

**PROCEEDINGS OF THE FOURTH ANNUAL
NATIONAL MULTI-DISCIPLINARY
CONFERENCE**

V-CMT 2017

On the Theme

“INDIA 2025: A VISION FOR NEXT DECADE”

February 3rd & 4th, 2017

Organized by

**VIDYALANKAR SCHOOL OF INFORMATION
TECHNOLOGY WADALA (EAST),
MUMBAI -400037**

SPECIAL ISSUE OF AN INTERNATIONAL

**SCHOLARLY RESEARCH JOURNAL FOR
INTERDISCIPLINARY STUDIES**

IMPACT FACTOR SJIF (2015)-5.403

EDITOR

Dr. Mrs. Rohini Kelkar

COPYRIGHT © AUTHORS, FEBRUARY 2017

ISSN : 2319 - 4766

IMPACT FACTOR SJIF (2015) - 5.403

SPECIAL ISSUE ON INDIA 2025: A VISION FOR NEXT DECADE

JANUARY - MARCH, 2017, VOLUME - 6, ISSUE - 26

Disclaimer: We do not warrant the accuracy or completeness of the Information, text, graphics, links or other items contained within these articles. We accept no liability for any loss, damage or inconvenience caused as a result of reliance on such content. Only the author is the authority for the subjective content and may be contacted. Any specific advice or reply to query on any content is the personal opinion of the author and is not necessarily subscribed to by anyone else.

Warning: No part of this book shall be reproduced, reprinted, or translated for any purpose whatever without prior written permission of the Editor. There will be no responsibility of the publisher if there is any printing mistake. Legal aspect is in **MUMBAI** jurisdiction only in Favor of Editor in Chief for this Special Issue on "**INDIA 2025: A VISION FOR NEXT DECADE**"



SCHOLARLY RESEARCH JOURNALS

S. No-05/14, Shivkrupa Residency, F.No-10, 2nd Floor, Near Telco Colony,
Jambhulwadi Road, Datta Nagar, Ambegaon (Kh), Pune-46

Website- www.srjis.com, Email- editor@srjis.com

PATRONS

Rashmi Deshpande

(Chairperson, Vidyalankar Dnyanpeeth Trust)

Vishwas Deshpande

(Managing Trustee, Vidyalankar Dnyanpeeth Trust)

Keshav Kulkarni

(Trustee, Vidyalankar Dnyanpeeth Trust)

Milind Tadvalkar

(Director, Vidyalankar Dnyanpeeth Trust)

Namrata Deshpande

(Trustee, Vidyalankar Dnyanpeeth Trust)

Avinash Chatorikar

(Secretary, Vidyalankar Dnyanpeeth Trust)

Guest Of Honour

Mr. Ram Bhogale

(Director, Nirlep Appliances)

Keynote Speaker

Mr. Raghav Narsalay

(Managing Director, Accenture Institute for High Performance at Accenture)

Expert Panellists

Prof. Dr. Pradeep Pendse

(Dean-IT & Business Design, WeSchool)

Mr. Sandesh Kirkire

(Director, Balgyani Educators Pvt. Ltd.,
Opulent Infotech Pvt. Ltd., Ixight
Technologies Pvt. Ltd., Focus Denmed Pvt.
Ltd.)

Mr. Umesh Chandrasekhar

(Prof. PSG Institute of Management)

Dr. Abhijit Phadnis

(Director, Giltedge Financial
Counsel Pvt. Ltd.)

Session Chairs

Dr. N. K. Narayanan

(Professor, Head of the Department of Information Technology, Kannur University)

Dr. Makarand Paithankar

(Vice-Principal, SaraswatiBhuvan College of Arts & Science, Aurangabad)

Dr. O. S. Sarvanan

(Head and Assistant Professor, Government Arts and Science College, Chennai)

Mr. Rupesh Kaslay

(Technology R&D Senior Principal at Accenture Technology Labs)

Dr. Vaishali Patil

(Prof - IT, Research & New Initiatives, WeSchool)

Dr. B. Lakshma Reddy

(Principal cum Director, Computer Science Bangalore City College, Bengaluru)

Dr. Saraswati Moorthy

(Associate Professor in Accountancy and Head Of Department, R. J. College)

Steering Committee

Dr. (Mrs.) Rohini Kelkar

(Principal, VSIT)

Mr. Vijay Gawde

(Vice Principal, VSIT)

Mr. Makarand Deshpande

(Adjunct Faculty, VSIT)

Mr. Chandrashekhar Vaze

(Chairman, JankalyanSahakari Bank)

Mr. Satish Joshi

(Consultant, IGATE Corporate University)

Dr. (Smt.) Brinda Jagirdar

(Independent Director & Senior Business Economist)

Mr. Abraham Koshy

(Country Manager-India, The Open Group)

Mr. Asif Rampurawala

(Vice Principal, VSIT)

Mr. Makarand Deshpande

(Adjunct Faculty, VSIT)

Dr. Suhas Pednekar

(Principal, Ruia College)

Mr. Shriram Dandekar

(Executive Director, Camlin-Kokuyo)

Mr. Sunil Bhandare

(Consulting Economist)

Mr. Ninad Dani

(Entrepreneur)

Conference Convenors

Ms. Prachi Mahajan

(Assistant Professor, Dept. of IT, VSIT)

Ms. Prathma Nemane

(Assistant Professor,
Dept. of Commerce, VSIT)

Conference Co-Convenors

Mr. Shajil Kumar PA

(Assistant Professor, Dept. of IT, VSIT)

Ms. Ashwini Joshi

(Assistant Professor,
Dept. of Management,
VSIT)



जाइयं धयो हरति सित्रचति वाचि सत्यं
मानोननति दिशति पापमपाकरोति।
चेतः परसादयति दिक्षु तनोति कीरति
सत्संगतिः कथय किं न करोति पुंसाम्॥

"Knowledge removes the lethargy of the intellect, invests truth in the speech, enhances the greatness and casts off sin; it cleanses the mind and spreads the fame all around. Tell me, what is not provided to a man, from the company of high thinking and noble souls."

VISION

Our Vision is to establish a leading centre of imparting Quality Education in the field of Science, Commerce and Management with emphasis on:

- ❖ Ensuring that students learn the fundamental concepts in various disciplines.
- ❖ Motivating students to apply the Scientific & Technological knowledge to develop problem solving capabilities.
- ❖ Making students aware of the societal and environmental needs with specific appreciation of the emerging global context.

MISSION

Our mission is to provide:

An educational environment where students can reach their full potential in their chosen discipline and become responsible citizens without compromising in ethics.

A scholarly environment where the talents of both, The faculty members and students are nurtured and used to create knowledge and technology for the benefit of the society.

ACKNOWLEDGEMENTS

I would like to thank to our Keynote Speaker Mr. Raghav Narsalay, our Guest of Honour Mr. Ram Bhogale and our Expert Panelists – Mr. Sandesh Kirkire, Prof. Dr. Pradeep Pendse, Mr. Umesh Chandrasekhar, Dr. Abhijit Phadnis and Moderator of the panel discussion

Dr. Chandrashekhar Deshpande for investing their valuable time for this conference. I would also like to acknowledge the efforts of the college management, adjunct faculty members, the organising committee, and all the other faculty members and staff of Information Technology, Commerce and Management Departments of VSIT.

I would also like to thank our Session Chairs –Dr. B. Lakshma Reddy and Mr. Rupesh Kaslay for chairing the track of ‘Digital India’; Dr. N. K. Narayanan and Dr. Vaishali Patil for chairing the track of ‘Innovative Applications of Emerging Technologies’; Dr. Makarand Paithankar, Dr. O. S. Saravanan, and Dr. Saraswati Moorthy for chairing the tracks ‘Contemporary Global Issues in Business Management’ and ‘Emerging Challenges in India’s Accounting and Taxation System’. Their critical reviews of the papers presented and their valuable feedback would definitely enrich authors in order to upgrade their papers.

Last but not the least, I would like to extend my gratitude to all paper presenters and delegates who have made it possible for us to organize such a Two Day National Conference V-CMT 2017.

Looking forward for V-CMT 2018!!!

Dr. (Mrs.) Rohini Kelkar
Editor

MANAGEMENT

Message from Chairperson, Vidyalankar Dnyanpeeth Trust Rashmi Deshpande



Zora Neale Hurston rightly says, “Research is formalised curiosity”. The faculty of thought and the eternal search for truth alone sets man apart from other life forms and also contributes to the development of mankind ultimately bringing more happiness to man. We, at Vidyalankar, have always believed in assigning the highest priority to the promotion of research culture amongst students and faculty. The Fourth National Conference ‘V-CMT 2017’ is organised and hosted by Vidyalankar School of Information Technology (VSIT). This conference is designed to give participants a plethora of usable content in the fields of Commerce, Management and Technology. It enables them to get tuned to the latest changes that occur within research domains and the industry. I wish the researchers the very best and hope to see more of such initiatives by Vidyalankar and to do our bit in carrying the torch of knowledge forward.

Message from Principal, Vidyalankar School of Information Technology (VSIT) Dr. (Mrs.) Rohini Kelkar



It is my great pride and privilege to present the pamphlet of the fourth National, Multi-disciplinary Conference V-CMT-2017. This academic conference is going to explore the four tracks related to “Digital India”, “Innovative Applications of Emerging Technologies”, “Contemporary Global Issues in Business Management” and “Emerging challenges in India’s Accounting and taxation systems. The objective of the conference is to reflect on the unfinished tasks of nation building and the country’s future possibilities of being the next super power. VSIT is fortunate to get Shri. Raghav Narsalay as the Keynote Speaker and Shri. Ram Bhogale as the Guest of Honour. We also have received a good number of research papers which will be published in our journal with ISBN number in the due course of time. I am thankful to all the paper presenters, speakers, session chairs and conference organisers for working hard to make V-CMT 2017 a fruitful conference.

Message from Convenor

Dr.Chandras Deshpande: Adjunct Faculty, Commerce and Management



VSIT arranged a Two-Day National Conference V-CMT 2017, on February 03-04, 2017. The theme chosen was “India 2025- A Vision for the Next Decade”. The objectives of the Conference were: To take cognizance of some of the latest developments in these four sectors through Experts-talks and Panel-Discussion, and to encourage Teachers and Students to contribute research paper on these themes. The VCMT-2017 received an overwhelming response. Several papers were received from Faculties as well as students. This volume puts together the selected papers which have been reviewed and edited by the committee. We sincerely hope that the contents of this volume proceeding will be of use and value to the teachers as well as students of Commerce Management and Information Technology.

Message from Steering Committee member

Mr. Makarand Deshpande: Adjunct Faculty, Information Technology



In its fourth year, the V-CMT conference is sharpening its focus on the current issues, challenges and application of technology as well as management perspectives for a better tomorrow. This year ICT section has seen an overwhelming response from teachers and students alike. The papers addressed various initiatives & upcoming technologies for effective application fields. We certainly expect to see the ideas getting converted into live implementations, eventually becoming standard way of life.

EMINENT SPEAKERS

Mr. Raghav Narsalay– Keynote Speaker



Mr. Raghav Narsalay is a Managing Director at Accenture Research. Accenture Research is responsible for publishing action-oriented management research for Accenture globally. Mr. Narsalay's research in the field of innovation is published in prestigious tier-one publications such as Harvard Business Review, Stanford Social Innovation Review and European Business Review amongst others. He has extensively spoken on the topic of innovation at prestigious institutions such as the Cambridge University and also at Oxford. In 2013, at the Academy for Innovation and Entrepreneurship Conference at Oxford, Raghav's work on innovation was awarded the 'special mention for pioneering contribution' to the subject.

He has also written more than 30 articles in English and Marathi in leading national and regional dailies focusing on business and international trade strategy. Adjudged by The Financial Express in 2006 as one of the youngest influential policy thinkers in the country, Raghav continues to work with range of business and social stakeholders to promote policies that promote business and social welfare. He was a part of the Insurance Regulatory Advisory Board and also a member of the Skills and Employment Sub-committee of the Planning Commission for the 12th Five Year Plan.

Mr. Ram Bhogale – Guest Of Honour



Ram Bhogale is a Bachelor of Engineering (Mechanical) from Government College of Engineering, Aurangabad.

Presently he holds the following business positions -

- Director, Nirlep Appliances Ltd, a company manufacturing Nirlep Nonstick Cookware
 - Director, Umasons Steel Fab Pvt. Ltd., A company manufacturing stainless steel fabricated machinery and plant for chemical and pharma industry
 - Director, Amulet Coatings Pvt. Ltd., a company providing powder coating and painting services to auto component sector
 - Director, Marathawada Autocompo Pvt. Ltd., front suspension component manufacturer
 - Director, Umasons Autocompo Pvt. Ltd., electroplated accessories for two wheelers
 - Partner, M/s Technocraft Toolings
-

EXPERT PANELISTS

Mr. Sandesh Kirkire

Track: Digital India



Mr. Sandesh Kirkire is an engineer with a Masters in Management Studies from JBIMS. He has about 25 years of experience in financial services covering a wide gamut of areas of Corporate Finance, Investment Banking, Treasury, Funds Management and General Management. He was the CEO for over 9 years at Kotak Mahindra Asset Management Company managing public money. He has been part of the Kotak Mahindra group for over 20 years with the last 15 years at Kotak Mahindra Asset Management Company first as a Fund

Manager and later as its Chief executive Officer. After about 25 years of experience in financial services Mr Sandesh Kirkire is now an Angel investor advising startups in different sectors of Telecom, Data analytics, E commerce, Healthcare and Education. He is also advising in the space of Impact Investments

Prof. Dr. Pradeep Pendse

Track: Innovative Applications of Emerging Technologies



An IT Consultant/CIO/Entrepreneur for nearly 15 years, and concurrently a passionate teacher (for 20 years), Prof. Dr. Pradeep Pendse is a BE, MMS, PhD. At present he is a Dean at WeSchool where he leads IT/e-Business area and Co-Leads the Business Design, Business Analytics and the Start ups area. He is also the CIO and CISO at WeSchool. He has served on Advisory Boards/Committees/Hon. Positions at various leading institutions such as VJTI, TISS, Somaiya Institutions and as an examiner for Ph.D. at Symbiosis University, Tilak University, SNDT to name few and in professional bodies such as Computer Society of India, Institute of Chartered Accountants (ICAI), Indian Merchants Chambers, Bombay Chamber of Commerce and several others. He is at present on IT Advisory Committee of the National Stock Exchange. He has also been a Jury for several awards notably the Information Week Magazine's award for **Global CIO and the EDGE Awards, the CISCO CIO awards, the Center for Recognitions - CIO Awards and Hot Start up Awards** to name a few.

Mr. Umesh Chandrasekhar**Track: Contemporary Global Issues in Business Management**

With an MBA in Marketing and Master in e-Business from Surrey Business School, England. Mr. Umesh has also been a Chartered Marketer at CIM UK. He is certified with Diploma in Communication Advertising and Marketing (UK) with a merit prize in marketing research. He is certified in Advertising from the International Advertising Association, New York. He served exclusively with the Times of India Group for over 28 years. He has been part of the Economic Times as a correspondent and he also made it to front page news. He returned to India in 2007 and took over a position as the Principal of Times Center for Media Studies, New Delhi. He completed one year post-graduate Diploma programs in Marketing and Journalism. He has been part of PSGIM since January 2010. Presently he is holding a position as a Professor-in-charge of the placement department at PSGIM.

Dr. Abhijit Phadnis**Track: Emerging Challenges in India's Accounting & Taxation Systems**

Dr. Abhijit is a Mumbai university rank-holder in the B.Com. (1982) examination (1st in M. L. Dahanukar College of Commerce, Vile Parle, Mumbai) and a national rank holder in final examinations of ICWA (1983), CA (1984), CS (1987) and CFA India (1989) examinations with 2nd, 11th, 1st and 3rd ranks respectively. After work spanning 6 years, in 2009, he was awarded a PhD by the Indian Institute of Technology, Bombay. His thesis titled 'Factors influencing investments into Indian states', has been published as a monograph by a German academic publisher. During 1997 to 2001, he worked for UBS & Credit Suisse, two Swiss Banks in senior positions with a position on the board of their local subsidiaries. There he headed all business support functions such as finance, operations, human resources, administration, building services, legal, compliance, IT. In 2002, he was co-opted to the Board of TJSB Sahakari Bank Ltd., a leading co-operative bank. Abhijit has participated in several consulting engagements for organizations such as ANZ Grindlays Bank, Clariant India, Deepak Nitrite, Essar group, NSDL Database Management Ltd., Pall India, Peregrine Securities, Schrader Scovill Duncan and Sekhsaria Chemicals.

SESSION CHAIRS

Dr. B. Lakshma Reddy



Dr. B. Lakshma Reddy is M.C.A, M.C.M, M.Phil, M.Sc (IT), M.B.A(H.R), M.B.A (SYSTEM), Ph.D. He did Ph.D in "An Efficient Approach in Optimized Performance with SAP Net Weaver BW & BI Accelerator" from Sri Krishna Devaraya University Ananthapuramu-515003, A.P, India, March 2014. He has been felicitated with various respectable awards. To name a few Dr. Abdul Kalam Life Time Achievement National Award, Best paper award on "Big data techniques and analytics" in E-commerce Business, Honory Doctorate award, Spoorthi Sri award, Dr .Radha krishna award, Best paper award on "Enhancing collaborative CRM with mobile technologies, Best paper award on "Bitmap Indexing improvement in Data warehousing query processing to achieve better performance."

Mr. Rupesh Kaslay



Mr. Rupesh Kaslay is the Technology R&D Senior Principal at Accenture Technology Labs. The Lab is focused on areas like Artificial Intelligence, Computational Linguistics/ NLP, Software Analytics and Software Engineering of Intelligent Applications. His professional career started with Systems programming for the Unisys A-Series/ClearPath mainframes. He worked in the Operating System (MCP/AS) group as Field Engineer for networking tools (FTP). Later with the relative loss in prominence of Mainframes and rise of the Internet, he moved on to the (then) latest technologies of VB, ASP, COM+. At Accenture he has lead and managed several large, multi-million dollar IT programs while at the same time enhancing his technical skills and maintaining his passion for being "hand-on" with the latest technology trends. This passion lead him away from the usual IT delivery lead role to being a researcher at the Technology Labs.

Dr. N. K. Narayanan

Dr. N.K. Narayanan is the senior most Professor in the Department of Information Technology, Kannur University, Kerala, with about 35 years of teaching and research experience. He is the founder Professor & Head of the Department of Information Technology, Kannur University. From December 1981 to February 2003, he worked as Lecturer in different Government Colleges in Kerala. In 2003 February he joined as Reader & Head of the Department of Information Technology (School of Information Science & Technology) in Kannur University and in June of the same year, he was elevated to the position of Professor & Chairman of the School of Information Science & Technology. He served on deputation as Principal, College of Engineering, Vadakara, Kerala from April 2008 to March 2010. He was a UGC Teacher Fellow in the Department of Electronics, Cochin University of Science & Technology (CUSAT), Kerala, for three years during 1985 to 1988. He earned a Ph.D degree under the Faculty of Technology from Department of Electronics, CUSAT, in 1990. He had published thirteen book chapters in the area of Information Technology; the publishers include reputed publishers like Springer. He had been the Chairman, Board of Studies in Computer Science of Kannur University from 2003 to 2012 and also a member of the Board of Studies in Computer Science and Applications of University of Calicut and Cochin University of Science & Technology.

Dr. Vaishali Patil

Dr. Vaishali Patil, a Professor in Information Technology, Research and New Initiatives for the last 16 years, pursued her doctorate in “Risk Management in Software Projects – An analytical study” from Bharati Vidyapeeth University, Pune. She obtained her Bachelor’s degree and Master’s degree from Shivaji University. She did her M.Phil from Bharati Vidyapeeth University, Pune. She has completed Masters in Human Resource Development Management from University of Mumbai. She has a work experience of 16 years which includes her journey in Bharati Vidyapeeth from a faculty to the Head of the Department and a Professor. She has joined Welingkar Institute of Management Development and Research, Mumbai in April 2016. She is an approved Ph.D Guide in University of Mumbai and BharatiVidyapeeth University, Pune. She has also received a gold medal from AIMS – All India Institute of Management Schools for “Innovation in teaching” in 2012 and 2014. She has also been bestowed with Ramaswamy Aiyar Best young teacher award in 27th AIMS Anuual Management Education Convention 2015.

Dr. Makarand Paithankar



Dr. Makarand Paithankar did Ph.D in "Impact of Impulse on Decision Making in Administration" - A Study of Maharashtra in 2004. He has Master's degree in Public Administration from Government College of Arts and Science affiliated to the Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. He was a member of the Governing Council of Saraswati Bhuvan Education Society Aurangabad, as research foundation representative

since 2008-09. He is the Head of the Department of Public Administration since 2005. He was the Vice-Principal of SBES College of Arts and Commerce, Aurangabad since 2010. He was coordinator of Internal Quality Assurance Cell of College for 10 years. He is Management Representative of college for ISO, TUV, Austria.

Dr. O. S. Saravanan



Dr. O. S. Saravanan has a Ph.D degree in Impact of Micro-finance on the Rural Development-A study with special reference to Kanchipuram and Thiruvalluram Districts from Madras University. Dr. O. S. Saravanan has many technical skills in HDCA which is a Computer Application and Tally. He has also achieved the UGC-JRF Award from University Grand Commission, New Delhi. He also has wide teaching experience and research related work in various reputed colleges. He presented papers on topics like The performance perspective of financial inclusion by existing financial

infrastructural institutions, Corporate mole-An unwanted intelligent in the organizational loyal teams. He has also been in the co-author review team on a book titled "Security Analysis and Portfolio Management"

Dr. Saraswati Moorthy



Dr Saraswathi Moorthy is an Associate Professor in Accountancy and also the Head of Department in R.J.College. She has completed her Master's and Ph.D from SNDT, Women's University, Mumbai (2009) Direct Selling Industry in India Commerce Education- Teaching and Research Accountancy Education. Dr. Moorthy is teaching various subjects on Accountancy and Financial Management, Financial accounting, Cost Accounting and Management Accounting. She has project experience in collaboration with HBCSE (TIFR) Mumbai and reported the findings through a project report (2015) . Her publication includes 12 papers till date.

CONTENTS

	Page
<i>Patrons</i>	1
<i>Vision & Mission</i>	4
<i>Acknowledgements</i>	5
<i>Management</i>	6-7
<i>Eminent speakers</i>	8-10
<i>Session chairs</i>	11-13

TRACK 1: DIGITAL INDIA

Brief Summary of the session

Best Paper

Soil analysis using Data Mining Techniques <i>Jayalalita B Iyer, Rajendra Patil</i>	14-16
--	-------

E-Learning <i>Rachna Desai</i>	17-20
-----------------------------------	-------

E-Learning: A new Era of learning in the traditional Indian Educational System <i>Ashwin Dhanraj Bhagat</i>	21-23
--	-------

E Health <i>Roopa .R. Kulkarni</i>	24
---------------------------------------	----

An innovative way of using condensate water from Air conditioners for watering plants in VSIT Campus <i>Madhavi Amondkar, Leena Jadhav</i>	25-28
---	-------

Trends and issues of E-learning in LIS-education in India- A Pragmatic perspective <i>Amit Kabra, Abhijit Rane</i>	29-34
---	-------

An analysis of E-learning and its impact on teaching and learning in higher education <i>Renu Vijay Verma</i>	35-39
--	-------

Green computing: Need of the hour <i>Misbah Momin, Areej Faquih</i>	40-43
--	-------

Applications of GIS (Geographic Information System) modelling to Control West Nile(WN) Virus <i>Shaikh Sabera Bano Rais Ahmed, Marium Shujauddin Shaikh</i>	44-47
Digitalization of Education <i>Sarika Chouhan</i>	48-50
Gamification-A Constructivist Learning Technique <i>Kimaya Shelar, Ketaki Ghawali</i>	51-54
Paradigms of Curriculum Designing process for e-learning in Higher Education <i>Ujwala Sav</i>	55-59
To Transform India into a Digitally Empowered Society and Knowledge Economy <i>Rohini Gaikwad, Aasha Vanve</i>	60-67
Use of ICT in Online Blended Learning <i>Vishakha Domal, Rajendra Patole, Mithila Satam</i>	68-73
Intelligent “Equity Sector” trading based on technical and statistical methods <i>Seema Bhatkar, Sylvy Dmonte</i>	74-77
Digital Marketing <i>Yamini Sawant</i>	78-81
To promote “Digital Concept” in primary and secondary education sector in India <i>Kutty Sana Asar</i>	82-85

TRACK 2: INNOVATIVE APPLICATIONS OF EMERGING TECHNOLOGIES

Brief Summary of the session

Best Paper

Motivation of Using Cognitive Radio (CR) Networks with Unmanned Aerial Vehicles (UAVs) for Border Patrolling: Needs and Possible Attacks <i>Payal Shah, Snehal Tandale</i>	1-3
Data Mining Association Rules to Improve Student’s Academic Performance <i>Manthan R. Gandhi</i>	4-7

Data Mining using big data tools in Higher Education <i>Sandhya Pandey</i>	8-9
Understanding the implications of customer segmentation using Business Intelligence <i>Reshma Desai, Beena Kapadia</i>	10-15
Cell Phone Radiation Exposure <i>Shobha Nalavade, Sunita Koli</i>	16-21
Smart Waste Management System Implementation <i>Akshatha Jain, Hrishikesh Tendulkar</i>	22-25
Cross Platform Frameworks for Hybrid Mobile Application Development <i>Prachi Mahajan, Seema Vishwakarma</i>	26-30
Cyber Crime Issues related to MEDJACK& Proactive strategies to tackle it in the Indian Context <i>Nikhil Pawanikar, SwapnaKadam</i>	31-34
Innovative Applications of Emerging Technologies: Data Warehousing& Business Intelligence <i>Reshma Bahauddin, Tahereen Momin</i>	35-38
Innovative Applications of Emerging Technologies in Embedded System: “Raspberry Pi as a Desktop Computer” <i>Huma Momin</i>	39-46
Internet of things <i>Reeta Rana</i>	47-51
Water Level Detection and Underground Pipeline Water Leakage Management System Using Sensors and GSM <i>Janhavi Vadke, Geeta Sahu</i>	52-55
Intelligent Instrumentation: Biomedical Applications <i>Umesh Koyande, Ashwini Koyande, Amita Gaonkar</i>	56-62
Neural Networks Unsupervised Approach - In Supervising My Inbox <i>R. Santha Maria Rani, Firnando Virgin</i>	63-65
Thermal Imaging for Safety and Efficiency in Public Transportation (Railway) <i>Prachi Mahajan, Tanvi Gawade</i>	66-69
Application of NANOTECHNOLOGY in BIOMEDICAL <i>Suchita .U. Revankar, Mona Marwaha</i>	70-73

“Mylanguage”; A Simplified Concept To Create Your Own Programming Language <i>Sohrab A. Vakharia</i>	74-82
Financial Goal Prediction using data mining <i>Pallavi Tawde</i>	83-86
Green Clouds with artificial intelligence : How major cloud providers use artificial intelligence for Energy Conservation <i>Neha Ansari</i>	87-89
Water Conservation and purification using Smart Water Tank <i>Pushpa Susant Mahapatro</i>	90-95
A study on Hadoop 1.x and Hadoop 2.x Eco-system along with Data Science Perspective <i>Akshatha Jain, Dr.Lakshma Reddy Bhavanam, Umapavan Kumar Kethavarapu</i>	96-100

TRACK 3: CONTEMPORARY GLOBAL ISSUES IN BUSINESS MANAGEMENT

Brief Summary of the session

Best Paper

Increasing trade amongst BRICS nations using Ease of doing Business as tool <i>Ketan Vira, Poonam Mirwani</i>	1-5
--	-----

Disaster Management <i>Mohan Iyer</i>	6-7
--	-----

Right to Information Act – An agent of Good Governance <i>Ashwini Joshi</i>	8-11
--	------

Strategic Planning to Cure Breast and Cervical Cancer <i>Maria Achary, Niti Salvi</i>	12-24
--	-------

A Study on the Interrelationship of Economic Development And Entrepreneurship . <i>Saraswathy kumar, Dr. C. Vethirajan</i>	25-29
---	-------

Determinants of Mind Processing for solution of a Problem Strategically <i>Bhijit Kumar Pathak</i>	30-33
---	-------

Reverse Mortgage - A golden stick for the Elderly <i>Vivek Ramprakash Gupta</i>	34-40
--	-------

Application of the teaching of The Jesus Christ to the Strategic management and problem solving <i>Vinod Adagle</i>	41-42
Impact of Surrogate Advertisement on Youth of India <i>Anindita Banerji</i>	43-50
Start-up in India: A New Business Perspective <i>Rohini Sankalp Madavi</i>	51-54
Roleof Corporate Communication in Crisis Management <i>Booma V Halpeth, Pushbam Shivkumar</i>	55-59
Emerging CSR Expenditure Pattern under Companies Act 2013: State Level Evidences from Selected BSE Listed Companies <i>Susanta Datta, Vinayak Karande</i>	60-68
Corporate Communication and Social Media <i>Rumeli Sharma</i>	69-73
An Approach To Bring Social Revolution: Mirchi And Mime (A Case Study) <i>Poonam Mirwani</i>	74-77
Impact of BREXIT on Indian Economy and Business <i>Sagar Gaikwad</i>	78-80
Supply Chain Agent-based Model for better business process management in Make in India <i>Amrutha Nair, Shajil Kumar P.A</i>	81-85
Reverse Mentoring : Millennials The New Mentor <i>Nisha Dang</i>	86-89
Equity Investment Prospects in Emerging Markets <i>Santosh Gupta</i>	90-92
Impression of Passenger Towards Service Quality of Air India <i>Harish Premrao Noula</i>	93-96
Recruitment process of talents in Life Insurance Corporation of India <i>Ila Pathak Jha</i>	97-100
Digital Marketing <i>Gajanand Nandgiri</i>	101-103
Make In India – Recognising an Ancient Manufacturing Hub <i>Vinit Jain</i>	104-106

To study the Plant species as Bio-indicators for Pollution Control <i>Dr. Siddhesh Ramesh Patil</i>	107-111
A study on well informed investors towards stock brokers in Mumbai City <i>N. Lakshmi Kavitha</i>	112-116
Booming Women Leaders in Banking and Finance Sector in India - Few Success Stories <i>Vijay Gawde, Alka Dhingra</i>	117-121

TRACK 4: CONTEMPORARY GLOBAL ISSUES IN BUSINESS MANAGEMENT

Brief Summary of the session

Best Paper

Study An Impact of Goods and Service Tax (GST) : Push for Growth or Inflation <i>Sandip Khandekar, Shravani Khandekar</i>	1-7
“IFRS Implementation in India – Practical Issues and Challenges” <i>Neelima B. Nimborkar</i>	8-12
Role of Forensic Accounting in Investigation of Bank Frauds <i>Agnus Anthony Meledath</i>	13-17
An Overview of Implications Of Proposed GST On Renewable Energy Sector In India <i>Rachana Chawda, Prathma Nemane</i>	18-23
Impact Of Implementation Of IFRS In Banking Sector <i>PoojaJogu, KavithaChandramohan</i>	24-28
GST- A challenging road ahead <i>Shreyas Bondre</i>	29-32
IFRS in India: Need & Convergence <i>Vishwanath Acharya</i>	33-36

SOIL ANALYSIS USING DATA MINING TECHNIQUES

Jayalalita B Iyer & Rajendra Patil

Dept. of Information Technology S.K.Somaiya College of Arts, Science and Commerce
iyerjayalalita@gmail.com

Professor Dept. of Information Technology S.K.Somaiya College of Arts, Science and Commerce patilrajendrab@gmail.com

Abstract

The different types of soil records are taken and analyzing variation in soil and for relating the soil to its environment is done. Soil analysis increasingly needs such quantitative information, and decisions have to be made against a background of variation in soil. The selection of suitable soil is done on the basis of plants need. The importance of soil analysis technique is emphasized with examples how to use the results for estimation, prediction, and efficient design. In this work, we perform the experiment on types of soil database. The experiment is conducted on 15 attributes and 66 records.

Keywords: Soil analysis, distance method, dissimilarity

I. INTRODUCTION: Efficient techniques can be developed and tailored for solving complex soil data sets using data mining to improve the effectiveness and accuracy of the Classification of large soil data sets. A soil test is the analysis of a soil sample to determine nutrient content, composition and other characteristics. Tests are usually performed to measure fertility and indicate deficiencies that need to be remedied. It helps farmers to decide the extent of fertilizer and farm yard manure to be applied at various stages of the growth cycle of the crop. The outcome of this research will result into substantial diminution in the price of these tests, which will save a lot of efforts and time of Indian soil testing laboratories.

Methodology: The selection of soil is implemented using categorical variables of clustering analysis. The categorical variables are of two types: nominal variable and binary variable methods. The nominal variables compute the dissimilarity between two objects based on the ratio of number of matches of object i with j with each other. For the given experiment 10 parameters are taken like Nitrogen, sulphur, calcium, Magnesium, zinc, Iron, phosphorous, potassium, Acidity or Basicity of a component, Humus. The second approach is binary variable method where the results are computed using the contingency table.

Table 1: Contingency table (C_T)

		Object b		
		1	0	sum
Object a	1	q	r	<u>q+r</u>
	0	s	t	<u>s+t</u>
	Sum	q+s	r+t	p

$$dis(a,b) = (r+s)/(q+r+s) \dots \dots \dots (2)$$

The dissimilarity C_t between *object a* (recipient) and *object b* (donor record from D) is computed by measuring the count of variables q, r, s as shown in table 1. If an *object a* has n attributes then $i = 1, 2, \dots, n$ and if *object b* has n attributes the index $j = 1, 2, \dots, n$. i.e. The respective variables resembles:

Naïve Bayes

Naive Bayes classifiers are a family of simple probabilistic classifiers based on applying Bayes' theorem with strong (naive) independence assumptions between the features.

$$p(C_k | \mathbf{x}) = \frac{p(C_k) p(\mathbf{x} | C_k)}{p(\mathbf{x})}$$

Comparison of different classifiers

Classifier	Naive Bayes
Correctly Classified Instances	932
Incorrectly Classified Instances	1468
Accuracy	38.74
Mean Absolute error	0.426

	A	B	C	D	E	F	G	H	I	J	K
1	soil id	N	S	Ca	Mg	Zn	Fe	P	K	pH	Hs
2	1	40	30	1100	200	2	33	30	110	5.8	5
3	2	41	31	1101	201	3	34	35	111	5.9	1
4	3	42	32	1102	202	4	35	94	139	6	6
5	4	43	33	1103	203	5	60	115	120	6	10
6	5	44	34	1104	204	6	36	45	130	6.1	22
7	6	45	35	1105	205	7	37	111	111	6.2	34
8	7	46	36	1106	206	8	38	57	112	6.9	25
9	8	47	37	1107	207	9	39	55	113	6.5	45
10	9	48	38	1108	208	10	45	60	110	6.6	22
11	10	49	39	1109	209	2	44	52	129	6.1	59
12	11	50	40	1110	210	3	59	80	113	6.8	48
13	12	51	41	1111	211	4	55	66	114	5.8	44
14	13	52	42	1112	212	5	45	94	115	5.9	11
15	14	53	43	1113	213	6	48	66	116	5.4	25

Conclusion: The results were found satisfactory for profile farmers based on the 10 attributes selected by us. This technique can be integrated into designing of an expert system/tool, which shall significantly improve the process of selecting the soil nutrient content. The expert system/tool designed using the proposed techniques will assist the soil specialist and farmers for finding the best-matching soil according to crop need.

References

- R.B. Patil, B.V. Pawar, A.S. Patil, "Sperm Donor Selection using Nominal and Binary Variable Methods", IJCA, Issue 14 , (4), pp 20 - 24 , 2015*
- P. Gruhn, F. Goletti, & M. Edelman, (2000) "Integrated Nutrient Management, Soil Fertility, and Sustainable Agriculture: Current Issues and Future Challenges", International Food Policy Research Institute, N.W. Washington, D.C. U.S.A.; Technical Report*
- R.B. Patil and Ajay S. Patil, "Effective Evaluation and Construction of Data Mining Techniques for Increasing the Success Rate of Procedures Held at ART Clinics", in the proceedings of International Conference on Recent Trends in Information Technology and Computer Science (ICRTITCS - 2011), page no.7.*
- L. Armstrong, D. Diepeveen& R. Maddern, (2004), "The application of data mining techniques to characterize agricultural soil profiles"*
- "Methods Manual-Soil Testing in India", Department of Agriculture & Cooperation Ministry of Agriculture Government of India, 2011*
- A. Al-Rawas, S. Al-Alwai, (1998), A. Bisma&Y. Al-Alwai, "Soil Classification Decision Support System Using An Expert System Approach", Engineering Journal Of University of Qatar, Vol. 11, p. 103-115.*
- <http://www.sciencedirect.com/science/article/pii/S0016706109004315>

LEARNING

Mrs. Rachna Desai

Lecturer, Dept. of Computer Science, S.K. College of Science and Commerce

Plot no: 31, Sec-25, Nerul, Navi Mumbai – 400706.

rachna_desai2000@yahoo.co.in, +91 9320299499

Abstract

Education sector is now Experience a revolution with the hasty internet accessibility and availability of low cost mobiles and other electronic gadgets. Technology is playing a major role to convey all the information to the multiple populations easily and effectively, many foreign as well as domestic service providers are providing online education in India. Digital India Campaign, which aims to improve the ways of teaching through its innovative plans about E- learning. The campaign targets to provide broadband connectivity, Wi-Fi services and so on to various schools and colleges to all over the country. E -Learning is a way to get all the require Knowledge and information to communicate and collaborate in an educational sector. This includes technological expertise that supplements traditional classroom training with web-based components and learning environments where the educational process is experienced online. Emphasizes the importance of perception in relation of information technologies and communication, so that futures leaders will be better prepared regarding these technologies. This paper reflects the importance of E-learning with major visions and plans of the Digital India programme and discusses how far it can facilitate E- learning in India.

Keywords: E- learning, Digital India, e-governance, information and communication technology, mobile connectivity

1. INTRODUCTION: Developments in Technologies have influenced all sectors of society, the student generation must be positively influenced by the organization of education that have a higher moral, ethical and social responsibility. They need to understand the importance of technology and should be well aware how to teach the next Leaders. In education, application of technologies in form of e learning is already changing teaching and learning processes. E Learning is the Experience that is delivered or enabled by electronic technology. The delivery of Learning or content can be over the intranet, extranet or over the Internet, via CDROM, Interactive TV, or satellite broadcast (WAGNER, 2008). Many socio-economic factors have driven higher learning institutions to adopt e learning through greater information and communication access via electronic facilities; synchronous learning; cost-effectiveness, virtual experiences, and graphic representations. The e-learning courses are fulfilling students' needs and desires as closely as possible. E learning gives the changed environment for teachers and learners with the aim to find the most suitable platform that can be utilized in an operational teaching environment and reflect on the implications of these for becoming an online teacher.

2. E learning in India: We accept that E-learning is arriving very late in India but it is being fast accepted in a big way. The India perhaps has seen the success of west in adopting e-learning and is trying hard to implement it. Over the past few years, the Ministry of Human Resource Development has been trying to achieve the target of making education accessible to every corner of the country. Still there are many parts of the country, which are in darkness about e-learning (MALIK, 2009). Due to the growing Indian economy, India has a chance to become heart of e-learning programs. There are many e-learning classes, which are coming to India to build and develop e-learning infrastructure. E- Learning does not only replacement of black boards but it seems to coexist with the existing system. The system rather promises to reach too far off rural areas in India where education is still a looming darkness. This objective can be achieved by providing PCs at low cost with Internet connection. The chances of e-learning to strengthen the educational system in India are very high.

3.Facilities of e-learning

- **SMS and MMS:** These are very old services through these services; we can type the any type of information in various languages of India. So, the scope for learning and communication creates. In MMS we have additional services like exchange pictures, songs etc.
- **Face book and what's app:** Now the world of friendship is out of consideration without the social media. We can share important information, notes in social media. Now what's app is very popular social media. The exchange of picture, message and songs are very easy under this service.
- **Skype and Viper:** Primarily telephone reduces the physical distance among the persons. Then mobile phone advances it. Now with these services we can talk with the person simultaneously watching them. IIT and IIM classrooms are now sharing world-class knowledge with videoconference.
- **Mail- Id:** Mailing is one of the best medium to exchange information. G-mail, yahoo mail, rediffmail are some of the remarkable mailing account providers. We mail our papers, documents, CV to an office through mailing service.
- **Virtual Classroom:** Virtual classroom is most suited application of e-learning system. It is an audio-video interaction, text-chat, interactive whiteboard enable classroom. It makes learning more interesting and attractive. Technology helps to share world class view of the topic. Students more easily become more independent in their life. Digital pedagogy is now concerning concept of e learning. We can learn through these media about the e-governance and many other types of services.
- **Google classroom:** Classroom having a free web-based platform that integrates your Google Apps for Education with all your Google Apps services including Google Docs, Gmail and Google Calendar. It saves time and paper and makes it easy to create classes, distribute assignments, communicate, and stay organized.
- **Collaborated Classroom:** Is a free service that host websites for teachers. The fundamental purpose is to provide a discussion forum for teachers and students. Under this, teachers can post assignments, notes, and media for students.
- **Perzi:** Anew perspective on presenting that gives unprecedeted visual storytelling power, combining the freedom of an open canvas with spatial dimension and motion to keep audiences engaged as you guide them through your message.
- **Testmoz:** Is a simple service for creating and administering multiple choice tests online. It provides a unique URL for the tests you create. As the administrator of the tests you can quickly see who has taken your test and how many questions they have answered correctly. If you are looking for a simpler option for giving multiple choice quizzes online, Testmoz is worth to give a try.

4.Advantages of E-Learning

- It is cost effective and saves time.
- Learning 24/7, anywhere and anytime.
- We can track our progress very easily.
- E-learning allows each individual to tackle the subject at their own pace, with interactivetasks being set in place to ensure a thorough understanding throughout each module.

5.Implementation of E-learning: As it is the case with other Asian countries, the implementation of e-learning platform in Indian universities is still very low despite of the opportunities provided by technology created by the government under this:

1. NPTEL provides E-learning through online Web and Video courses in Engineering, Science and humanities streams. The mission is to enhance the quality of engineering education in the country by providing free online courseware.
2. The initiative of the 'Talk to a Teacher' activity of the National Mission on Education through ICT, launched by the Ministry of Human Resources and Development, Government of India.
3. The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honorable Dr. A P J Abdul Kalam, the President of India soon after providing the Internet connectivity to the Universities .
4. The Quantum-Nano Centre is a multidisciplinary centre at Dayalbagh Educational Institute, Agra set up under MHRD on Education with partners as IIT Kanpur, IIT Delhi and IIT Madras. To utilize the latest distance learning technologies such as videoconferencing, webcasts, e-lectures, online courses for promoting quantum-nano education and provide opportunities to young scientists and researchers.
5. The project on 'Creating Digital-learning Environment for Design' also called 'e-kalpa' is sponsored by Ministry of Human Resources
6. The Amrita VishwaVidhyapeetham has managed to implement the A-VIEW (Amrita Virtual Interactive e-Learning World).<https://www.amrita.edu/research/project/amrita-virtual-interactive-e-learning-world-view>

6.FUTURE TRENDS OF E –LEARNING: Digital Literacy, which is a 21st century major skill, is one of the major pillars of Digital India. E-governance only gives importance on the citizen centric services but Digital India creates a free and independent learning environment for the Indian citizens. Most of the universities and other national and international important institutions have started to transform their resources to digital format. A positive voice has come out from the all sector of people.

1. All schools will be connected with free wifi system. Higher education institutions will be technologically smart like the universities of US or China. Workable knowledge and original traditional way of acquiring knowledge will increase simultaneously in the programme. India will be digitally linked under an umbrella.
 2. Services like biometric attendance system and digital identification in offices will enhance work period and work culture in offices. It will add speed in work. We can hopefully said that India will lead the world regarding digital ideas and systems.
 3. Emails to be primary mode of communication. Cloud storage, Big data will help us to communicate, exchange and gather information. It will save papers and add speed and variety to the communication process.
 4. Development of online courses will increase literacy rate and skills among the people. It has already been started and increasing rapidly. The courses of skill development will enrich India with a great number of skilled labours. Examination will also be taken through internet.
 5. Regarding health all services will be available in Internet. Such as online medical consultation, online medical records etc.
 6. Mobile banking and digital banking will be on everyone's mobile. State bank of India has already started their service on e-corner or e-gallery. It will make us free from long queue.
 7. SMS based service in all sectors will be started. So, waiting for any news or important information will be closed. In a nutshell, Digital India will provide us a smart, intelligent and democratic economy
- 7. CONCLUSION:** The programme of Indian govt has praised in the Silicon Valley of US. India is facing a lot of challenges in education and e-learning had a lot to answer and needed to be taken seriously by the planners of education and government at the same time. The past decade has been a time of rapid change as E-learning has replaced traditional learning methods. It can be expected that the future is going to bring innovations that can hardly be anticipated. The internet access and the

wide spread use of lap top computers are opening new opportunities for education. Experts are of the view that there needs to be a mindset for the adoption of e learning and that involves content. In addition, there should be scope for customization since each organization has its own needs. Regions without university education can access via the Web, a solution much cheaper than building university infrastructure. E learning is rapidly raising the level of education, literacy and economic development. Even though e learning is progressing, it can continue to adopt new measures in order to meet its communication needs and seize better opportunities for a better future.

References

- Sharma, S.K. and Koli, S.K. (2014). *Educational Technology And Teaching Strategies*. Delhi, India: Neha Publishers &Distributors.
- Mangal, S.K. (2014).*Essentials of Educational Technology*. Delhi, India: PHI Learning.
- Computer Education (NSOU &KSOU Study Material, ODL mode). (2013).Kolkata, India: NSOU School of Education. <https://mygov.in/group/digital-india/> retrieved on 15.1.2016.
- www.india.gov.in/e-governance retrieved on 13.01.2016.
- www.nsdcindia.org retrieved on 11.01.2016.
- elearningclassroom.blogspot.com/ retrieved on 10.01.2016.
- www.digitalindia.gov.in retrieved on 09.01.2016.
- www.mhrd.gov.in retrieved in 12.01.2016.
- <http://www.virtual-college.co.uk/elearning/elearning.aspx> retrieved on 20.12.2015.
- <http://blog.chillifreeze.com/rate-other-indian-writers/e-learning-the-future-of-learningin-india/>>. Access: Apr. 26, 2010.

E-LEARNING: A NEW ERA OF LEARNING IN THE TRADITIONAL INDIAN EDUCATIONAL SYSTEM

Ashwin Dhanraj Bhagat

Assistant professor, Dept. of Information Technology, Sonopant Dandekar College, Palghar, Mumbai.
Email: ashwinbhagat09@gmail.com, Mobile: 8554922947/8983223879

Abstract

Traditional Educational System in India focuses more on theoretical learning, reading and stressful Examinations, hampering the overall growth of a learner in all aspects. With the advent of technology having its impact in almost all areas of development, Educational system is also not left untouched. This paper reviews the innovative methods of learning mainly focusing on E-Learning. A brief study on the traditional educational system, its disadvantages, and applications of technology in the systems, its advantages & the overall impact of e-learning is summarized in the paper.

Keywords: E-learning, innovation, traditional.

INDIAN EDUCATION SYSTEM: The Indian Education Systems offer a broad range of subjects & the aim of the system is to prepare a learner for the challenges in near future. The central & most of the State boards in India follow a (10+2+3) pattern of education. The pattern includes 10 years of study in schools, 2 years of study in junior college and 3 years of graduation for a bachelor's degree. The learner can also opt for post-graduation for Master's Degree after graduation. The education is offered via government schools or private schools. The governments run schools often lack in Infrastructures & enthusiastic teachers, thus forcing the common masses to complete their education in private schools offering better facilities.

Research reveals that the Education System in India has some of the below loopholes:

INTRODUCTION TO E-LEARNING: theoretical approach in education prepares a child to read and absorb focuses more on memorizing the study materials stressful Examinations good academic performances sports and other extracurricular activities ignored no liberty to choose a particular subject based on interests lack of innovative methodologies in rural areas lack of creativity and imagination in children The traditional method of teaching and learning imposes several restrictions on the creative ability of a young learner making him a routine learner, equipped with all the theoretical knowledge in the world but lacks creativity, decision making power in adverse situations. As compared to other developed economies in the world Indian Education is far behind in making a global impact in the field of innovative education. But, with the advent of technology in the 20th century, technology has its impact in all walks of life. It was combined with the traditional patterns the results were astonishing. The global education fraternity was also not spared. E-learning is one of the most innovative methodologies which have revolutionized the global education systems. E-learning combines' technology with education and it is providing some of the best innovative practices to help the different strata of the society. Education sector in India is vast and is growing at a very steady pace. From ancient times the education sector has been given an utmost significance for the growth of the nation and the people, which keep on changing from time to time. In the past, traditional courses and subjects were considered best by prospective students, but now times have changed. Students are now looking for more options and developing a modern outlook to education. E-Learning is transforming education sector in a very innovative manner. The widening of courses and the changing trends in education sector has formed a broader choice for students to decide their career as per their competence and skill. Benefits of having such varied courses are not restricted to students, but are also beneficial for colleges, educational bodies, corporate and the nation at large. Any age group can get the best benefit of e-learning and excel in their chosen career path. The presence of an instructor is not required and learners can decide their own time and venue for learning. This provides

a great amount of flexibility for the learner, allowing learning to fit in within their busy lives. In the absence of an instructor, it is important for e-learning to be impactful, yet engaging. This is achieved by infusing e-learning courses with attractive visuals, audio and other multimedia elements including simulations and animations. The use of such innovative techniques to garner learner interest creates an indelible impression in the minds of the learners and helps them retain more as well as apply more. For the corporate sector, where training and learning are an integral part, e-learning has been immensely successful in creating a strong foothold.

EVER EXPANDING E-LEARNING: The tremendous increase in the Internet Connectivity is responsible for the rapid growth of e-learning. Indian companies are adopting e-learning platforms as continuous employee learning has become a strategic necessity. The number of Internet users in India is expected to reach 250 million, rivaling the U.S and only second to China. With this gigantic numbers, India is emerging to evolve as a huge platform for e-learning for the global and local giants in the field of e-learning. The future of education in India will see more students accessing their coursework outside the traditional classrooms with benches and blackboards. As per the Docebo report issued in July 2014, the worldwide market for self-paced e-learning reached \$35.6 billion in 2011. The five-year CAGR is estimated to be 7.6%, so revenues should reach \$51.5 billion by 2016. While the aggregate growth rate is 7.6%, several world regions have higher growth rates. The highest rate is in Asia at 17.3%, followed by Eastern Europe (16.9%), Africa (15.2%) and Latin America (14.6%). According to another report, India's online education market size is set to grow to \$40 billion by 2017 from the current \$20 billion. India has one of the largest education systems in the world with a network of more than 1 million schools and 18,000 higher education institutions. More than half of the country's 1.2 billion population falls in the target market for education and related services.

COMPONENTS OF E-LEARNING: E-Learning or electronic learning can be used collectively with the term "multimedia", as the purposes of both the concepts are somewhat similar. The word 'multimedia' comes from the Latin words *multus* which means 'numerous' and *media* which means 'middle means'.

The multiple means by which we can perceive information are:

1. Text (e.g. articles, documents, paragraphs)
2. Images and graphics (e.g. photographs, charts, maps, logos, sketches)
3. Sound (e.g. voice, background music)
4. Video and animation (e.g. animated clips and motion pictures)

Multimedia is defined as any combination of text, graphics, art, sound, animation and video delivered by any electronic means. Thus, non-interactive and non-digital devices are also included within the purview of multimedia.

As multimedia methodologies are used in e-learning, it exhibits some of the following characteristics of multimedia:

- **Multiple media:** Multiple media in e-learning involves different types of mediums along with text. The medium includes images, hand-drawn pictures like sketches, diagrams and portraits, called graphics. With improvement in technologies, sound and movies are also used.
- **Non-linearity:** Non-linearity is the capability of jumping or navigating from one point within a webpage to another webpage without appreciable delay. In a multimedia presentation, the user can instantly navigate to different parts of a presentation and display the frames in any way he/she chooses, without appreciable delays, due to which it is called a non-linear presentation.
- **Interactivity:** Human beings tend to remember only 20% of what we read, 40% of what we see and hear over an extended period of time, but almost 80% of what we actually do. This principle is used for creating programs like CBTs (Computer Based Training) and CAIs

(Computer Aided Instructions). In these applications a user can interact with the individual media elements.

The above characteristics form the basic principles of the e-learning environments, based on which the current e-learning applications and other software and websites are developed.

V. HARDWARE AND SOFTWARE REQUIREMENTS: E-learning applications can be accessed from any computer globally with basic requirements of computer hardware and services. The following are the essential hardware requirements and services enabling any computer to access e-learning applications:

- Internet facility
- Programs like Web browsers(e.g. Internet Explorer, Mozilla Firefox, Google Chrome), Multimedia Tools(e.g. VLC player, Windows Media Player, QuickTime Movie Player)
- Document readers(e.g. Adobe reader, MS Office, Image Viewer, Text Editor)
- Speakers and Headphones (For Voice based CBTs)
- Sound card (for enabling sound)
- Memory Space (Hard disk drive, RAM)

The above requirements enable any desktop or laptop to access the e-learning facility. Due to the minimum requirements of a computer, the e-learning applications are rapidly making a mark globally. As the traditional Educational System is degrading, the emerging concept of e-learning is gaining pace in the long run.

SALIENT FEATURES OF E-LEARNING: E-learning has many salient features which provide convenience, flexibility, ease of use to the users that too round the clock. It offers such features that the traditional Educational may not. Following are some of the features of e-learning:

- **Live Instructions:** E-learning offers live broadcasts with the help of which the instructors can interact with the students from different locations all at the same time. Specialized instructors are required in higher level of educations.
- **Interactive Sessions:** Video-Conferencing provides the opportunity to students from different regions or countries to interact with each other, thus providing means to learn from others as they can learn from the instructors. Study has become more flexible and cost effective as you can switch on your system anytime and anywhere and can seek for what you want without taking help from anyone apart from the web. You can interact and share your thoughts with different people from all over the world which let you enhance your knowledge at a wider level.
- **Customized Learning:** Computer Based Training (CBT) contents come with audiovisuals, graphics and gaming, making it more interactive and interesting for the learners. It engages them and develops their concentration in the training program. Anything entertaining is always acceptable among the humans and with gaming and images it just provides a good solution to an effective training. The corporate amend and modify the different aspects of the contents according to their requirements. The e-learning training programs are developed after a wide research and study of markets, so that it provides the knowledge of the specific industry to the employees working in that industry.
- **Approach to enhance our skills :** To sustain the ever increasing competitive markets, the employers are embracing the e-learning methodologies, understanding the fact that by making their employees more skilled, they will reach the heights of success. The system saves time as well as money too. They are not wasting any production time and can train their workforce to be up-to-dated with the latest trends of productions, thus getting a skilled set of work force ready to take on the changing trends and challenges in the production environment.

VII. AREAS OF APPLICATIONS: E-learning has its impact on almost all the prominent areas, as it is the most sought of learning techniques which have been adopted worldwide. It gives us great advantage over the traditional education system and universally accepted by the different age groups. Some of the areas which are revolutionized are:

- **Home Education:** e-learning in home education includes computer based games for kids, interactive encyclopedia, story-telling, cartoons etc. As we go by the notion “a picture is worth thousand words”, many audio visual, fun learning activities help toddlers in an early age to understand the language basics, numbers thus helping in the early growth in a young age.
- **Educational Purposes:** includes learning packages and simulation of lab experiments which cannot be performed easily. Some concepts of different courses cannot be grasped easily by simple text and images and require special methods for explanations like video clips, animation, 3D modeling, audio annotations etc. The high quality of content is created by the expertise of experienced instructors and then that content can be distributed globally by using e-learning to provide a good grasp of the subjects and interactivity elements for better retention.
- **Industrial Training:** Successful organizations always prefer to invest in Computer Based Training (CBT) packages for employees, both technical and marketing. Advantages of these courses are:
 - Many people can use each of these courses
 - No need to spend time away from office
 - Learning at their own pace
 - No full time instructors
 - High quality
 - Simple evaluation
- **Medicine:** Multimedia technologies can be used to prepare high quality magnetic resonance 3D images of human bodies and practice complicated surgeries procedures. Image transmission over geographical boundaries can help in the growth of ‘tele-medicine’, where doctors from other countries could consult together to find a solution to complicated problems.
- **Simulation:** Astronauts are trained in the simulators to be adaptive to the external environment of other planets by creating a similar environment so that the climatic conditions, atmosphere and other aspects will be adaptive. The *National Aeronautics and Space Administration (NASA)* use such kind of simulator training programs.

CONCLUSION: In the light of the above points elaborated above, it can be said that e-learning has revolutionized the education domain globally in the 20th Century. Traditional education systems have certain lacunas, which the e-learning methodologies are eradicating. In near future it will be accepted globally and traditional education in class room and with the instructors will have no place in future. Whenever any individual wants to learn anything in near future, he/she will just need a cell phone connected to internet and will have all the content developed by the experts in the respective fields, ready to be downloaded in the cell phone. It is the need of the hour, where learners will need to be self-assessing, self-evaluating and exploring new horizons which they were not able to do in the traditional systems.

REFERENCES

- Ranjan Parekh, “Principles of Multimedia”. www.google.com
www.wikipedia.com <http://elearning-india.com/E-learning-Articles/>
<http://www.dynamicpixel.co.in/blog/> <http://www.worldatlas.com/webimage/country/asia/cn.htm>
<http://www.worldatlas.com/webimage/country/namerica/us.htm>

<http://www.tonyjohn.com/resources/Category16-Education.aspx>

<http://www.hometuitionbangalore.com/4/post/2014/07/difference-between-indian-and-us-education-system.html>
<http://www.studyvillage.com/resources/2765-American-education-Indian-education-which.aspx>
<http://www.financialexpress.com/jobs/why-e-learning-has-a-promising-future-in-india/19204/>

E HEALTH

Ms Roopa. R. Kulkarni

Lecturer, Dept. of Information Technology, Bhavna Trust College Deonar, Mumbai.

Cell no : 9920307457

Abstract

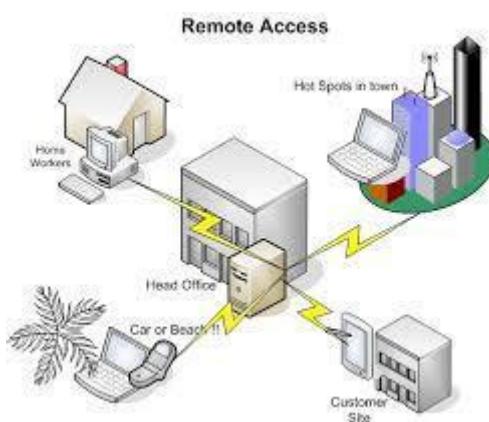
Internet and mobile utility for patients living in remote area and who are obese

I. INTRODUCTION: Technology has developed rapidly to such an extent that it is possible to access internet even in remote areas. Patients living in remote areas find it difficult to go to doctors in case of emergency for medical help especially people who are obese and had knee Replacement surgery

II. MOBILE NETWORK: mobile network helps to connect people all over the world. Through network we are able to connect people in remote areas through phone call and video call. A facility should be there where in if a patient connects to doctor on net through video call the doctor should immediately be able to diagnose the patient and prescribe a medicine and also the doctor should understand the history of the patient through the report of the patient immediately

Conclusion: Data of the patients should be entered in database along with illness with security permission given on to the patients when the patient calls the doctor the data base should open only on recognizing the patient. The doctor should be able to scan the patient through net and then understand the patient's condition through the scanned details

The doctor then can suggest a medicine if no surgery is required



AN INNOVATIVE WAY OF USING CONDENSATE WATER FROM AIR CONDITIONERS FOR GARDENING IN COLLEGE

Madhavi Amondkar & Leena Jadhav

Vidyalankar School of Information Technology, Mumbai, India, Amondkar88@gmail.com

Vidyalankar School of Information Technology, Mumbai, India , Leena.jadhav@vsit.edu.in

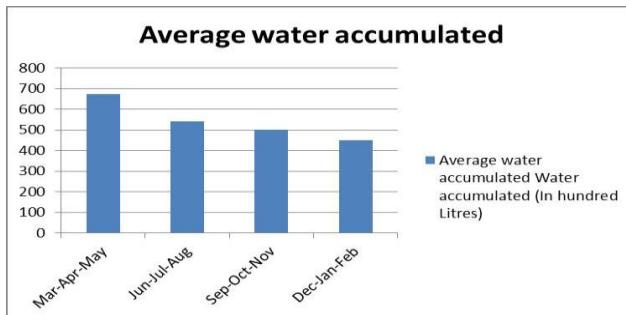
Abstract

Water conservation has become a need of an hour due to water scarcity. We need to conserve the water so as to make adequate use of water. During summer, we face severe water crunch, which ultimately gives less or no water supply for plants or trees. In order to create pleasant and comfortable academic experience, classrooms, offices and most of the laboratories are made air conditioned. This paper will focus on reusing the water emitted from the air conditioners for valuable and social cause of plant growth. Here we have considered VSIT campus with 90 air conditioners generating roughly 1000 liters of water every day. All it needs is piping and storage so the capital expenditure would not be much. Water from the air conditioners will then be stored in a reservoir and would be used when required for watering plants. This ultimately leads to Waste management system because condensate by the air conditioner was as it is going waste.

Index Terms –water conservation, waste management, condensate, reservoir.

I. INTRODUCTION: Water scarcity has become an International Issue. Water Scarcity is seen in almost every continent. Reasons for water scarcity could be – uneven rainfall due to rapid climate change, increased pollution, increased human demand and overuse of water. More than 1.2 billion people lack access to clean drinking water. Water scarcity involves water stress, water shortage or deficits, and water crisis. A water crisis is a situation where the available potable, unpolluted water within a region is less than that region's demand. The use of water includes indoor & outdoor household purposes. All the things we do at home such as drinking, preparing food, bathing, washing clothes or dishes, watering yard etc. As we know every living being needs clean water to move nutrients into their cells and to help them excrete wastes and toxins. So if we don't get enough water we simply cannot survive or more specifically if we say, no living being can survive. If trees or plants don't get enough water for their growth they will not grow. If they don't grow they will not emit enough oxygen in the environment. Oxygen is essential to human bodies for survival because it provides nutrients that are then transported throughout the body by the blood. In this paper, our focus would be on developing a pro-forma or a plan for saving all the water which comes out of all the air conditioners and reusing it for various purposes.

II. CURRENT SYSTEM: Vidyalankar School of Information Technology (VSIT) is a Science, Commerce and Management College, equipped with IT infrastructure which meets industry standards. A well-designed educational facility can truly enhance performance and make learning-teaching a more gratifying and rewarding experience. In order to create pleasant and comfortable academic experience, all classrooms, offices and most of the laboratories are made air conditioned.



The above graph shows the water accumulated during a year month wise. Let us see the water usage out of this accumulated distilled water so far. Following table will show the usage of water.

Month	Water accumulated (In hundred Litres)	water used for cleaning
Mar-Apr-May	675	100
Jun-Jul-Aug	540	150
Sep-Oct-Nov	500	150
Dec-Jan-Feb	450	200

As we can see this number is quite big for water wastage. As per our findings, if we take this number into consideration and follow the proposed structure then we will be able to water all the gardens around VSIT building on daily basis.

III. PROPOSED SYSTEM & IMPLEMENTATION: Vidyalankar has huge gardens with number of plants having different species and may grow even if they don't get clean water. We can utilize distilled water for watering such plants which doesn't produce any eatables. Proposed system has been designed as per the college structure. We have considered the VSIT building ie. X-Block both ground floor & First floor. This process will help the institution to overcome water scarcity. This will benefit more to the institute as it will conserve clean water for other purposes. Proposed system will deal with using the water accumulated from the AC exit pipes.

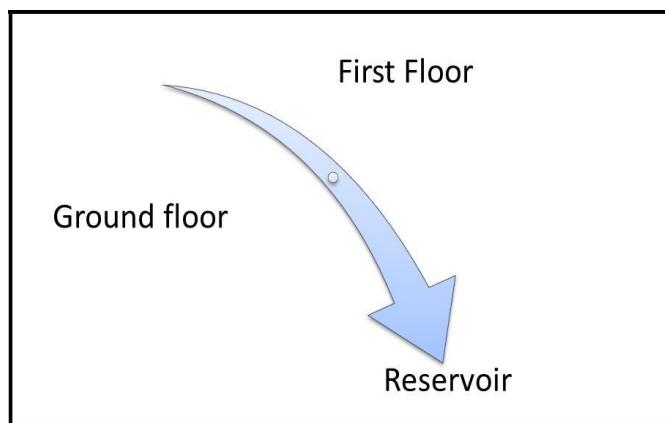


Fig: Diagrammatical representation of college water storage

As shown in the above diagram, water from first floor & ground floor would be accumulated in a reservoir. We have taken into consideration that each class has at least 2 air conditioners with one bucket for water accumulation. Now the classrooms which are exactly outside, facing the play-ground, have out pipes directly kept open. So we have designed a structure which contains 2 pipelines named as Phase I & Phase II. Phase I pipeline will collect the water from out pipes lying inside the college ie. from classrooms X001, X002, X003, X004, X005, X006, X007, X008, X014, X012, X013, X018, X020, X016. Phase II pipeline will connect all the out pipes lying outside the college i.e. from X110 to X118 including laboratories. So with the proposed pipeline structure shown in the diagram below we can get that water and add it to the reservoir, which was going waste. We will require rubber tubes as shown in the following diagram to connect to the exit pipes and ultimately connecting the reservoir outside the college. The connecting tubes as well as the transfer tubes can be designed using PVC pipes. This pipe structure will automatically help in

watering plants without the need of labour. It may also be used in combination with rain water harvesting system by storing it alongwith the rain water in the underground tanks.

Reservoir

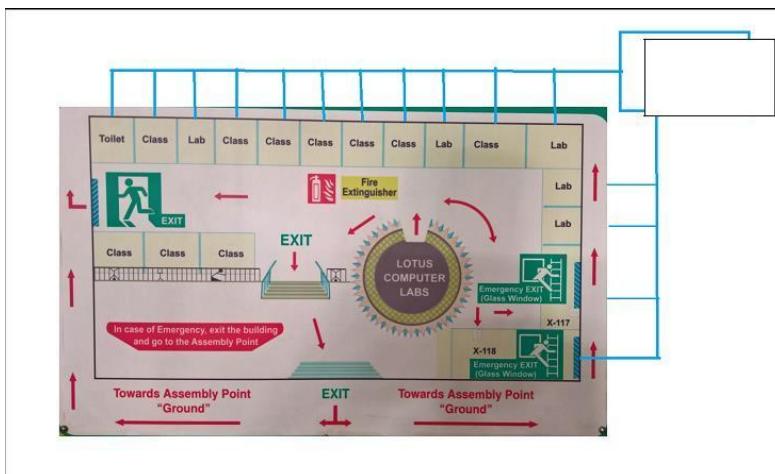


Fig. College Structure with rubber/PVC pipes (Phase II)

As we are going to consider both ground floor & first floor, the whole structure can look like this, In the below diagram water from both the floors is accumulated in the reservoir. So the sprinklers would be connected to it and watering will start simultaneously.

IV. OTHER USES: We have seen this proposed solution makes the use of distilled water in a novel way. We can also use this water for other purposes such as cleaning, flushing. As these processes make use of too much of clean water which now can be replaced with this water? Cleaning staff can just make use of the reservoir constructed once and by using rubber tubes can make it available for cleaning and flushing. This is a waste management system because the condensate generated by the AC was as it is going waste. By putting such a system in place we are actually putting a stop to the wastage of our most important resource –water and putting it to a valuable use of plant growth as well as preventing other waste problems which are a result of it like the creation of slippery surfaces, generating areas for mosquito breeding due to spilling of this condensate. Air conditioner condensate can be used for decorative water features, such as water fountains. Building a backyard wetland is an industrious, but potentially rewarding project. Air conditioning condensate and other gray water sources can be filtered for reuse in a backyard wetland.

Examples of common applications are as follows:

1. Landscape irrigation
2. Swimming pool
3. Domestic water
4. Cooling tower makeup

V. CONCLUSION: The problem occurred during hot summer days when the gardens were not getting enough water due to the limited water supply. Using combination of rubber tubes and PVC pipes, we transferred the water from the AC exit pipe to the garden free of labor and cost. We can also scale it up using a bigger AC system for big corporate office or IT parks. When we consider the cost factor we came to know that cost of connecting rubber/PVC pipes is not much although by making use of this water we can surely cut the cost of our water bill. The proposed system is very economic as we only have to assemble a system of tubes maintaining the potential. During the hottest summer months, when the air conditioner is running and generating the most condensate, water rates are likely to rise and water usage restrictions are implemented. Using air conditioner condensate can provide much needed water to gardens on non-watering days. Using air conditioner condensate in place of fresh water can reduce clean water costs. This is an alternate and important use of the Air

Conditioner. The optimum utilization of an existing technology & creating a green environment by conserving water and plants.

References

- https://www.sciencedaily.com/terms/water_scarcity.htm
<http://blogs.timesofindia.indiatimes.com/Sportvicarious/why-not-harvest-water-from>
<http://www.instructables.com/id/Self-Watering-Garden-Using-recycled-water-from-a/>
<http://forums.gardenweb.com/discussions/1433576/recycling-air-conditioner-condensate>
<https://www.ashrae.org/resources--publications/free-resources/top-ten-things-about-air-conditioning>
<http://www.explainthatstuff.com/airconditioner.html>
http://www.rainbird.com/documents/turf/ASC_Spring01.pdf
www.mcgm.gov.in

TRENDS AND ISSUES OF E-LEARNING IN LIS-EDUCATION IN INDIA: PRAGMATIC PERSPECTIVE

Amit Kabra & Abhijit Rane

Assistant professor, Dept. of Management, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: amit.kabra@vsit.edu.in

Assistant professor, Dept. of Management Vidyalankar School of Information Technology Wadala, Mumbai Email: abhijit.rane@vsit.edu.in

Abstract

E-Learning is as an approach to instruction and learning that utilize Information and communication technologies to communicate and collaborate in an educational milieu. This includes technological expertise that supplements traditional classroom training with web-based components and learning environments where the educational process is experienced online. This paper reflects the importance of e- learning in higher education with its extent and growth in Indian LIS education. Some of the major Indian initiatives and the target segments covered by the online education have also been detailed in this article. Emphasizes the importance of perception in relation of information technologies and communication, so that futures leaders will be better prepared regarding these technologies. The paper presents future perspective in relation to e-learning in India, where demand within higher education is no different from that seen in developed countries. The e-learning was being considered useful only for distance learning programs. But no one can deny the fact that e-learning is the most innovative application of the Internet and it has done wonders globally and currently is achieving education classroom as well.

Keywords: *E-Learning; Web-Based Components; Indian Initiatives; Distance Learning Programs; Internet; Pedagogy.*

I. INTRODUCTION: In a society, the student generation must be positively influenced by the imparters of education who have a higher moral, ethical and social responsibility. They have to realize the importance of technology and have to be well aware how to teach the future leaders, they need to be technology better equipped. Annually, the demand for higher education is growing globally and India is no exception to it. In fact, in India, the number of applicants is three to five times as against the number of seats in any institution of higher education. Therefore, need arises for such a system, which will help to reach to the maximum number of learners and 'e -learning' is the solution for it. E-Learning is the experience that is delivered or enabled by electronic technology. The delivery of learning or content can be over the intranet, extranet or over the Internet, via CDROM, interactive TV, or satellite broadcast (WAGNER, 2008). With the passage of time, student's number is exploding on university campuses. The universities have been averse to change their programs, both in content and delivery. A challenge is faced from alternative providers of education and training, with more focus on employability; the university professors represent a breed of career academics that remain isolated from the changes in the real world around them.

II. E-LEARNING IN INDIA: The e-learning, though reached India late of course, but it is being fast accepted in a big way. The India perhaps has watched the success of west in adopting e -learning and is trying hard to implement it. Over the past few years, the Ministry of Human Resource Development has been trying to achieve the target of making education accessible to every corner of the country. Still there are many parts of the country, which are in darkness about e-learning. The e- learning does not seem to replace the conventional classrooms with black boards but it seems to coexist with the already existing system. This system rather promises to reach too far off rural areas in India where education is still a looming darkness. This objective can be achieved by providing PCs at low cost with broadband connection. The chances of e-learning to strengthen the educational system in India are very high. The scope of e-learning is much wider in India with many e-learning companies stepping forward in providing the service. Though nothing can actually outrun the popularity of traditional classroom teaching, e-learning only gives more value to the process, independent of the

distance factor. Many institutions have started augmenting teacher-led programmes with content-rich e-learning modules. Government initiatives are not far behind either. The projection for further development of distance e-Learning in India is positive. Several efforts are currently progressing towards providing quality distance learning to more people in urban and rural areas, through the utilization of more effective web resources and practices. The major hindrance to the acceptance of e-learning can be attributed to the Indian mindset that is more inclined to traditional classroom teaching

III. ONLINE EDUCATION SCOPE AND GROWTH IN INDIA: The scope of open distance education in India is actually much wider. Apart from proper course works, some E-learning portals in India are also conducting ridicule mock tests for various competitive examinations like engineering, medical, management etc. There are many E-learning portals in India which are providing tutorials for school students also. Thus, the reach of E-learning in India has expanded from adults to youth. The future of E-learning industry in India seems to be vibrant as number of Internet users is growing in the country, at quite a reasonable rate and more, and more reputed players are showing their interest in the e-learning business. The global revenue of world stands about US\$36 billion by 2010 and e-learning market in India stands at US\$11 million in 2010. The e-learning market in India is in an infant stage and in 2002 it was approximately US\$ 4-5 million with an expected four year annual growth rate of 20-25 per cent. Companies such as McGraw-Hill, Digital Think, Skill Soft, and Entergy are setting up operations in India which is a positive sign for the e-learning segment.

3.1 Challenges to E-Learning

Some of the challenges that e-learning initiatives from the Institutions of Higher Education Management could face are:

- i. For those Institutions offering online e-learning course, awarding a Recognized Degree for students might become imperative. Most students and their potential employers are happy only when a certifying endorsement is given.
- ii. A fall out of the above could be escalating a number of Online Institutions offering courses with spurious certificates, which may not have any value.
- iii. Since, the e-learning method is self-paced and self-learnt, the attention length of the student may not be enough for him/her to learn a concept.
- iv. Generally the duration of the course also matters in this mode of lecture delivery.

Lastly, the Legal implications of e-learning come into play. Once again, we should not forget that e-learning over internet is across geographical boundaries. This makes it all the more, tougher for the enforcing authorities to have a global legal framework for the net offender. Measuring the level of success and the Return on Investment would be difficult.

- **Cost:** While delivery costs of e-learning are significantly reduced compared to costs associated with classroom learning delivery, especially when large numbers of learners are involved. The initial development and purchase of e-learning products represents a major barrier to the adoption of e-learning training within organizations.

a) Lack of time: The lack of time as an obstructing factor comes second, after the cost barrier. Long development cycles prohibit many institutions from engaging in production of custom e-learning training. Lengthy time-to-promote is especially true for small institutions who have limited capacities to produce complex, media-rich, highly interactive and customized solutions.

b) Content Incompatibility and Penury: Locating appropriate off-the-shelf e-learning material or converting custom eLearning (i.e., classroom-based) material for use on an e-learning platform proves a major challenge for institutions. The difficulty resides primarily in the lack of interoperability between content materials purchased outside the company on the one hand, and both proprietary content and in-house applications.

c) Human Resistance: The enthusiasm for e-learning technologies is limited for those who do not have the skills to use the technology, think it is more cumbersome than traditional tools or simply prefer the human interaction provided in instructor-led training. Considerable evidence of the prevalence of e-learning in the workplace was gathered in surveys by Industrial Design Centre (IDC) who found that 70% of respondents preferred instructor-led seminars and training.

d) Technological Barriers: Severe limitations of technology infrastructure also serve to hamper enthusiasm and the widespread use of e-learning technologies. These restrictions range from inadequate network speed and bandwidth capacity to incompatibility across different platforms and between different content materials. The bandwidth refers to the capacity of a communication channel to carry information (e.g., text, graphics, audio and videos). The insufficient bandwidth was rated as the most significant barrier in a survey where 65% of those surveyed indicated that increased transfer speed would result in increased usage for them.

IV. E-LEARNING IN INDIAN LIS-EDUCATION: The scope of LIS education in India has undergone sea changes with the rapid expansion of research and development activities, particularly in the area of Information and Communication Technology (ICT). For qualitative improvement of LIS education in India, there is a need to introduce new courses based on ICTs in different LIS schools to face new challenges. In fact, technology has not only affected operations of library services but also LIS education itself. There is a need to integrate qualitative changes in LIS education to:

- Increase excellence of LIS students to meet the growing demands in e-environment.
- Face challenges due to the growing influence of ICT and its impact on LIS education.
- Suit ever-increasing demands for trained LIS professionals.
- Amplify career opportunities for LIS professionals.
- Use internet-based e-learning courses which are growing day-by-day.
- Adopt and promote e-publishing which is being fast accepted by the users.
- Transform traditional and habitual mode of LIS education in India.

The appropriate utilization of technology for imparting LIS courses can produce better results. It has now become indispensable to consider the utilization of online learning environment in LIS education. The main objectives for providing LIS education in online environment must be:

- To cover broad perspectives of the core principles of Library and Information Science and its applicability in the new milieu.
- To understand the managerial activities of Library and Information systems in present context.
- To comprehend the principles of knowledge organization, management, retrieval and delivery.
- To develop practical skills in new online virtual environment to countenance the challenges.
- To meet the demands of new digital era.
- To educate learners in the tune of market demands.
- To offer online information skills.

The education and training in LIS in the digital environment shall contribute to accomplish the following:

- Extensive theoretical and practical knowledge of information management and Business
- Behavioral attitudes and understanding and information needs of individuals and institutions
- Financial and quantitative methods of analyzing organizational information
- Problem solving methodology
- Analytical abilities and critical thinking expertise
- Research theories and practices
- Human resource management and quantitative practices and management
- Competence in information handling
- Online information skills

V. SOME MAJOR INDIAN INITIATIVES

- In February 2009, India launched a National Mission on Education through Information and Communication Technology (ICT), which is a billion dollar enterprise. It will provide internet connection to about 20 thousand colleges and other educational institutions. The United Nations Educational, Scientific and Cultural Organization (UNESCO) are intended to play a significant role as a global clearing house of ideas and to foster the growth of knowledge based societies.
- The E-Gyankosh, a National Digital Repository of learning resources, project was started by Indira Gandhi National Open University, in 2006. The repository was developed using DSpace open source software, which ideates to store, index, preserve, distribute and share the digital learning resources of open and distance learning (ODL) institutions of the country.
- NODLINET (National Open and Distance Learners' Library and Information Network) is recent initiative taken up by IGNOU to provide a podium for libraries and information centers of the open and distance learning system of the country that will provide access to all electronic and digital resources from the leading publishers and vendors across the globe to its stockholders from anywhere at any time using sophisticated technologies to enhance the quality of education at par with the conventional education system.
- Inter University Consortium for Technology-Enabled Flexible Education and Development (IUC-TEFED) is the latest initiative of IGNOU which works as a nodal point to undertake all types of collaborative activities involving Open and Distance Learning, new knowledge creation, e-learning, appropriate technology, etc.
- The UGC had established the Consortium for Educational Communication (CEC), in 1993, which is an inter-university center for electronic media.
- An initiative was launched by CEC known as Learning Object Repository(LOR) which is an Open Courseware initiative having educational resources indifferent subjects like Archeology, Biology, Botany, Chemistry, Commerce, ComputerScience, Economics, Education, English, Fine Arts, etc.
- The CECis also having a Media Tape Library with a total collection of about 16.000 (sixteenthouosand) educational video programs on *betacam*cassettes consisting of thecategories of collections mentioned below and is available both in English and Hindiand adds about 1.000 (one thousand) video programs on various subjects andtopics to its collection every year from the Multimedia Research Centres spreadthroughout the country.
- In an another initiative by government of India, a project undertaken by the National Council of Educational Research and Training (NCERT) in the form of online textbooks showed that e-learning can reach to maximum.
- An E-Learning Portal for Awareness Raising on Information Literacy waslaunched by the Indian Society for the Advancement of Library and InformationScience (SALIS), in collaboration with UNESCO in 2006.
- Another collaborative project of Documentation Research and TrainingCentre (DRTC), Bangalore and Goethe-Institute in New Delhi, in 2007, came in theform of Indo-German e-Gurukul on digital libraries to facilitate self-paced learning ondigital libraries.
- Another open education initiative is Ekalavya, launched by Indian Institute ofTechnology, Bombay in 2004. In this project, content developed in various Indianlanguages is distributed over the Internet. The Ekalavya project has developed anOpen Source Educational Resources Animation Repository (OSCAR) that providesweb-based interactive animations for teaching.
- In 2002, deliberations of various committees were held that led to the settingup of the UGC-INFONET towards the end of 2004. The UGC also joined this crusade of introducing e-learning.

Wholly funded by UGC, UGC-INFONET provides electronicaccess to scholarly literature available over the Internet in all areas of learning to theuniversity sector in India.

- In July, 2005, the agreement signed between the US and India, 6 (six)leading American Universities representing the US and the Indian Space ResearchOrganization (ISRO), the Department of Science and Technology (DST) along withAmrita VishwaVidyapeetham representing India, will participate in a project designedto enhance higher education and research in India through a satellite e-learningnetwork. The beneficiary institutions are IITs, NITs IIIT, BIT Ranchi, and a few otherprestigious Institutions across the country.
- Another project to provide web based training is the National Programme onTechnology Enhanced Learning (NPTEL), which is being funded by the Ministry ofHuman Resource Development (MHRD). This was first conceived in 1999, to pavethe way for introducing multimedia and web technology to enhance learning of basicscience and engineering concepts, was launched in September 2006. The 6 (six)major engineering disciplines have been covered in this project so far at theundergraduate (B.E./B.Tech) level.
 - The NPTEL has developed curriculum based video courses (110 newcourses, 109 existing courses encapsulated in digital video format and 129 ecoursesweb-based). This has been undertaken by 7 (seven) IITs, IISc Bangalore asPartner Institutions (PI) and other selected premier institutions as Associate PartnerInstitutions (API) through a collaborative effort.
 - Microsoft agreed to give US\$ 20 million fortraining the trainers in the e-learning programme, also known as 'Shiksha'. Under this80,000 teachers and 3.5 million students would be trained between a period of 3(three) and 5 (five) years. The collaboration would be done in partnership with theDepartment of Information Technology.
 - The 24x7 learning (2009) inform that the Indian Talent Lifecycle ManagementCompany announced that it is enabling Thapar University, Patiala, and Punjab – oneof the oldest and established engineering institutions of India – to provide B.Techcourses through e-Learning mode.

VI. FUTURE OF E-LEARNING IN INDIA

India needs to increase penetration in terms of PCs andcommunication lines for any e-learning project to be successful. The soaring cost ofownership, which proves to be a hurdle, needs to be lowered. Following steps couldhelp in arresting the above problems:

- The Service providers, including the Government need to cut the tarifflevels. As the field becomes more and more competitive, this is bound tohappen.
- The government needs to stimulate a learning culture and e-learning mustbecome a policy issue. Government must distinguish the e-learningindustry as a separate forum and not treat it as part of the IT enabledservices (ITeS) or a sub sector of the IT industry.
- Use of open source software will not only be cost effective but can alsomeet the localized demands for the vast linguistic diversity of India.Further, open source software can also be used on old hardware.

VII. CONCLUSION: The e -learning is emerging as the future trend of learning in India would be dominant in the times ahead. E- Learning has created new dimensions in education,both within and beyond the curriculum and is still looking at further opportunities ofbecoming more practical. A word of concern at this juncture would serve good,though, the e-learning seems to be a solution for an absent teacher, deploying such an atmosphere would be requiring much thought. Both the instructor and the learnerneed to shift their methods of teaching and learning. Educational Institutions need tohave suitable strategies in place for successful deployment of the e-learning process.But, call it Web- based Training (WBT) or Border-less Education; e-learning is here tostay. I strongly believe that e-learning will soon substitute classroom learning in India.

References

- ARORA, S. K. *Concept note NODLINET*. 2007. Available:<<http://www.ignou.ac.in/divisions/library/N-About.htm>>. Access: June 13, 2010.
- ASVINA.Press Information Bureau Government of India. 2009. Available:<http://www.ugc.ac.in/new_initiatives/mouintel.pdf>. Access: Apr. 26, 2010.
- BANDUNI, M. *The future of e-learning in India: Weekly insights for technologyprofessionals. Weekly Insightsfor Technology Professionals, Mumbai*, 2005. Available:<<http://www.expresscomputeronline.com/20051114/market03.shtml>>.Access: Apr. 21, 2010.
- CEC-UGC.Consortium for Educational Communication: *An Inter-UniversityCentre of UGC on Electronic Media*. Available:<http://www.scholarshipsinindia.com/consortium_for_educational_communication.html>. Access: Apr. 26, 2010.
- CHOUBEY, P. *E-Learning: The future of learning in India*. 2009. Available:<<http://blog.chillifreeze.com/rate-other-indian-writers/e-learning-the-future-of-learningin-india/>>. Access: Apr. 26, 2010.
- EGC-AICTE-NPTEL.National Programme on Technology Enhanced Learning(NPTEL). 2007. Available: <<http://npTEL.iitm.ac.in/pdf/NPTELFAQ.pdf>>. Access: Apr.29, 2010

AN ANALYSIS OF E-LEARNING AND ITS IMPACT ON TEACHING AND LEARNING IN HIGHER EDUCATION

Renu Vijay Verma

Assistant professor, Dept. of Banking and Insurance, The S.I.A college of Higher Education, Dombivili, Thane, Email: renu.verma201@gmail.com, Mobile: 8976634745

Abstract

E- Learning is defined as learning via electronic means such as the internet, video, audio or multi media. Students may access learning material any time of the day and anywhere in the world as long as they have access to the server which houses the material. With globalization and technological advancement, e-learning has transformed the traditional mode of instruction in higher education. It is apparent that the trend in higher education is to incorporate e- learning in the curriculum. E- Learning can be viewed as computer assisted learning, and as pedagogy for student centred and collaborative learning. Early developments in e-learning focused on computer assisted learning, where part or all of the learning content is delivered digitally. More recently the pedagogical dimension of e-learning has become prominent. E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process. This study presents aspects related to e-learning solutions including the educational context of eLearning and pedagogical principles which inform e-learning approaches, examples of e-learning approaches and technologies, and the rapid changes being experienced in educational systems. It then provides a summary of what is known about the impacts of e-learning on education

Keywords: E-Learning, Digitalization, Virtual Learning Environment (VLE)

I. INTRODUCTION: No generation is more at ease with online, collaborative technologies than today's youngpeople digital natives, who have grown up in an immersive computing environment. Where a notebook and pen may have formed the tool kit of prior generations, today's students come to class armed with smart phones, laptops and iPods. Teaching in a traditional face-to-face setting is a very complex activity. The complexity is even further extended when teaching is delivered online or electronically due to the lack of standard cues such as tone of voice, eye contact, body language, and so forth, which are key tools for human communication. Technology-enhanced learning is at the core of using innovative and emerging technologies to facilitate and support learning in both online and blended settings. The success and promotion of effective learning is dependent on a range of factors: the learner's ability, sound pedagogy, the nature and alignment of the curriculum, assessment, sociocultural and accessibility issues, and so on. Indeed, the success of technology-enhanced learning is underscored by sound pedagogy and promotion of the effective use of technology in teaching and learning by scholars and practitioners like Betty Collis, Hirumi, and Pall off and Pratt. The present study focuses on developing, teaching, and assessing online programmes, academic development, the use of technology for collaborative learning, and the potential of learning technology for developing skills transferable to students future professions.

With the exponential progress of technological development comes a strong sense that events are moving too quickly for our colleges and that teachers may be losing control of them in the process. This paper examines the impact of e-learning and e-teaching in Higher education, from both the student and teacher perspective.

Objectives of Study:

1. This study aims to help preservice teachers consider the possibilities for embedding technology in to teaching.
2. To understand the role of technology in education.

3. To identify technological applications and resources used in classrooms today.
4. To make aware about how technology can be embedded through a range of teaching and learning strategies.
5. To evaluate technological tools to support teaching and learning.

RESEARCH METHODOLOGY: The researcher has adopted analytical, descriptive and comparative methodology. For this report; reliance has been placed on books, journals, newspaper and online database and on the views of the writers in the discipline of ICT. This paper is based on secondary data for which reference are collected from various sources.

- **Learning with technological tools:** The contemporary curriculum guides teachers to facilitate the development of adaptable and flexible learners who know how to take on new tasks and situations, quickly and easily. Students will need to be good communicators who can competently discuss topics with others and effectively share their ideas in many forms and for different purposes. Students will need to possess excellent collaboration skills and be able to work together with many different types of people, each of whom has own special disciplines and unique ways of learning and working together. Furthermore, students will need the ability to create in a variety of manners and bring their visions and ideas alive through different types of media. The ways in which students can learn to understand, communicate, collaborate and create using different modes of technology, and how teachers can use technology to assist their students in transforming knowledge and skills into products, solutions and new information.
- **Technology for understanding:** This view of learning is the information processing perspective, which considers learning as a change in knowledge in our stored memory. When we pay attention to inputs into our sensory register, these inputs (or information) become part of our working (short-term) memory. If we want to retain this information, it needs to be encoded as schematic into our stored (long-term) memory. Then we need to be able to retrieve this information from our stored memory to use it later (Atkinson & Shiffrin, 1968). Teachers can support students to process information by helping them to organise new information, link it to their existing knowledge and use memory aids to retrieve information. Digital learning resources and computer software can be used to facilitate these processes.
- **Digital learning resources:** Digital learning resources support information processing by helping students to develop mental representations through the mix of media elements presented to them. Digital learning resources include content and, sometimes, learning activities. They combine multimedia elements including text, image, video and audio to present information. Research on multimedia learning have demonstrated more positive outcomes for students who learn from resources that effectively combine words and pictures, rather than those that include words alone (Mayer, 2008). Student attention and engagement with these resources helps them to process the information into working memory. When students meaningfully interact with the multimedia information, they encode this information into their long-term memory. This meaningful interaction might involve learning activities within the digital resource itself and/or as a lesson that is created by the teacher. However, not all information presented in multimedia form support learning. For learning to occur, the resources themselves need to be designed using sound educational principles, and need to be purposefully integrated into the learning experience by the teacher. Effectively designed digital learning resources:
 - Exclude information and activities that are not directly related to schema construction
 - Focus on information and activities that directly relate to schema construction

- Clearly identify the complexity of learning materials and experience of learner.
- These principles guide teachers in evaluating the digital learning resources that they might want to use with their students. Teachers can assess resources for how directly they cover the topic being taught, how clearly the information is conveyed and how directly activities within the resources support student learning. And teachers can ensure that the lessons they design using these resources are also focused on the topic and take their students' abilities and experience into consideration.
- Teachers use digital resources for a variety of purposes and in many ways, including:
- As a way to introduce students to a topic
- As part of a teacher lecture or demonstration
- As a stimulus to group or whole-class discussion
- To provide students with access to different text types
- To engage students in activities that is not possible in the classroom
- To allow students to work at their own pace as a review or extension activity.

IV. Web quests: Web Quests were created as a learning activity not long after the initial development of the worldwide web. A Web Quest is an inquiry based activity that embeds the use of a variety of learning resources – with most being digital learning resources available on the internet. The inquiry activity may take the form of tasks such as a problem to be solved, a position to be taken, a product to be designed or a work to be created. Teachers can create their own Web Quests that address curriculum outcomes and draw upon resources they have identified and evaluated. Or teachers can choose to use a Web Quest that someone else has created. Web Quests have a consistent structure:

- **Tools for analysis:** Analysis and simulation tools support knowledge construction by allowing learners to manipulate information and visualise information in different ways. The Curriculum includes learning elaboration's that involve students collecting, organising, analysing and interpreting various forms of data and information. Some examples of technological tools that support these processes include:
- **Concept or mind mapping tools:** These tools help learners to identify and link relevant concepts and represent those concepts visually.
- **Database software:** This type of software allows learners to record, sort and report on a variety of data in numerical, textual and media forms.
- **Spread sheet software:** This type of software allows learners to record, sortmathematically analyse and represent numerical data in tabular and/or graphical forms.

A. Using technology to communicate: A child is not born a user of digital technology, but can learn to become one. It is through a parent, a program, a friend or a teacher that a child learns to use technology. Students are seeing, using and trying media in all aspects of their lives outside of the school context. Teachers can help students draw links between what is happening outside of college and what is happening inside the college. Teachers can use technology within the classroom to model real-world practices. Meaning making occurs when students communicate using multimodal texts. The Curriculum for language explains that multimodal texts combine language with other means of communication such as visual images, soundtrack or spoken word, as in film or computer presentation media'(ACARA).Curriculum documents are changing to adjust to the increasing demands of the technological world that we live in, and the many modes in which we communicate.Teachers can set a range of communication learning activities for students, including journal writing, speech writing, preparing topic talks, newsletters and debates. Technology can be embedded meaningfully and engagingly into these activities. Communication tools include: word-processing, presentation and publishing software, webpage authoring tools, email and online discussion forums. These tools allow students to communicate their ideas using a range of media elements (text, images, sound, and video).

B. Blogging: Journal writing has long been an activity utilised in the classroom. Journal writing allows students to reflect on what they are learning and how they are learning. This traditional, notebook-and-pencil activity can become digital when word processing software is used. Or it can go online as a blog. Blogs (a short form of the weblog) are personal journal websites on which a user can type an entry, add images, video and links to other websites. Readers of a blog usually can post comments. With the blog, access can be provided to the teacher, the class, the student's parents and the world. Lessons that introduce new forms of technology that students can use to communicate facilitate their ability to transfer technology skills from one tool to another and to apply those skills to communicate in different modes and genres. This supports the development of the 21st-century skills called for today – adaptability, flexibility and engagement. Media-sharing sites allow users to communicate with each other by uploading videos, photos and other multimedia.

C. Collaborative learning with technology: Collaborative learning is typically understood to be a situation in which two or more students work together to search for understanding or meaning, or to solve a problem. Students might work together to make meaning by creating an artefact or product. Collaborative learning is an important learning strategy for educators to teach and to use in their classrooms. It improves student knowledge by combining strengths, sharing responsibilities and learning from one another, which brings together many opportunities for enriching knowledge. In these learning experiences, students work together towards a common goal and, through the process, depend on each other for their experiences and knowledge. This means that teachers have an important role in facilitating and scaffolding collaborative learning. In the past, collaborative learning took place mainly in face-to-face situations, whereby students worked together while sitting at a table in a classroom, or perhaps working as a group in a learning centre. However, now, with technology in our classrooms, collaborative learning is also possible through many different means or modes, such as online discussion groups, interactive platforms and online classroom environments. These environments allow students to work together on group projects; publish on wikis and blogs; solve problems; on discussion boards, have debates and study teams; in online classrooms; and participate in other activities in cooperative ways. Students are working together in teams and using computer tools and resources to search for information, to publish results and create products. Perhaps the most common form of collaborative learning in the classroom environment is the group writing experience. Classroom teachers are using technological tools such as wikis, blogs and classroom webpages to post college news and various events

VI.CONCLUSION: E-learning is a large and growing market with great potential in higher education. The pace of technological change in society and in higher education has been exponential and will continue to be so. Teachers are using ICT to support their role in providing students with structure and advice, monitoring their progress and assessing their accomplishments. When students use technology to conduct research projects, analyse data, solve problems, design products and assess their own work, they work with others to create and communicate new knowledge and understandings. This study has presented a range of tools and a range of teaching and learning strategies that will have an impact on teaching and learning process. These strategies are based on theories of learning that allow teachers to provide different experiences for their students. Technology is changing all the time and what we know about how to use that technology effectively is developing continuously. As a future teacher, you will continue to develop your understanding and practice regarding the use of technology to help our students learn effectively. In order to maximize potential, e-learning implementations should endeavor to satisfy the needs and concerns of all stakeholder groups as much as possible.

VII. References

- R. J. Blake. *Brave New Digital Classroom: Technology and Foreign Language Learning*. Washington, DC: Georgetown University Press, 2008, p. 59.*
- M. Robyler and A. Doering. *Integrating Technology into Teaching* (5thEdn). Sydney: Allyn& Bacon, 2010.*
- N. S. A. Silva, G. J. M. Costa, S. Rogerson and M. Prior.—Knowledge or content? The philosophical boundaries in e-learning pedagogical theories, in A. Mendez-Vilas Research, *Reflections and Innovations in Integrating ICT in Education*, p. 221, 2009.*
- R. Donnelley and F. Mc Sweeney. *Applied E-Learning and E-Teaching in Education*. Hershey, PA: Information Science Reference, 2009.*
- S. Bennett, K. Maton and L. Kervin. —The „digital natives‘ debate: A critical review of the evidence, // British Journal of Educational Technology, vol. 39, no. 5, pp. 775-786, 2008.*
- G. Kennedy, K. Krause, T. Judd, A. Church wood and K. Gray. *First year students' experience with technology: Are they really digital natives?* Melbourne: Melbourne University, 2006.*
- H. Green and C. Hannon. *Their Space: Education for a digital generation*. London: Demos, 2007.*
- R. Benson and C. Brack. —Developing the scholarship of teaching: What is the role of e-teaching and learning? *Teaching in Higher Education*, vol. 14, no. 1, pp. 71-80, 2009.*
- Bosom, E. Fernandez, M. J. Hernandez, F. J. Garcia and ASeoane. —Excellence in Virtual Education: The Tutor Online Approach, // *Journal of Cases on Information Technology*, vol. 9, no. 2, pp. 61-74, April-June 2007.*
- P. Darbyshire and G. A. Sandy. —Building an Online Undergraduate Model from a Graduate Model: A Case Study, *Journal of Cases on Information Technology*, vol. 8, no. 3, pp. 41-54, July-Sep. 2006.*

GREEN COMPUTING: NEED OF THE HOUR

Ms. Areej Abid Faquih & Ms. Misbah Momin

Student SY BSc IT, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi. Email: areej_faquih@yahoo.in, Mobile: 9321514869

Assistant professor, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi. Email: mismomin@gmail.com, Mobile: 9323336154

Abstract

Green computing is an effective study in which disposing, recycling and manufacturing of computers and electronic devices is taken into consideration. The goal of green computing is to lower down the use of hazardous materials, maximize energy efficiency and popularize biodegradability or recyclability of out-dated products and factory waste. In this paper we discuss the wastage of energy by comparing the power usage by small, medium and large organizations; providing steps to utilize the concepts of green computing; recent implementations and their effects on small and large scale.

Key Terms:Cloud Computing, Green computing; N-Computing; Save Energy; Future computers; Virtualization; Computer Virtualization

I.INTRODUCTION: The field of green technology encompasses a broad range of subjects — from new energy-generation techniques to the study of advanced materials to be used in our daily life. Green technology focuses on reducing the environmental impact of industrial processes and innovative technologies caused by the Earth's growing population. It has taken upon itself the goal to provide society's needs in ways that do not damage the natural resources. This means creating fully recyclable products, reducing pollution, proposing alternative technologies in various fields, and creating a centre of economic activity around technologies that benefit the environment. The huge amount of computing manufactured worldwide has a direct impact on environment issues, and scientists are conducting numerous studies in order to reduce the negative impact of computing technology on our natural resources. A central point of research is testing and applying alternative non-hazardous materials in the products' manufacturing process.

Objective:

1. Our main objective is to save mother earth.
2. To apply the 3r's for sustainability.
3. To reduce the carbon footprint of every individual associated with the usage of computer and related devices.

II.METHODOLOGY: The quantitative technique of researching was applied. First the sectors the dealt with the maximum usage were found .The necessary solutions were discussed and implemented on small level.

III.CARBON-FREE COMPUTING: One of the VIA Technologies' ideas is to reduce the "carbon footprint" of users — the amount of greenhouse gases produced, measured in units of carbon dioxide (CO₂). Greenhouse gases naturally blanket the Earth and are responsible for its more or less stable temperature. An increase in the concentration of the main greenhouse gases — carbon dioxide, methane, nitrous oxide, and fluorocarbons — is believed to be responsible for Earth's increasing temperature, which could lead to severe floods and droughts, rising sea levels, and other environmental effects, affecting both life and the world's economy. After the 1997 Kyoto Protocol for the United Nations Framework Convention on Climate Change, the world has finally taken the first step in reducing emissions. The emissions are mainly a result of fossil-fuel-burning power plants. (In the United States, such electricity generation is responsible for 38 percent of the country's carbon dioxide emissions.) VIA aims to offer the world's first PC products certified carbon free, taking

responsibility for the amounts of CO₂ they emit. The company works with environmental experts to calculate the electricity used by the device over its lifetime, generally three years. From this data, one can conclude how much carbon dioxide the device will emit into the atmosphere during its operation. This estimate will serve as an indicator, and the company will pay regional organizations for the sequestering, or offsetting, of the emissions. Offsetting carbon dioxide can be achieved in different ways. One way is to plant trees that absorb CO₂ as they grow, in the region in which the processors were purchased. The necessary amount of trees per processor is represented by VIA's TreeMark rating system. VIA promotes the use of such alternative energy sources as solar power, so power plants wouldn't need to burn as much fossil fuels, reducing the amount of energy used. Wetlands also provide a great service in sequestering some of the carbon dioxide emitted into the atmosphere. Although they make up only 4 to 6 percent of the Earth's landmass, wetlands are capable of absorbing 20 to 25 percent of the atmospheric carbon dioxide. VIA is working closely with organizations responsible for preserving wetlands and other natural habitats, and others who support extensive recycling programs for ICT equipment. The amount paid to these organizations will be represented by a proportion of the carbon free product's price.

STEPS TO GREEN COMPUTING:

1. Develop a sustainable green computing plan. Discuss with the business leaders the elements that should be factored into such a plan, including organizational policies and checklists. Such a plan should include recycling policies, recommendations for disposal of used equipment, government guidelines and recommendations for purchasing green computer equipment. Green computing best practices and policies should cover power usage, reduction of paper Consumption, as well as recommendations for new equipment and recycling old machines. Organizational policies should include communication and implementation.



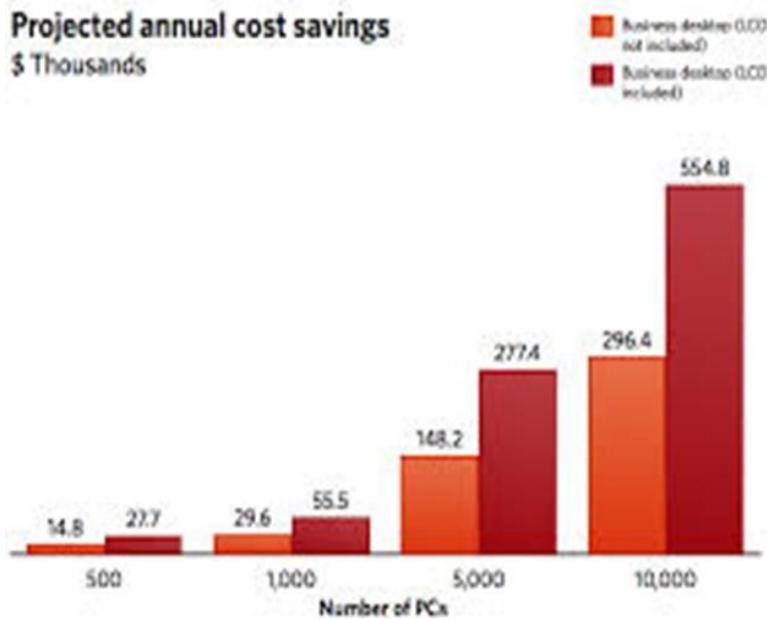
2. **Recycle:** Discard used or unwanted electronic equipment in a convenient and environmentally responsible manner. Computers have toxin metals and pollutants that can emit harmful emissions into the environment. Never discard computers in a landfill. Recycle them instead through manufacturer programs such as HP's Planet Partners recycling service or recycling facilities in your community. Or donate still-working computers to a non-profit agency. Make environmentally sound purchase decisions. Purchase Electronic Product Environmental Assessment Tool registered products. EPEAT is a procurement tool promoted by the non-profits Green Electronics Council.

IV. BENEFITS OF GREEN COMPUTING

- Help institutional purchasers evaluate, compare and select desktop computers, notebooks and monitors based on environmental attributes
- Provide a clear, consistent set of performance criteria for the design of products.
- Recognize manufacturer efforts to reduce the environmental impact of products by reducing or eliminating environmentally sensitive materials, designing for longevity and reducing packaging materials. Reduce Paper Consumption. There are many easy, obvious ways to

reduce paper consumption: email, electronic archiving, use the —track changes|| feature in electronic documents, rather than redline corrections on paper. When you do print out documents, make sure to use both sides of the paper, recycle regularly, use smaller fonts and margins, and selectively print required pages.

Conserve energy. Turn off your computer when you know you won't use it for an extended period of time. Turn on power management features during shorter periods of inactivity. Power management allows monitors and computers to enter low-power states when sitting idle. By simply hitting the keyboard or moving the mouse, the computer or monitors awakens from its low power sleep mode in seconds. Power management tactics can save energy and help protect the environment.



V.COMPANIES USING GREEN COMPUTING TECHNOLOGY

- Dell is a good example of a company with a green image, known for its free worldwide product recycling program.
- VIA C7-M and VIA C7 processors that have a maximum power consumption of 20W at 2.0GHz and an average power consumption of 1W. These energy-efficient processors produce over four times less carbon during their operation and can be efficiently embedded in solar-powered devices. These processors work on the concept of Quiet Computing.
- Intel, the world's largest semiconductor maker uses virtualization software, a technique that enables Intel to combine several physical systems into a virtual machine that runs on a single, powerful base system, thus significantly reducing power consumption.
- With the aid of a self-styled ultra-efficient evaporative cooling technology, Google Inc. has been able to reduce its energy consumption to 50% of that of the industry Average.
- Advanced Power Management which is a joint venture of Intel and Microsoft allows a computer's BIOS to control power management functions in a computer.

VI.FUTURE OF GREEN COMPUTING: A Canadian Company, Useful Inc. have concocted an answer that transforms 1 computer into 10 -Uncover Station. Rapidly turning into the standard for green processing around the world, Uncover Station influences the unused computing force of advanced PC's to make an ecologically proficient option to conventional desktop computing. Multiple clients can chip away at a solitary workstation by essentially appending up to 10 screens, mice and keyboards. Another approach for future Green Registering is building enormous more data focuses

where data focus alludes to a brought together store, either physical or virtual, for the stockpiling, **VII.CONCLUSION:** This paper displays around a green computing in a nature's turf .The study will likewise tell the methodologies of green computing. What and the amount work done in green computing and how the force utilization is diminished through diverse methodologies and key difficulties confronting to fulfill the objective. The idea of green computing is advancing in the recent years. Separated from biological issues, this additionally bargain in investment needs. This paper aimed to give a study on the current state-of-threat in green computing. Moreover, points of interest of some genuine results have also been indicated. Later on we can spare more vitality through a few methodologies which are demonstrated in the paper like virtualization, server farm and numerous different methodologies.

ACKNOWLEDGEMENT: I would like to express my special thanks of gratitude to Star college scheme, *Department of Biotechnology, Ministry of Science (DBT)*for funding.

References

- <http://h20426.www2.hp.com/progra m/care pack/pdf>
- <http://thefutureofthings.com/articles /1003 /green-computing.html>
- <http://www.teno-preneur.net/ informationdesk/scientetech-magazine/2007/nov07>
- <http://www.judsonisd.org/district/technology/JudsonISDG GreenComputingIni tiative.cfm>
- <http://searchdatacenter.techtarget.com/ definition/green-computing>
- <http://www.greencomputing.co.in/>
- <http://timesofindia.indiatimes.com /topic/Green-computing>
- Digit magazine.*

APPLICATIONS OF GIS MODELLING TO CONTROL WEST NILE (WN) VIRUS

Ms. Shaikh Sabera BanoRais Ahmed & Ms. Marium Shujauddin Shaikh

S.Y.I.T Student, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi, Thane, Email: shaikhsabera001@gmail.com, Mobile: 9890508885

Assistant Professor, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi, Thane. Email: shaikh.marium@gmail.com, Mobile: 9890508885

Abstract

Human West Nile virus (WNV) infection was first detected in Cuyahoga County, Ohio in 2002. During that year's extensive epidemic/epizootic among non-immune human and bird populations, the county experienced 155 cases of severe human WNV. Even our country is badly affected by West Nile virus. In India, antibodies against WNV were first detected in humans in Bombay in 1952. In order to better focus monitoring and control efforts, we can use a Geographic Information System (GIS) approach and spatial statistical analysis to identify the association of environmental factors and human population structure with the observed local risk for WNV transmission.

Keywords: Encephalitis/ provirus, (WNV)West Nile virus, epidemic, epizootic, GIS

Introduction: West Nile fever is a mosquito-borne infection by the West Nile virus. Symptoms may include fever, headaches, feeling tired, muscle pain or aches, nausea, loss of appetite, vomiting, and rash. Less than 1% of the cases are severe and result in neurological disease when the central nervous system is affected. People of advanced age, the very young, or those with immunosuppressant, either medically induced, such as those taking immunosuppressive, or due to a pre-existing medical condition such as HIV infection, are most susceptible. The specific neurological diseases that may occur are West Nile encephalitis, which causes inflammation of the brain, West Nile meningitis, which causes inflammation of the meninges, which are the protective membranes that cover the brain and spinal cord, West Nile meningoencephalitis, which causes inflammation of the brain and also the meninges surrounding it, and West Nile poliomyelitis—spinal cord inflammation, which results in a syndrome similar to polio, which may cause acute flaccid paralysis. West Nile virus is an arbovirus of the *Flavivirus* kind in the family *Flaviridae*. The main way it is spread is by various species of mosquitoes, with birds being the most commonly infected animal and serving as the prime reservoir host. WNV has been found in various species of ticks, but current research suggests they are not important vectors of the virus. WNV also infects various mammal species, including humans, and has been identified in reptilian species, including alligators and crocodiles, and also in amphibians. Not all animal species that are susceptible to WNV infection, including humans, and not all bird species develop sufficient viral levels to transmit the disease to uninfected mosquitoes, and are thus not considered major factors in WNV transmission**currently; there is no vaccine for WNV**. The best method to reduce the rates of WNV infection is mosquito control on the part of municipalities, businesses and individual citizens to reduce breeding populations of mosquitoes in public, commercial and private areas via various means including eliminating standing pools of water where mosquitoes breed, such as in old tires, buckets, sagging gutters, and unused swimming pools. The GIS (Geographic Information System) modeling can be used to identify significant spatial and temporal clustering of cases within the county environment and to link these observations to underlying environmental features that could likely contribute to transmission risk. Following risk stratification of neighborhoods by discriminant analysis, we are able to identify a link between local GIS-predicted environmental levels of risk and both the independently measured levels of mosquito vector (*Culex* spp.) abundance and WNV mosquito pool positivity within the same areas.

Objectives:

To control the increasing graph of death due to WNV

To find out wetlands those are *Culex* mosquito breeding sites

Location of positive indicators of WNV

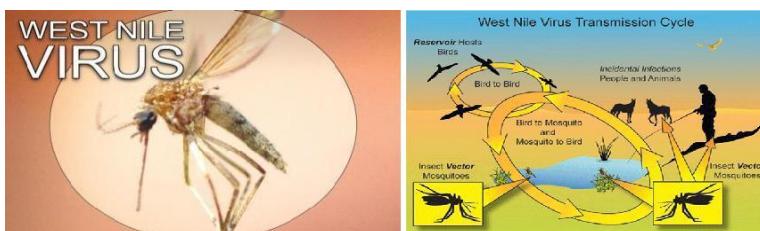
To identify significant spatial and temporal clustering of cases within the county environment

To link these observations to underlying environmental features that could likely contribute to transmission risk

To identify a link between local GIS-predicted environmental levels of risk and both the independently measured levels of mosquito vector (*Culex* spp.)

What is West Nile Virus?

Although humans and horses only serve as incidental hosts for West Nile (VN) virus, this mosquito-borne disease can cause fatal inflammation of the brain and the spinal cord. WN virus also kills some domestic and wild birds. Mosquitoes, primarily members of the *Culex* species, often become infected by biting a bird that carries the virus. Consequently, preventative measures have concentrated on reducing the mosquito population and encouraging people in affected areas to limit their exposure to mosquitoes.



Geographic Information Systems (GIS) combine a database with records that contain spatially specific information and attributes combined with a computerized mapping capability, and hence is a powerful tool for the analysis of spatial data. The GIS software which can be used to control WN virus was ArcGIS 8.3 (with the ArcView level of functionality) and the Spatial Analyst extension. This software provides the capacity for spatial analysis and mapping necessary for a GIS project. Spatial Analyst is an extension for ArcGIS 8.3 that allows for raster-based analysis. The raster data format is a grid of equal size cells that each contains a single value. Files in this Application of GIS: Control over West Nile Virus format is referred to as grids. In ArcGIS, both raster and vector data formats can be combined in a single map document. A consistent cell size facilitates analysis between grids. The default cell size used in this project for all grids was 186.4603376 meters. Traditionally, GIS has largely been used for natural resource study. Cromley and McLafferty (2002) find that the use of GIS for public health is a relatively new application of the software.

- **Study Area:** Our country is badly affected by West Nile virus. In India, antibodies against WNV were first detected in humans in Bombay in 1952. Virus activity has been reported in southern, central, and western India. WNV has been isolated in India from *Culexvishnui* mosquitoes in Andhra Pradesh and Tamil Nadu, from *Cx.* mosquitoes in Maharashtra, and from humans in Karnataka State. Assam which is the most populated state in northeastern India. West Nile virus has caused sporadic epidemics in Assam since 1976, due to which many death cases have been observed.
- **Need of GIS to control the WNV virus:** Since 2001, two desktop applications and four web systems have been developed to accommodate the changing needs of national West Nile virus dead bird surveillance. These systems are operated in different locations. The operation cost is high because these applications and systems have to be maintained and operated manually. There is also a delay between data reported to the database and data available for web mapping and public access. The evolution of those applications and system demonstrated the urgent needs for public health professionals, policy-makers, and various end-user groups to have an integrated surveillance system for real-time West Nile virus data collection and management, and to monitor, track, and understand public health events in a spatial context. Therefore the need of GIS arises in national West Nile virus dead bird surveillance. Static map web site can be developed; ArcView can be used to create professional maps and to export them as images. These image maps can be posted on the static web site. HTML Image Mapper transforms ArcView maps and data into interactive maps on a new interactive web map site.

Developing a GIS based West Nile Virus infection model: The GIS based West Nile Virus infection model can be used to control the disease caused by this virus. Which can be concerned with the environmental factors that appear to contribute to the spread of human WNV infection. This activity include review of existing historical literature on the spread of WNV, the national climatologically clearing house literature for precipitation and temperature data, and publicly available literature on

major migratory bird flyways. This information can be used to develop a GIS-based human WNV infection model that correlated human WNV infections with these three components

Component 1—River corridors and roadways.

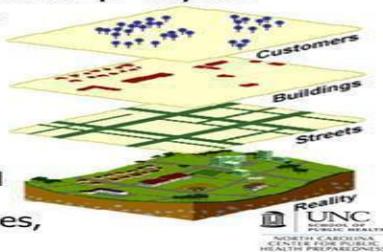
Component 2—Precipitation/Temperature trends and documented rare bird sightings. The component includes information about the severity of infections.

Component 3—Temporal changes in the life cycle process of the *Culex pipiens* mosquito, the primary mosquito vector in WNV transmission.

- GIS displays information in map “layers”

- Example: West Nile virus

- Street network
- Buildings: enclosures for sentinel species (chicken coops, horse stalls), offices, dwellings
- Population at risk
- Maps of land cover, digital elevation, precipitation, temperature, water features, veterinarians/physicians



This model include an initial review of those environmental factors that appear to contribute to the spread of WNV by assuming three primary components in the transmission of WNV: wild birds infected with high levels of WNV, bridge-vector mosquitoes that feed on these birds and humans who are bitten by the mosquitoes. The environmental factors that can affect in tracing WN virus are as follows:

Human WNV transmission cycle Trends in annual precipitation and average temperature Geographic location of human WNV cases for each state, organized by county Information on the mosquitoes responsible for the spread of WNV. Any changes in, flyways used by wild birds suspected of involvement in the transmission of WNV. This information was used to formulate the human WNV infection model and then placed in the GIS. This article will address only environmental factors that contributed to the development of this model.

Precipitation and Temperature Data: Annual precipitation and average temperature data obtained from the National Oceanic and Atmospheric Administration (NOAA) Climate at a Glance Web site. The NOAA climate data from this Web site contained the total precipitation and average temperature Data for each state from 1990 to the present.

In an ArcMap session, the attribute table was linked to the generalized state shapefiles from the Esri Data & Maps sample data. Three maps—total precipitation, average temperature, and WNV human cases—were generated for each quarter and exported as JPG images.

Geographic Locations of Human WNV Activity:

- Data for determining geographic locations of historic human WNV activity is obtained from two sites. Data organized by state can be obtained from the Centers for Disease

In the same ArcMap document, countries in each state with human WNV activity animal can be selected, exported as discrete data features, and added to the data frame. Generalized major river features and major tributary river features from the Esri sample data can also be added

Noting Changes in Migratory Bird Flyways:

- Research to discover any notable changes in migratory bird flyways can be conducted. Annual rare bird sighting summaries can be conducted to see if there are any documented increases in rare bird sightings in particular geographic areas.
- This information for rare bird sightings can be coded and created by city, as a separate data feature, and added to the data frame.

Climatologically Evaluation: A thorough review of interpretive GIS climate maps can be conducted to see if there is any correlations between the spread of the WNV and climatic changes (i.e., to test and validate the second component of the human WNV infection model). Based on a review of the summary data, the following observations can be made. Human WNV activity appears when the upper end of the third quarter regional temperature range exceeds 80°F. The period of highest WNV human activity can be measured. In fact, the precipitation in Louisiana during that period was the wettest on record. This deluge following a dry period would have provided conditions favorable to the population growth of the *Culex pipiens*. This would have likely resulted in viral amplification in these

regions, which validates the second and third components of the human WNV infection model. Regardless of the climate, there is currently no record of human WNV activity prior to the third quarter of each year.

Geographic Location Evaluation:

Reviewing interpretive GIS geographic location map can be conducted to see if there were any correlations between the spread of WNV and geographic locations or proximity to certain geographic features. Based on the data presented on GIS maps, the following observations can be made, which validates component C1 of the human WNV infection model. WNV activity can also be observed in several counties located immediately adjacent to those affected counties.

Rare Bird Sightings in Corridor Areas: Since migratory birds have the potential to carry WNV, a rare documented appearance to a new geographic area would be significant. A thorough review of Bird Source annual rare bird sighting summaries can be conducted to see if there is any noticeable increase in bird sightings in specific geographic areas. This appears to validate the first two components of the human WNV infection model.

Suggestions: As GIS is one of the best technology so I would suggest that the government of India should work on this in more efficient way in order to control the various kind of diseases such as West Nile fever, dengue, yellow fever by tracing the viruses which cause these diseases. As GIS is used to detect various information, so it will be very helpful to detect the environmental factors which causes the growth of viruses that can be controlled by proper planning.

Conclusion and Recommendations: It is imperative that environmental managers appreciate that climate and geographic locations appear to play a role in the WNV transmission cycle. Recognizing the significance of particular climate trends and specific locations would alert managers of the high potential for human WNV transmission in those areas. Based on the results presented by this technology all three components of the human WNV infection model were validated. The GIS spatial data layers as part of a human WNV infection model could assist environmental professionals (e.g., risk/planning managers and epidemiologists) in making risk management decisions.

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to Star college scheme, Department of Biotechnology, Ministry of Science (DBT) for funding.

References

- Centers for Disease Control and Prevention, Division of Vector Borne Infections, West Nile Virus Questions and Answers Web page. Retrieved January 9, 2003, from www.cdc.gov/ncidod/dvbid/westnile/qa/transmission.htm*
- Cornell University, Department of Communication and Center for the Environment, Environmental Risk Analysis Program West Nile Virus: Transmission, Infection, and Symptoms Webpage. Retrieved May 28, 2003, from environmentalrisk.cornell.edu/WNV/Summary2.cfm#birdmap*
- Cornell University, Lab of Ornithology, Project FeederWatch Website. Retrieved May 26, 2003, from http://birds.cornell.edu/pfw/DataRetrieval/data retr_index.html*

DIGITALIZATION OF EDUCATION**Sarika Chouhan**

Research Scholar, Shri Jagdishprasad Jhabarmal Tibrewala University, Jhunjhunu, Rajasthan. Email: sarika.chouhan9@gmail.com Mobile: 9833464857

Abstract

Digitalization of Education is a most welcome step in the history of education and a great change in teaching and learning trends. Information technology has reformed each sector and it has visible impact on education sector. This change makes promising phases of altering academia. In the coming decades Digitalization of Education if has its approach, education will be far changed, more immersive and hopefully more constructive to the people than it is today. Digitization in education industry has totally changed the learning and also the teaching process to a very great extent.

Keywords: Innovation, Training, Data, Transmission.

I. INTRODUCTION: IT innovation has improved every division it has gotten a handle on and it is as of now in the promising periods of modifying the scholarly world. In the coming decades if IT innovation has its approach, instruction will be far changed, more immersive and ideally more productive to the general population than it is today. Digitization in Education industry has completely changed the learning furthermore the instructing procedure to an exceptionally incredible degree. Innovation has made bestowing training tranquil for both understudies and instructors. Schools are step by step actualizing advanced instructing answers for include with an era of learners acquainted with any semblance of PlayStations and iPads and attempting to make the classroom environment more expansive and participatory. Data and correspondence innovation in instruction has encouraged understudy understanding, understudies are maybe the most prepared and presented to outer training yet they are in the best circumstance to assimilate what comes up in the classroom. Right now understudies live in a world that is continually connected and alive outside the classroom, so conventional techniques won't work now. The genuine insurgency in education must be accomplished through digitization of instruction so understudies can learn at their own speed both inside and outside the classroom. Their learning overhauls while they bear on to advantage from cultivating, mentorship and heading of their instructors. Digitization is provoking advanced education additionally as at no other time. Nothing is unavoidable and we have the matchless quality to shape the way we utilize innovations. The computerized insurgency is edging its way into the classroom. It is currently conceivable to have a document in each classroom or even in the pocket. As Google Chief Eric Schmidt has said, 'the web isn't rolling out unavoidable improvement quicker; it has turned into the engine of progress'. As online training has been adjusted by numerous colleges, it has made receptive and abbreviate the separation between an understudy and his/her fantasies. Online instruction is a sort of separation learning. There is no compelling reason to go to the school or college face to face. Courser is an instructive innovation organization which works with colleges to make some of their courses accessible on the web. E-learning or PC based preparing incorporates all types of electronically bolstered learning and instructing. It additionally incorporates instructive innovation. In the 21st century, the reconciliation of innovation inside the instruction area can on a very basic level change how learning is gotten and conveyed. Innovation in the computerized period has made another level of customized learning.

II. FASTER TRANSMISSION OF EDUCATION: Digitization has helped in speedier transmission of training at an insignificant cost. Firms that give imaginative advances in the field of training are looking forward for tapping openings in rural area with the assistance of state government. Digitization of training in India is in developing state. Non-public schools in India are receiving innovation quickly to meet the instructive needs of cutting edge understudies. The legislature is

additionally working towards upgrading training framework in country India with the assistance of computerized devices. A normal Indian classroom was once depicted by extend periods of time of addresses given by the educator. The presentation of instructive innovation has made exceptional changes in the nature of training in India. Schools and universities in India are embracing computerized answers for improve learning knowledge of new era understudies. Digitization has made the earth of the class more intuitive and participative. With the assistance of digitization, educators can show understudies by demonstrating 3D model and it's working in a successful way as opposed to drawing an entangled outline on writing board. Presentation of digitization has unquestionably made procedure of instruction more rearranged and consideration snatching. Moreover, it has helped in the advancement of advanced education more than ever. Digitization has reduced the separation amongst understudies and their instructive needs.

III.GOAL: The objective is to enhance learning process, react to future abilities and skill needs, reestablish teaching method through test conspires and move deep rooted learning. The study demonstrates that instructors in exhaustive schools see digitalization in a positive light (70% of the respondents) and might want to utilize more advanced applications in their work (75% of the respondents). Generally 50% of the instructors trust they ace the nuts and bolts in data and innovation utilize and near 33% feel that their abilities are best in class. However, the study additionally demonstrates that there are the individuals who might want to enhance their abilities, as around 20% of the respondents reported having huge weaknesses in their ICT capability. Following the Digital revolution in education, universities are offering for studies the choice to study partly or full online. For studies, web based alternatives offer and freedom to choose from a larger selection of courses and allow them to take part from any location.

Smart classes: Conveying content base outlines and content locations challenges that conventional manual classes would never provide the overcome. Macintosh, Amazon, HP, Microsoft and numerous, all are contributing at incredible degree in the digitization of instruction by their tablets, ipods, note pads and so on. Training is a colossal and quick rising division, which is driving the development of scratch pad. There is enhanced note pad requirement for understudies and instructive establishments. Computerized program stages in schools, universities and colleges are a portion of the new patterns. Educomp Solutions' Take Smart class is one of the primary Indian organizations in this space. Smart class is essentially an advanced substance library of mapped educational modules, sight and sound and 3D content. It likewise encourages teachers to expediently judge the amount of a specific lessonunderstudies have possessed the capacity to adjust amid the class. Digital learning prepares the students for the future and promotes independent learning in students.

IV.DEMERITS: As considering some of its negative marks, classrooms these days have ended up film lobbies with varying media content, with no correspondence amongst understudies and instructors. The relationship between the students and teacher will perhaps be obscured. Young students have lack of interest in studying. It makes students vulnerable to potential pitfalls. People have negative views on technology. New technological challenges raise instructional challenges for teachers.

V.CONCLUSION: Think it is a Challenge to create a new environment for digital learning essential and in administration instructor preparing will be changed. Trials and workshops on teaching method, advanced learning and new learning situations will be created. The National Board of Education facilitating a 'community for developments' to organize the digital learning process and to guarantee the productive create best practice of education. School culture and mindset should support Digital opportunities & Infrastructure. The students should allow and encouraged to take decisions on their own digital learning process. The traditional training instructions united with digitized learning is one of the powerful ways to connect our future generations to become global learner and contributor who can keep them

connected them across the culture, time and geographies. Integrating technology in education has its advantages and disadvantages, but proper implementation might help keep the drawbacks to a minimum. Better planning is necessary.

REFERENCES

- <http://www.minedu.fi/export/sites/default/OPM/Tapahtumakalenteri/2016/05/>
- http://valtioneuvosto.fi/en/artikkeli/-/asset_publisher/selvitys
- <http://ojs.statsbiblioteket.dk/index.php>
- <https://www.linkedin.com/pulse/digitization>
- <http://greengarageblog.org>

GAMIFICATION – A CONSTRUCTIVIST LEARNING TECHNIQUE

Kimaya Shelar & Ketaki Ghawali

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: shraddha.parab@vsit.edu.in Mobile: 9967024127

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: ketaki.ghawali@vsit.edu.in Mobile: 9987366414

Abstract

The world has entered a bright new technology-driven era, yet the education system remains rooted in a gray industrial past. Today's schools and colleges face major problems around student motivation and engagement. **Constructivism** is a philosophical viewpoint about the nature of knowledge. Constructivism is basically a theory -- based on observation and scientific study -- about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. When we talk about constructivism, online social gaming may become the educational tool of choice. Gamification in education, or gamification in learning, is sometimes described using other terms: gameful thinking, game principles for education, motivation design, engagement design, etc. It operates under the assumption that the kind of engagement that gamers experience with games can be translated to an educational context towards the goals of facilitating learning and influencing student behaviour. Thus far, gamification has most frequently been used as a clever way to promote a business or product. For instance, players can earn badges, discounts, and other rewards for visiting real-world shops and "checking-in" to the mobile phone application. Intuition suggests that gamification may be able to motivate students to learn better and to care more about school. For that reason, we must clearly define what is meant by gamification, evaluate its benefits and drawbacks and understand the reason behind implementing gamification. In this paper we explain these needs regarding the gamification of education.

Keywords: Elearning, Educational curriculum, Subject, Education, Gamification

INTRODUCTION: eLearning is all about using electronic technologies for educational curriculum outside the boundaries of traditional classroom and, of course, it is gaining popularity especially among the younger generation over the past decade. Nowadays, obtaining a degree or a certificate for a course opted has become very easy. You don't need to actually sit and take a lecture at the institute; instead, all you need is an **internet connection** to access any lecture of your favourite professor **online**. The broad-band of eLearning varies from **distantedducation, learning online, computerized electronic learning**, and many others which makes it more appealing to the public. The eLearning industry is getting revolutionized by current up gradation of **cyber and technological industry**. 2016 and coming years can be considered as the renaissance period of the eLearning industry with constant evolution of its components.

FUTURE PROSPECTS OF ELEARNS: The conventional education system gives an idea of an environment where the teacher is the supreme authority and students are their subjects. However, most of the adults who need to enhance their educational backgrounds find the campus experience difficult.

GAMIFICATION: Games and game-like elements have begun to invade the real world. Gamification, defined as the use of game mechanics, dynamics, and frameworks to promote desired behaviors, has found its way into domains like marketing, politics, health and fitness, with analysts predicting that it will become a multi-billion dollar industry in the near future.

The potential of gamification, however, goes beyond promoting healthy lifestyles and marketing strategies. Gamification attempts to harness the motivational power of games and apply it to real-world problems – such as, in our case, the motivational problems of schools and colleges. Motivation and engagement are major challenges for the educational system all over the globe. The key objective behind gamification of education is that it is fun and more appealing to the general. Studies have shown video games boost hand-eye coordination and enhance general **IQ** and **brainpower**

Many studies have looked into the games industry to find out why games are so addictive to both children and adults. Players may play hours upon hours whereas they are not willing to spend more than 15 minutes on doing homework or studying for exams. Same issues appear with adults who would rather play online games than do compulsory chores. Many people confuse gamification with playing games; these are two very different things. Playing a game is the actual action of **playing**. Gamification, on the other hand, looks into games' mechanism. There are typical elements which are used in most games, such as:

- Challenge.
- Chance.
- Competition.
- Cooperation.
- Feedback.
- Rewards.
- Winning.
- Progression.

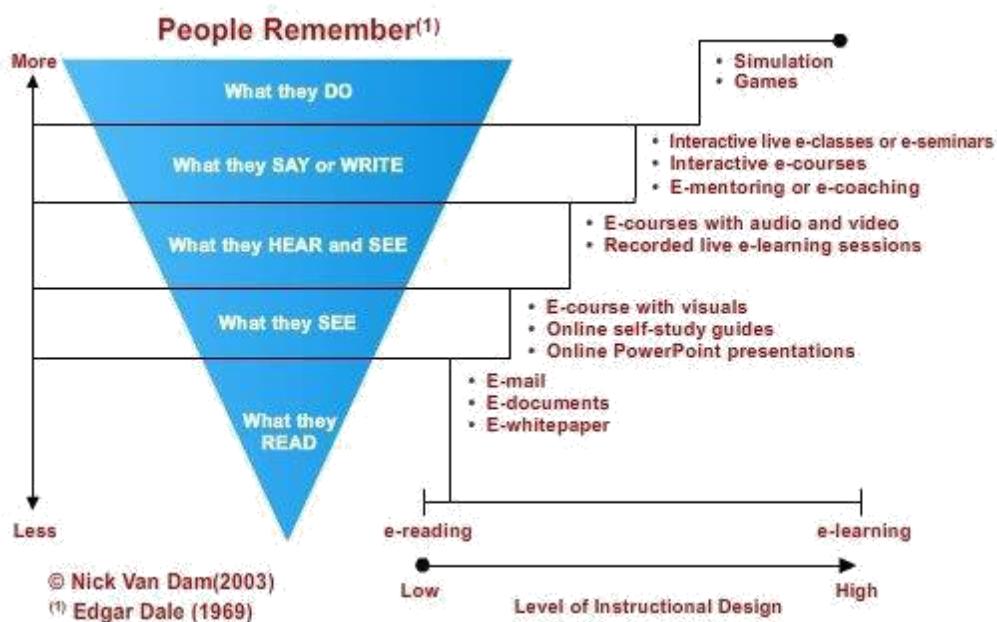
These game elements can be easily extracted from a game content and applied to almost any field. The idea is to take the engaging elements of gaming and implement them into the teaching process. Games increase a person's ability to switch between tasks and *incept multiple ideas* at the same time for problem solution. Serious games often contain points, badges, and leader - boards driving learners for accomplishing levels that are *key lessons* or *topics*.

HOW DOES GAMIFICATION ENHANCE LEARNING?

Successful learning is a combination of three elements:

- 70% from real-life and on-the-job experiences, tasks, and problem solving
- 20% from feedback and from observing and working with peers and role models
- 10% from formal training

Take a look at this diagram on the techniques used in learning design approaches and their relationship to retention of learning



As we note from this, gamification can provide an effective approach to enhancing learning. This is on account of these inherent features:

- It evokes friendly competition.

- It provides the learners with a sense of achievement.
- It provides an engaging learner experience leading to anticipated behavior change.
- It encourages learners to progress through the content, motivate action, and eventually influence behavior.

5 BENEFITS OF GAMIFICATION IN ELEARNING

- **Better learning experience:** The learner can experience “fun” during the game and still learn if the level of engagement is high. A good gamification strategy with high levels of engagement will lead to an increase in recall and retention.
- **Better learning environment:** Gamification in eLearning provides an effective, informal learning environment, and helps learners practice real-life situations and challenges in a safe environment. This leads to a more engaged learning experience that facilitates better knowledge retention.
- **Instant feedback:** It provides instant feedback so that learners know what they know or what they should know. This too facilitates better learner engagement and thereby better recall and retention.
- **Prompting behavioural change:** Points, badges, and leader - boards would surely make training awesome. However, gamification is about a lot more than just those surface level benefits. Gamification can drive strong behavioural change especially when combined with the scientific principles of repeated retrieval and spaced repetition.
- **Impact on bottom-line:** On account of all these aspects that touch and impact learners (better learning experience, higher recall and retention, catalysing behavioural change, and so on), it can create a significant performance gain for the student as well as organization.

A PRACTICAL WAY TO APPLY GAMIFICATION IN THE CLASSROOM: Education is constantly transforming as educators we need to keep up or lose the battle on students' attention. This describes a practical and easy way to apply gamification in the classroom to enhance motivation. It costs nothing, and yet the results are priceless.



Students today are digital natives; not like their digital immigrant teachers. On the other side, this means that students interact with technology in a much better way. On the down side, it means that they have very short spans of attention; nearly around 7 minutes in a session. This makes traditional teaching methods lacking the motivation incentive students may need to be motivated to learn.

As a teacher, we have noticed that students lose their attention very quickly or seem to have no motivation to learn the curriculum's topics: That's even before the mental challenges required by the subject.



HOW TO APPLY GAMIFICATION IN THE CLASSROOM: Here are some of the elements used to gamify teaching and motivate students:

New system: Instead of grades (max 100%), students got eXperience Points (XP). When a student gets a grade of 60%, he/she feels disappointed because it shows them that they didn't make it to the top. In games, however, the player gains points according to his/her performance and achievements. Therefore, the only way is up. Instead of grades, they get points: 500XP for doing homework, up to 1000XP for a quiz, 300XP for participation in the class, etc. To the "grades" off their minds, each **unit** of the subject is called **level**. In each level, a student needs to gain at least 11.000XP to continue to the next level, and up to 20.000XP to get the top score. To make things even more interesting: If a student gains more than 20.000XP, he/she can use these points in the next level. This gives him/her a better starting point over the others, hence **competition +rewards = motivation**. Students can only gain points; not lose them, as done in games. This way, students count up from zero, which is motivating, rather than lose points from 100%, which is demotivating if the student doesn't get the full 100% mark. Any effort from the student can be rewarded by points: The more they try, the more the score increases. At the end of the day, the score translates back to a grade (up to 100%), as we need to report according to the education system rules. However, as the year goes by, the students don't feel like being graded; they enjoy the game-like atmosphere, the competition, and their high scores.

CONCLUSION: Students would start reacting very positively toward the gamification of the subject. Some students who might score very low grades and perform poorly in previous years, will get the chance to shine by doing small tasks and gain points which were not possible in the traditional grading system. For example, students who brought the books every week and showed responsibility were rewarded with XP. Students who helped their friends got a badge, which has high XP value that was added to their total score. By viewing the leader - board (progress bars), the students will feel competitive and push themselves a bit harder than normally. By using game elements in education (NOT actual games), we can motivate our students to improve their achievements. By using a very practical implementation of gamification, anyone can increase motivation, create positive competition, more fun and hence, increase their performance.

Reference

- <https://elearningindustry.com/education-future-of-elearning>
- <https://elearningindustry.com/practical-way-to-apply-gamification-in-the-classroom>
- <http://www.ncee.org/wp-content/uploads/2013/10/India-Education-Report.pdf>
- <https://elearningindustry.com/top-6-benefits-of-gamification-in-elearning>

PARADIGMS OF CURRICULUM DESIGNING PROCESS FOR E-LEARNING IN HIGHER EDUCATION

Ujwala Sav, M.Sc., M. B.A., M.Ed., M.Phil.

Assistant Professor cum Coordinator Department of Information Technology, Vidyalankar School of Information Technology, Wadala (E), Mumbai, India.

Abstract

Traditional learning process has been overtaken by e-learning for number of higher education courses. e-learning process is empowering the students through their personal learning. E-learning helps the students to acquire the knowledge through self-study and experience. This research paper presents the paradigms of curriculum designing process for e-learning in higher education. Our education system is adopting the new technology to get the learning outcomes and competencies which measure skills, knowledge or attitude through curriculum. Curriculum designing process includes goal of learning, content, sequence, instructional methods, instructional resources evaluation approaches and evaluation process. Learning outcomes and competencies describe specific measurable skills, knowledge or attitudes that learners will have achieved through the education program. There are certain methods which are used to describe the curriculum for e-learning. Learning takes time and patience. Self-directed learning process is the most powerful model for facilitating and inspiring individual, group and organizational learning and development.

Keywords: curriculum designing, e-learning, higher education

Introduction: e-learning plays a very important role in completion of the Higher education for most of the learners. Students enrolled for the higher education prefer e-learning. Emerging technology enables the students to do self-study. Self-study is a part of learning process which became easy through e-learning. E-learning is effective and very powerful if curriculum design is proper. This research paper presents the paradigm of curriculum designing for e-learning in higher education. Researcher has focused mainly on two terms whereas first is curriculum design and second is e-learning in higher education. Students enrolled for higher education are adult and well equipped with mobile, laptop or desktop like devices with internet facility. They always prefer e-book, power point presentation, digital images, audio/video, and notes in docs or pdf file for learning process. Therefore there is a need to study that what are facts have been taken into consideration while designing the curriculum for e-learners specific to higher education.

Literature Review: To understand the curriculum design process and e-learning literatures are reviewed. Some of the relevant literatures reviews are mentioned here.

Paradigm: Paradigm is an interpretative framework, which is guided by “a set of beliefs and feelings about the world and how it should be understood and studied.”[2] A broad framework of perception, understanding, belief within which theories and practices operate. Paradigm is pre-structure, perception and understanding.[3] In 1962, Thomas Kuhn wrote, “Paradigm is a mental model, a way of seeing, a filter for one’s perceptions, a frame of reference, an example used to define phenomenon and a commonly held belief among a group.

E-learning: e-learning is a learning conducted via electronic media on the Internet.

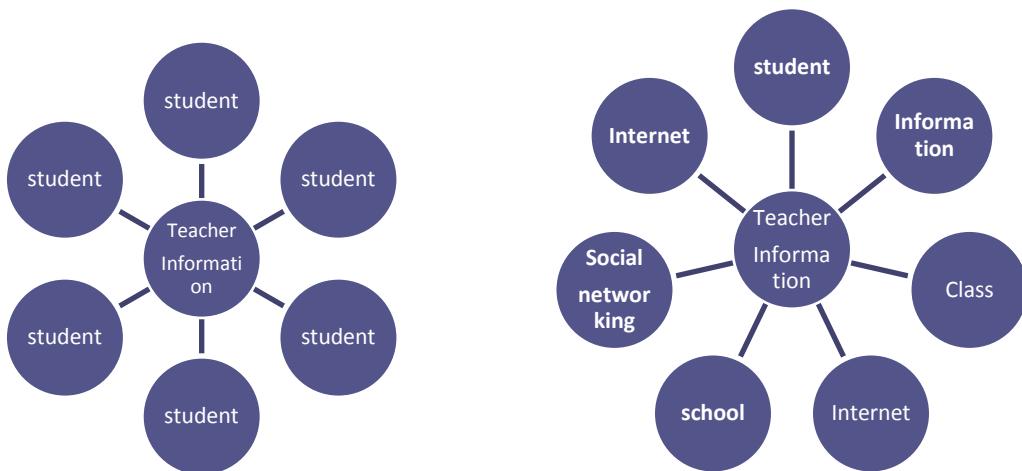
[7]. e-learning important is increasing in many curricula and needs to be planned carefully if it is to make an effective contribution. Online materials can be valuable support for learning and learning can be designed to include helpful self-assessment task.

[4]. A new pedagogical methodology for the teaching and learning has to be developed in order to overcome barriers and facilitates the platform to transfer knowledge effectively by creative design.[2]

- **Curriculum design :** CBT (Competency-Based Training) model used for curriculum design which integrates with e-learning information technology in order to form an e-CBT model and then develops teaching competence.[4] Use of technology to construct learning experiences in e-

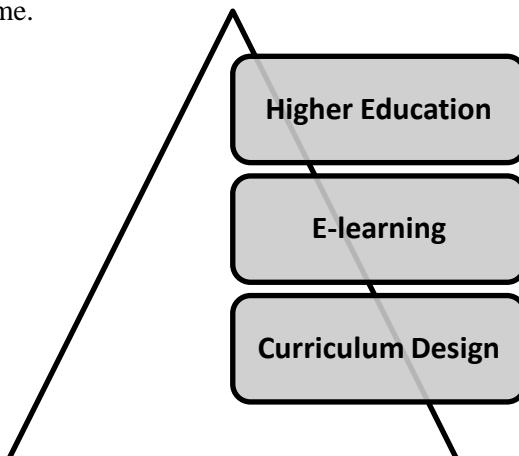
learning [8] argues that e-learning can change the way we learn dynamically. The e-learning industry continues to emphasize the cost savings and return on investment. The effectiveness of the course is less dependent upon enabling technology than on the skill with which the developer uses the available technology to construct learning experiences appropriate to the learners and to the topic.

Research Methodology: Research paper is review research paper, based on secondary data and experience. In this area of learning process, lots of innovative methods are introduced and implemented. It is reviewed that traditional method of learning is teacher centric whereas new learning method is student centric as show in the figure.



Higher education: Higher education is also one of the important devices of social and economic transformation. Presently higher education in India is experiencing a transformation in terms of access, equity and quality. Use of electronic media is inevitable in higher education i.e. e-learning.

Curriculum design for Higher education: Education system should design the curriculum starting from objective, goals, instructions, Higher Education syllabus, and evaluation through e-learning. This can e-learning be possible with the help of ICT. e-learning allows the student to learn at any place Curriculum Design and at any time.



Use of ICT: Technology enables the learner to learn easily but they should know how to use technology. ICT use is cheaper, faster, paperless and effective for e-learners. ICT is used to design the new curriculum for higher education. Modern courses focused on promoting competency and performance which should be considered in process of knowledge construction. It should be more emphasis on how information will be used and to make available to learners. Curriculum must be

learner centric. ICT supports to develop the requirements of modern course. The ICT tools used for learning and curriculum design is as follows. 1) digital library, e-books and electronic publications 2) internet 3) social networking sites 4) email, search engines, websites, browsers, chat etc. 5) Video conferencing and computer aided instructions, 6) Storage media like CDs, DVDs, pen drives 7) Multimedia PCs, laptops, notebook, tablets, smart phones, 8) Open source softwares

ICT TOOLS

Computer-aided	Digital libraries,	Multimedia	internet, e-mail browsers,	CDs, DVDs,	Multi media PCs,	
instruction and	e-books and	software and	website, search	digital videos,	laptops,	
video-audio	electronic	open source	engines, chat,	still cameras	notebook	
conferencing	publications	software	etc.			

Advantages of e-learning approach:

e-learning is student centric.

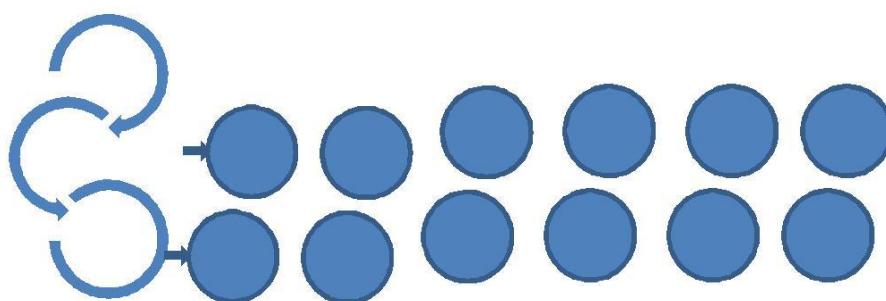
e-learning used multimedia means audio, video, ppt, images, animation, text etc.

Collaborative work – easy to communicate the peers Information exchange skill based learning

Technology enabled learning

e-learning has pull approach means active learning

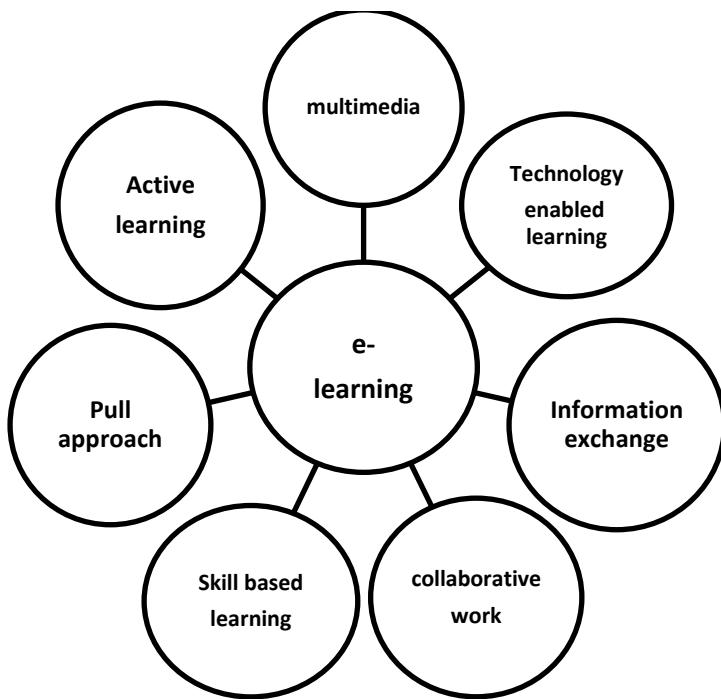
Paradigm of Curriculum Design for e-learning



In the above model, goals, objectives, instruction, evaluation, assessment and student interest and career is considered for curriculum development whereas e-learning computer, laptops, mobile app, software, software tools and open source/operations are used to develop the skill for career development of the student for higher education.

IV) Result and Analysis: After reviewing literatures, facts are found out that use of ICT can be effectively use the for the curriculum design.

ICTs in curriculum design process for



E-learning: It involves the adoption of general components of ICTs in the teaching and learning and evaluation process. In this research paper, the tools and techniques available to development of curriculum for active learning is as follows. Moodle, digitalcontent, OER, Thecn.com, screen castomatic, wordpress, wiki, spoken tutorial, drupal above are the Information communication technology tools. All the above tools are very useful for the curriculum and content design process.

Use of ICT in Curriculum design

- Systematic approach in curriculum design
- Implement Blooms taxonomy to cover cognitive, affective and sensory domains of learning objectives.
- Collaborative work can be possible to design the quality curriculum.
- Active learning
- Involvement of participants assured
- Full-fledged content
- Powerful Communication with learners
- Conduction of online evaluation/assessment process

E-learning is useful for the flipped classroom. Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions. Design of short videos has to meet the curriculum objectives. OER (Open Education Resource) are freely accessible, openly licensed documents and media that are useful e-learning in higher education for teaching learning and assessing as well as for research purpose. Social Networking Media: Faculty can pick up and choose the individual resources they want to use – and to modify those resources and assemble them in a unique ways. It is social networking environment for academic services, which lead to an interesting and encouraging feeling for learners. It is free of cost for both teachers and learners. It provides MOOC access. [10].

MOOC: It has some special features like rewarding tools (ANAR), monitoring mechanism to understand the level of learner, continuous assessment, posting, quizzes, tasks to be given by teachers, chat and e-mail, grade books, etc. <https://www.thecn.com/>

V) **Scope and Limitation:** The scope and limitations of the research is given below.

Scope: Developing countries going under digitalization, e-environment, global warming and many more transformations at a large scale. Trend of learning is also changing to reach to all the level students through e-learning. e-learning curriculum design process can be worked for all the level of students.

Limitation: This research is limited to only higher education. This e-learning process required electronic devices and internet connectivity. The area where lack of devices and lack of knowledge of operations.

VI) Conclusion: The conclusion of this research is to increase the use of ICT in development of e-learning curriculum design. Implementation of technology will definitely make available the systematic approach of learning. It will be helpful to achieve the learning objectives. Paradigms of curriculum design process for e-learning in higher education are student centric, technology approach, use of ICT for designing curriculum, training the trainer, awareness for e -learning methods to complete the higher education, adoption of e-learning process by university.

The above mentioned paradigms should be use by curriculum designer while designing e-learning curriculum which helps the higher education student to complete their education.

VII) Acknowledgement: I would like to thank Principal Dr. Rohini Kelkar from Vidyalankar School of Technology for her kind support and motivation

IX) References

- Zeying WAN, Deborah Compeau, Nicole Haggerty, "The Effects of Self-Regulated Learning Processes on E-Learning Outcomes in Organizational Settings", *Journal of Management Information Systems* / Summer 2012, Vol. 29, No. 1, pp. 307–339.
- Sergio Altomonte, "Enhancing teaching and learning of sustainable design through ICTs", 2nd International Conference on Education Technology and Computer, Year: 2010, Volume: 2
- Glenn Trout, "E-Learning & Online Training Keeping Up With the Evolving Workplace", JUNE 2016 www.asse.org
- <http://www.tlso.manchester.ac.uk/map/teachinglearningassessment/teaching/curriculumdesign/>
- <http://www.project2061.org/publications/designs/online/pdfs/designs/chapter1.pdf>
- Ling-Yu Wen; Shun-Fa Hsu; Shiu-Yu Chen; Jun-Yen Wu, "Application of a blended e-learning method in designing a training program for developing professional competences of university teachers" e-CBT Model", 2010 International Conference on Educational and Network Technology.
- <https://onlinelearningconsortium.org/updated-e-learning-definitions-2/>
- Greenagel, F. L. (2002). *The illusion of e-learning: Why we're missing out on the promise of technology*. <https://www.theecn.com/>
- <https://www.edx.org/course/>

TO TRANSFORM INDIA INTO A DIGITALLY EMPOWERED SOCIETY AND KNOWLEDGE ECONOMY

Rohini Gaikwad & Aasha Vanve

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: rohini.g@vsit.edu.in Mobile: 9870880720

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: aasha.vanve@vsit.edu.in Mobile: 8767134195

Abstract

Digital India is an ambitious programme of the Government of India with a vision to transform India into a digitally empowered society. The focus areas are: creation of a countrywide digital infrastructure as a utility for every citizen, ensuring governance and services on demand and digital empowerment of citizens. The Digital India Programme is a mission to prepare India for a knowledge future by making technology central to enabling change. The Digital India programme rests on nine pillars: Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Programme, e-Governance Reforming Government through Technology, e-Kranti Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest Programmes. From enabling storage of legacy documents in digital format to providing a unified platform for all scholarships provided by the Government of India, from facilitating online registration and obtaining appointments in hospitals to propagating widespread use of digital signatures, from setting up of a National Centre for Flexible Electronics to creating an Electronic Development Funds, from creating the fiber optics backbone infrastructure across the country to moving ahead with the Next-Generation Network that heralds the convergence of voice, data and multi-media services. This paper explores Innovativeness of Digital India.

Keywords: Digitally Empowered Society, Digital Infrastructure, Broadband Highways ,E-Governance, E-Kranti ,Electronic Development Fund

Introduction: The world has transformed from a knowledge savvy to techno knowledge savvy. Think of something and it is available in one click. So, Digital India is a step by the government to inspire and connect Indian Economy to such a knowledge savvy world. The program targets to make Government services available to people digitally and enjoy the benefit of the newest information and technological innovations. It brings out various schemes like E-Health Digital Locker, E-Sign, E-Education etc. and nationwide scholarship portal. Digital India is a great plan but its improper implementation due to inaccessibility & inflexibility to requisite can lead to its failure. The program strives to provide equal benefit to the user and service provider. The consumers will be benefited by way of saving time, money, physical & cognitive energy spent in lengthy government processes. For e.g. digital ticketing will lead to reduction in queue at ticket counter with online resources for booking, online tax-return filing etc. The aim of Digital India to give a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis. This program will also lead to paperless work and reduction in cost to the government expenses. Government services will be available to every citizen electronically.

What is Digital India?

Digital India is a Programme to prepare India for a knowledge future. The focus is on being transformative – to realize $IT + IT = IT$. The focus is on making technology central to enabling change. It is an Umbrella Programme – covering many departments. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them is seen as part of a larger goal.

- [1] Each individual element stands on its own. But is also part of the larger picture.
- [2] It is coordinated by DeitY, implemented by the entire government.
- [3] The weaving together makes the Mission transformative in totality.

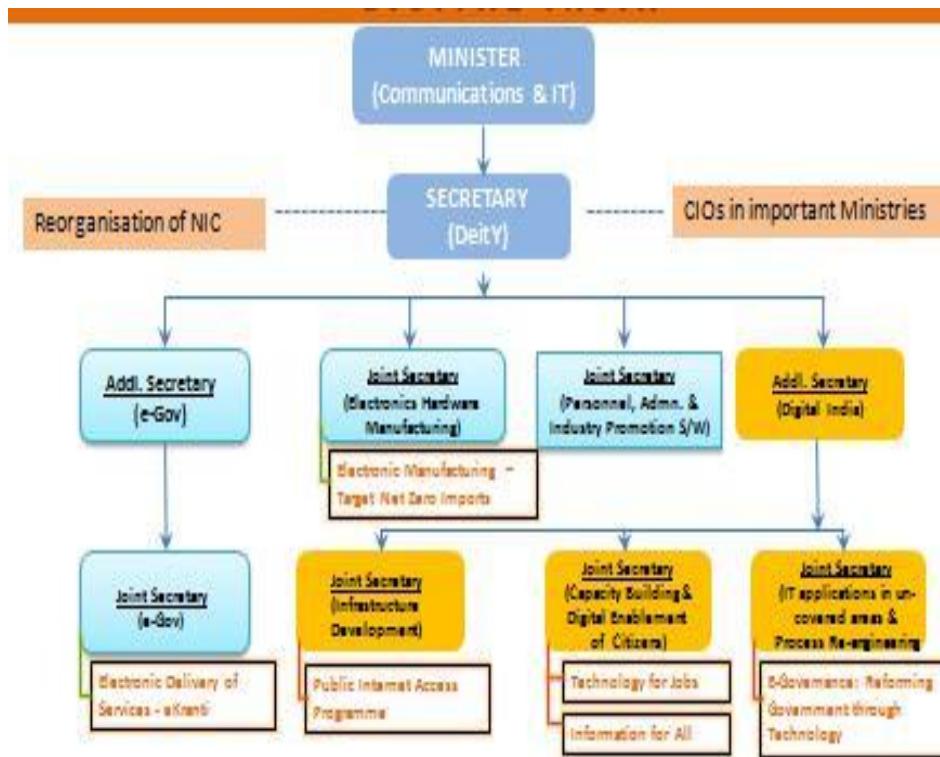


Fig 1.1: Digital india

The Programme:

- Pulls together many existing schemes.
- These schemes will be restructured and re-focused.
- They will be implemented in a synchronized manner.
- Many elements are only process improvements with minimal cost.

The common branding of programmes as Digital India highlights their transformative impact.

- **Vision Areas of Digital India**

Centered on 3 Key Areas

- Digital Infrastructure as a Utility to Every Citizen
- Governance & Services on Demand
- Digital Empowerment of Citizens

Vision Area 1: Infrastructure as a Utility to Every Citizen

- High speed internet as a core utility
- Cradle to grave digital identity -unique, lifelong, online, authenticable
- Mobile phone & Bank account enabling participation in digital & financial space
- Easy access to a Common Service Centre
- Shareable private space on a public cloud
- Safe and secure Cyber-space

Vision Area 2: Governance & Services On Demand

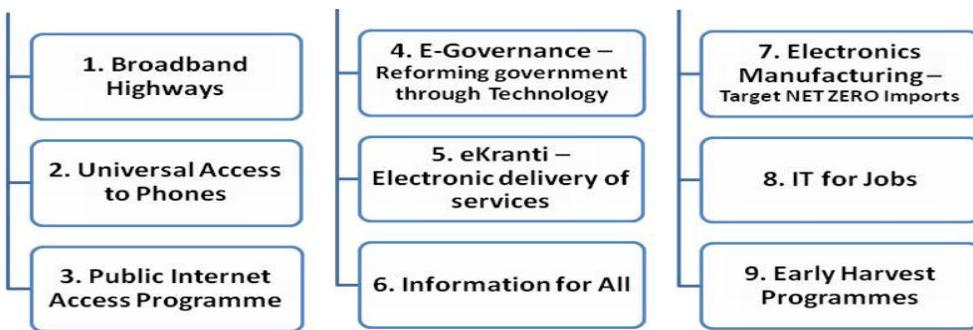
- Seamlessly integrated across departments or jurisdictions
- Services available in real time from online & mobile platform
- All citizen entitlements to be available on the cloud
- Services digitally transformed for improving Ease of Doing Business
- Making financial transactions electronic & cashless

- Leveraging GIS for decision support systems & development

Vision Area 3: Digital Empowerment of Citizens

- Universal Digital Literacy
- Universally accessible digital resources
- All documents/ certificates to be available on cloud
- Availability of digital resources / services in Indian languages
- Collaborative digital platforms for participative governance
- Portability of all entitlements through cloud

Nine Pillars of Digital India



Pillar 1: Broadband Highways: The first step is to provide high speed broadband highways through fiber optics that connect all the remote areas, government departments, universities, R&D etc. Web based portals and Mobile apps will be developed to access online information while on the move.

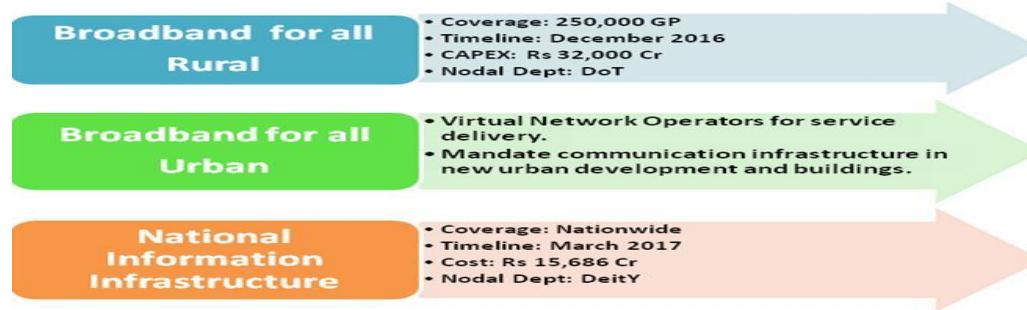


Fig 3.1: Broadband Highways

Pillar 2: Universal Access to Mobile connectivity: In the coming years, network technologies like 3G, 4G and upcoming 5G will storm the speed. Government is specially preparing to connect unconnected areas and speedy use of these technologies. General public will access The online government services with the help of handheld devices. Action is ready to be well-connected, efficient, and more productive in every aspect.



Fig 3.2: Universal Mobile Access

Pillar 3: Public Internet Access Programme – National Rural Internet Mission: Virtuous technologies that support cost containment, collaboration, security, and services-on-the-go, social-connect, and in-built intelligence that deliver remote access to any information or service available across the domain. This change will open new doors of e-services to every citizen.

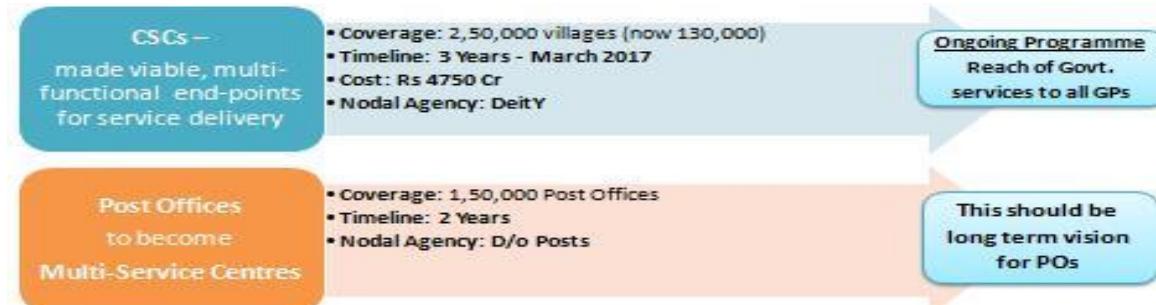


Fig 3.3: Public Internet Access Programme – National Rural Internet Mission

Pillar 4: e-Governance: Reforming Government through Technology: Government Business Process Re-engineering using IT to improve transactions. Form Simplification, reduction. Online applications and tracking, Interface between departments. Use of online repositories e.g. school certificates, voter ID cards, etc. Integration of services and platforms – UIDAI, Payment Gateway, Mobile Platform, EDI. Electronic Databases – all databases and information to be electronic, not manual. Workflow automation inside government. Public Grievance Redressal - using IT to automate, respond, analyze data to identify and resolve persistent problems – largely process improvements. To be implemented across government - critical for transformation.

Pillar 5: eKranti - Electronic Delivery of Services: This kranti will fully focus on digital knowledge program where education, health, farming, rights, financial and any more services will be delivered on a very high bandwidth. Physical boundaries no longer are a limitation when almost everyone and everything is a digital handshake away.

1. **Technology for Education – e-Education**
 - All Schools connected with broadband
 - Free wifi in all schools (250,000)
 - Digital Literacy program
 - MOOCs–develop pilot Massive Online Open Courses
2. **Technology for Health – e-Healthcare**
 - Online medical consultation
 - Online medical records
 - Online medicine supply
 - Pan-India exchange for patient information
 - Pilots – 2015; Full coverage in 3 years
3. **Technology for Planning**
 - GIS based decision making
 - National GIS Mission Mode Project
4. **Technology for Farmers**
 - Real time price information
 - Online ordering of inputs
 - Online cash, loan, relief payment with mobile banking

5. Technology for Security

- Mobile Emergency Services

6. Technology for Financial Inclusion

- Mobile Banking
- Micro-ATM program
- CSCs/ Post Offices

7. Technology for Justice

- e-Courts, e-Police, e-Jails, e-Prosecution

8. Technology for Security

III. National Cyber Security Co-ordination Center

Pillar 6: Information for All

Online Hosting of Information & documents

- Citizens have open, easy access to information
- Open data platform

Government pro-actively engages through social media and web based platforms to inform citizens

- MyGov.in
- 2-way communication between citizens and government Online messaging to citizens on special occasions/programs.

Largely utilize existing infrastructure – limited additional resources needed.

Pillar 7: Electronics Manufacturing Target NET ZERO IMPORTS by 2020

Target NET ZERO Imports is a striking demonstration of intent. Ambitious goal which requires coordinated action on many fronts

- Taxation, Incentives
- Economies of Scale, Eliminate cost disadvantages
- Focused areas – Big Ticket Items
 - FABS, Fab-less design, Set top boxes, VSATs, Mobiles, Consumer & Medical Electronics, Smart Energy meters, Smart cards, micro-ATMs
- Incubators, clusters
- Skill development
- Government procurement

There are many ongoing programs which will be fine-tuned. Existing Structures inadequate to handle this goal. Need strengthening.

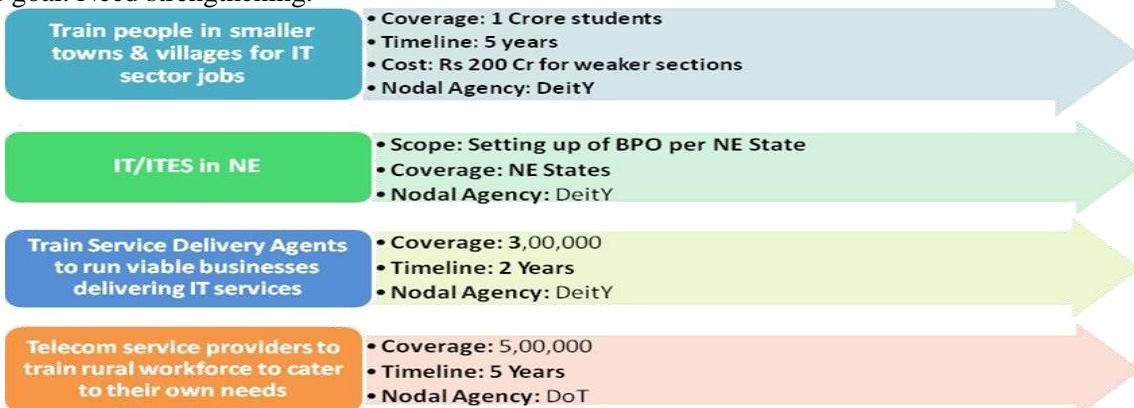


Fig: 3.4: IT for Jobs

Pillar 8: IT for Jobs: The government is preparing to provide training and teaching skills to the youth for employment opportunities in the IT sector. BPO industries will be established for the fastest growing segment of the Information Technology Enabled Services industry. It offers e-services 24/7 in every field and gives more jobs potentials.

Pillar 9: Early Harvest Programmes

This programme will generate short timeline projects where every manual service is altered by e-service. E-services like:

- Implementation of Wi-Fi in all the universities.
- Public Wi-Fi Sports to access online gen. Educational books to e-books.
- People will use the e-services for entertainment, weather information, latest updates etc.
- Replacement of manual attendance to Biometric procedure.

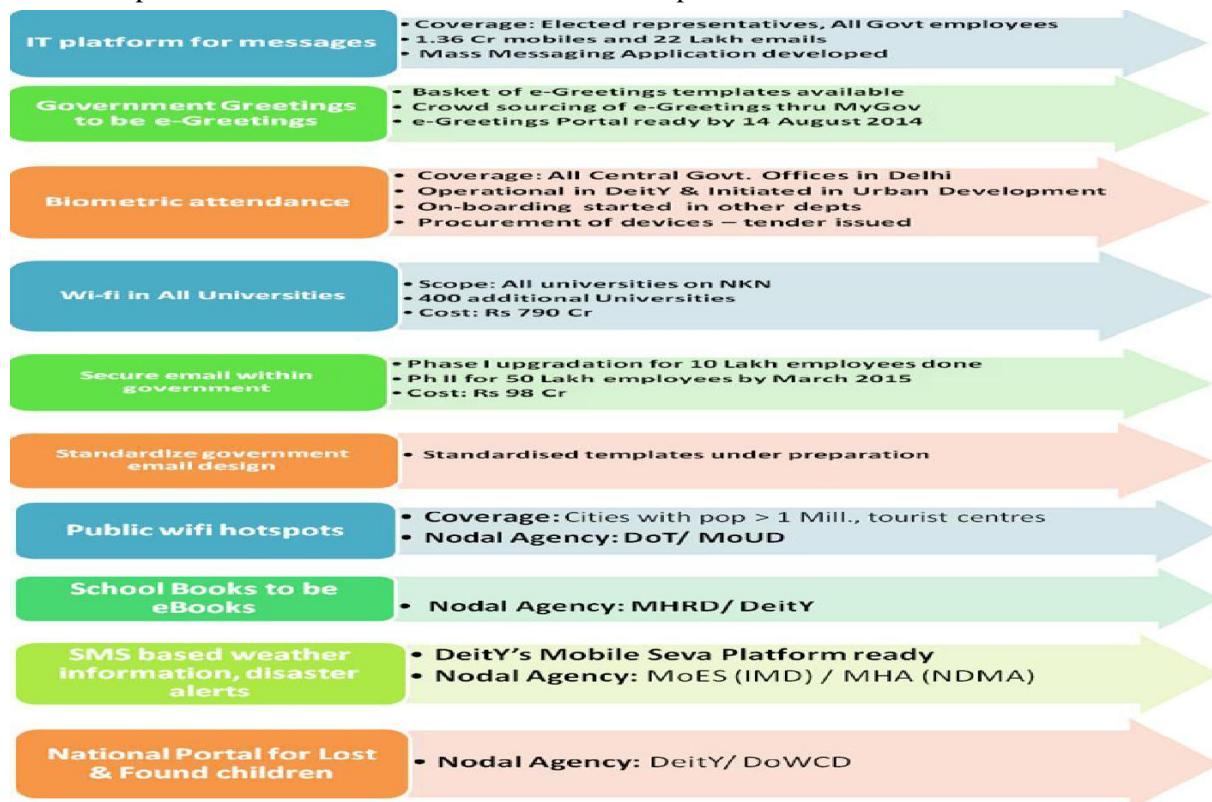


Fig: 3.5: Early Harvest Programmes

LITERATURE SURVEY: Digital India campaign is a welcome step in shaping an India of the 21st century powered by connectivity and the technological opportunity that such connectivity offers in terms of access, services. Digital India has three essence components. These include:

- Digital infrastructure creation.
- Digitally Delivering services and resources.
- Digital Education.

V. Estimated Costs and Impacts

- Overall Costs of Digital India
 - Rs 100,000 Cr in ongoing schemes (only DeitY, DOT & not incl. those in other line Ministries)
 - Rs 13,000 Cr for new schemes & activities
- Impact of Digital India by 2019
 - Broadband in 2.5 lakh villages, universal phone connectivity
 - Net Zero Imports by 2020

- 400,000 Public Internet Access Points
- Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens
- Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Jobs
- Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr.
- e-Governance & eServices: Across government
- India to be leader in IT use in services – health, education, banking
- Digitally empowered citizens – public cloud, internet access

VI. Challenges & Changes Needed

- Program on this scale never conceived. Each Pillar/program has own challenges.
- Human Resource Issues
 - NIC - not equipped for a fraction of this task (obsolesce) - needs revamping & restructuring
 - DeitY – needs program managers – at least 4 more officers at senior levels
 - Ministries – Need a Chief Information Officer / Chief Technology Officer (CIO/CTO)
 - Could begin with CIOs 10 major Ministries
 - Can be anyone – from within or outside government
 - To be patterned as AS& FAs – dual reporting
- Financial Resource Issues
 - Mostly structured around ongoing programs : Better focus, need some restructuring
 - Some others are process improvements or better utilisation of resources
 - A few new programs may be needed – particularly in Electronics manufacturing and Skill Development
- Coordination Issues
 - Program covers many other departments
 - Need commitment and effort
 - Leadership and support critical for success

VII. Conclusion: The outcome of Digital India is to produce Wi-Fi locations for people, creating job, universal phone connection, High speed internet , Digital Inclusion, e-Services, e-Governance, Digitally motivated people, National Scholarships Portal , Digital Lockers System, e-education and e-health making India to be pioneer in IT use solution. Some of the aforementioned projects are under various stages of implementation which may require some transformational process reengineering, refinements and adjustment of scoping and implementation strategy to achieve the desired service level objectives by the concerned line Ministries/Departments at the Central, State and Local Government levels.

VIII. References

“Digital India: A need of Hours “JinalJani, GirishTere Dept. of Computer Science Thakur College of Science and Commerce India

“DIGITAL INDIA AND ITS IMPACT “Dr Uma Narang, Assistant Professor, PG Department of Commerce, PG Govt. College, Sector- 46, Chandigarh

“Digital India: A Vision -Towards Digitally Empowered Knowledge Economy” , Sudhir Kumar Sharma Assistant Professor Dept. of Computer Applications, Vandana Lama Assistant Professor Dept. of Economics, NidhiGoyal Assistant Professor Dept. of Computer Applications PGGCG-42, Chandigarh.

<http://www.ibnlive.com/news/tech/digital-india-and-the-pdf-patchwork-1017055.html>

http://www.csiindia.org/communications/CSIC_April_2015.pdf

<http://digitalindiainsight.com/what-is-digital-india-campaign/>

<http://digitalindia.gov.in/content/approach-and-methodology>

USE OF ICT IN ONLINE BLENDED LEARNING

Vishakha P. Domal, Rajendra R. Patole & Mithila Satam

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: vishakha.domal@vsit.edu.in, Mobile: 9892262370

Assistant Professor Dept of Information Technology, Vidyalankar School of Information Technology Wadala, Mumbai. Email: rajendra.patole@vsit.edu.in, Mobile: 9821826845

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: mitjila.satam@vsit.edu.in Mobile: 9821073039

Abstract

Information and communication technologies (ICT) have become commonplace entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and Procedures of nearly all forms of endeavour within business and governance. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. This Traditional Non-formal education system process includes activities like admission, Personal Contact Programmes, Exam for any course in a University or Institution The use of ICT in education lends itself to more student centred learning settings along with sorting various formal and non-formal forms of education. As the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow creating a benchmark for ourselves. In this paper, a literature review regarding the use of ICT in education for Online and Blended Learning through various collaborative techniques is provided. The various techniques are Flipped Classroom Methodology, Online Education Resources. These methodologies were implemented on various students ranging from below average to above average. Along with ICT use in the teaching learning process; promoting quality and accessibility of education; learning motivation.

Keywords: Methodology, OER, Flipped Classroom Technology, Think Pair share.

INTRODUCTION: Conventional teaching has emphasized content. For many years course have been written around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favouring curricula that promote competency and performance. Curricula are starting to emphasize capabilities and to be concerned more with how the information will be used than with what the information is. Contemporary ICTs techniques are able to provide strong support for all these requirements. The integration of information and communication technologies can help revitalize teachers and students. This can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and development of intervention change strategies, which would include teaching partnerships with ICT as a tool.

- **CONVENTIONAL PROCESS OF TEACHING:** In the past, the conventional process of teaching has revolved around teachers planning and leading students through a series of instructional sequences to achieve a desired learning outcome. Typically these forms of teaching have revolved around the planned transmission of a body of knowledge followed by some forms of interaction with the content as a means to consolidate the knowledge acquisition.

The teacher's primary activity was assigning and listening to these recitations; students studied and memorized the assignments at home. A test or oral examination might be given at the end of a unit, and the process, which was called "assignment-study-recitation-test", was repeated. In addition to its overemphasis on verbal answers, reliance on rote memorization (memorization with no effort at understanding the meaning), and disconnected, unrelated assignments, it was also an extremely inefficient use of students' and teachers' time. This traditional approach also insisted that all students

be taught the same materials at the same point; students that did not learn quickly enough failed, rather than being allowed to succeed at their natural speeds.

During Class – Information Transmission is done. Here Instructor give lectures and students takes down the notes, accordingly teacher ask question and student start answering the question.

Outside class – Assimilation: In This Instructor give Problem sets and assignment to the students and these questions, problems need to be solved and submit to the teacher by the student.

Limitation of Traditional Classroom

Instructor Lecture: Here student don't pay utmost attention; they think they can understood the lecture because they are following the lecture. After lecture when instructor ask question only few high achievers can able to answer the question remaining students were left behind.

Student Ask questions: The student started asking question, this question where ask only by high achievers only and instructor/teacher thinks every student understood the topic properly

Outside class assimilation: Instructor gives set of question and Assignment which are too challenging for some students or too boring for others, possibly these question or assignment lead to copying of answers. Here student done this sometime before submission of the assignment, they not able to focus on the actual concept attainment.

Traditional Method

Information Transmission  In class

Assimilation  Outside class

ICT IN EDUCATION: Contemporary learning theory is based on the notion that learning is an active process of constructing knowledge rather than acquiring knowledge and that instruction is the process by which this knowledge construction is supported rather than a process of knowledge transmission.

According to Zhao and Cziko (2001) three conditions are necessary for teachers to introduce ICT into their classrooms:

- Teachers should believe in the effectiveness of technology.
- Teachers should believe that the use of technology will not cause any disturbances.
- Teachers should believe that they have control over technology.

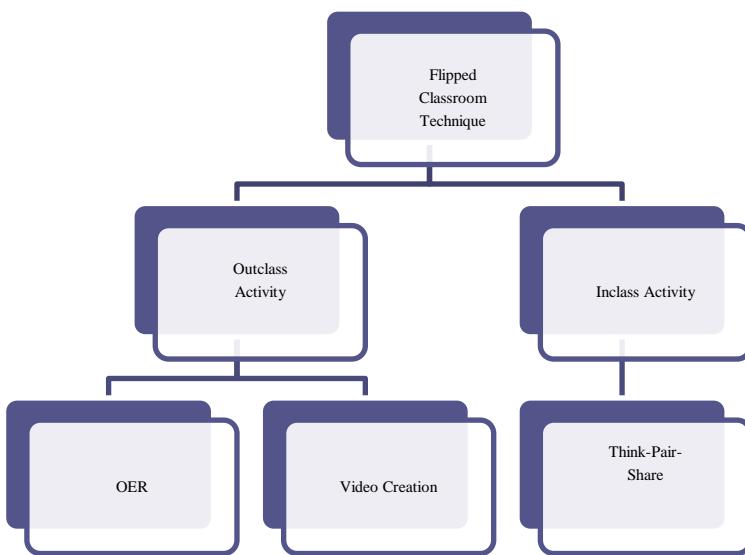
The use of ICT in educational settings, by itself acts as a catalyst for change in this domain.

The influence of the technology on supporting how students learn will continue to increase.

In this paper, we investigate the various techniques in term of quantity and quality of student engagement during the involvement in those collaborative techniques.

Following are the methods we used in Teaching and Learning

- Flipped Classroom Technique.
- Think-Pair-Share.
- Online Education Resource.



IV. FLIPPED CLASSROOM TECHNIQUE

Flipped classroom is one way to ensure that class time is spent in assimilation rather than in information transmission.

- Instructor finds or creates videos on topic.
- Student watches video before coming to the class
- Class time is spent in activities and discussions.

Flipped classroom-Does it work?

There are many studies establishing the benefits of active learning strategies. Flipped classroom that incorporate active learning reap these benefits!

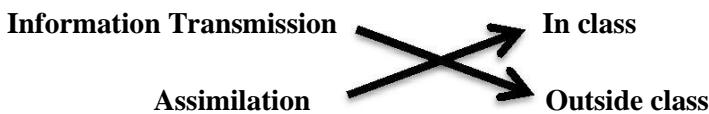
Flipped classroom with peer instruction result in significant learning gains compared to traditional instruction.(Mazur 2001)

Flipping the classroom with small group discussions can produce significant learning gains. (Weiman 2011)

Why is flipped classroom a good idea?

- [1] Class time is spent in assimilation, rather than information transmission.
- [2] Class time is spent in higher cognitive levels (analyze, apply, create) rather than lower levels (recall, understand).
- [3] Support of peers and instructor is available while working on higher cognitive levels.

FLIPPING THE CLASSROOM



An active learning method where classroom activities should have characteristics that allow students to reason through a problem, write open ended responses (such as pieces of code), work in groups and discuss solutions. Think-Pair-Share (TPS) is an active learning technique that satisfies these requirements.

The three phases in TPS are structured as follows:

- Think - the instructor poses a question to which students individually write their answers.
- Pair - students work on a well-defined task with their neighbour(s).
- Share - students engage in a class-wide discussion, sharing their answers and reasoning, and debating alternate solutions.

TPS is recommended as a teaching technique to engage learners in higher-order thinking, and as a feedback mechanism both for students and teachers [7]. However, TPS has not been widely researched and evaluated for objective evidence of student engagement or learning.

TPS Example for Huffman Compression coding

Before TPS activity start teacher will give brief about Huffman Coding method and student will Revise their concept and clear the unclear doubts.

Think Phase - [3 minutes]

Question: Compress string "Mississippi river" using Huffman compression technique. What Teacher does -

- Explain the question,
- Asks students to think about problem individually and write a solution in their notebook
- Thinks individually about how to solve the problem,
- Solve the problem in the book.

Pair Phase - [5 minutes]

Question: Discuss your solve problem with your neighbor and check who is able to compress more .

What Teacher does -

- Explain the question in brief,
- Asks students to pair up with their neighbor and discuss about their solution.
- Goes around the class to check whether students are discussing,
- Help students to solve their unclear doubts.

What students does -

- Student Pairs up with neighbor,
- Checks each others solutions,
- Those who are not cleared about concept they can solve the problem by taking help of their neighbor.
- Checks whether anyone is missing any steps.
- Calculates the total bits after compression, and find best steps to get the maximum compression.

Share Phase - [10 minutes]

Share solutions with the class to identify the best path to achieve maximum compression. What Student Does -

- Share their compressed file size with the class.
- student who is getting good maximum compression with quality can Discuss the step in class.
- Note down each of the answers in the board,summarizes the key concepts involved in this problem - Frequency calculation, hoe to build tree,bits assignment.

VI. OPEN EDUCATION RESOURCES: Open Educational Resources are freely accessible, open licensed documents and media that are useful for teaching, learning and assessing as well as for research purposes.Larsen and Vincent-Lancrin (2005) say, "The open sharing of one's educational resources implies that knowledge is made freely available on non-commercial terms,"Many resources offered by non-commercial enter-prises such as academic papers published by learned societies are nonetheless not openly accessible. They require payment of a subscription fee for access. And many resources and services offered by commercial enterprises such as Google search are widely and freely available without constraint.The definition of 'Open' is mainly depend upon 'Commercial ' and 'Non-Commercial' resources For example, Walker (2005) defines 'open' as "convenient, effective, affordable, and sustainable and available to every learner and teacher worldwide."

For example, defining the nature of resources according to their function in learning, Johnstone (2005) states "By 2004 OER was defined to include:

- Learning resources - courseware, content modules, learning objects, learner-support and assessment tools, online learning communities
- Resources to support teachers - tools for teachers and support materials to enable them to create, adapt, and use OER, as well as training materials for teachers and
- other teaching tools
- Resources to assure the quality of education and educational practices."

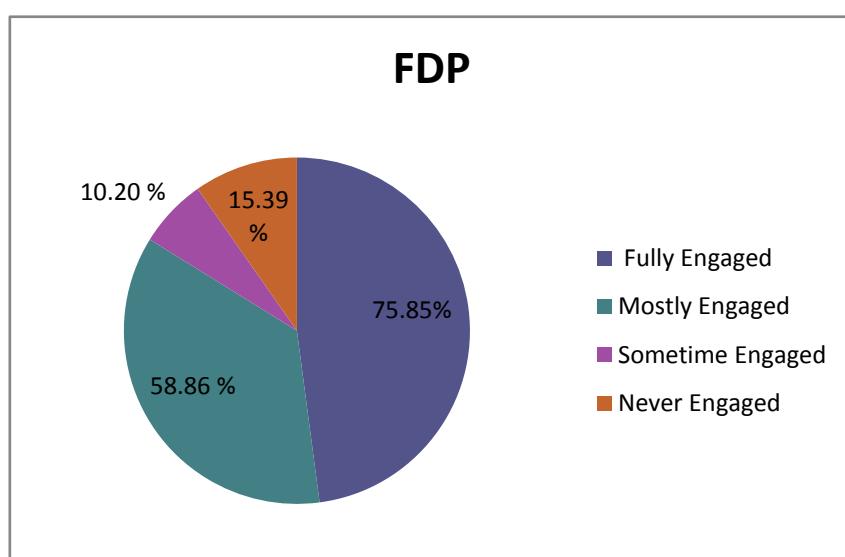
For example, a UNESCO (2002b) report includes:

1. Visiting lecturers and experts
2. Twinning arrangements, providing for international exchanges of students and academic staff
3. Imported courseware in a variety of media
4. Externally developed sponsored programmes
5. Inter-institutional programmes developed collaboratively
6. PublicationsInformation resources of the Internet

VII. OVERALL ENGAGEMENT OF STUDENTS: we began by identifying, from among the 130 students observed in each TPS activity, those who displayed desirable behaviours in all cycles of a phase. These were categorized as 'fully engaged'. Similarly we identified those who displayed desirable behaviours in fifty per cent or more of the cycles. They are categorized as 'mostly engaged'. Students who showed desirable behaviours in less than fifty percent of the cycles were categorized as 'sometimes engaged'. Those who displayed only undesirable behaviours in all cycles were categorized as 'Never engaged'. This result gives us a picture of the overall engagement of the class in the three phases of a TPS activity

Table 1: Overall engagement of student

No. Of Students=130	Think	Pair	Share
Fully Engaged	75.83%	65.03%	68.43%
Mostly Engaged	56.86%	40.23%	25.57%
Sometime Engaged	10.2%	12.53%	10.00%
Never Engaged	15.39%	7.21%	8.01%



VIII. CONCLUSION: Give students an opportunity to gain first exposure to the topic before class. Provide incentives for students to prepare for the class. Facilitate higher level cognitive activities in

the classroom. Provide mechanisms for student to get feedback from peers and instructor. The goal of this field study was to understand student behavior in an implementation of an active learning strategy, Think-Pair-Share. A major instructional implication of our study is that Think-Pair -Share is a suitable strategy to use for instructors who intend to incorporate active learning techniques in their courses.

REFERENCES

- www.nyu.edu/classes/keefer/waoe/amins.pdf
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.592.4748&rep=rep1&type=pdf>
<http://www.oerafrica.org/FTPFolder/SharedFiles/ResourceFiles/36197/33584/33564/Open%20Education%20Resources%20Serve%20the%20World.pdf>
American Bar Association.(n.d.). An overview of “open source” software licenses
<http://www.abanet.org/intelprop/opensource.html>
Creative Commons. (2006). Choosing a license. <http://creativecommons.org/about/licenses>

INTELLIGENT “EQUITY SECTOR” TRADING BASED ON TECHNICAL AND STATISTICAL METHODS

Seema Bhatkar & Sylvy Dmonte

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: seema.bhatkar@vsit.edu.in, Mobile: 9920927411

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: sylvy.dmonte@vsit.edu.in, Mobile:8097923137

Abstract

In Equity Sector the shares are issued and traded, either through exchanges or over-the-counter markets. It is one of the most vital areas of a market economy because it gives companies' access to capital and investors a slice of ownership in a company with the potential to realize gains based on its future performance. An insight of stock market trends has been an area of vast interest both for those who wish to make profit by trading stocks in the stock market. Generally there is an opinion about stock market like high risk and high returns. Even though we have a huge number of potential investors, only very few of them are invested in the stock market. The main reason is the inability of risk taking skill of investors. Though get low returns they want to save their money. One important reason for this problem is that, they don't have a proper guidance for making their portfolio. This paper discusses technical methods like GARCH, AR(1) and statistical method like regression analysis, moving averages to help investors predict future value of the stock.

Keywords: Equity, Garch, AR(1), regression

INTRODUCTION: The main components of financial market are money and capital markets. Equity market is a market that gives companies a way to raise needed capital and gives investors an opportunity for gain by allowing those companies' stock shares to be traded. The equity market can be split into two main sections: the primary market and the secondary market. The primary market is where new issues are first sold through initial public offerings (IPO). Institutional investors typically purchase most of these shares from investment banks. All subsequent trading goes on in the secondary market where participants include both institutional and individual investors. Stock market forecasting includes uncovering market trends, planning investment strategies, identifying best time to purchase the stocks and what stocks to purchase. There has been a critical need for automated approaches to effective and efficient utilization of massive amount of financial data to support companies and individuals in strategic planning and investment decision making. The focus of this paper is to introduce a tool to help investors to go about selecting stocks in a systematic way so that they select winning stocks and make a profit with minimum risk.

BACKGROUND STUDY: The analysis was done on the basis of past historical data of BSE and NSE. The recent research using regression analysis, moving averages and GARCH methods are more useful for massive data analysis of stock market. The main intention is to make wakefulness for the new contestant for stock market and also to remove the fear about stock related issues.

PROBLEM DEFINITION AND OBJECTIVE: Over the last few decades, increasingly huge amounts of past data have been stored electronically and this volume is expected to grow considerably in the future. The objective of this paper is to apply statistical and technical methods to stock data in order to classify the stock into two categories, 1) the stocks that are likely to increase in price 2) the stocks that are likely to decrease in price over the next 20 trading days.

IV. RESEARCH METHODOLOGY: Regression Analysis: Regression analysis is a statistical tool for the investigation of relationship between variables. It includes techniques for modeling and analyzing several variables, when the focus is on relationship between a dependent variable and one or more independent variables. On today's stock exchange one of the most common analysis tools is the regression channel. It uses historic values to forecast the future. The regression channel is based on a form of chaos theory i.e. trying to predict something that springs from total chaos. Regression channels

are based on the same principle they use a share's closing price and the channel's boundary is the chaotic attractor, which the share price is not allowed to cross for a longer period of time. If the share moves outside the regression channel it indicates that an unforeseen event has occurred, such as positive or negative news or a new price target has been released and it is time to sell or buy the share. One of the most common regression channels in use today is the Raff Regression Channel. It uses time and closing price to draw up the channel. A regression line is created by analysing a share's closing price between certain days, say for example 100 days. Once the regression line is drawn two more parallel lines are drawn, one above the regression line and one below it, at equal distance from the regression line, see the figure below. The distance is determined by the highest or lowest share closing price from the regression line during the 100 days analyzed. The top line is seen as resistance and the bottom line is seen as support. The share may cross these two lines for a short moment but if it stays outside for a longer period of time it indicates that a new trend is coming. BHEL Share Price

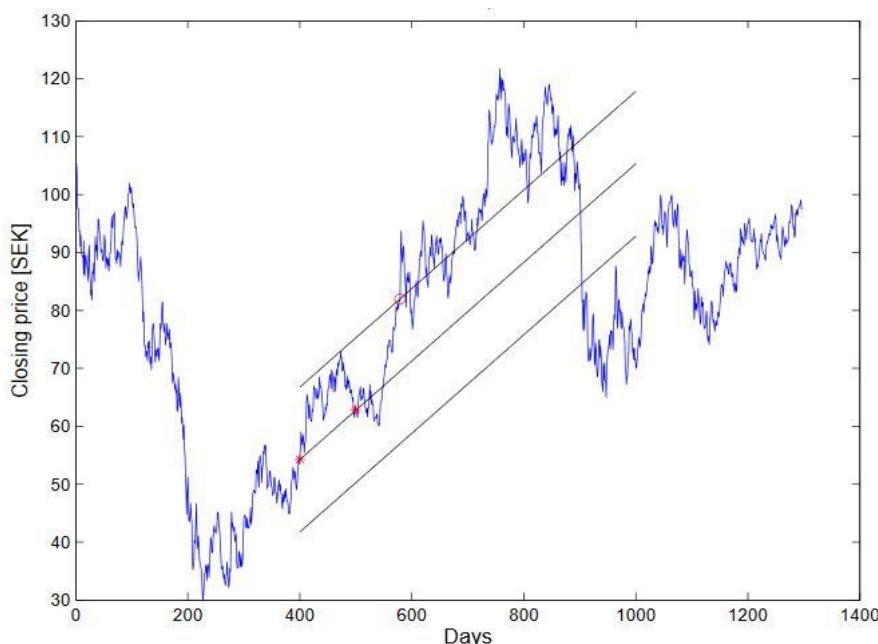


Figure 1: Raff Regression channel with 100 days analyzed of BHEL Share between 2008-01-02 to 2013-02-21. As seen in Figure 1 the 100 days analyzed is between day 400 and day 500, marked with two red stars. In this case it was the maximum value at day 473 that set the distance between the resistance line and the regression line. The red circle at day 579 indicates the point in time when something unexpected happened and it was time to sell the shares and collect the profit.

2. Moving average: The moving average (MA) is a simple technical analysis tool that smooths out price data by creating a constantly updated average price. The average is taken over a specific period of time, like 10 days, 20 minutes, 30 weeks, or any time period the trader chooses. Moving average strategies are also popular and can be tailored to any time frame, suiting both long term investors and short-term traders. A moving average can help cut down the amount of "noise" on a price chart. Look at the direction of the moving average to get a basic idea of which way the price is moving. Angled up and price is moving up (or was recently) overall, angled down and price is moving down overall, moving sideways and the price is likely in a range. A moving average can also act as support or resistance. In an uptrend a 50-day, 100-day or 200-day moving average may act as a support level, as shown in the figure 2. This is because the average acts like a floor (support), so the price bounces up off of it. In a downtrend a moving average may act as resistance; like a ceiling, the price hits it and then starts to drop again.



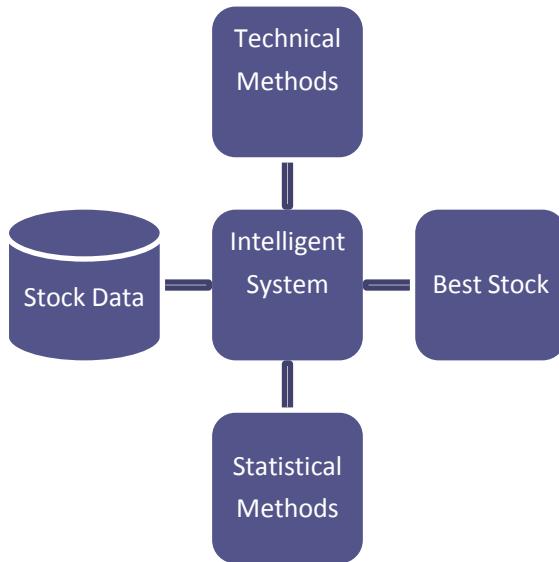
The price won't always "respect" the moving average in this way. The price may run through it slightly or stop and reverse prior to reaching it. As a general guideline, if the price is above a moving average the trend is up. If the price is below a moving average the trend is down. Moving averages can have different lengths though (discussed shortly), so one may indicate an uptrend while another indicates a downtrend.

AR(1) Model: In a multiple regression model, we forecast the variable of interest using a linear combination of predictors. In an autoregression model, we forecast the variable of interest using a linear combination of past values of the variable. The term autoregression indicates that it is a regression of the variable against itself. Autoregressive is a stochastic (having a random probability distribution or pattern that may be analysed statistically but may not be predicted precisely.) process used in statistical calculations in which future values are estimated based on a weighted sum of past values. An autoregressive process operates under the premise that past values have an effect on current values. A process considered AR(1) is the first order process, meaning that the current value is based on the immediately preceding value.

GARCH: The generalized autoregressive conditional heteroskedasticity (GARCH) process is an econometric term developed in 1982 by Robert F. Engle, an economist and 2003 winner of the Nobel Memorial Prize for Economics, to describe an approach to estimate volatility in financial markets. The GARCH process is often preferred by financial modeling professionals because it provides a more real-world context than other forms when trying to predict the prices and rates of financial instruments. GARCH models help to describe financial markets in which volatility can change, becoming more volatile during periods of financial crises or world events and less volatile during periods of relative calm and steady economic growth. On a plot of returns, for example, stock returns may look relatively uniform for the years leading up to a financial crisis such as the one in 2007. In the time period following the onset of a crisis, however, returns may swing wildly from negative to positive territory. Moreover, the increased volatility may be predictive of volatility going forward. Volatility may then return to levels resembling that of pre-crisis levels or be more uniform going forward. A simple regression model does not account for this variation in volatility exhibited in financial markets and is not representative of the "black swan" events that occur more than one would predict. GARCH processes, being autoregressive, depend on past squared observations and past variances to model for current variance. GARCH processes are widely used in finance due to their

effectiveness in modeling asset returns and inflation. GARCH aims to minimize errors in forecasting by accounting for errors in prior forecasting, enhancing the accuracy of ongoing predictions.

Proposed System



This document is a template. An electronic copy can be downloaded from the conference website. For questions on paper guidelines, please contact the conference publications committee as indicated on the conference website. Information about final paper submission is available from the conference website. An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it. Bullets and formatting can be done as per the choice

REFERENCES

- MARČEK, D.: *Stock Price Prediction Using Autoregressive Models and Signal Processing Procedures. Proceedings of the 16th Conference MME'98, Cheb 8.-10.9.1998 (114-121)*
- McCulloch, W. and Pitts, W. (1943). "A logical calculus of the ideas immanent in nervous activity". *Bulletin of Mathematical Biophysics*, 7:115 - 133.
- Desai, V. S., &Bharati, R., (1998). A comparison of linear regression and neural network methods for predicting excess returns on large stocks. *Annals of Operations Research*, 78, 127–163.
- H. Li. "Predicting Business Failure Using Classification and Regression Tree: An Empirical Comparison with Popular Classical Statistical Methods and Top Classification Mining Methods". *Expert Systems with Applications*, 37 (8), pp.5895-5904, 2010.
- C.A. Hargreaves; H Yi; "Does the Use of Technical & Fundamental Analysis Improve Stock Choice? : A Data Mining Approach applied to the Australian Stock Market". *Statistics in Science, Business and Engineering (ICSSBE) International Conference Proceeding. IEEE Explore Digital Library*, pp.1-6, 2012
- Jung-Hua Wang; Jia-YannLeu Stock market trend prediction using ARIMA-based neural networks *Neural Networks*, 1996., *IEEE International Conference on Volume 4, Issue , 3-6 Jun 1996 Page(s):2160 – 2165 vol.4*.

DIGITAL MARKETING

Yamini Arun Sawant

B.M.S. Dept., D. G. Ruparel College, Matunga West, Mumbai, India yamini_18@ymail.com

Abstract

This paper throws light on digital marketing. It will showcase on its trends from past, present as well as will guide to future in the globalized world. As marketing has become the very important tool for every industry to reach the consumer, it has become complicated as to decide what is the rather which is the right medium of marketing. As the world has drastically modernized in the last decade, digital media has reached each and every home and hence become a very important vehicle for marketing. This paper will cover digital marketing types, few live as well as practical examples. The 'Digital India' programmes, an initiative of honourable Prime Minister Mr. Narendra Modi, will emerge new progressions in every sector and generates innovative endeavours for geNext. The motive behind the concept is to build participative, transparent and responsive system. Today, every nation wants to be fully digitalized and this paper strives to provide equal benefit to the user and service provider.

Keywords— marketing on digital platform, latest developments and strategies, types, importance of digital marketing expense.

Objective –

- i. To focus on the current digitalized market and its various types.
- ii. To see that how and who will the digital marketing benefit financially.

Data collection –The secondary data has been collected. For this purpose, various websites and books have been used as it is a conceptual paper. Thus, the focus is to know more about the concept, its application and the impact on the market and the consumers. Therefore, only qualitative data have been used.

Introduction of Digital marketing

Digital marketing is an umbrella term for the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium. Digital marketing was implemented in 1990.

Marketing on Digital platform

Ease of access: Information is easy to access at a fast rate through the use of digital communications. Users with access to the Internet can use many digital mediums, such as Facebook, YouTube, Forums, and Email etc. Through Digital communications it creates a Multi-communication channel where information can be quickly exchanged around the world by anyone without any regard to whom they are.

Competitive advantage: To reach the maximum potential of digital marketing, firms use social media as its main tool to create a channel of information. Through this a business can create a system in which they are able to pinpoint behavioral patterns of clients and feedback on their needs. Effective use of digital marketing can result in relatively lowered costs in relation to traditional means of marketing lowered external service costs, advertising costs, promotion costs, processing costs, interface design costs and control costs.

Effectiveness: Brand awareness has been proven to work with more effectiveness in countries that are high in uncertainty avoidance, also these countries that have uncertainty avoidance; social media marketing works effectively. Brands that represent themselves in an anthropomorphizing manner are more likely to succeed in situations where a brand is marketing to this demographic. Moreover, digital platform provides an ease to the brand and its customers to interact directly and exchange their motives virtually.

Latest developments and strategies: As digital marketing is dependent on technology which is ever-evolving and fast-changing, the features which are to be expected from digital marketing

developments and strategies are as below:-

1. Segmentation: More focus has been placed on segmentation within digital marketing, in order to target specific markets in both business-to-business and business-to-consumer sectors.

2. Influencer marketing: Important nodes are identified within related communities, known as influencers. This is becoming an important concept in digital targeting. It is possible to reach influencers via paid advertising, such as Facebook Advertising or Google Adwords campaigns, or through sophisticated sCRM (social customer relationship management) software, such as SAP C4C, Microsoft Dynamics, Sage CRM and Salesforce CRM. Many universities now focus, at Masters Level, on engagement strategies for influencers.

To summarize, **Pull** digital marketing is characterized by consumers actively seeking marketing content while **Push** digital marketing occurs when marketers send messages without that content being actively sought by the recipients. Various methods are given below:-

- 1. Online behavioral advertising:** It is the practice of collecting information about a user's online activity over time, "on a particular device and across different, unrelated websites, in order to deliver advertisements tailored to that user's interests and preferences"
- 2. Collaborative Environment:** A collaborative environment can be set up between the organization, the technology service provider, and the digital agencies to optimize effort, resource sharing, reusability and communications. Additionally, organizations are inviting their customers to help them better understand how to service them. This source of data is called User Generated Content.
- 3. Data-driven advertising:** Users generate a lot of data in every step they take on the path of customer journey and Brands can now use that data to activate their known audience with data-driven programmatic media buying. Without exposing customers' privacy, users' Data can be collected from digital channels (e.g.: when customer visits a website, reads an e-mail, or launches and interact with brand's mobile app), brands can also collect data from real world customer interactions, such as brick and mortar stores visits and from CRM and Sales engines datasets. Also known as People-based marketing or addressable media, Data-driven advertising is empowering brands to find their loyal customers in their audience and deliver in real time a much more personal communication, highly relevant to each customers' moment and actions.
- 4. Remarketing:** Remarketing plays a major role in digital marketing. This tactic allows marketers to publish targeted ads in front of an interest category or a defined audience, generally called searchers in web speak, they have either searched for particular products or services or visited a website for some purpose.
- 5. Game advertising:** Game ads are advertisements that exist within computer or video games. One of the most common examples of in-game advertising is billboards appearing in sports games. Businesses can now use social media to select the age range, location, gender and interests of whom they would like their targeted post to be seen by.

Various types of Digital marketing

Search Engine Optimization (SEO): SEO is one of the first and still strongest types of digital marketing that has come across. 94% of all the clicks in search results go to organic listings – not PPC. The methods have changed over the years; but the aim is still generally the same. Get you higher up in the list when your customers do Google searches.

Pay Per Click Advertising (PPC): When people refer to pay per click advertising, they are likely talking about the 'sponsored' links you often see in Google searches; however they may also be referring to ads in other search engines too, like Yahoo or Bing

Social Media Marketing: Social media marketing is a great way to get exposure and connect with your customers. Talking with your customers directly is a great way to get them to know, like and

trust which is ultimately the best way to make a sale, and maybe even a brand advocate.

Content Marketing: Content marketing is like all the best bits of digital marketing – wrapped up into one big cuddle.

Affiliate Marketing: Affiliate marketing is where one sits back and relaxes and let someone else do the marketing. The only catch is, if they bring in a sale –the profits is meant to be shared.

Viral Marketing: Viral marketing is that when one can get some content of their product or service to go viral and it could turn the business into an overnight success.

Importance of managing digital marketing expenses: With more than 80 % of the world using smart phones, marketing leaders are boosting budgets to define markets and attract, acquire and retain customers. But with great power, comes great responsibility. Increased funding puts enormous pressure on marketers to deliver along with bringing new opportunities. According to a survey, companies tend to spend 10.4% of their annual revenue on marketing activities including salaries, and both traditional and digital marketing costs, in addition to a capital budget used to acquire marketing software licenses and the infrastructure (servers and storage) to run it on. When customers shift to a digital market for every need, spending has to shift to cater to digital marketing. Digital marketing operating budgets personnel costs, contract labor, software as a service and external marketing services such as agency creative services, search, website design, content creation and management, social and mobile marketing. So many avenues make it hard to count and allocate digital marketing spending as digital and traditional marketing techniques are merging and even harder to keep track of the spending. The tremendous pressure to create, manage and distribute content for multiple marketing activities through the right channel is ever raising as customers use more digital channels for collaboration, researching and acquisition of products and services. Digital Marketers are also increasingly investing in technology to channelize the customer experience across social, mobile, commerce and website channels; integrate and analyze data from an increasing number of sources to get a better understanding of customers (Eg. Netflix analytics); enhanced marketing campaigns and programs, such as a mobile app, paid search marketing and social marketing. (Eg. Boosting a post through a Facebook page) Having established that an increasing amount of spending is being dedicated to digital marketing every day, it becomes extremely important to keep a track of this spending. As yourself three simple questions:

- Am I spending on the right strategy? If a large portion of your budget is dedicated to an outdated strategy, you need to put a stop on it right away.
- Is the spending enough? Keep a track of the amount spent versus returns gained (in terms of number of customers on boarded v/s cost of acquisition per customer).
- Which budget should I increase? Analogous to reducing expenses in an outdated, it is important to readjust the budget of a successful strategy to keep reaping benefits from it.

Conclusion: Thus, it can be seen the term digital marketing was used with the launch of Archie-first web search engine in 1990 and the first e-commerce transaction over net market was started in 1994.

Unbox therapy-has the highest subscriber and is the top most channel when it comes for marketing of electronic products. Depending on views YouTube earns the money, secondly the company approaches the YouTube to promote it's product online through video from which it earns a lot and they even earn for the advertisement of different companies, like food and tech, before the video begins. Big digitalized companies like Amazon, Snapdeal and Olx used digital marketing to promote and sell their products. Amazon is advertising their new service called as the Amazon prime by giving 30 days free trial period. There are not only apps to sell their apps of their products to their consumers but also other apps like gaming apps. For example, Minimilitia app, Candy crush app which initiates in marketing on other product's website just by giving popups of their apps. They also get sponsorship for carrying out such activities. This is how the digital marketing is carried out.

References**Websites-**

<http://popcontent.co.uk/different-types-of-digital-marketing/>
<http://www.zeading.com/story/importance-of-managing-digital-marketing-expense>
<https://medium.com>

Books-

Marketing Management by Philip Kotler published in 2009
Digital Marketing- Strategies for online success by Godfrey Parkin published in 2009
The Art of SEO: Mastering Search Engine Optimization By Eric Enge published in 2009

TO PROMOTE “DIGITAL CONCEPT” IN PRIMARY AND SECONDARY EDUCATION SECTOR IN INDIA

Ms. Kutty Sana Asar

Abstract

This research paper is aimed to explore various area of going Digital in primary and secondary education sector. As per state Board syllabus, students are only focusing on theory aspects of their subject where quality of education is degrading day by day. If we focus on to improve quality from primary section then it will lead to improve secondary section and surely it will improve literacy rate. Although India has raised its current literacy rate of 75% (2016) from 12% at the time of Independence in 1947, its still lag behind the world average literacy rate of 84%. Compared with other nations, republic of India has the largest illiterate population.

(www.indianonlinepages.com/population/literacy-rate-in-india.html). In recent years reference to ‘digital technology in the classroom’ (DTC) can be taken to understand digital processing systems that encourage active learning, knowledge construction, analytical thinking, inquiry, and exploration on the part of the learners, and which allow for remote communication as well as data sharing to take place between teachers and/or learners in different physical classroom locations. This paper is aimed to explore opportunities to improve quality of education in state board so as to reduce the number of dropouts in school and giving flexibility for students to access resources according to their time and availability those who are working with the help of digital library concept.

B. Review of Literature: As we go with the statistics over 460 million internet users, India is the second largest online market ranked only behind China. By 2021, there will be about 635.8 million internet users in India. Furthermore men dominated internet usage in India with 71 percent to women's 29 percentage. (www.statista.com). With statistics it is clear that Internet is not a barrier in today's time. Internet should be integrated with primary and secondary education so as to enable analytical thinking among young students. There has been many initiative. The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. (<http://digitalindia.gov.in/content/about-programme>)

It was launched on 1 July 2015 by Prime Minister Narendra Modi. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India consists of three core components. These include:

- The creation of digital infrastructure
- Delivery of services digitally
- Digital literacy

https://en.wikipedia.org/wiki/Digital_India)

a. Facts and statistics related to School dropout in India.

Date: Jul 15, 2016.

<http://timesofindia.indiatimes.com/india/At-47-million-India-has-the-most-adolescent-school-dropouts/articleshow/53219039.cms>

- **A joint study by Unesco Institute** for Statistics and the Global Education Monitoring Report has found that 47 million adolescents in India have not progressed to upper secondary school.
- As per the data, the country has the highest number of out-of-school adolescents in the world.
- Sharing India specific data, the report also highlighted that 2.9 million children have not attended school at all, which is the third highest number of out-of-primary school children in a country after Nigeria and Pakistan.
- A key obstacle to achieving the agreed target is persistent disparities in education participation linked to sex, location and wealth.

Also girls are more likely than boys to never set foot in a classroom, despite efforts made and progress achieved over the past two decades -- 15 million girls of primary school age will never get the chance

to learn to read or write in primary school compared to about 10 million boys. Over half of these girls - 9 million - live in sub-Saharan Africa.

Hence it is very clear that if we improve the foundation of our young children then it will take nation to improve the quality of education successively.

Since many students are enrolled in BMC schools due to poverty. It will be a best place to start the integration so that more and more students get associated with government schools.

b. Facts and statistics related to BMC drop outs.

Date: Tue, 22 Dec 2015

(<http://www.dnaindia.com/mumbai/report-enrollment-in-mcgmschools-drops-by-9-in-5-years-2158324>)

[Praja Foundation managing trustee Nital Mehta (L) and project director Milind Mhaske at a press conference on Monday (DNA - Fariha Farooqui)]

As many as 44 per cent parents of Municipal Corporation of Greater Mumbai school students are dissatisfied with the quality of education, while 42 per cent are not happy with the teachers, according to a Praja Foundation study. The study also showed that the enrollment of students is **increasing** by the year in English medium schools run by the Brihanmumbai Municipal Corporation (BMC), known as **Mumbai Public Schools (MPS)**, while the vernacular enrollment is dropping. Praja's latest white paper on state of education in BMC schools reveals the condition is same year after year, with no significant improvement. The study also revealed that BMC schools enrollments are still decreasing. The number of enrolment in MPS schools, however, is going up. In the last five years, enrollment in schools run by MCGM has dropped by around 40,778 students, an aggregate drop of 9 per cent. The Class I enrolment is decreasing at a more alarming rate than ever, according to the study. Nitai Mehta, founder and managing trustee of the Praja Foundation, said, "If we want to make this country a knowledge economy and want programmes such as digital India, smart cities and skill India to be successful, **the basic education of the country should be improved, especially at the primary level.**

Objective of study

1. To understand the practical implication of the subjects.
2. To create strong foundations of children from primary and secondary section itself.
3. To find the measures to reduce the drop out of children from primary and secondary sections.
4. To promote digital class room concept in BMC School as with statistics it is clear that there is a huge increase in as **Mumbai Public Schools (MPS)** - English medium government school.
5. To promote digital library for "All" by creating it within schools by teacher and students.

Suggestions

- Important measures to promote digital concept in primary and secondary sector**
- Empowering educated teachers
For children to get quality education, they need to have an educated and dedicated teacher. Private schools and prominent government schools may have an endless supply of highly-qualified teachers to teach their students. But in the case of underprivileged children, they may have a hard time finding educated individuals who are willing to teach them. This is mainly due to the minimal or zero pay.
- ICT should not be considered as separate subject instead its implementation should be included in all subjects so as to enable open learning and e-learning for children.

How to use digital concept in primary and secondary section.

1. Languages

Students should be shown basic conversation of their language in classroom and students should be encouraged to do the same and do either audio or video recording for the same which teacher can show in classroom. With these children will learn the language and will also how to use mobile phone in productive manner. With this Teacher can create portal and upload the same on website where other students can also get benefit. I am sharing one of the interesting easy English conversations for primary section children.

Mark Kulek - Easy English Conversation

(<https://www.youtube.com/playlist?list=PLD-YxwW2jAGyCb9dfDqKKGnDPlfwxkp7C>) Like this interesting videos can be created for other languages by teacher and shown in classroom. Since these materials are viable for students through website, students can even learn them at their available time. Here important role is played by teacher because she has to take steps for creating of valuable resource s for study materials.

W) Science, Mathematics

Many children find mathematics difficult so to make it simpler, teacher can take following efforts.

(Early learning toys- <https://www.facebook.com/thedadlab>)

Teacher can go through the above link to explore videos for Educational Toys, Fun Activities and Science for Children. Where children will learn through by experimenting various science and mathematics concepts.

(Smart Learning for All- <https://www.youtube.com/channel/UCobgOt3poNKIml3Y5TnVU8Q>)

Here also teacher and children can explore various concepts of basics of mathematics and science.

□ **History, Civics, Geography and Economics:** Many children's are learning these subjects only for exam purpose and hence we are lacking to explore our own history. Many children are unaware of geographical distribution of country and at the same they have least knowledge about civic and economics. History subject can be shown like a movie covering world war, Indian freedom history, Mughal Empire and many more. Once students studies these videos, students themselves should be encouraged to give presentation what they learnt and recording can be done for the same and like this we can also create portal of the subjects and made available to other children. Historical places should be shown in videos like virtual visit. Children must also be given to explore various historical places like self-learning and audio recording and report writing must be done and should be available for others to access. Students will also learn and take inspiration from other works. Civics and economics subjects should be explored with recent updates in nation through news channel updates like current Rajyasabha, Lokshabha, and Parliament. Duties of Prime minister, President should be explained by showing what current Prime minister, Presidents are doing for the nation. It will also help students to keep themselves updated with current economics of the country. Hence we are building foundation of our children with strong bricks of knowledge domain.

□ **Chemistry, Biology and Physics:** As in CBSE syllabus these subjects are introduced to children at very early stage similar pattern should be applied to Maharashtra board or local board. Children from secondary section itself should be given hands on practical session. Even if school is not capable of giving practical session at least teachers can show study materials including presentation and videos. I am listing down few useful links to explore about subjects.

(amritacreate:<https://www.youtube.com/channel/UCBsy7f40NzuWOhP3YdyyBjA>)

E. Conclusion: Digital literacy is not simply maintaining and developing a familiarity with computers, the internet and the possibilities afforded by incorporating ICT – it is more about future proofing learning, keeping teaching accessible and relevant to pupils, and extending and embedding key skills and concepts into pupils lives – both in and out of school. Governments should also take initiative to impart digital skills for teachers and should keep workshops and seminars in order to make teachers equipped with digital medium. Many NGO's have started mobile class room concept for those children who are unable to pursue school due to poverty where they have to work like Children of laborer. Government should also start mobile class room concept through digitally enabled vehicles where such students are given education at their convenient time.

Teachers might face difficulties at the beginning but once they are used to it and completer year in these then they will have following results with them

- Links to all useful websites, youtube videos and presentations for these to be available to students, schools should have their own website where all these resource materials should be uploaded in student zone.
- Recorded videos, audio and presentations of student's activity. These will also help to physically challenged students in class like blind students will also get benefits through audio recording.
- With these teachers must have already created digital library for next year session.
- Nation will have qualified teacher along with improved quality with digital medium.
- It will also reduce the gap related to theory and practical aspects of subjects.
- Students will also learn to use digital medium from their early childhood itself.
- Children will be able to connect and collaborate with other students and teachers outside their school and even across the world.
- Children will be able to understand challenging concepts in virtual worlds that would not otherwise be possible
- Easy access to the huge range of resources available on the internet to support learning (websites, apps and more

MOTIVATION OF USING COGNITIVE RADIO (CR) NETWORKS WITH UNMANNED AERIAL VEHICLES (UAVS) FOR BORDER PATROLLING

Payal Bhavik Shah & Snehal Raju Tandale

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: payal.shah@vsit.edu.in Mobile: 8082716844

Assistant Professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: snehal.tandale@vsit.edu.in Mobile: 9920206644

Abstract

Unmanned aerial vehicles are used in applications which are dangerous for human to operate or which does not require human operator. These Unmanned aerial vehicles operate on unlicensed band. With recent developments in technology many portable devices have been developed which operates on the same unlicensed band. These unlicensed band have become congested and UAVs may be left unattended due to spectrum scarcity. CR provides with the solution for solving the problems caused by spectrum scarcity. The paper focuses on the motivation of using CR with UAVs. One of the applications discussed is border patrolling where CR with UAVs technology can be used because conventionally Border Patrol System suffers from intensive human involvement. Our main objective is to showcase the need associated with the integration of CR with UAVs technology.

Keywords: Cognitive radio (CR), Unmanned aerial vehicles (UAVs), Drones, Border patrol, surveillance.

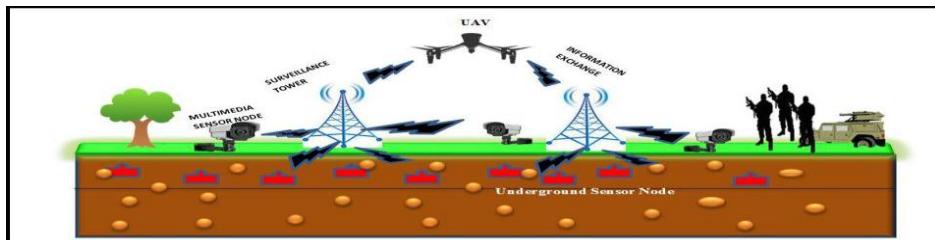
I. INTRODUCTION

Overview of Unmanned Aerial Vehicles

Unmanned aerial vehicle(UAV), is called as ‘unmanned aircraft vehicle’ (G, 2007) indicates such airplane which operates remotely and autonomously without a human pilot. UAV is a power driven airplane. Unmanned missile or bomb does not belong to this classification as they are designed for a single use only and are not reusable, but a remote controlled aircraft is considered as a UAV. Using UAV, the life of a pilot in risky environments is no longer in danger. UAV has embedded sensors and cameras, which perform surveillance. Therefore, instead of human pilot the navigation is performed by an auto pilot. Today, the weight of operating UAVs ranges from 100 to 1000 pounds which can fly as high as about 6000ft (Chao H, 2008) UAVs were mainly developed for military purposes. Primarily, the maintenance and development of UAVs was too expensive, which make them difficult for citizens to use. Nevertheless, the emergence in high power density batteries, powerful processors, equipment, long range radio devices, low power and inexpensive air frame cut off resulted in an increasing interest in the development of small, flexible, versatile, relatively less expensive and easily installable UAVs (McGarry S, 2013) which may be deployed in many applications. Some of the applications are traffic surveillance, crop monitoring, remote sensing, disaster management and image acquisition. Since these applications are small and inexpensive in nature, they are affordable to researchers and provide them a different viewpoint in the environment and ease in remote sensing close observation of objects (Haddal CC, 2010).

II. BORDER PATROLLING: The requirement of national security has increased the demand and interest of border patrol systems. A lot of human involvement was required in the traditional approach of border patrolling. There are security check and border troops (Han Z, 2009) . Security check points are required on international roads in order to monitor incoming and outgoing vehicles for unlawful activities. A border troop is a cluster of humans, liable for monitoring and controlling a detailed region of the border, who patrol the region allowing to a pre-specified time interval and route. Several surveillance tools have been proposed for live border patrolling with minimal human involvement and high accuracy. A similar scheme is proposed in Sunet (I.F. Akyildiz, 2007) known

as 'BorderSense', which is based on hybrid wireless sensor networks and UAVs. Sensor nodes are used for the recognition of intruder or illegal border crossing and UAVs are used for tracking the intruder (Elston J, 2009) . It reduces the involvement of intensive human resources due to high mobility and large coverage of UAVs. Thus, human resources can be allocated to take decision based on the information received from UAVs. There are three layers in Border Sense as presented in the following figure. At the lowest layer, underground sensor nodes are placed which provide higher granularity for surveillance. At the second layer, multimedia sensor nodes, armed with video cameras or night vision scope, are deployed for providing visual information and improving the accuracy of the system. Lastly, at the third layer, UAVs are deployed in order to track intruders based on the information of underground sensor nodes and support in catching them by border patrol agents. For example, as shown in Fig. , when ever underground/ multimedia sensor nodes detect the intrusion, they report it to the surveillance tower. The surveillance tower then sends the route and speed of the intruder to the nearest UAV and keeps on monitoring the location of the intruder and updating it to UAV. After UAV obtains information of intruder from surveillance tower it starts tracking it and uninterruptedly sends the location of the intruder to border patrol agents in order to catch the intruder. It is important that before intruder moves out of monitoring area of surveillance tower, the UAV must reach it and start its tracking. Here, arises the need of CRT because in this application, there are two tasks of UAVs. First job of UAVs is to continuously monitor the intruder and second job is to report the location of intruder to border patrol agents. So, if the operating spectrum band of UAV is over crowded or it is jammed by the intruder, then UAV cannot longer monitor and track the intruder, and later cannot report its location. Therefore, if UAVs are integrated with CRT, they can dynamically switch to their available spectrum bands by first Sensing the spectrum then performing the Spectrum Analysis and at last Spectrum Decision (Rehan Ahmed, 2010) and can continuously monitor and report the location of the intruder to border patrol agents.



Overview of Cognitive Radio: A cognitive radio is an intelligent radio that can be configured dynamically. Its transceiver is designed in such a way that it uses the best wireless channels from its surrounding. Such radio automatically detects available channels in wireless spectrum and then automatically changes its transmission or reception to allow more simultaneous wireless communications in a given spectrum band at one location. There are two types of holders or users, first is the licensed holder or the primary user and the second is the unlicensed holder or the secondary user.

The primary user is being assigned a fixed spectrum band and they use it during their allocated time without any interference or disruption. A large part of spectrum has been already allocated to licensed holders and there is spatial and temporal variance in use of the spectrum band. The secondary user either use the licensed spectrum or the unlicensed spectrum depending upon its availability. However, a secondary user can use a licenced spectrum only when it is available. If a primary user wants to use its spectrum band which is currently been used by the secondary user, the secondary user should vacant this band and either switch to another available band or wait until the primary band completes its activity to avoid any interruption. Cognitive radio is an evolving technology which helps to overcome the shortage of the unlicensed bands 2.4 GHz and 5GHz. It has been observed by the Federal Communication Commission (FCC) that many licensed spectrum bands for example the TV bands are not utilized fully and the unlicensed spectrum bands are over utilized. This concept of

underutilization of the licensed spectrum band with the overutilization of the unlicensed spectrum gave rise to cognitive radio.

III. NEED OF COGNITIVE RADIO WITH UNMANNED AERIAL VEHICLES: UAVs operates on unlicensed spectrum band. The use of portable devices such as smartphones, PDAs, tablets, walkie-talkies have been increased and they too operate on unlicensed spectrum band. The wireless networks such as Bluetooth, Wi-Fi, Wi-Max are also depended on these unlicensed spectrums. However due to high demand of spectrum, the supply becomes very difficult as the spectrum are scarce. These technologies are highly depended on the availability of the spectrum. To overcome the shortage of spectrum scarcity, the Federal Communications Commission came up with a solution of allowing unlicensed devices to use licensed spectrum with only condition to be meet is that Primary Users(PUs) should not be interfered. This gave rise to dynamic spectrum access also called as Cognitive Radio(CR). CR provides UAVs a solution for effectively using licensed or unlicensed spectrum bands. As CRT allows the UAVs to effectively use spectrum bands i.e. dynamic spectrum access it provides with the following advantages: -

- Interference with other operating devices is reduced to a greater extent due to which there is a lower delay and rate at which the packets are delivered are high.
- Depending on the Quality of Service (QoS) required for the application, the CR can accordingly select the spectrum band. For example, Multimedia application requires timely delivery of data where loss of packet is acceptable and for File Transfer application there should not be any loss of data.

CONCLUSION: In this paper, a hybrid wireless sensor architecture is introduced for border patrolling in order to reduce the human involvement in dangerous operations. Border Patrol is a system that uses unmanned aerial vehicles, underground sensors, multimedia sensor nodes, video cameras and surveillance towers. The unmanned aerial vehicles operate on unlicensed spectrum bands; however, these unlicensed spectrum bands are used by many portable devices due to this reason there is a shortage of spectrum band. We have discussed the integration of using Cognitive Radio technology for Unmanned aerial vehicle, where cognitive radio helps to overcome the spectrum scarcity. Our further research addressing would be on the possible attacks that could be possible after integrating CR with UAVs.

References

- [1] Chao H, B. M. (2008). *Multi UAV based cooperative remote sensing*. IFAC world Congress.
- [2] Elston J, A. B. (2009). *Distributed atmospheric sensing using small uas and doppler radar*. Aerospace conference. Seattle, WA: AIAA Infotech.
- [3] G, C. (2007). *Simulation modelling and analysis of a border security System*.
- [4] Haddal CC, G. J. (2010). *Homeland security:Unmanned aerial vehicles and border surveillance*., (p. DTIC document).
- [5] Han Z, S. A. (2009). *Movement of unmanned air Vehicles*.IEEE Trans Veh Technol.
- I.F. Akyildiz, K. C. (2007). *A survey on wireless multimedia sensor networks*.Elsevier.Computer Network Journals.
- [6] McGarry S, C. B.-N. (2013). *Characterizing routing with radio-to router information*., (pp. 12(8):4183-95).
- [7] Rehan Ahmed, Y. A. (2010). *Detection of Vacant frequency band in cognitive radio*. Blekinge Institute of Technology.

DATA MINING ASSOCIATION RULES TO IMPROVE STUDENT'S ACADEMIC PERFORMANCE

Manthan R. Gandhi

M.S c. I.T.Dept. of Information Technology,N.B.Mehta College, Bordi, Maharashtra.Email: manthanrgandhi@gmail.comMobile: +91 9033572791

Abstract

The main aim of the education bodies (Junior Colleges) is to provide the quality education to their students. In rural areas the education plays a very important role, there are students studying in English medium and other mediums too. The education bodies there hopes to improve the quality of education by identifying the students that need special attention and training to improve them and get succeed in the examinations. This also helps them to secure good marks after their higher education studies. A system to analyze the performance of students using association analysis algorithm is being described in this paper. This paper will assist the academic planners in identification of students that need more attention such that the extra efforts can be employed on these set of students to improve the results and make their future better[1].

Keywords: Data Mining; Business Intelligence; WEKA; Association Analysis; Academic Performance, Apriori Algorithm.

I. INTRODUCTION: A large number of educational institutes and universities have opened over the last decade with an objective to provide the quality education to students in various fields. Global competition and rapid opening of the institutes may results in the admission crises. To have a good results, early identification of the students who needs extra training and attention is to be done, such that the institutes can provide some extra training and conducts extra lectures at the beginning of their educational programme. Normally this type of problem is generated when the students from the Non-English medium goes for the higher studies. So test must be conducted at the time of their admission in the institutes based on their school and junior college marks. Educational Data Mining Technique is the concept used to identify the students that needs special focus in order to improve them and secure their future and also to improve the overall result of an institute. Data Mining is a powerful technology that is used to extract the hidden predictive information from the large databases. This also helps to distribute the subjects in the institutes. This technique is also helpful in discovering the data, that queries and reports fails to reveal. After gathering data submitted by students at the time of admission regarding the percentage of marks obtained in graduation and from the faculties regarding the percentage of marks obtained in post-graduation, data mining technique need to be applied to identify set of students in subsequent years that need more focus in order to improve their result in post graduation. With the help of data mining techniques, such as clustering, decision tree or association analysis it is possible to discover the key characteristics from the details of students and possibly use those characteristics for future prediction. This paper presents association analysis algorithm as a simple and efficient tool to analyze the students details collected over the years such that effective measures can be taken

II. METHODOLOGY: Association analysis is useful for discovering interesting relationships hidden in large data set. The uncovered relationships are represented in the form of association rules. A common strategy adopted by many association rule mining algorithms is to divide the problem in two subtasks

- Frequent Itemset Generation - The main aim is to find all the itemsets that satisfy the minsupport threshold. These itemsets are called frequent items.
- Rule Generation – Its objective is to extract all high confidence rules from frequent itemsets found in previous step

III. APRIORI ALGORITHM: Apriori algorithm is a seminal algorithm proposed by R. Agarwal and R. Shrikant in 1994 for mining frequent itemsets for Boolean association rules. The name of algorithm is based on the fact that the algorithm uses the prior knowledge of frequent itemset properties. The following lines state the steps in generating frequent itemset in Apriori algorithm.

Let C_k be a candidate itemset of size k and L_k as a frequent itemset of size k . The main steps of iteration are:

Find frequent set L_{k-1}

Join step: C_k is generated by joining L_{k-1} with itself (cartesian product $L_{k-1} \times L_{k-1}$)

Prune step (apriori property): Any $(k-1)$ size itemset that is not frequent cannot be a subset of a frequent k size itemset, hence should be removed

Frequent set L_k has been achieved [3]

Fig. 1 Apriori Algorithm

The analysis using association analysis is being done with the help of WEKA tool. WEKA, formally called Waikato Environment for Knowledge Learning supports many different standard data mining tasks such as data pre-processing, classification, clustering, regression, visualization and feature selection. WEKA is an open source application that is freely available under the GNU general public license agreement. Originally written in C the WEKA application has been completely rewritten in Java and is compatible with almost every computing platform. It is user friendly with a graphical interface that allows for quick set up and operation. WEKA operates on the predication that the user data is available as flat file or relation, this means that each data object is described by a fixed number of attributes that usually are of a specific type, normal alpha-numeric or numeric values. The WEKA application allows novice users a tool to identify hidden information from database and file systems with simple to use options and visual interfaces.

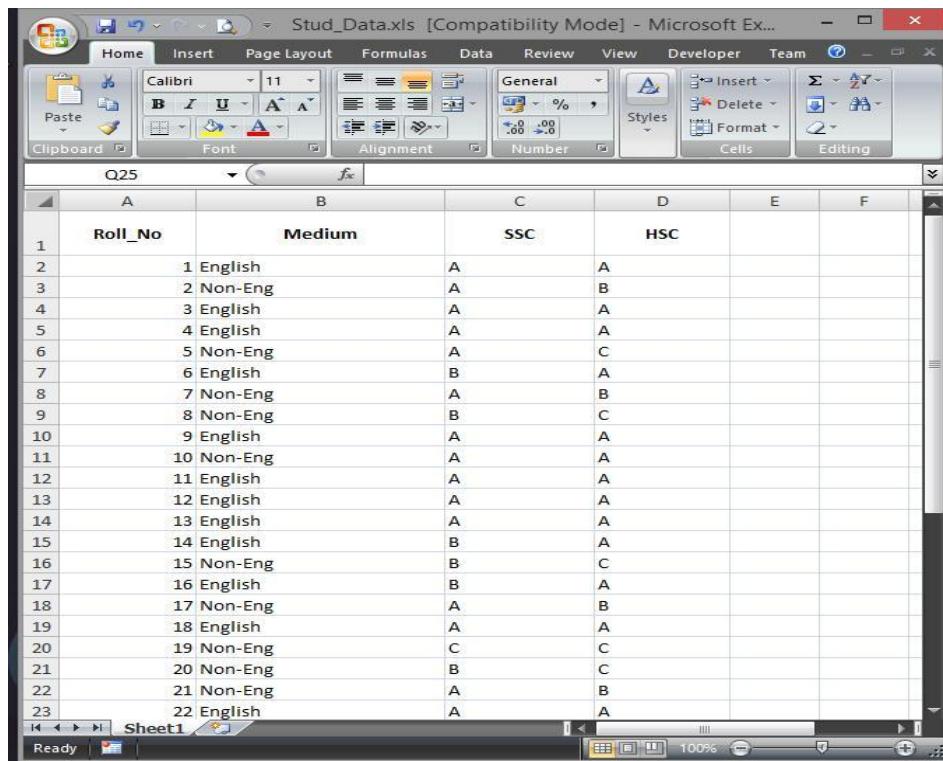
IV. RESULTS: The model applied on the students that have taken admission in the HSC in the year of 2012 in reputed college of Bordi. The analysis is being performed on the basis of the percentage of marks obtained by these students in SSC and HSC. The numbers of students involved in analysis are 38. The performance of students is compared by associating the following grades with various percentage intervals as represented in Table 1.

TABLE I Performance Index

Percentage	Class
75 and above	A
70-74	B
65-69	C
60-64	D
55-59	E
50-54	F
Below 50	F

The details for the students of HSC Batch (2012) are represented in Fig. 2. The batch considered for analysis consists of 21 students from English medium and 17 students from

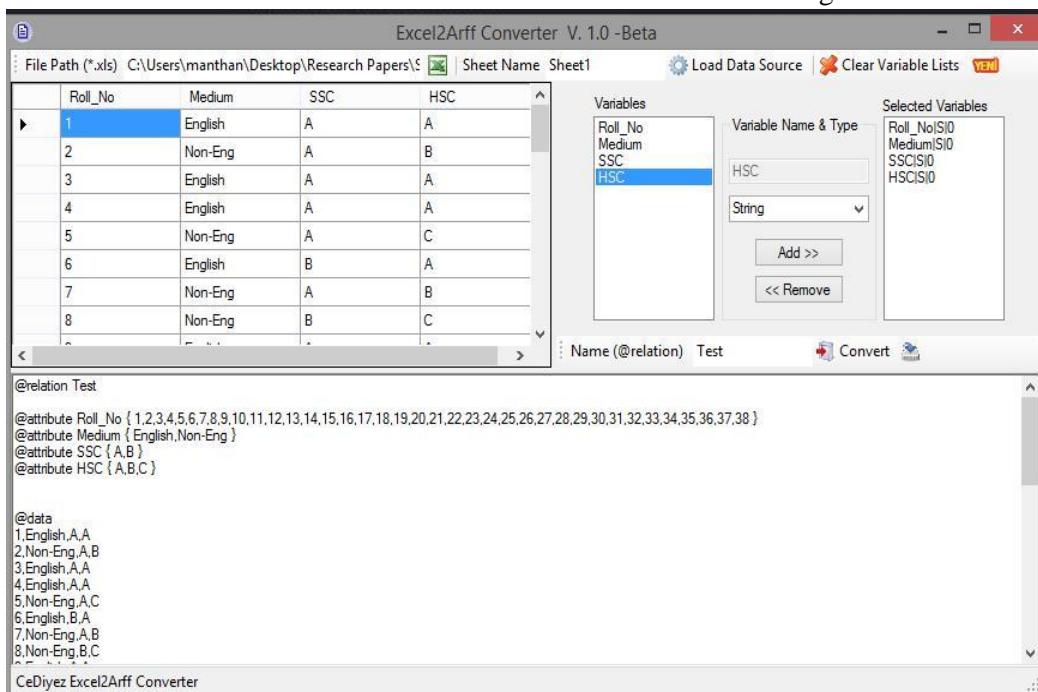
non-english medium.



	A	B	C	D	E	F
1	Roll_No	Medium	SSC	HSC		
2		1 English	A	A		
3		2 Non-Eng	A	B		
4		3 English	A	A		
5		4 English	A	A		
6		5 Non-Eng	A	C		
7		6 English	B	A		
8		7 Non-Eng	A	B		
9		8 Non-Eng	B	C		
10		9 English	A	A		
11		10 Non-Eng	A	A		
12		11 English	A	A		
13		12 English	A	A		
14		13 English	A	A		
15		14 English	B	A		
16		15 Non-Eng	B	C		
17		16 English	B	A		
18		17 Non-Eng	A	B		
19		18 English	A	A		
20		19 Non-Eng	C	C		
21		20 Non-Eng	B	C		
22		21 Non-Eng	A	B		
23		22 English	A	A		

Fig 2: Sample Database of students

The data file normally used by WEKA is in ARFF (Attribute-Relation File Format) file format, which consist of special tags to indicate different things in the data file. Figure 2 shows the sample view of dataset and Figure 3 shows the ARFF format of desired dataset. To convert an Excel format into ARFF format an Excel to ARFF convertor is being used.



The ARFF code generated by the converter is as follows:

```

@relation Test
@attribute Roll_No { 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38 }
@attribute Medium { English,Non-Eng }
@attribute SSC { A,B }
@attribute HSC { A,B,C }

@data
1,English,A,A
2,Non-Eng,A,B
3,English,A,A
4,English,A,A
5,Non-Eng,A,C
6,English,B,A
7,Non-Eng,A,B
8,Non-Eng,B,C

```

Fig 3: ARFF Format of the sample database of students

The results generated using WEKA is represented using Fig 4.

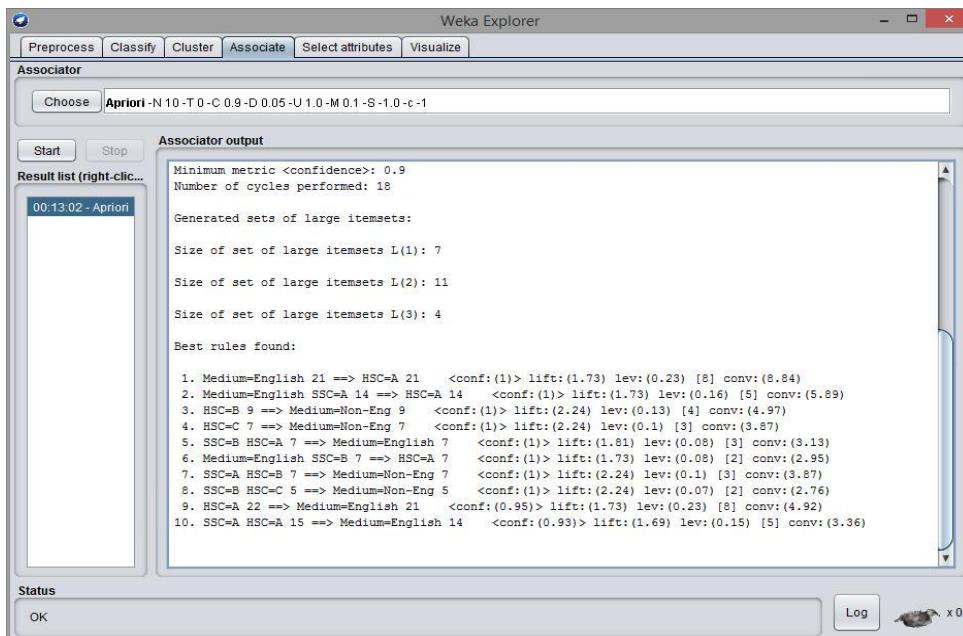


Fig 4: Output generated using WEKA

The above output clearly indicates that the performance of students having English medium has significantly improved in HSC. The grades of 5 students from English medium have improved from B to A while in the case of students with Non-English the condition is reversed. The grades of 8 students have been degraded from A to B and A to C of a single student. It clearly indicates that the students from non English are facing difficulty in competing with students having English medium. In order to improve performance of students from non English medium, some introductory courses need to be conducted at initial level or some extra lectures can be taken by experts.

CONCLUSION: Apriori is the simplest algorithm which is used for mining of frequent patterns from the transaction database. The purpose of reducing the number of scans of database to extract frequent item set will be resolved in future due to our work is in progress for the same. We have tried to implement the Apriori algorithm for sufficient research work and also we have utilized WEKA for referring the process of association rule mining.

References

- 1)Arora K. Rakesh, Badal Dharmendra, " Subject Distribution using Data Mining ", International Journal of Research in Engineering and Technology, Volume 2, Issue 12, Dec 2013
- 2) <http://www-users.cs.umn.edu/~kumar/dmbook/ch6.pdf>
- 3) U. Fayyad, G. Piatetsky-Shapiro and P. Smyth. "The KDD process for extracting useful knowledge from volumes of data", CACM 39 (11), pp. 27-34, 1996.
- 4) www.gbit.org/downloads/dwdmsem6/dwdmsem6lman.pdf
- 5) N.V.Anand Kumar Research Scholar, Department of Computer Science and engineering Anna university, Chennai G.V.Uma Assistant professor, Department of Computer Science and Engineering Anna university,Chennai "Improving Academic Performance of Student By Applying Data Mining Techniques
- 6) Arora K Rakesh, Badal Dharmendra, "Location wise student admission analysis", International Journal of Computer Science, Information Technology and Security, Dec 2012.
- 7)Arora K. Rakesh, Badal Dharmendra, " Evaluating Student's Performance Using k-Means Clustering", IJCST Vol.4, Issue 2, April - June 2013
- 8) Rakesh Kumar Arora et al, "Mining Association Rules to Improve Academic Performance" International Journal of Computer Science and Mobile Computing, Vol.3 Issue.1, January- 2014, pg. 428-433
- 9)Paresh Tanna, "Using Apriori with WEKA for Frequent Pattern Mining", International Journal of Engineering Trends and Technology (IJETT) – Volume 12 Number 3 - Jun 2014

DATA MINING USING BIG DATA TOOLS IN HIGHER EDUCATION

Sandhya Pandey

The S.I.A. College of Higher Education, Dombivli (E), sandhyapramod@rediffmail.com

Contact: 9594073652

Abstract

In India Higher educational institutions grown rapidly. These Institutions focused on quality education for students. Educational sector has a lot of data that can produce valuable and relevant information for improvement of quality Education. This data can be used to increase the quality of education. Data Mining refers to mining knowledge from large amount of data. It is a technology with great potential. Big Data tools with data mining plays important role for creation of strategic data. This paper is focused on improvement of student's performance in Higher Education using data mining with Big data tools.

Keywords: Educational Data Mining, Big Data, Higher Education, Students Performance

Objectives: Student's Grades Improvement in Higher Education using data Mining with Big data tools.

Methodology: The secondary sources of data and related study were used.

Introduction: Data mining is the process of analysing data from different perspectives and summarizing it into useful information, this information that can be used to increase quality and quantity. Data mining software is one of a number of analytical tools for analysing data but now a day many big data tools are also available to extract useful information for data mining. It allows users to analyse data from many different dimensions or angles, categorize it, and summarize the relationships identified. Education field is very important area in terms of any country's growth and development. Data mining concepts and methods can play a vital role in the field of higher education. Educational Data Mining in Higher Education can be used to improve graduate student's performance, and overcome the problem of low grades of graduate students. To achieve this, data could be collected with different sources, pre-processing can be done using big data and data mining tools to prepare results to improve performance of students.

Areas to be covered for improvement of students grade

Data mining in higher education is a recent exploring field and this area of research is achieving popularity because of its potentials to educational institutes. For implementation of educational data mining following data can be collected and analysed:

Variable	Description	Possible Values
10 th	Grade 10 th marks	>75%,>60%,>48%,<48
12 th / Diploma	Grade 12 th marks/Diploma	>75%,>60%,>48%,<48
CTG	Class Test Grade	Poor , Average, Good
ATT	Attendance	Poor , Average, Good
ASS	Assignments	Poor , Average, Good
FSG	First Semester Grade	O,A,B,C,D,E,F
SSG	Second Semester Grade	O,A,B,C,D,E,F
TSG	Third Semester Grade	O,A,B,C,D,E,F
LSG	Last Semester Grade	O,A,B,C,D,E,F
GP	General Proficiency	Good, Average, Poor

Steps for Data Assessment:

Using these components some steps can be followed for Grade improvement.

1. Problem Statement
2. Data Collection
3. Data Processing

4. Data Analysis
5. Presentation/Visualisation

1. Problem Statement: Similar to School, Higher Education grades are also very important for any institution. It is a continual process for formation of Vision and Mission of an institution. For improvement of grades of students First, variables should be analysed like what is students previous year performances, how student is performing in class tests, how their attendance is and how they are performing in other class room activities. Using these variables analysis and result Institutions can follow steps for their student's grades improvements.

2. Data Collection: In present educational system, a student's performance is determined by the internal assessment and semester end examination. The internal assessment is carried out by the teacher based upon student's performance in educational activities such as class test, seminar, assignments, and general proficiency. For improvement of grades in any institution data sets can be collected for final year students from their previous records of all the areas related to their performance like academic details of grade 10th, 12th and previous semester details, class test performance, attendance details etc. Data can be collected using questionnaire or if any other software system is available that can be source of data. Collected data can be stored in **Hadoop which is big data tool**

3. Data Processing: After data collection next step is Data Processing. After collection of data of all historical data related to students' academic details can be stored under one umbrella. After processing data can be put in the form of table for further reference. Data processing includes data cleaning, normalization, transformation, feature extraction and selection. For processing of data **Mapreduce** of big data tool can be used.

4. Data Analysis: Data analysis refers to the process of applying logical and statistical techniques to evaluate, condense and describe data and extracting useful information. After analysis students can be grouped in high and low grades. For low grade students some improvement measures can be taken. After data collection data sets can be created and analysis can be done. For data analysis **Pig and Hive** can be used.

5. Presentation/Visualisation: After implementation of big data tools results can be generated and based on the results improvement steps can be performed for undergraduate students. Result can be generated in the form of 2 categories. In one category satisfactory students' performance can be put and in another category low grade students can be put. In this category improvement measures can be taken. Visualization or presentation can be done using **Tableau or R**.

Conclusion: Current Higher education system not predicting grades for students based on student's previous performance. This type of study will help to the students and the teachers to improve the knowledge of the students further. Based on the history of students it will also be useful to identify those students which needed special attention to reduce failure and taking appropriate action for the next semester examination. Educational Data Mining with the help of Big data tools can be used in Higher Education to collect relevant and actionable data of learners and used for improvement of student's grade. Using this educationalist can find out who is weak in what area? How to help weak student and how to improve result of college. Future research work can explore proper algorithm and implementation.

References

- <http://arxiv.org/ftp/arxiv/papers/1201/1201.3417.pdf>
- <http://airccse.org/journal/ijdms/papers/5313ijdms04.pdf>
- http://esjournals.org/journaloftechnology/archive/vol2no2/vol2no2_7.pdf
- http://www.ijarcsse.com/docs/papers/Volume_3/8_August2013/V3I8-0105.pdf
- <http://www.anderson.ucla.edu/faculty/jason.frand/teacher/technologies/palace/datamining.htm>

UNDERSTANDING THE IMPLICATIONS OF CUSTOMER SEGMENTATION USING BUSINESS INTELLIGENCE

Mrs Reshma Desai & Mrs Beena Kapadia

Assistant Professor, Dept. of Computer Science, Thakur College of Science and Commerce, Kandivali (East), Mumbai. Email: resh_d@hotmail.com Mobile: 9820080427

Assistant Professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: beena.kapadia@vsit.edu.in

Mobile: 98333 19001

Abstract

Business organizations continuously make an effort to predict customer trends, increase sales and make best business decisions to enhance performance; considering social, regulatory, and political environment. In this paper, we have explained various BI tools and types of customer segmentation as well as their usefulness through various case studies. We emphasize on understanding Customer Segmentation in perceptive of various Business Intelligence tools that can be implemented to make better and informed decisions for benefits of the organization. We have analysed various case studies which prove that Business Intelligence along Customer Segmentation relevant to the product/organization enhances the decision making process.

Keywords: Data Mining, DEA, SOM neural network, C4.5, Data Warehousing, Forward BI, TargetMarketing, Customer Segmentation

I. INTRODUCTION: To predict customer trends of purchase and to facilitate the business with customer behaviours, customer segmentation can be used for enterprise-specific solution that uses data mining to group customers based on customer attributes and customer transactions. Business Intelligence shows how a customer segment's sales trends can be analyzed for decision making by comparing various aspects of customer segments which leads to significant marketing and increase cross-sell opportunities. Customer segments differ in terms of socio-demographic or lifestyle characteristics and determine whether these characteristics can be used to target different customer segments with more relevant product offers. In this paper we emphasize on understanding Customer segmentation in perceptive of various business intelligence tools that can be implemented to make better and informed decisions for benefits of the organization. We have analysed various case studies which proved that business intelligence along customer segmentation relevant to the product/organization enhances the decision making process. (RANJAN, 2005 - 2009) (Jang Hee Leea, 2005) Business intelligence is the use of any of the computing technologies like data warehouse, Data Mining, DEA, SOM neural network, C4.5 etc. for gathering, accessing, and analyzing data for making better business decisions to know customer trends and thereby to increase sales.

II. RESEARCH OBJECTIVE: To understand customer segmentation and its applicability in business intelligence for better analysis in various fields thorough secondary data.

III. LITERATURE REVIEW FOR BUSINESS INTELLIGENCE AND CUSTOMERSEGMENTATION

i) Business Intelligence

- a) **Needs for Business Intelligence:** (RANJAN, 2005 - 2009) Business intelligent tools make use of available data source and generate accurate reports so that one can get consolidated data in the form of a single quality report as per the requirements rather than doing it manually. The primary activities include gathering, preparing and analyzing data. The data itself must be of high quality. The various sources of data is collected, transformed, cleansed, loaded and stored in a warehouse. The relevant data for a specific business area is extracted from the data warehouse.

(RANJAN, 2005 - 2009) Business intelligence reveals:

- The position of the firm as in comparison to its competitors
- Changes in customer behaviour and spending patterns
- Market conditions, future trends and economic information
- The social, regulatory, and political environment

Using BI, one can eliminate a lot of the guesswork within an organization and enable companies to maximize revenue and reduce costs. BI improves the overall performance of the company using it. A company's most valuable assets are its people. The information is often regarded as the second most important resource a company has. So when a company can make decisions based on timely and accurate information, the company can improve its performance. It can also improve customer experience, allowing for the timely and appropriate response to customer problems and priorities.

b) Tools of Business Intelligence

Some Business Intelligence (BI) and analytics tools are listed below:

1. (Smita, 2014) **Data mining**: Data mining means collecting relevant information from unstructured data to achieve specific quality reports. The purpose of a data mining effort is normally either to create a descriptive model or a predictive model. A descriptive model presents, in concise form, the main characteristics of the data set. The purpose of a predictive model is to allow the data miner to predict a future value of the target variable.
2. (Jang Hee Leea, 2005) **DEA (Data Envelopment Analysis)**: DEA evaluates efficiency through the relation analysis between the company's input costs for a customer (e.g. marketing cost, production cost, inventory cost, delivery cost, service cost and relationship management cost) and the output (e.g. his/her satisfaction level, repurchase intentions and word-of-mouth intentions in the customer satisfaction survey and his/her profit contribution to it).
3. (Yi Ding, 2012) **Self-Organizing Map (SOM) neural network**: It provides a way for cluster analysis by producing a mapping of high dimensional input vectors onto a two dimensional output space while preserving topological relations as faithfully as possible. After appropriate training iterations, the similar input items are grouped. As such, the resulting map is capable of performing the clustering task in a completely unsupervised fashion.
4. (Drown, Khoshgoftaar, & Seliya, 2009) **C4.5**: The C4.5 classifier is a very commonly used decision tree algorithm. Starting with the root node, the algorithm selects an independent variable to split the data into subtrees. This process is carried out recursively for each subtree, until a stopping criteria is satisfied. If a child node contains instances of only one class, then the recursion stops for that branch of the tree. The node will need no further splits, and it will be a leaf in the final decision tree.

(Phillipson, 2016) Some latest tools:

1. **Oracle Hyperion System**: Using mobile, desktop and MS Office Interfaces, Hyperion supports and enables enterprise-wide planning, budgeting and forecasting and generate cost-effective enterprise alignment.
2. **Microsoft Business Intelligent Tools**: Microsoft's BI solutions are built as tools that require little IT involvement. It allows any user to drill-down, analyze and visualize data through Excel. It enables report-sharing and other collaborative features. Its self-service capabilities that reduce the burden on IT.
3. **(IBM, 2013) BI Forward**: A combination of self-service and managed data analysis capabilities is helping users become more efficient and effective when decisions need to be made, to drive profitable growth and predictive analytics to optimize business outcomes.

A company should choose tools that allow them to visualize the data, analyze relevant data and customize the data to make fact-based and insightful decisions so that company's performance can be improved.

ii) Customer Segmentation

a) Types of Customer Segmentation: There are various ways in which market segmentation for customers can be done they are: Geographic, Demographic, Behavioural, Psychographic Lifestyle Segmentation, Lifestage Segmentation, Benefit Segmentation etc.(Goyat Sulekha et al,2011)Geographic segmentation is uses factors like nations, states, regions, cities, postal/zip codes to divide customer base into various groups. This helps marketers run specific marketing and promotional campaigns to various regions and create unique offerings.Demographic segmentation is used to divide customers into groups based on their age, gender, income level, religion or ethnicity.Psychographic segmentation is characterized by the composition of three variables: personality, attitude and lifestyle, which are mixed criteria for segmentation of behaviour. Psychographic segmentation emerged as an alternative research methodology that aims to fill the gaps left by other types of segmentation, or propose a new way to see the market.Lifestyle Segmentation uses activities, interests and opinions (AIOs) of customers to divide them in groups.

Life stage Segmentation uses the life stage of customers to divide in various groups. Customers are normally divided based on following factors: Single/ unmarried, Married without children, Married with dependent children, Married with independent children, Retired.Benefit segmentation uses sought or perceived benefits from a product/service by customers to divide them in groups.

b) Need of Customer Segmentation: (Su-Yeon Kim a, 31 (2006)) This paper works on a framework for analysing customer value and customer segmentation based on their value. Based on this customer value and strategies building according to customer segment was studied a case study on a wireless telecommunication company. This paper has studied Customer value under different areas LTV (Life Time Value), CLV (Customer Lifetime Value), CE (Customer Equity) and Customer Profitability. They have used three dimension, current value, potential value and customer loyalty, to consider the customer defection. These measures are possibilities of additional sales and the customer loyalty to for customer retention.(Rajagopal, November 2011)This paper identifies high-profit ,high value and low-risk customers of retail smart store data as case study using IBM Intelligent Miner as a tool The study uses demographic clustering technique for customer. Clustering and segmentation are two of the most important techniques used in marketing and customer-relationship management. The study uses customer-purchase transaction data to track buying behaviour and create strategic business initiatives(Kishana R. Kashwan, December 2013) The study does the cluster analysis of the chosen sample of respondents which explained a lot about the possible segments which existed in the target customer population. Computing based system developed during this study was an intelligent and it automatically presented results to the mangers to infer for quick and fast decision making process.

IV) RESEARCH METHODOLOGY USED FOR UNDERSTANDING THE IMPLICATIONS OF CUSTOMER SEGMENTATION USING BUSINESS INTELLIGENCE:

In this research paper we have used secondary data to high light the various kinds of Customer Segmentation and various Business Intelligence tools applied in organizations for better decision making thereby profiting the organization.

V. CASE STUDIES OF UNDERSTANDING THE IMPLICATIONS OF CUSTOMER SEGMENTATION USING BUSINESS INTELLIGENCE FROM DIFFERENT

1. (IBM, 2013) This case study is about a US bank's increase in cross-sell campaign strategy to attract new customers and encourage existing customers to take advantage of more selective

services and products. After implementing a forward-thinking BI solution, there was a 600 percent increase in cross-sell campaign uptake, which improved their top line significantly. They also increased customer response rates by more than 3 percent, a small change that drove big growth in profits. To increase this big growth, they have found reason using predictive modeling and worked on it to change the deactivated customers to the active one. Based on the predictive model, data on the dashboard and the what-if scenarios, they determined that what steps to be taken to improve on the cause of deactivation of customers without a significant negative impact on their bottom line.

2. (Jang Hee Leea, 2005) This paper aims at providing an easy, efficient and more practical alternative approach based on the customer satisfaction survey *for the profitable customers segmentation*. They have illustrated a case study on a Motor company's profitable customer segmentation. To intelligently segment profitable customers of a company in terms of their profitability, they presented an easy and efficient alternative approach based on the mining of customer satisfaction survey, socio-demographic and accounting database instead of using a complicated customer profitability model. First, the presented approach used DEA to find out the customers with higher cost efficiency, High Efficiency Customer Group (HECG), among all the surveyed ones about their output from a company's input costs for them. And then it used SOM to form the profitable customers group (PCG) by removing undesirable customers among HECG's customers. Finally, it successively used C4.5 and SOM to decide the priority orders of non-PCG's customers.
3. (Wei Li, 2010) Based on the real data of a Chinese commercial bank's credit card, in this paper, they have *classified the credit card customers into four classifications by K-means*. Then they built forecasting models separately based on four data mining methods such as C5.0, neural network, chi-squared automatic interaction detector, and classification & regression tree according to the background information of the credit cards holders. Conclusively, they obtain some useful information of decision tree regulation by the best model among the four. That information was not only helpful for the bank to understand related characteristics of different customers, but also marketing representatives to find potential customers and to implement target marketing.
4. (Alexandre) Based on the whitepaper released by SASSAS is the leader in providing business intelligence software and solutions. SAS Customer Intelligence solutions can help to develop customer segmentation and profiles. SAS gives the businesses scalability; flexibility and adaptability which ensure among other things trusted, analytical-based decisions are made across the organization. This paper considers two companies Endesa and Chubb Group of Insurance Companies. One of these companies challenges were to acquire and retain customers in a competitive, deregulated energy market through more efficient, effective campaign management and better understanding and others was to gain a clearer understanding of customers to develop and market its specialized products. After implementing Business Intelligence on customer segments through SAS the companies found the following benefits:
Endesa: Understood its customers better, reduced customer churn by 50 percent, significantly increased sales, reduced customer acquisition costs and improved cross-selling success. And Chubb saw improvements in: confidence in decision-support information, Enhanced distribution planning, growth strategies and budgeting
5. User Segmentation Based on Finding Communities with Similar Behaviour on the Web Site (Kateřina Slaninová et al, 2010) The case study presented here does automatic user segmentation (clustering) based on the similar user's behaviour on the web which can be extracted using process mining techniques which helps in user segmentation by finding communities

with similar behaviour through two-step hierarchical clustering. In this case study the researchers defined the User segmentation as clustering of user's navigation sessions on the basis of similar behavioural characteristics. This case study did its web mining analysis by processing the typical web log from apache server with its records of requested activities. To obtain data collection there were applied the standard data pre-processing methods. This paper also shows the user segmentation and its visualization using community structure analysis. In social network term based on the similar user's behaviour on the web site was provided using process mining techniques. Therefore we find that for better understanding customer segmentation and in this case user segmentation is very helpful, which has been concluded by the results of research through graph visualization that for the reduction of the amount of types of the sequences and users' clustering can provide users' segmentation on the basis similar behaviour on the web site.

6. Intelligent value-based customer segmentation method for campaign management: A case study of automobile retailer (Chu Chai Henry Chan) This paper studies campaign strategies using customer targeting and customer segmentation. This investigation identifies customer behaviour using a recency, frequency and monetary (RFM) model and then used a customer life time value (LTV) model to evaluate proposed segmented customers. This research work performs an empirical study of a Nissan automobile retailer to segment over 4000 customers. To enhance campaign effectiveness, Empower company (a Nissan dealer) spent one and half year conducting a project for customer relationship management. This project collected and sampled over 40,000 customers. The present study sampled 4659 customers. To integrate customer segmentation and customer targeting, this research work used the generic algorithm (GA) to determine the optimized marketing strategy and proposed model that uses GA to select customer RFM behaviour using a LTV evaluation model. Thus presenting that for various profitability of customers, in terms of life time value etc.; customer segmentation is required. This can be further used along with various business tools for implementing strategic decision making for the profitability of the company /organization itself

VI) SUGGESTIONS AND CONCLUSION: We suggest that market segmentation based on customer are different in different context and cannot be uniformly made out as a standard whereas the observation after literature review and understanding different case studies is that customer segmentation and its variety is completely based upon the industry and product itself. Further studies can be conducted with their research on psychographic segmentation of customers which may prove as good basis for segmentation but everything is dependent upon the responsive behaviour of the consumers. We concluded that it is always better to segment customers either based on their common needs or common behaviours. Moreover, using various case studies we concluded that using BI there are measurable changes in understanding characteristics of customer, maximise sales and decision making after applying BI tools on customer-segmentation

References

- [1] RANJAN, J. (2005 - 2009). *BUSINESS INTELLIGENCE: CONCEPTS, COMPONENTS, TECHNIQUES AND BENEFITS*. *Journal of Theoretical and Applied Information Technology*, (pp. Vol 9. No 1. (pp 060 - 070)). Ghaziabad, Uttar Pradesh, India.
- [2] Kishana R. Kashwan, M. I. (December 2013). *Customer Segmentation Using Clustering and Data Mining Techniques*. *International Journal of Computer Theory and Engineering*, Vol. 5, No. 6.
- [3] Rajagopal, D. S. (November 2011). *CUSTOMER DATA CLUSTERING USING DATA MINING TECHNIQUE*. *International Journal of Database Management Systems (IJDMS)* , Vol.3, No.4.,
- [4] Su-Yeon Kim a, T.-S. J.-H.-S. (31 (2006)). *Customer segmentation and strategy development based on customer lifetime value: A case study*. *Expert Systems with Applications*, 101–107.
- [5] Wei Li, Y. S. (2010). *Credit Card Customer Segmentation and Target Marketing Based on Data Mining*. *2010 International Conference on Computational Intelligence and Security* (pp. 978-0-7695-4297-3/10 \$26.00 © 2010 IEEE). Dongguan, Guangdong, China: City College,Dongguan University of Technology.

- [6] Alexandre, A. M. (n.d.). *Customer Segmentation Equals Marketing Advantage*. SAS.
- [7] Yi Ding, X. F. (2012). *The Research of Text Mining Based on Self-Organizing Maps*. 2012 International Workshop on Information and Electronics Engineering (IWIEE) (pp. 537–541). Huangshi: Engineering 00 (2012).
- [8] Jang Hee Leea, S. C. (2005). Intelligent profitable customers segmentation system. School of Industrial Management, Korea University of Technology and Education, 307 Gajeon-ri, Department of Industrial Engineering, Korea Advanced Institute of Science and Technology (KAIST) (pp. 145–152). South Korea: Expert Systems with Applications.
- [9] Drown, D. J., Khoshgoftaar, T. M., & Seliya, N. (2009). *Evolutionary Sampling and Software Quality Modeling of High-Assurance Systems*. IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans (Volume: 39, Issue: 5, Sept. 2009) (pp. 1097 - 1107). Florida: IEEE .
- [10] Smita, P. S. (2014). *Use of Data Mining in Various Field: A Survey Paper*. e-ISSN: 2278-0661, p- ISSN: 2278-8727 Volume 16, Issue 3, Ver. V (pp. 18-21). IOSR Journal of Computer Engineering (IOSR-JCE).
- [11] Phillipson, C. (2016, October 17). *The 54 Best Business Intelligence Tools: Top BI Software to Help You Analyze Data to Make Smarter Business Decisions*. Retrieved from <http://www.docurated.com: http://www.docurated.com/all-things-productivity/50-best-business-intelligence-tools>.
- [12] IBM. (2013, October). *BI forward: A full view of your business*. Retrieved from BI forward: A full view of your business - IBM: <https://www.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=YTW03361USEN>
- [13] Kate'rina Slaninov'a, R. D. (2010, 09 11). *2010 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology* .
- [14] *Understanding the Implications of Customer Segmentation using Business Intelligence* Chan, C. C. (n.d.). Intelligent value-based customer segmentation method for campaign management: A case study of automobile retailer. E-Business Research Laboratory, (pp. No. 168,). Taiwan: E-Business Research Laboratory, Department of Industrial Engineering and Management, Chaoyang University of Technology, .
- [15] Goyat, S. (2011). *The basis of market segmentation: a critical review of literature*. European Journal of Business and Management www.iiste.org, v13, no 9.

CELL PHONE RADIATION EXPOSURE

Shobha U.Nalavade&Sunita J. Koli

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: shobha.nalavade@vsit.edu.in, Mobile: 9004133702

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai Email: sunita.koli@vsit.edu.in, Mobile: 9987979460

Abstract

The rapid use of cellular phone has raised the concerns about the possible interaction between the electromagnetic fields (EMF) radiation and the biological effects on human tissues, particularly the brain and the human immune system. These concerns have induced a large volume of research studies. However, most of the previous review studies are concentrated on negative effects caused using cell phones. In this paper, we aim to provide review of studies which investigated the possible negative and positive biological effects of cell phone radiation on human tissues. This review will provide answers for public concerns about the risk of using cell phone. Our conclusion shows that long-term exposure to EMF radiation from a cell phone could cause health effects, such as brain cancer. Some positive health effects due to the exposure to the EMF radiation such as improve bone healing and reduce toxic effects of chemotherapy are highlighted.

INTRODUCTION



Working of cell phones: Cell phones are just radio transmitters emitting signals through radio waves. These waves are a form of *electromagnetic radiation*, or EMR. When the cell phone is turned on it locates itself by broadcasting a series of signals to the cell phone carrier's closest cell phone tower. The carrier then relays that information to the nearest mobile telephone switching office. When making a call, the phone sends its data to the carrier's nearest tower, to the switching office and then to the switching office in the area code of the number being called. Once the connection is made the cell phone's transmitter packages your voice or text data onto a second radio wave that is created for transmitting the information. This second wave is called the *Information-Carrying Radio Wave*, or ICRW. When the call is received by the recipient's switching office a connection is made through the nearest tower that connects the call with your phone.

Through a processor in the phone the digital information signal is converted into an analog signal so a voice can be heard. All this occurs in an average time of four to eight seconds. Each cell phone contains its own transmitter. The purpose of the transmitter is to encode information onto a radio wave. This radio wave radiates out from the phone's antenna evenly through space. The information being encoded, for example, could be the sound of your voice, the data from your text message or a photo. The transmitter will then send the encoded wave, with your information or voice, to the antenna and the antenna will then send the signal. The function of the antenna is to propel these radio waves out into space so that a receiver in a nearby cell tower will pick them up. This makes the antenna the most dangerous part of the phone.

Analysis: As we are frequently using mobile phone, so the solution should be via mobile phone only. so we have thought that an App should be there which will notify the user if he or she is using the mobile phone for longer time than an app will notify the user about the defects in terms of some notification, beep or message by calculating the radiation. Based on the level of radiation it will give notification.

What Exactly Is Cell Phone Radiation



Electromagnetic radiation is a form of energy consisting of a magnetic field plus an electrical field. Cell phone radiation is one form of electromagnetic radiation. All electromagnetic radiation falls within a spectrum that can range from extremely low frequency radiation, or ELFs, on the low end, to microwaves, X-Rays and gamma rays at the upper end. AM radio operates at one megahertz while most cell phones operate in the range of 800 to 2200 megahertz. These frequencies are substantially higher than 60 Hertz. At the high end of the energy spectrum we find X-Rays that operate at more than one million megahertz. This kind of radiation energy is also known as "ionizing" radiation since these radio waves are so powerful that they can break chemical bonds in the body and cause genetic damage. Radiation at the low end of the spectrum is known as "non-ionizing" radiation and radiation of this kind is generated by such devices as cell phones, cell phone towers, wireless routers, Wi-Fi, etc. This form of radiation is too weak to break chemical bonds and is one reason why many falsely believe that cell phone radiation is harmless. When the radio wave from a cell phone is oscillating at 800 to 2200 megahertz, (or two thousand two hundred million cycles per second) it is moving much too fast for the body to detect. The body simply cannot recognize a radio wave moving at this speed and thus it moves invisibly through the body without detection. Radiation moving this fast could only be recognized if it were driven by a very strong source of power. If the power driving a radio wave is of sufficient strength the wave could cause damage through the heating of biological tissue. Since cell phones aren't strong enough to heat biological tissue the mechanism by which cell phone radiation causes harm occurs in a different manner

SAR: Smartphone has so much penetrated in our daily life that now no one can think of without it. Excessive use of smartphone may cause health problems but if you are even using less a smartphone with bad **SAR**, that is most dangerous [6]. SAR stands for Specific Absorption Rate which is a measure of the amount of radio frequency energy absorbed by the body when using a mobile phone. **Specific absorption rate (SAR)** is a measure of the rate at which energy is absorbed by the human body when exposed to a radio frequency (RF) electromagnetic field; although, it can also refer to absorption of other forms of energy by tissue, including ultrasound. It is defined as the power absorbed per mass of tissue and has units of watts per kilogram (W/kg). Federal Communications Commission (FCC) has adopted limits for safe exposure to radio frequency (RF) energy which is 1.6 watts per kilogram (1.6 W/kg). Any smartphone at or below this SAR levels is "safe" to use.

SAR for electromagnetic energy can be calculated from the electric field within the tissue as:

$$SAR = \frac{1}{V} \int_{\text{sample}} \frac{\sigma(\mathbf{r}) |\mathbf{E}(\mathbf{r})|^2}{\rho(\mathbf{r})} d\mathbf{r}$$

where

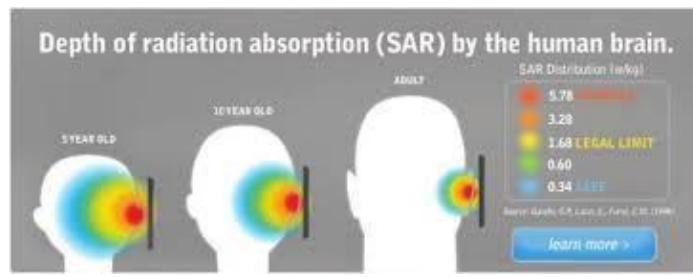
σ is the sample electrical conductivity

\mathbf{E} is the RMS electric field

ρ is the sample density

V is the volume of the sample

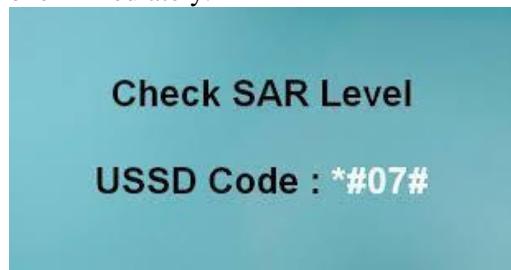
[7]



[2]

Check Radiation Level:

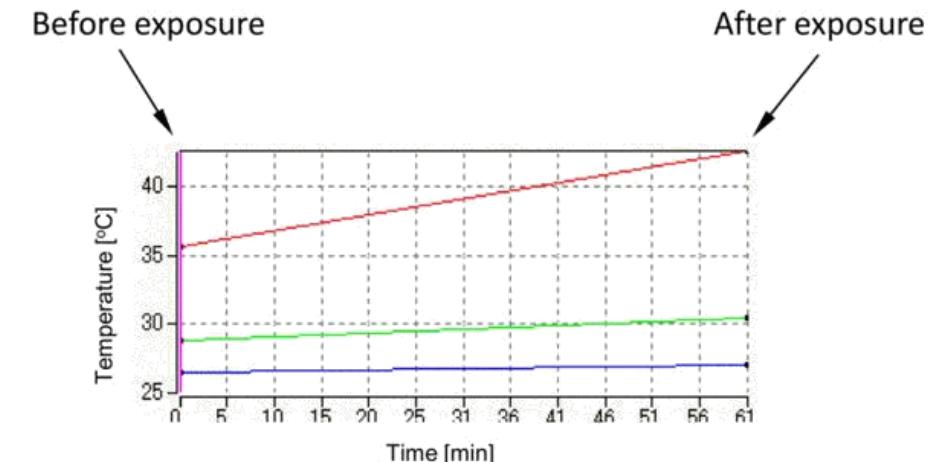
You can check Radiation level in terms of SAR of your smartphone by dialling a USSD code *#07#, if results show SAR below 1.6 watts per kilogram (**1.6 W/kg**) then it is OK otherwise you are advised to change your smartphone immediately.



SAR level of some popular smartphones in the market.

Mobile phone	Range
iPhone 6	1.59 W/kg
LG G3	0.99 W/kg
LG G2	1.44 W/kg
Samsung Galaxy Note 2	0.42 W/kg
Samsung Galaxy Note 3	1.07 W/kg
Samsung Galaxy Note 4	1.20 W/kg
Samsung Galaxy	1.28 W/kg
HTC One (M8)	1.29 W/kg

Effects: The increasing use of wireless equipment has also increased the amount of radiation energy to which human bodies are exposed. A common property that measures absorbed energy is the SAR value, (specific absorption rate) to determine the amount of radiation that human tissue absorbs.



Radiation takes place when the atomic nucleus of an unstable atom decays and starts releasing ionizing particles, known as ionizing radiation. When these particles meet organic material, such as human tissue, they will damage them if levels are high enough, causing burns and cancer. Ionizing radiation can be fatal for humans.

REM (roentgen equivalent in man) - this is a unit we use to measure radiation dosage. We use this measurement to determine what levels of radiation are safe or dangerous for human tissue. It is the product of the absorbed dose in rads and a weighting factor (W_R), which accounts for how effective the radiation is in causing biological damage. A sudden, short dose of up to 50 rem will probably cause no problems, except for some blood changes. From 50 to 200 rem there may be illness, but fatalities are highly unlikely. A dose of between 200 and 1,000 will most likely cause serious illness - the nearer the 1,000 it is, the poorer the outlook for the human will be. Any dose over 1,000 will typically cause death.

- 0 to 250 mSv - no damage
- 250 to 1,000 mSv. Some individuals may lose their appetites, experience nausea, and have some damage to the spleen, bone marrow and lymph nodes.
- 1000 to 3000 mSv - nausea is mild to severe, no appetite, considerably higher susceptibility to infections. Injury to the following will be more severe - spleen, lymph node and bone marrow. The patient will most likely recover, but this is not guaranteed.
- 3,000 to 6,000 mSv - nausea much more severe, loss of appetite, serious risk of infections, diarrhea, skin peels, sterility. If left untreated the person will die. There will also be hemorrhaging.
- 6,000 to 10,000 mSv - Same symptoms as above. Central nervous system becomes severely damaged. The person is not expected to survive.
- 10,000+ mSv - Incapacitation. Death. Those who do survive higher radiation doses have a considerably higher risk of developing some cancers, such as lung cancer, thyroid cancer, breast cancer, leukemia, and cancer of several organs

Precautions:

Use Your Cell Phone Only Where Reception is Good: The weaker the reception, the more power your phone must use to transmit, and the more power it uses, the more radiation it emits, and the deeper the dangerous radio waves penetrate into your body. Ideally, you should only use your phone with full bars and good reception.

Avoid Carrying Your Phone on Your Body as that merely maximizes any potential exposure. Ideally put it in your purse or carrying bag. Placing a cell phone in a shirt pocket over the heart is asking for trouble, as is placing it in a man's pocket if he seeks to preserve his fertility.

Don't Assume One Cell Phone is Safer than Another: There's no such thing as a "safe" cellphone. This is particularly true when it comes to SAR ratings, which are virtually useless in measuring the true potential biological danger as most all the damage is not done by heat transfer, which SAR measures.

Keep Your Cell Phone Away from Your Body When it is on: The most dangerous place to be, in terms of radiation exposure, is within about six inches of the emitting antenna. You do not want any part of your body within that area, nor near a cell phone that is 'On' for lengthy periods.

Respect Others Who are More Sensitive: Some people who have become sensitive can feel the effects of others' cell phones in the same room, even when it is on but not being used. If you are in a meeting, on public transportation, in a courtroom or other public places, such as a doctor's office, keep your cell phone turned off out of consideration for the 'second hand radiation' effects. Children are also more vulnerable, so please avoid using your cell phone near children.

If you are using the Pong case, which redirects the cell phone radiation away from the head and successfully lowers the SAR effect, realize that in redirecting the radiation away from your head this may be intensifying the radiation in another direction, perhaps toward the person next to you, or, if in your pocket, increasing radiation intensity toward your body. Caution is always advised in dealing with any radiation-emitting device. We recommend cell phones be kept 'Off' except for emergencies.

Use Safer Headset Technology: Wired headsets will certainly allow you to keep the cellphone farther away from your body. However, if a wired headset is not well-shielded – and most of them are not – the wire itself acts as an antenna attracting ambient radio waves and transmitting radiation directly to your brain. Make sure that the wire used to transmit the signal to your ear is shielded. The best kind of headset to use is a combination shielded wire and air-tube headset. These operate like a stethoscope, transmitting the information to your head as an actual sound wave; although there are wires that still must be shielded, there is no wire that goes all the way up to your head.

Conclusion: When searching for a correlation between cell phones and health concerns one must take into consideration the cell phone's radiofrequency. As an apparatus, cell phones are low-powered radiofrequency transmitters, which is to say that they do emit radiofrequency but at very low ranges. Over the last two decades many organizations, including the World Health Organization (WHO) specifically The International Agency for Research on Cancer (IARC) a subdivision of WHO, the Federal Drug Administration (FDA), and the Federal Communications Commission (FCC), have run many studies to ensure the safety of cell phones, and make sure that they do not have adverse effects on their users. WHO officials assure the public that "research does not suggest any consistent evidence of adverse health effects from exposure to radiofrequency... [and that] research has not been able to provide support for a causal relationship between exposure to electromagnetic fields and self-reported symptoms" (WHO: Electromagnetic Fields and Public Health). Thus, making the continual usage of cell phones safe, despite the popular notion that cell phone radiation can cause cancer or even "microwave to brain" as some radicals proclaim. Another popular argument is that cell phones have only become so widespread in the last two decades, thus the long-term effects have not been properly examined; WHO purports, however, that "results of animal studies consistently show no increased cancer risk for long-term" (WHO: Electromagnetic Fields and Public Health).

BEST PHONES (low radiation)	WORST PHONES (high radiation)
 Nokia 7710	 Blackberry 8820 [AT&T, T-Mobile, Verizon Wireless]
 Blackberry Storm 9500 Smartphone	 Palm Pixi [Sprint]
 Blackberry Storm 9530 [Verizon Wireless]	 Blackberry 8703e [Verizon Wireless]
 Nokia 9300i	 Blackberry Bold 9700 [AT&T, T-Mobile]
 Samsung i8000 Omnia II [Verizon Wireless]	 Kyocera Jax S1300 [Virgin Mobile]
 Samsung Propel Pro (SGH-i627) [AT&T]	 HTC Magic (T-Mobile myTouch 3G) [T-Mobile]
 T-Mobile Wing (HERA110) [T-Mobile]	 Blackberry Curve 8330 [Sprint, U.S. Cellular, Verizon Wireless, MetroPCS, CREDO]
 Nokia E90	 Palm Treo 600
 Helio Pantech Ocean [Virgin Mobile]	 Motorola MOTO Q 9h
 Samsung Flight (SGH-A797) [AT&T]	 Motorola Moto Q Global [AT&T]

References

1. https://www.google.co.in/search?q=SAR&biw=1366&bih=628&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiUgvS1oJHRAhWFwI8KHXsIBPMQ_AUICsxE#tbs=isch&q=sar+level+code&imgrc=4Ka2s82p9jxsgM%3A
2. https://www.google.co.in/search?q=SAR&biw=1366&bih=628&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiUgvS1oJHRAhWFwI8KHXsIBPMQ_AUICsxE#tbs=isch&q=sar+mobile+radiation&imgrc=JQy5b_7GCwZooM%3A
3. https://www.google.co.in/search?q=SAR&biw=1366&bih=628&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiUgvS1oJHRAhWFwI8KHXsIBPMQ_AUICsxE#tbs=isch&q=sar+level+code&imgrc=2WIBnM93yQDfiM%3A
4. <http://articles.mercola.com/sites/articles/archive/2012/11/07/heavy-cell-phone-use.aspx>
5. https://www.google.co.in/search?q=cell+phone+working&biw=1366&bih=628&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiPzdS0y5bRAhVLQ48KHe2zCF4Q_AUIBigB#tbs=isch&q=cell+phon+radiation++working&imgrc=eViFGx8WwEciEM%3A
6. <http://telecomvibe.com/check-radiation-level-sar-of-your-smartphone-by-ussd-code-07/>
7. https://en.wikipedia.org/wiki/Specific_absorption_rate

SMART WASTE MANAGEMENT SYSTEM IMPLEMENTATION

Akshatha C Jain & Hrishikesh Tendulkar

Assistant professor, Dept. of Information Technology, Vidyalankar School of InformationTechnology, Wadala, Mumbai. Email: akshathaariga@vsit.edu.in
Mobile: 9867925326

Assistant Professor, Dept of Information Technology, Vidyalankar School of InformationTechnology, Wadala, Mumbai. Email: rishikesh.tendulkar@vsit.edu.in
Mobile: 9820769742

Abstract

In most of the places, the garbage bins are not cleaned at proper time intervals which results in overflowing of garbage resulting in hygiene problems, land pollution; also it creates ugliness to that place. This shows the need for a system that monitors the status of the garbage bin and provides information to the concerned authorities to manage the collection intervals for cleaning the bins. A solution to this problem is proposed in this paper. This paper practically demonstrates how Internet of Things (IoT) integration with data access networks, Geographic Information Systems (GIS), combinatorial optimization, and electronic engineering can contribute to improve cities' management systems. We present a waste collection solution based on providing intelligence to trashcans, by using an IoT prototype embedded with sensors, which can read, collect, and transmit trash volume data over the Internet.

Introduction: Intelligent Transportation Systems (ITS) enable new services within Smart Cities. Efficient Waste Collection (WC) is considered a fundamental service for Smart Cities. Internet of Things (IoT) can be applied both in ITS and Smart cities forming an advanced platform for novel applications. Surveillance systems can be used as an assistive technology for high Quality of Service (QoS) in waste collection. Specifically, IoT components: (i) RFIDs, (ii) sensors, cameras, and (iv) actuators are incorporated into ITS and surveillance systems for efficient waste collection.

Waste management services are becoming an important market, for which the waste collection process is a critical aspect for the service providers. The main goals are the following:

- 1 Reducing waste production
- 2 Ensuring that wastes are properly disposed
- 3 Recycling and re-using disposed products

To achieve these goals, regulations and taxes are being implemented to favor virtuous behaviours. In particular, to reduce the production of waste, there is an increasing trend towards individual billing, where people are charged depending on waste quantity disposed. Selective sorting is another approach, which is often implemented to improve recycling and reduce the environmental impact. The importance of resources and energy saving is another argument to manufacture recyclable materials. The sorting of wastes must be implemented as early as possible in the chain to increase the quantity of valuable recyclable materials. The use of pervasive computing technology such as Radio Frequency Identification (RFID), and sensor networks offer a new way to optimize the waste management systems. In recent years, we have seen increasing adoption of the radio-frequency identification (RFID) technology in many application domains, such as logistic, inventory, public transportation and security. Essentially, RFID makes it possible to read digital information from one or several objects using a reader at proximity of the objects, enabling automatic identification, tracking, checking of properties, etc. It is predicated that RFID could replace barcode and attached to most products by manufacturers and/or retailers. In this perspective, RFID would be an important opportunity for waste management, as RFID tags could be used to improve current waste

management processes. This paper proposes a method to improve the quality of selective sorting. This approach is based on local interactions to track the waste flow of a city. Each waste is detected by information properties stored in a RFID tag associated to it. At each step where wastes are to be processed the RFID tags are read in order to provide the relevant information. This process improves the sorting quality of recyclable products. We assume organic wastes products are not recycled and hence RFID tags are not attached to it. Without using an external information system, RFID can improve the selective sorting quality. The information stored in each tag associated to a waste can be used to help the user in the sorting process, and to analyse the content of a bin. In this paper we propose a method that uses operations research techniques to optimize the routes of waste collection vehicles servicing dumpster or skip type containers. The waste collection problem is reduced to the classic travelling salesman problem.

PROPOSED SYSTEM FRAMEWORK

The proposed framework is a 3 tier system namely A) Intelligent Bin, B) Gateway and C) Remote Base station

A. Intelligent Bin: The sensor node attached to the bin helps in the collection and transmission of data. The sensor node is divided in 2 groups. The first group consists of accelerometer sensor, temperature and humidity sensor, ultrasonic sensor. The Accelerometer sensor checks the opening/closing of the lid. The temperature and humidity sensor keeps track of the temperature and humidity inside the bin; two parameters that become important when storing organic waste. The ultrasonic sensor measures the filling of the bin. The second group consists of a transmitter to send the collected data to the gateway. The importance of this bin is that it can be used to store any waste: Plastic waste, E-waste, Metal waste, Food waste, Organic waste as in all these types of waste, collection interval will depend on the filling of the bin except in food waste and organic waste where all these parameters decide the collection interval.

B. Gateway: At the heart of the gateway is a transmitter that acts as a receiver to receive the transmitted data so that it could be stored in the local database. This data is further transmitted to the control station with the help of GPRS communication.

C. Control Station: The central server that hosts the Data Base Management System (DBMS) and the database is present at the control station. A web based user interface is present for user interaction with the system. The data from here is fed to programs like data parsing programs, route optimization systems and scheduling applications.

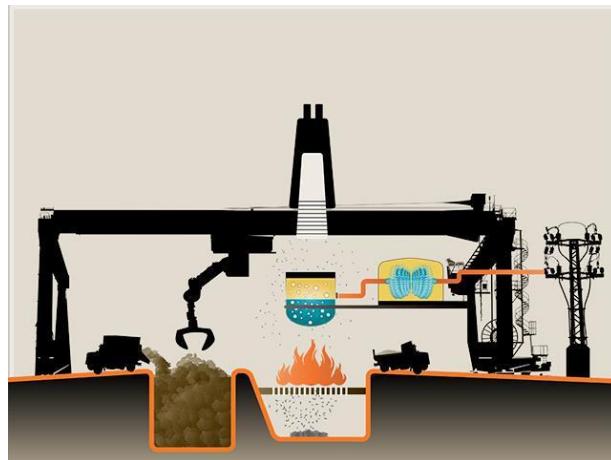
Algorithms: Shortest Path Spanning Tree (SPST) : This algorithm is used to calculate the shortest distance between two points in the area (for example, two trashcans), combined with GIS data of the streets in the city. The street network can be represented as a graph where street segments are edges and the joining points are vertexes. Hence, it is possible to calculate a realistic shortest driving distance between points by applying SPST. The distances are necessary as an input for the route optimization process. For practical reasons, it is convenient to pre compute the distance from all-to-all trashcans to speed up the route optimization process.

RELATED WORK: A RFID and a load cell sensor based waste management system have been implemented in paper. The parameter of the bin monitored in this system is the amount of waste being dumped in the bin. The collection interval is decided based on this parameter. The use of authentication password based on RFID technology helps to provide extra security in this system by identifying stolen bins. Another framework based on the integration of RFID and communication technologies such as GSM, GPRS, and GIS has been proposed in paper. Theoretical framework and algorithm have been developed in this paper for successful hardware implementation. The information retrieved is stored for monitoring and management activities. A Graphical User Interface is presented for user interaction. Another framework based on RFID, GSM and GIS has been

proposed in paper. The proposed system monitors the waste collection and management process. This system provides the real time data of waste collection process, tracking of vehicle position is done with the help of GIS which helps to overcome difficulties like route optimization, safe environment, availability of a vehicle and low fuel. In what follows, a natural representation of the city map is described as a graph that allows vehicle distances travelled to be calculated. Since the calculations must take into account the city blocks' traffic directions, a digraph (a graph in which the arcs are directed) is employed. The nodes in the graph represent the ends of each block and the container locations, which for our purposes are the significant vehicle positions. If a vehicle is at an intersection, the two possible blocks it may be in (in one or the other of the two streets) are identified on the map as different positions. In a two-way street the position will depend on which side of the street it is on. Thus, vehicle position is defined in terms of the street and block number, the traffic direction and the exact position within the block. Two nodes representing two positions have a directed arc joining them if a vehicle can travel directly from one node to the other. This means that a path in the graph represents a valid travel segment for a vehicle. The weight of an arc is the distance in metres between the positions representing its node ends. An intersection of two two-way streets will have 8 positions, one for each direction of each the four blocks touching the intersection. If there are no prohibited turns, these points will connect and a vehicle can turn in either direction.

Location of containers: Included in the databases supplied by the city were four lists of current container locations, one for each subzone. The locations are listed in the order in which they are currently serviced by the collection vehicles and are indicated. With this information, the length of the current routes can be calculated in order to compare them with the results obtained from our optimization method. Even if we do not know whether the path taken between any given consecutive pair of containers is the shortest possible one, we assume it is and then calculate lower bounds for the corresponding values of distance and work. Analogously, it can be also assumed that the paths between the EHU and the first container, the last container and the transfer station, and the transfer station and the EHU are also the shortest possible ones.

Algorithms: Shortest Path Spanning Tree (SPST) : This algorithm is used to calculate the shortest distance between two points in the area (for example, two trashcans), combined with GIS data of the streets in the city. The street network can be represented as a graph where street segments are edges and the joining points are vertexes. Hence, it is possible to calculate a realistic shortest driving distance between points by applying SPST. The distances are necessary as an input for the route optimization process. For practical reasons, it is convenient to pre compute the distance from all-to-all trashcans to speed up the route optimization process. Genetic Algorithms (GA): Collection routes are essentially travelling cycles containing a given set of trashcans. The optimization of these cycles is a combinatorial optimization problem. The objective of this optimization is to minimize the driving distance (equivalent to minimizing the length of the cycles), the problem is well known as *The Traveling Salesman Problem* and closely related to *The Minimum Linear Arrangement Problem*. Due to the high number of route optimizations required to carry out the experiments, it was decided to use GA which are relatively fast in providing near-optimal solutions. A detailed explanation of how to use In this we calculate the distance between the vehicle carrying garbage and the trash can. Once we calculate the distance by using GA we can help to decide the shortest path for a vehicle carrying garbage . Instead of a traditional landfill procedure, a community can implement a waste-to-energy facility that burns garbage, transforming chemical energy to thermal energy and that thermal energy is transformed into electrical energy, usually by turning a turbine. Another energy resource that comes from our garbage is the methane gas that is produced as the waste decays. This gas can be used as fuel.



Conclusion: This paper presents a practical Smart City use case of an intelligent waste collection cyber physical system. The system is based on an Internet Of Things sensing prototype which measures the waste level of trashcans and sends this data over the Internet to a server for storage and processing. Based on this data, an optimization process allows creating the most efficient collection routes, and these are forwarded to the workers. The paper is focused on the efficiency and economic feasibility of the system, in order to motivate the potential interested parties to deploy intelligent solutions for common city services. The results indicate that under the same conditions, basing the waste collection strategies on real time trashcan filling status improves the waste collection efficiency by guaranteeing that when trashcans become full, they are collected the same day, and by reducing by a factor of 4 the waste overflow that cannot be accommodated when trashcans are full. However, the distance required to drive is tripled, implying an increment on the daily collection cost between 13 - 25%. In relation to the economic feasibility analysis, the improvement in efficiency by deploying and using the proposed system implies higher total costs. However, when comparing the total costs of the different collection strategies under some efficient figures, we have observed that the savings in collection costs for an intelligent solution may cover the extra expenses for deploying and maintaining the system in a short term perspective of 2 years. Furthermore, once the system is deployed, the efficiency and collection costs could be further improved when historical data is available for trashcan selection optimization. In relation to future work directions, being aware that the numerical results of the experiments are highly dependent on assumptions considered, a sensibility analysis on the different parameters may provide valuable information about the system's performance in under different conditions. Furthermore, the natural step to take is to test how the use of historical data analysis can improve the efficiency and collection costs of dynamic strategies. Afterwards, if the results are satisfactory, field trials are expected to be conducted. Here we are converting the waste collected into a thermal energy.

References

1. <http://smartcities-infosystem.eu/>
2. https://www.researchgate.net/profile/Jose_Gutierrez36/publication/282738798_Smart_Waste_Collection_System_Based_on_Location_Intelligence/links/562f404808ae22b17036d336.pdf
3. [www.powershow.com/.../SMART_Waste_Management_powerpoint_ppt.4.](http://www.powershow.com/.../SMART_Waste_Management_powerpoint_ppt.4) <https://www.hindawi.com/journals/tswj/2014/646953>

CROSS PLATFORM FRAMEWORKS FOR HYBRID MOBILE APPLICATION DEVELOPMENT

Ms. Prachi Mahajan & Ms. Seema Vishwakarma

Vidyalankar School of Information Technology, Mumbai, India prachi04@gmail.com

Vidyalankar School of Information Technology, Mumbai, India seesbv@gmail.com

Abstract

According to 2016 mobile apps usage statistics, Mobile apps now account for more than half (52%) of all time spent on digital media. Smartphone users spent 89% of their mobile media time using mobile apps [7]. Users spend 90% of their time in (native) apps compared to the mobile Web (mobile web apps). Mobile web apps can be built quickly, but they do not provide any unique functions that help deliver users with expected mobile experience. On the other hand, native apps enable users to make use of mobile functionalities, but developing a native application can be troublesome and time consuming. Hybrid apps, offer a solution to this problem by striking a balance between mobile web apps and native apps. It is estimated that hybrid apps will be used in over 50% of mobile apps by 2016. A variety of cross platform frameworks are available to create such hybrid apps. This paper studies such four frameworks with respect to certain factors such as volume of data handling, user Interface, ease of use, integrating native features, applications and security.

Index Terms—Hybrid apps, cross platform, frameworks, native apps

I. INTRODUCTION: There are over 2.6 billion smartphone users worldwide[11]. Apps account for 89% of mobile media time, with the other 11% spent on websites[12]. Hence an important question is to decide what type of app to create. There are mainly three types of apps viz. mobile web apps, native apps, and hybrid apps. Each of them has certain pros and cons. Mobile application development consumes maximum amount of time for customization since it has to run on diverse platforms, hardware, OS version and browser. Mobile application development consists of an integrated development environment with tools to allow programmer to write base code and allow deployment of the application on various devices. Mobile web apps are in reality not applications but mobile friendly websites. Native app is an application program that has been developed for use on a particular platform or device. Hybrid apps on the other hand, ensure that the app can be seamlessly used across all the platforms and mobile devices. Cross platform frameworks help create such hybrid apps.

II. WEB, NATIVE AND HYBRID

Mobile applications are of following types as shown in the figure below.

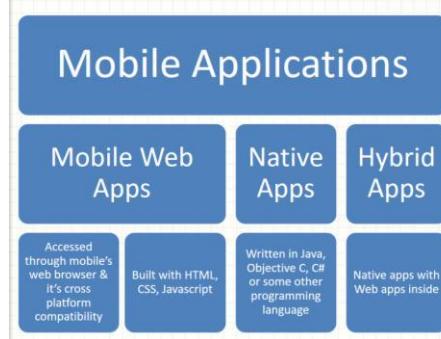


Figure.1

Based on the underlying techniques used to develop the apps, mainly three types of apps are widely observed viz. Web apps, Native apps, Hybrid apps.

A. Web mobile application: Web based mobile applications are programs developed for running on a web browser of any hand-held mobile devices. They have common code base which is used across all mobile platforms. Web apps are device independent since it's been used directly from the browsers. The most important technologies which are used for creating a web app include knowledge about

designing, presentation and animations. The main advantages of web apps are the ease of development and implementations. From the user's perspective, the benefit of using a web app is that it is easy to use, and there are fewer pop-ups and distractions. Also the design generally leans toward large square or rectangle buttons that are easy to tap. From the developer's perspective, all the current Web development skills such as HTML, JavaScript, CSS can be used to build the app. The knowledge required to mobilize apps isn't limited to a certain platform or vendor. The mobile architecture followed by the web apps are Thin Client Application Architecture, which means all information and program logic will be residing on the main server and the client will need no other software for running the app. Most of the platforms have pre-installed browsers of their company on the devices. One downside to mobile web apps is that many features available to native apps simply aren't available to mobile Web sites. Even some of the native features hybrids enjoy are out of reach for mobile Web sites. The code for the mobile web apps can't call on the webcam, sensors or other hardware components. This is primarily for security reasons.

B. Native mobile application: Native apps are installed on the devices directly from the web store. They are device and operating system specific and they reside on the system once the app is installed. The programming languages most widely used for native mobile application development are Java, Objective C and C#.

Platform	Programming language
Symbian	Symbian C++
Blackberry	Java
Windows phone	C#
Android	Java
Ios	Objective C

Table1. Programming language on different OS

Frameworks with the enhanced features to get adapted to the cross platform is supposed to be created. These applications include Android, iOS, Windows, Blackberry. The market for smartphone is growing which ultimately required development and advancement in native apps. There are over 400,000 and 200,00 applications available on Apple's App store and Google's Play store respectively[1]. Native apps are based on Native Application Architecture. The architecture needs to be installed on the device which is written in specific programming languages depending upon the mobile operating system platform. Angry Bird, WhatsApp, Kindle etc. are some of the examples of native applications.

C. Comparison of Mobile web app and native apps

Parameter	Native	Cross/Web
User Interface	User centric app	Application centric app
Accessibility	Compatible with hardware and features of device	Can access only limited features
Updates	Standalone app, updates needs to be downloaded by the user	Updates itself without the user's intervention
Efficiency	Faster, more efficient and less expensive	More expensive
Device feature	Yes	No
Offline functioning	Yes	No

Discoverability	No	Yes
Speed	Yes	No
Installation	Easy	May have
Maintenance	Difficult	Easy
Platform Independence	No	Yes
Content restrictions, approval process, fees, development cost	Yes	No

Table 2. Comparison of native and web app

D. Hybrid mobile application: There exist a third option called Hybrid applications, which provides ease from developing custom native apps for different mobile platforms or web apps with less capabilities. With a hybrid app, much or all of the user interface appears in a browser window, with a native app wrapped around it to provide access to device functionality not available via the browser. Hybrid applications are web-based applications built into native applications. Just like a native application, it runs on the device, but it is written by using web technologies (HTML5, CSS, JavaScript). In hybrid solution, developer can use available platform such as PhoneGap or Titanium. With it, native application can be built by using a HTML, CSS, and JavaScript code and still be able to make use of device features such as the camera, accelerometer, and storage[3]. Most of the user interaction happens in the browser and the native app will be available to provide access to system's features and functionalities not available in the browser. The advantage which the developer's get through hybrid app includes significant reduction in customizing coding which ultimately leads to less development time and cost. The user will get the complete look and feel of a native app: it is downloaded from an app store, stored on the mobile device, and launched just like a native app. But for a developer the difference is huge, because rather than rewriting the entire app for each mobile platform, they write code once and reuse it across different devices. The only design issue faced by an app based on Hybrid concepts is that web-based and native functionality should get seamlessly blended with each other.

III. FRAMEWORKS FOR HYBRID APPS: Hybrid application for mobile devices are created using HTML5, CSS and JavaScript, many of the technologies needed for developing hybrid apps also required knowledge of C#, JQuery, Angular JS or Bootstrap. Based on these requirements a list of frameworks have been designed but there are differences between those platforms, and we cannot call any single platform as the best for all projects. The paper concentrates on the comparative study of most of these frameworks so that the further analysis of each of the platforms' features, requirements, and availability will help the developers to select the one which is the best for a certain project.

1) Titanium: Titanium is an open source software development kit widely used in cross platform mobile development. It is an open source software. Titanium uses JavaScript for writing application code. Titanium substantially reduces the major work of a developer by allowing 60-90% of code reusability. It can be widely used for Rapid development of a prototype for user's interactions since it provides flexible and faster performance. With Titanium, the developer does not create web pages with HTML and CSS, but instead, builds UI using JavaScript code. The developer compiles the application for a specific platform in Titanium Studio, and can benefit from installing third-party, platform-specific SDKs beforehand. At runtime, the JavaScript interpreter runs JavaScript code in an environment with proxies for the native objects, such as input controls and windows. The JavaScript command 'create text field' creates a native 'UITextView' for iOS and Android.

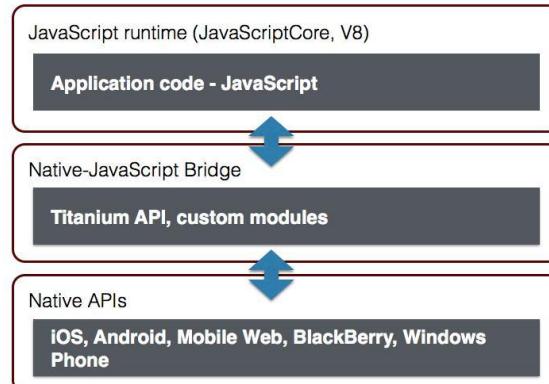
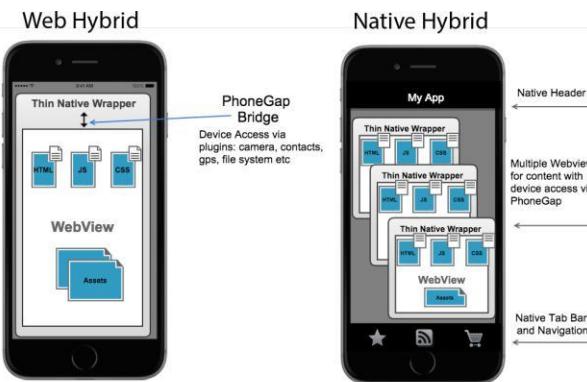


Figure 2. Titanium Architecture

The use of JavaScript allows easy development without the need to know platform languages. Not so large applications perform better as native API usage gives access to iOS and Android features. Titanium applications look and feel better than apps built on other platforms. But using external JavaScript libraries that work with Document Object Model (DOM) is not possible, as there is no DOM. Also due to library loading, delays are observed when the application starts. Development of complex applications is difficult, because JavaScript usage negatively affects application performance. Developers are required to manage target platform SDKs locally. The apps development experience is most smooth, fast and comfortable compared to native application development but since Titanium is based on automatic conversion from web code to native code animations are sluggish and apps are not responsive when control is returned from background processing.

2) PhoneGap: PhoneGap is a software development framework by Adobe Systems. Simple apps with already available web version are mostly developed using Phonegap. A tool called PhoneGap Build is offered by PhoneGap which is a cloud service where the 'www' folder is uploaded in one platform. The cloud service compiles and converts the code from one platform into another platform, removing the need to install local SDKs. Native device APIs can be accessed through plugins.



PhoneGap renders the user interface using an embedded browser. This many a times generates a poor and sluggish response compared to a native application. The embedded browser behaves differently on different devices, so the user interface of the app varies. Additionally, many of the existing PhoneGap plugins are outdated, so own plugins have to be written in order to extend the application.

3) Sencha Touch: Sencha Touch is a framework based on MVC architecture for building cross platform mobile web applications. It makes use of HTML5 and JavaScript. It accelerates the hardware to provide high performance components of user interface. Sencha Touch helps to create impressive mobile based apps that can function smoothly on varied operating systems like iOS, Android and

Windows. The software package consists of a special feature to extract data from any backend data set. The impressive native looking themes for major platforms makes the web and hybrid applications match the look and feel of the target platform. Its layout engine makes it possible for developers to respond and load an application with better performance. Sencha Touch applications works on every mobile browser, but access to the device features and native deployment is often essential for mobile applications. The data package allows client side collections of data and also offers features for sorting and filtering.

4) Ionic: Ionic has established itself as the leader in mobile application development. Ionic is an open source framework which is available free of cost for usage. Ionic has always updated itself with latest trends. Ionic uses Angular JS rather than jQuery, which gives this framework most of the hidden superpowers over other frame works. This allows Ionic to rely on native hardware acceleration rather than expensive DOM manipulation. Ionic emulates native app UI guidelines and uses native SDKs, bringing the UI standards and device features of native apps together with the full power and flexibility of the open web. Ionic is the only mobile app stack that enables web developers apps for all major app stores and the mobile web with a single code base.

IV. CONCLUSION: The paper has put forth the pros and cons of four popularly used frameworks used for hybrid apps. Every framework has certain peculiarities which makes it good for certain types of apps. Phonegap, for example cannot be used for apps like online shopping apps that require handling a huge volume of data and quick response to the user. This problem has now been overcome in Ionic, by

mixing its own code with native mobile app code in Apache Cordova. Developers have reported that though Titanium is good for prototyping, there are issues with stability and memory management. Though these frameworks have their own share of problems, solutions are also being developed to overcome them. Cordova, the backbone of all these frameworks, earlier could not access some of the native features of the mobile devices (eg. Back button on the screen), hence mimicked this functionality through the app. This problem though has now been overcome and the back button is now an inherent feature. Thus, it can be suitably stated that hybrid apps and the frameworks to develop them is the way ahead.

REFERENCES

- [1] "OS (Operating System)" [Online]. Available from <http://www.gsmarena.com/glossary.php3?term=os>
- [2] "Lionbridge" [Online] Available from http://www.lionbridge.com/pl-pl/files/2012/11/Lionbridge-WP_MobileApps2.pdf
- [3] "The Suitability of Native Application for University E-Learning Compared to Web-Based Application" [Online] Available from
- [4] STUDY ON XAMARIN CROSS-PLATFORM FRAMEWORK, International Journal of Technical Research and Applications e-ISSN: 2320-8163,
- [5] <https://www.ijsr.net/archive/v4i1/SUB15686.pdf>
- [6] <http://www.appcelerator.org/>
- [7] <https://enricoangelini.com/2012/5-pros-and-cons-of-appcelerators-titanium/>
- [8] <https://www.graph.uk/blog/mobile-development-frameworks-in-2016>
- [9] <http://www.business2community.com/infographics/mobile-apps-usage-statistics-trends-infographic-01248837#1j8mbFkBvoLye4vJ.97>
- [10] <http://justcreative.com/2016/03/17/html5-vs-native-apps-whats-best-for-2016/>
- [11] <https://msdn.microsoft.com/en-us/magazine/dn818502.aspx>
- [12] <http://www.forbes.com/sites/anthonykosner/2013/08/11/does-your-business-need-a-mobile-app/#591fc3d53cc>
- [13] <https://deviceatlas.com/blog/16-mobile-market-statistics-you-should-know-2016>
- [14] <https://www.impactbnd.com/blog/mobile-marketing-statistics-for-2016>
- [15] <http://www.informatit.com/articles/article.aspx?p=2478076>
- [16] <https://ionicframework.com/>

CYBER CRIME ISSUES RELATED TO MEDJACK& PROACTIVE STRATEGIES TO TACKLE IT IN THE INDIAN CONTEXT

Mr. Nikhil Pawanikar & Ms. Swapna Kadam

Assistant professor, University Dept. of Information Technology (UDIT) , University of Mumbai, Email:Nikhil.pawanikar@hotmail.com ,Mobile: 9967753717

Assistant Professor, Dept of Information Technology, Santacruz Vidyalankar School of Information Technology, (E), Mumbai 400098.Wadala, Mumbai.

Email: swapna.kadam@vsit.edu.in, Mobile: 9870378940

Abstract

The purpose of this paper is to understand Cyber crime implications on the health care industry globally and suggest proactive measures to tackle it in the Indian context. With the fast growing trend towards digitization there is rising demand for integration of computers and internet connectivity at an explosive rate. In short internet-connected devices are being increasingly used in the health care industry. Cyber security analysts globally have confirmed and reported attacks on hospitals wherein medical devices have been hijacked and termed as MEDJACK^[1]. This hijacking typically concludes being a case of ransom ware which is a type of malware that typically prevents organizations from accessing certain parts of its system and may be unable to get in unless they pay a certain amount of money. The ransom ware will then either deny access to the data or it will encrypt it.

Keywords: *Cyber crime, Healthcare, MEDJACK, Ransom ware, EMR & HER*

OBJECTIVE: The paper provides an overview of the strategies that can be taken in the direction to prevent ransomware and cyber attacks in the health care infrastructure especially in the Indian Context.

LITERATURE REVIEW: In India Information and Communications Technology (ICT) has seen an aggressive inclusion in e-governance post 2010 and has the potential to impact almost every sector including the health sector. In healthcare industry, information management and communication processes are pivotal, and are facilitated or limited by the availability of information. With inclusion of ICT there is a great push for digitization. The technology being used in the health care industry has digitized the medical procedures and has resulted in the use of standards such as Electronic Medical Records (EMR) and Electronic Health Records (EHR). An EMR contains the standard medical and clinical data gathered in one provider's office. It is a digital version of a paper chart that contains all of a patient's medical history from one practice. EHRs go beyond the data collected in the provider's office and include a more comprehensive patient history. EHRs are meant to contain and share information from all authorized providers involved in a patient's care. EHR data can be created, managed, and consulted by authorized providers and staff from across more than one health care organization. Benefits of EMR are as follows:

1. Track data over time
2. Identify patients who are due for preventive visits and screenings
3. Monitoring of patients medical parameters, such as vaccinations and blood pressure readings
4. Improve overall quality of care in a practice

IV. CYBER CRIME IN HEALTH CARE: Latest IT initiatives are promoted by the healthcare industry as a way to enhance the quality of care, also add information security risk. In developed countries such as the United States of America where the health care industry is pretty much established compared to its Indian counterpart the scale and intensity of healthcare related cybercrime is a critical and growing threat to its medical system. A growing number of nurses and doctors are using Wi-Fi-enabled communication devices and tablet computers instead of clipboards and sheets of

paper. In a very similar manner internet-connected devices have been introduced to patient bed sides in different forms such as fetal monitors, electrocardiograms, temperature monitors, or blood glucose monitors— and are increasingly used in remotely managing services. These devices— in addition to many more emerging technologies like Internet of Things (IoT) – face the same security risks that are in networked computers, but often have not been designed to the same information security standards. According to U.S. Department of Health and Human Services in 2015 data breaches which are cyber crimes have affected well over 110 million people which means the personal information of nearly half the US adult population has been compromised in some manner by a data breach.^[4]

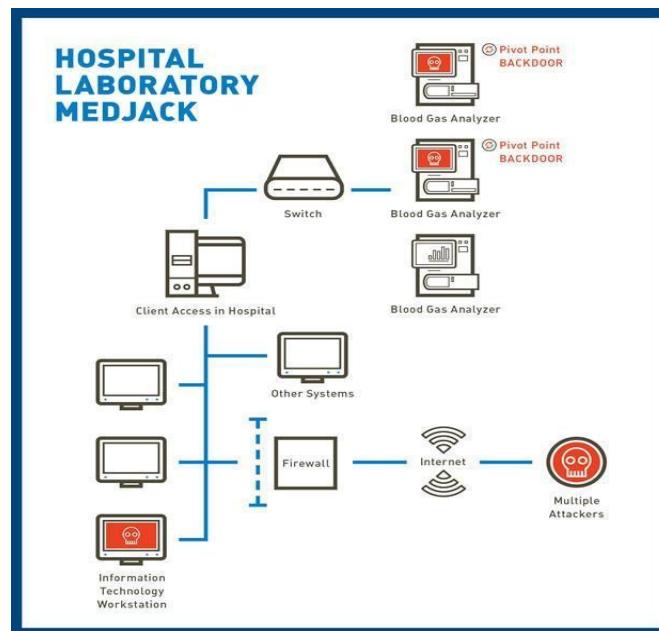
Risks of data breaches include:

- Personal data being used by criminals to open new credit accounts in their name
- Being accused of using medical services due to criminals filing false medical claims using their information
- Threaten with blackmail or extortion from criminals to expose sensitive medical details

This stands as a very significant fact for INDIA because a developed country such as USA is yet to find a robust solution to this problem while INDIA where digitization has come out of dormancy and is now on the rise is bound to follow the step of these developed nations and fall prey to cyber crime especially in health care industry.

RANSOMWARE

Definition - Ransomware is computer malware that installs covertly on a victim's device which could be a computer, smart phone, wearable device, etc, executes a crypto virology attack that adversely affects it, and then demands a ransom payment to decrypt it or not publish it. Simple ransomware may lock the system in a way which is not difficult for a person with proper knowledge to reverse, and display a message requesting payment in specific to unlock it. More advanced malware encrypts the victim's files, making them inaccessible, and demands a ransom payment to decrypt them. If a health care entity such as a hospital or a clinic cannot access its own EHR, patient treatment could be delayed or hindered. The following illustration describes a MEDJACK attack on a hospital laboratory with the medical devices being infected with ransomware and the network points acting as a vulnerable point of entry.



CHALLENGES IN THE INDIAN HEALTH CARE INDUSTRY: In India the medical devices that communicate data on the network do *not* conform to any regulated standards as compared to

other countries. For example, in the USA medical devices go through a Food and Drug Administration approval process prior to commercial release. This is essential to ensure that the standards of product manufacture, its operation and performance protect consumers and meet its safe intended use. This makes things much more complex for the healthcare cyber offenders.

CYBER SECURITY INFRASTRUCTURE IN INDIA: The Indian Cyber Security currently *lacks* the infrastructure to mount defensive and offensive operations against cyber attacks. It is currently engaged in tackling localized cyber crime on a case-by-case basis. In 2014, the Prime Minister's Office (PMO) proposed creating the National Cyber Security Agency (NCSA) recognizing the strategic dimensions of the Indian cyberspace. India currently has a high level of agencies performing cyber operations — the National Technical Research Organization, the National Intelligence Grid, and the National Information Board are a few to name — but there is also an additional layer of ministries performing governance functions which includes the Ministries of Defense, Home, External Affairs and IT^[6].

RANSOMWARE REMOVAL: Combating the scale, scope, and sophistication of cybercrime is outside the expertise of most healthcare organizations. Their primary purpose, after all, is to provide health care. Staying at par with the cutting edge global cyber security defense technologies and figuring out how to manage the brand new challenges of IoT will require tremendous effort and investment. The healthcare industry should start by taking example from financial services: implementing more robust and automated fraud detection technologies to rapidly detect security lapses breaches, and plan for consumer friendly response and remediation once a security breach occurs. Because organized cybercrime is targeting patient records, the security of data should be considered at critical level. This may seem obvious, yet it was found that most of compromised databases were not even encrypted. Any healthcare organization involved in collecting, storing and transmitting patient data is vulnerable from the smallest physician practices, clinics, and labs to the largest hospitals. Failure to secure sensitive information is going to be increasingly damaging to profits and reputations, not to mention the healthcare system as a whole^[7].

PROACTIVE STRATEGIES TO TACKLE CYBER CRIME ISSUES RELATED TO MEDJACK, RANSOMWARE IN INDIA: A multi-faceted approach should be taken to help the healthcare industry detect and prevent cyber crime issues related to medjack, ransomware. Following are a few steps that need to be taken:

Overcoming Funding shortage: The cyber security problem is compounded by the fact that the healthcare industry doesn't view cyber security to be as much of a strategic priority as the finance and defense industries do. Healthcare funding is focused squarely on the human and technology assets that make medical treatment possible. *At an organizational and institutional level the medical facilities should acknowledge the need to spending for securing their data and allocate appropriate budget for the same. At National level the government should consider a separate budget head for cyber security and warfare which could be monitored by the Ministry of Defense.*

Overcoming the Talent Deficit: It's harder to find cyber security professionals than it is to find general IT professionals. Locating the right security talent is very challenging and difficult. Not only at an institutional level the preparedness for cyber security should stem at a national level and span a holistic approach to securing the cyber space. Some of the top certifications in the field of Cyber Security are

- CompTIA Security+
- Certified Ethical Hacker (CEH)
- SANS GIAC Security Essentials (GSEC)
- Certified Information Systems Security Professionals (CISSPs).
- Certified Information Security Manager (CISM)

At an organizational and institutional level the medical facilities should appoint necessary number personnel with proper qualifications for securing the digital infrastructure.

At National level the Government should estimate the requirement of cyber security professionals in general and then divide them according to different domains of security challenges ^[9].

Use of Advanced Technology: Big data and analytics are essential for making informed, strategic security decisions. Cybercriminals are continually gathering intelligence on security solutions, so they can make assumptions on less-visible behavioral patterns to better conceal their actions. Data must therefore be analyzed quickly to identify actionable insights and stop attackers. Big data and analytics convert unstructured log data to a format that enables informed, strategic decision making. This allows security teams to quickly respond to threats before data leaves the network. *Network-based security solutions* to name a few - IDS/IPS, Firewall and BreachDetection Systems that can identify inbound/outbound Command & Control communications which are a key component of this threat lifecycle. Endpointsolutions that have specific anti crypto-ransomware technologies such as behavior analysis that can identify the encryption process and stop it from continuing ^[10].

Other general measures at organizational level: Educating employees on identifying suspicious emails (phishing). Review shared drive policy and require authentication to access. Identify and restrict Bring-your-own-device (BYOD). The mobile applications that employees install and use on their personal devices expose corporate IT to additional risks

CONCLUSION: The value of EMR & EHR to a cyber criminal is much higher than a credit card or a bank account number. Cyber crime in the healthcare industry is still in its infant stage as the online exchange of healthcare information is in infancy. Evidences of recent data breaches show that more the data that is communicated online higher are its chances of getting compromised. Healthcare industry faces greater risks compared to finance and other sectors due to the sensitivity of the information they hold and the unsecure nature of the access points that are used to share them. All stake holders in the healthcare industry – consumers, providers, insurers and pharmaceutical companies need to be aware of the potential cyber security risks they face and exercise proactive measures that should keep on evolving.

References

- MEDJACK-<http://www.computerworld.com/article/2932371/cybercrime-hacking/medjack-hackers-hijacking-medical-devices-to-create-backdoors-in-hospital-networks.html>
- Ransomware - <http://healthitsecurity.com/features/how-ransomware-affects-hospital-data-security>
- EMR & HER – <https://www.healthit.gov/providers-professionals/electronic-medical-records-emr>
- Data breaches in US Health Care Institutions -<http://www.beckershospitalreview.com/healthcare-information-technology/15-biggest-data-breaches-of-2015-so-far.html>
- Ransomware definition - <https://en.wikipedia.org/wiki/Ransomware>
- Cyber security infrastructure in India - <http://www.thehindu.com/opinion/columns/upgrading-indias-cyber-security-architecture/article8327987.ece>
- Ransomware removal – <http://www.healthcareitnews.com/blog/growing-pains-cybercrime-plagues-healthcare-industry>
- Top certifications in Cyber Security - <http://www.tomsitpro.com/articles/information-security-certifications,2-205.html>
- Overcoming the Talent Deficit -<http://www.cisco.com/c/dam/en/us/products/collateral/security/cybercrime-healthcare.pdf>
- Preventing – <http://www.cso.com.au/article/597125/healthcare-held-ransom-how-protect-australian-healthcare-systems-patients-from-cybercrime/>
- Major 2016 Healthcare Data Breaches- <http://www.hipaajournal.com/major-2016-healthcare-data-breaches-mid-year-summary-3499>

INNOVATIVE APPLICATIONS OF EMERGING TECHNOLOGIES: DATA WAREHOUSING & BUSINESS INTELLIGENCE

Mrs. Reshma Bahauddin & Ms. Tahereen Momin

Assistant professor, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi. E-mail: reshminabahauddin@gmail.com Contact No: 8446348606

Assistant professor, Dept. of Information Technology, G.M.Momin Women's College, Bhiwandi. E-mail: tahereenmomin@gmail.com Contact No: 8600419719

Abstract

India has taken a stand for making cities of India smart. The core infrastructure element in an Indian smart cities by Indian government include: digitalization, robust IT connectivity, good governance, efficient urban mobility and public transport, street lights, health and education, sustainable environment, etc. Everything is generating data which is multi source, inconsistency and hard to manage. This paper emphasizes on developing data warehouse for smart cities, which is oriented to data acquisition and integration. It helps government of India to make prediction for managing the smart cities with the help of business intelligence. A data warehouse is a central repository of the data that is subject oriented, integrated, time variant and nonvolatile. Data is the new currency of smart cities; we won't be smart unless we use business intelligence for managing the smart cities. The key techniques of the paper are comprehensive data acquisition, data storage, dynamical update, integration of multi-source heterogeneous data and business intelligence were described.

Keyword: data warehouse, business intelligence, digitalization, IT connectivity, dynamical update, data acquisition and integration.

Introduction: With aim of global economic crises in 2008, IBM introduced the Smarter Planet Vision. IBM explain how a whole new generation of intelligent systems and technologies can be built with Smarter power grids, smarter food systems, smarter water, smarter healthcare, smarter traffic systems. This can be achieved by making the city as "Smart cities". Smart city which is continuation of digital city provides intelligent analysis and services on the basis of urban information and put forward higher demand for real time, dynamic and integrated data resource. With the advent of smart city oceans of raw data are produced which comes from Multiple heterogeneous source. We need to acquire, integrate and centralize the data so that we can analyze and apply business intelligence to take proper decision regarding urban management. This can be achieved by creating a data warehouse for smart cities of India.

Architecture of Ware House With Respect To Smart City

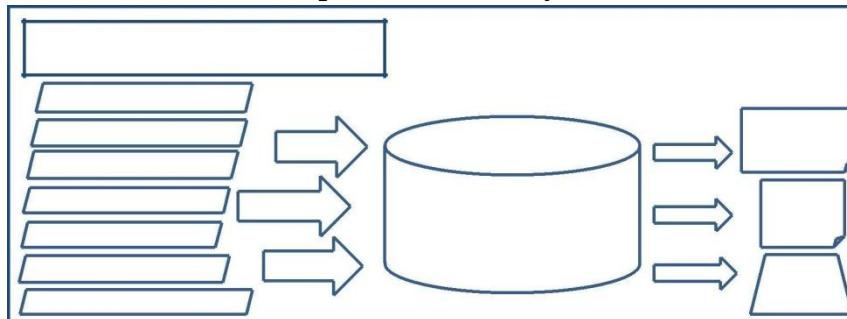


Fig 1: Data source, Data warehouse and Analytics of smart city—pictorial view

Data warehouse is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision making process. **Subject-Oriented:** A data warehouse can be used to analyze a particular subject area. For example, "Education" can be a particular subject.

Integrated: A data warehouse integrates data from multiple data sources. For example, source—Public Transport|| and source —Environment|| may have different ways of producing data, but in a data warehouse, there will be only a single way of representing a Data.

Time-Variant: Historical data is kept in a data warehouse. For example, one can retrieve data from 3 months, 6 months, 12 months, or even older data from a data warehouse. This contrasts with a transactions system, where often only the most recent data is kept. For example, a transaction system may hold the most recent address of a customer, where a data warehouse can hold all addresses associated with a customer. **Non-volatile:** Once data is in the data warehouse, it will not change. So, historical data in a data warehouse should never be altered.

Data Acquisition

We need to consider the following questions when determining the sources and costs of data for the Data Warehouse:

- Where does the data come from?
- What processes are used to obtain the data?
- What does it cost to obtain the data?
- What does it cost to store the data?
- What does it cost to maintain the data?

Smart cities sources for Data Acquisition



Fig 2: Sources of Smart cities

(REF:<http://smartcities.gov.in/writereaddata/What%20is%20Smart%20City.pdf>)

Data Integration

ETL (Extract, Transform and Load) is a process in data warehousing responsible for pulling data out of the source systems and placing it into a data warehouse. ETL commonly integrates data from multiple applications. ETL involves the following tasks:

extracting the data from source systems. Data from different source systems is converted into one consolidated data warehouse format which is ready for transformation processing.

transforming the data may involve the following tasks:

applying business rules (so-called derivations, e.g., calculating new measures and dimensions) cleaning (e.g., mapping NULL to 0 or "Male" to "M" and "Female" to "F" etc.), filtering (e.g., selecting only certain columns to load), splitting a column into multiple columns and vice versa, joining together data from multiple sources (e.g., lookup, merge), transposing rows and columns, applying any kind of simple or complex data validation (e.g., if the first 3 columns in a row are empty then reject the row from processing).

loading the data is the process of writing the data into the target database for analytical reporting and information. The target system can be a simple delimited flat file or a data warehouse.

Data Warehouse Storage Schema

Star Schema

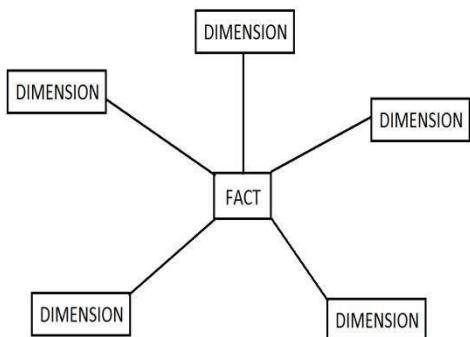


Fig 3: Star Schema

Snowflakes schema

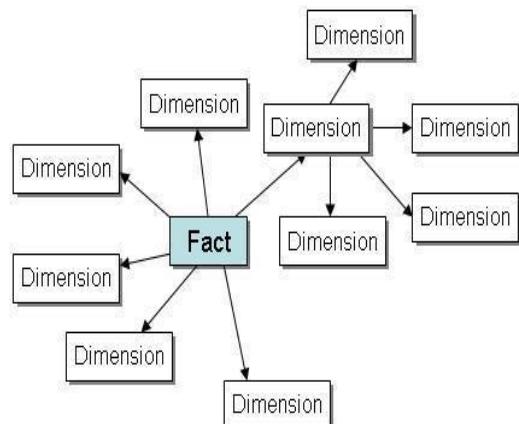


Fig 4: Snowflakes Schema

The star schema architecture is the simplest data warehouse schema. It is called a star schema because the diagram resembles a star, with points radiating from a center. The center of the star consists of fact table and the points of the star are the dimension tables. Usually the fact tables in a star schema are in third normal form (3NF) whereas dimensional tables are de-normalized. Despite the fact that the star schema is the simplest architecture, it is most commonly used nowadays and is recommended by Oracle.

The snowflake schema architecture is a more complex variation of the star schema used in a data warehouse, because the tables which describe the dimensions are normalized.

Business Intelligence for Smart cities warehouse: Business Intelligence refers to a set of methods and techniques that are used by organizations for tactical and strategic decision making. It leverages technologies that focus on counts, statistics and business objectives to improve business performance. They believe that up-to-date, accurate and integrated information about the city are critical for the management of the smart cities. Based on the smart cities project in India, data warehouse can help planners, decision makers and designer of Smart City in following ways:

Loss Management—Data collected from each sensor on regular interval from cities will give insight on where the actual loss is happening. Government can look for how these losses can be reduced based on deep data analysis.

Outage management - Rather than waiting for customers to report outages, government can receive reports from the grid itself. The Smart Grid can provide the report on outage; document its recovery in real-time and isolate locations of physical damage. **Infrastructure Management**—With the Warehouse, government can predict about the fail of any infrastructure and helps in determining how costly or dangerous those breakdowns are going to be. It can also help in managing future challenges like the increased threat of storms and natural disasters to grid resiliency.

Crisis Management – Data warehouse can help in making visual analytics systems which can be placed in Smart Grid to help decision makers to perceive and analyze the crisis situations.

Energy Theft- Use real-time metering data can help in discovering unaccounted consumption when energy is being diverted and stolen.

Traffic Congestion management: One of the main aspects of smart cities is a good control of the traffic flow within the city, which will enhance the transportation systems and improve the citizens' commutes and the cities overall traffic patterns. Traffic Congestion Management The urbanization and metropolitan cities trend is fast growing. The number of vehicles on the world's roads is expected to double to around 2.5 billion by 2050. When the population increases, traffic problems, pollution, and economic problems happen. Due to this, the use of smart traffic lights and signals is one of the most important techniques that smart cities use to deal with high volumes of traffic and congestions. Smart traffic lights and signals should be interconnected across the traffic grids to offer more information about traffic patterns. Each sensor detects a different parameter of the traffic flow (e.g. the speeds of cars, traffic density, waiting time at the lights, traffic jams, etc.). The system makes decisions according to the values of these parameters and gives the appropriate instructions to the lights and signals. Thus, the more data available to this system, the more informed decisions it will be able to make. This requires the use of real-time big data analytics

- **Green Energy** - Through predictive analytics, producer can generate electricity from renewable sources with small plant set up and in incremental way depending upon the needs of a city. Large dataset can help in doing analysis on sources of carbon emission which can be reduced.
- **Smart education:** by relying on big data collected in the field and correctly processed to generate the required information, we will have a positive effect on the knowledge levels and teaching/learning tools to deliver or acquire knowledge

Conclusion: The role of data warehouse and business intelligence is fundamental in building smart cities. The significant increase in connected devices in urban cities has led to the rapid growth of data, which has elicited the attention of many researchers in different research domains. The future model and architecture with the aim of managing big data for smart city were also proposed, and the applications of the smart cities in which business intelligence analytics can play an important role. Data can be stored in transactional processing system, but we won't be able to apply business intelligence on those data. With the help of Data warehouse and business Intelligence, relevant information can be extracted and analytical processing can be applied on it. This paper aims to offer a comprehensive view of the role of Data warehouse and business Intelligence in a smart city. However, a research in a smart city is in its infancy and the discussed challenges that remain to be addressed make it a practical field.

Acknowledgement: I would like to express my special thanks of gratitude to Star College Scheme, Department of Biotechnology, Ministry of Science (DBT) for funding this research paper.

References

Smart Cities Mission:

<http://smartcities.gov.in/>

Book on: Theory and Practice from Digital City to Smart City. Li, D.R., Shao, Z.F., Yang, X.M.: *Geospatial Information* 9(6), 1–5 (2011).

Book on: Data warehousing: Design, Development and best Practices, By: Soumendra Mohanty

Star schema and Snowflake: <http://prashanthobiee.blogspot.in/2012/12/star-schema-and-snowflake-schema.html>

Data Integration:

<http://www.dataintegration.info/etl> Extract, transforms, and loads

https://en.wikipedia.org/wiki/Extract,_transform,_load

INNOVATIVE APPLICATIONS OF EMERGING TECHNOLOGIES IN EMBEDDED SYSTEM: RASPBERRY PI AS A DESKTOP COMPUTER

Huma Shehzad Momin

*Assistant professor, Dept. of Information Technology, G.M. Momin Women's College, Rais High School Campus, Thane Road, Bhiwandi. Email: humamomin588@gmail.com
Mobile: 9096130057*

Abstract

As the technology are emerging day by day and so its application and uses. Raspberry Pi is one of them. Computer education in schools play important role in students career development. Computer with internet is most powerful device that students can use to learn new skills and more advanced version of current lessons. Schools are around the globe teaching student's basics of computers and internet. But, in some schools computers are not yet an integrated part of the school curriculum. The most important problems schools have with computers are lack of financial resources and difficulty in managing them. In this paper, I discuss about a proposed system, which is different than the existing system. This paper presents a flexible and less expensive desktop system by utilizing Raspberry Pi. The Raspberry Pi is a low cost single-board computer which has recently become very popular. This paper showcases the attempt at building a low cost desktop computer device from emerging technology for schools that are unable to buy desktop computers (or PC).

Keywords: Raspberry Pi, Internet, Desktop Computer

INTRODUCTION: Use of computer is increasing day by day, it is very much important for schools to have a computer Lab. Computer technology has had a deep impact on the education sector. In schools computer education is one of the most important subjects. In schools it is really important for computer teachers to teach students about "How to use computers?", "How to understand, the benefits of using various application such as Microsoft word, excel, power point, Internet, etc." I know most of the schools are trying to do this. But they are teaching students in schools about computers more theoretically than practical education. Why? Because there are some problems faced by schools to implement a computer lab. Among those problems financial aspect is one of them. To overcome this problem Raspberry Pi can be used as one of the appropriate solution. I have seen the Raspberry Pi can be used for an incredible amount of projects. Mine, I thought, was rather simple. I thought of using Raspberry Pi as a desktop type of computer. As Raspberry Pi is one of the Emerging Technologies in Embedded System for which we can get a beneficial gain from a little investment. The Raspberry Pi Foundation works to put the power of digital making into the hands of people all over the world, so they are capable of understanding and shaping our increasingly digital world, able to solve the problems that matter to them, and equipped for the jobs of the future.

IMPORTANCE OF COMPUTER AND INTERNET IN SCHOOLS: The uses of computers and internet are growing day by day in high speed. In almost all business, companies, schools using computers for various official operations. New tech tools are coming that helping students to learn better. Computers and internet not only help students to explore creativity and imagination but also help to understand technologies. Students are future leaders for any nation. Current school students are future doctors, engineers, entrepreneurs. So, for the education development it is really important to teach students in schools about computers, internet and its benefits. Computers and the Internet are a great resource even for teachers! Teachers can find suggestions, lesson plans, practical support, information, and materials through the Internet. In fact, using a computer can make a teacher's life more efficient. There are many ways in which teachers can make computer and Internet technology

work for them as well as for students. Internet is a way for students and teachers to learn and to connect with others.

PROBLEM STATEMENT: All parents want their kids to be intelligent and creative. They don't want to see their kids don't know about computers when other knows very well. They want to send their kids in schools where high level of education and schools have enough IT infrastructures. But not all parents are able to admit their students in private schools. Schools in urban areas and even some poor schools cannot afford to provide basic computer facility. The most important problems schools have with computers:

- Lack of financial resources (to buy enough computers, up-to-date computers, enough printers and other peripherals, licenses for good software, technical support, infrastructure).
 - The inability of teachers to know how to use the computers effectively.
 - Difficulty in integrating computers into the school / classroom curriculum (problems of use, of scheduling, of time).

PROPOSE SYSTEM: To overcome this problem Raspberry Pi can be used as one of the appropriate solution. I have seen the Raspberry Pi can be used for an incredible amount of projects. Mine, I thought, was rather simple. I thought of using Raspberry Pi as a desktop type of computer. As Raspberry Pi is one of the Emerging Technologies in Embedded System for which we can get a beneficial gain from a little investment.

Raspberry Pi: The Raspberry Pi is a series of credit card-sized single-Board computers developed in the United Kingdom by the Raspberry Pi Foundation to promote the teaching of basic computer science in schools and in developing countries. The original model became far more popular than anticipated, selling outside of its target market for uses such as robotics. Peripherals (including keyboards, mice and cases) are not included with the Raspberry Pi. The Raspberry Pi device looks like a motherboard, with the mounted chips and ports exposed (something you'd expect to see only if you opened up your computer and looked at its internal boards), but it has all the components you need to connect input, output, and storage devices and start computing. Raspberry Pi is a Linux powered computer. The reason for raspberry pi being a preferred is because it runs a complete Linux Kernel and has direct interfaces such as Ethernet for wired internet as well as USB ports to connect to wifi. The operating system of raspberry Pi supports modern programming languages like python which makes IoT application development easier. The Raspberry Pi is having components like GPIO header, USB ports, LAN port, CSI and Touch Screen interface, HDMI port, integrated audio and video output port. The board runs on single +5v power supply for which there is a micro USB female connector provided

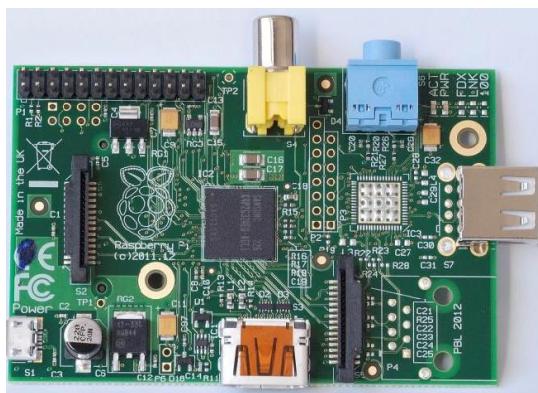


Fig.1: Raspberry Pi 1 Model A

Here are the various components on the Raspberry Pi board:



Fig. 2: Raspberry Pi 3 Model B

- ARM CPU/GPU:** This is a Broadcom BCM2835 System on a Chip (SoC) that's made up of an ARM central processing unit (CPU) and a Videocore 4 graphics processing unit (GPU).
- GPIO:** These are exposed general-purpose input/output connection points.
- RCA:** An RCA jack allows connection of analog TVs and other similar output devices.
- Audio out:** This is a standard 3.55-millimeter jack for connection of audio output devices such as headphones or speakers. There is no audio in.
- USB:** This is a common connection port for peripheral devices of all types (including your mouse and keyboard). You can use a USB hub to expand the number of ports.
- HDMI:** This connector allows you to hook up a high-definition television or other compatible device using an HDMI cable.
- Power:** This is a 5v Micro USB power connector into which you can plug your compatible power supply.
- SD card slot:** This is a full-sized SD card slot. An SD card with an operating system (OS) installed is required for booting the device.
- Ethernet:** This connector allows for wired network access and is only available on the Model B.

Operating System of Raspberry Pi: Raspbian is a Debian-based computer operating system for Raspberry Pi. It is now officially provided by the Raspberry Pi Foundation, as the primary operating system for the family of Raspberry Pi single-board computers. Raspbian is a version of Linux built specifically for the Raspberry Pi. It comes packed with all the software you'll need for every basic task with a computer. You'll get LibreOffice as an office suite, a web browser, email program, and some tools to teach programming to kids and adults alike. Some other operating systems that can be loaded up onto Raspberry Pi to get it started on a road to general purpose computing. Ubuntu MATE, Snappy Ubuntu, Pidora, Windows 10 IoT.

Table 1: Specification of Raspberry Pi

Parameters	Raspberry Pi 1		Raspberry Pi 2	Raspberry Pi 3
	Model A	Model B+	Model B	Model B
Memory	256 mb	512 mb	1 GB	1 GB
CPU	700 MHZ Singlr-core	700 MHz Singlr-core	900 MHz Quad-core	1.2 GHz Quad-core
USB Port	1	4	4	4
GPIO	8	17	40	40
Power Source	5V Micro USB	5V Micro USB	5V Micro USB	5V Micro USB
Size (in Inches)	3.370 in × 2.224 in	3.370 in × 2.224 in	3.370 in × 2.224 in	2.66 in × 1.22 in

DIAGRAM OF PROPOSED SYSTEM

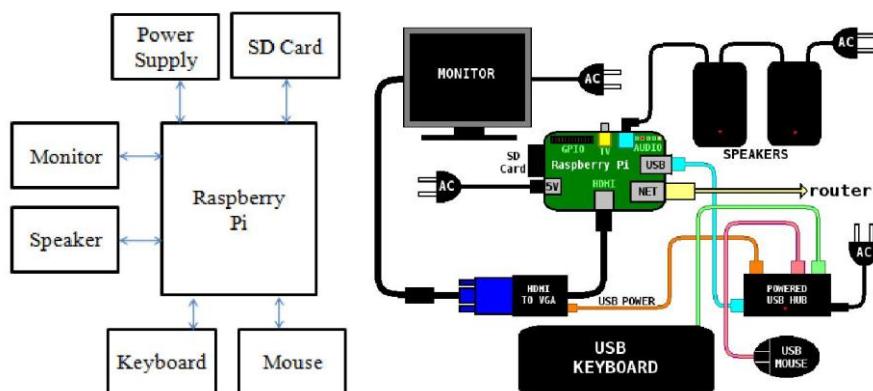


Fig. 3: Block Diagram

Fig. 4: Sketch of the System Setup

COMPUTER HARDWARE COMPONENTS**Monitor****Table 2 Monitors from different companies within range less than 6500 rupees.**

Company Name	Type	Model No.	Screen Size	Price (In Rupees)
Acer	LCD	E1900	18.5"	5380.00
	LED	E1900HQ		5006.00
Dell	LCD	E1914H	18.5"	6157.00
	LED	E1916HV		5037.00
LG	LCD	W1943C	18.5"	5426.00
	LED	19M3AB		5098.00
Samsung	LCD	LS19C170BS	18.5"	5962.00
	LED	S19F350HNW		4900.00
Viewsonic	LCD	VA1903A	18.5"	4790.00
	LED	VA1931wma		5346.00

Mouse**Table 3: Mouse from different companies within range less than 300 rupees**

Company Name	Model No.	Price (In Rupees)
Dell	MS116	269.00
HP	X1000	275.00
Iball	Style 36	270.00
Lenovo	M110	254.00
Logitech	B100	275.00

Keyboard**Table 4 Keyboard from different companies within range less than 650 rupees.**

Company Name	Model No.	Price (In Rupees)
Circle	C23	640.00
Dell	KB 216	599.00
HP	K1500	530.00
Iball	V 2.0	499.00

Speakers**Table 5 Speaker within range less than 300 rupees.**

Company Name	Model No.	Price (In Rupees)
Quantum	QHM	272.00

Motherboard

Table 6 Motherboard within range less than 8000rupees.

Company Name	Model No.	Price (In Rupees)
Gigabyte	GA-H81M-GAMING 3	4600.00
	(GA-B150M-D3H) LGA 1151	7746.00

Processor**Table 7 Processor from different companies within range less than 7000 rupees.**

Company Name	Model No.	Price (In Rupees)
Intel	Intel Core i3-2100 (BX80623I32100)	6970.00
AMD	AMD Phenom II X4 840	6000.00

Hard Disk**Table 8: Hard Disk within range less than 1000rupees.**

Company Name	Capacity	Price (In Rupees)
Seagate	160 GB Sata	779.00

RAM**Table 9: RAM from different companies within range less than 1500 rupees.**

Company Name	Model No. and Capacity	Price (In Rupees)
Kingston	(KVR667D2N5/2G) DDR2 2GB	1230.00
Transcend	(JM800QLU-2G) DDR2 2GB	1290.00

Keyboard**Table 4 Keyboard from different companies within range less than 650 rupees.**

Company Name	Model No.	Price (In Rupees)
Circle	C23	640.00
Dell	KB 216	599.00
HP	K1500	530.00
Iball	V 2.0	499.00

Speakers**Table 5 Speaker within range less than 300 rupees.**

Company Name	Model No.	Price (In Rupees)
Quantum	QHM	272.00

Motherboard

Table 6 Motherboard within range less than 8000rupees.

Company Name	Model No.	Price (In Rupees)
Gigabyte	GA-H81M-GAMING 3	4600.00
	(GA-B150M-D3H) LGA 1151	7746.00

Processor**Table 7 Processor from different companies within range less than 7000 rupees.**

Company Name	Model No.	Price (In Rupees)
Intel	Intel Core i3-2100 (BX80623I32100)	6970.00
AMD	AMD Phenom II X4 840	6000.00

Hard Disk**Table 8: Hard Disk within range less than 1000rupees.**

Company Name	Capacity	Price (In Rupees)
Seagate	160 GB Sata	779.00

DVD Writer**Table 10: DVD Writer from different companies within range less than 1700 rupees.**

Company Name	Model No.	Price (In Rupees)
Transcend	Slim Portable	
	CD/DVD Writer	1608.00
LG	GP65NB60 DVD	
	Writer	1578.00
HP	F6V97AA External	
	DVD Writer	1550.00

Cabinet with SMPS**Table 11: Cabinet with SMPS from different companies within range less than 3000 rupees.**

Company Name	Model No.	Price (In Rupees)
Intex	Cabinet IT-225	1300.00
Iball	BABY 342 Desktop Cabinet (With SMPS)	2500.00

Raspberry Pi

Table 12: Cost of Raspberry Pi.

Company Name	Model Name	Price (In Rupees)
Raspberry Pi	Raspberry Pi 3 MODEL B inbuilt Bluetooth and wifi	2799.00

Assembled CPU**Table 13: Price of Assembled CPU**

Component Name	Price (in Rupees)
Cabinet with SMPS	1300.00
Motherboard	4600.00
Processor	6000.00
Hard Disk	779.00
RAM	1230.00
CD/DVD Writer	1550.00
Assembling Charges	350.00
TOTAL	15,809.00 (approx 16,000.00)

(Note: Table entries highlighted in bold letters are the lowest price component and prices are subject to change)

Comparing Price between Assembled Desktop computer and Raspberry Pi Computer:**Table 14: Comparing Price of Desktop Computer and Raspberry Pi as a Desktop Computer**

Computer	Hardware Components Name (With Approximate round of Price)					TOTAL (in Rupees)
	CPU	Monitor	Keyboard	Mouse	Speaker	
Desktop Computer	16000.00					22,100.00
Raspberry Pi as a Desktop Computer	3400.00	5000.00	500.00	300.00	300.00	9,500.00

When we assemble hardware components of Desktop computer and Raspberry Pi as a PC then we can observe that the cost of Desktop PC is double then raspberry Pi Computer. Raspberry Pi as a computer device can be implemented in schools, so the children's can get aware of basic software and internet. When teachers become aware of how to find information online, they can help their students begin to tap into this huge resource. And suppose if we want to setup 10 computers, so among 10 computers we can keep 8 raspberry pi computers and 2 desktop computers. Because it is also important to teach students about desktop PC

MORE WITH RASPBERRY PI: It's a perfect machine for making project. It is cheap, portable, robust connect to real world object. You can expand the Raspberry Pi computer with modules, like adding a camera module or a touch screen module, to increase the scope of the device. Hobbyists and hackers had made excellent use of the Pi. Raspberry Pi provides an inexpensive and relatively easy base for electronics projects. The raspberry pi boards are used in many applications like Media streamer, Arcade machine, Home automation, Computer, Internet radio, Controlling robots, Cosmic Computer, Hunting for meteorites, weather, GPS Tracker, Touch screen tablet, Industrial automation system and many more.

CONCLUSION: I can conclude that price of desktop computer is greater than Raspberry Pi computer. This will be helpful for those schools who cannot afford a desktop computer (or PC) because of financial, maintenance and infrastructure problem; they can easily go for the Raspberry Pi as a Desktop Computer. Raspberry Pi is a cheap computer with the size of a credit card, developed in response to a lack of computer literate young people and to make computing more wide spread in classroom and home. It will be helpful for students to get familiar with computer environment and get use to basic computer tools and software. With the help of this low cost desktop students can access internet, can explore thing, they can search information online, students can review educational software programs. The goal of technological education is to make students better thinkers, creative and confident. Raspberry Pi is also being very useful for students in creating various electronic and robotics projects. That helps them in higher education and in life.

ACKNOWLEDGEMENT: I would like to express my special thanks to Star College Scheme, Department of Biotechnology, Ministry of Science (DBT) for funding.

REFERENCES

- 1)<https://www.raspberrypi.org/about/>
- 2)https://en.wikipedia.org/wiki/Raspberry_Picomputer-education-in-schools-for-students/
- 3)www.amazon.in
- 4)www.flipkart.com
- 5)www.lifehacker.com.pi.htm/printable
- 6)en.wikipedia.org/wiki/Computers_in_the_classroom
- 7)<http://www.klientsolutech.com/importance-of->
- 8)<http://novadigitalmedia.com/history-raspberry-pi>
- 9)<http://computer.howstuffworks.com/raspberry->
- 10)<http://www.education.pitt.edu>

INTERNET OF THINGS

Mrs. Reeta Rana

*S.K. College of Science and Commerce, Plot no: 31, Sec-25, Nerul, Navi Mumbai – 400706.
reetarana2012@gmail.com; Mob: +91 98202 46296*

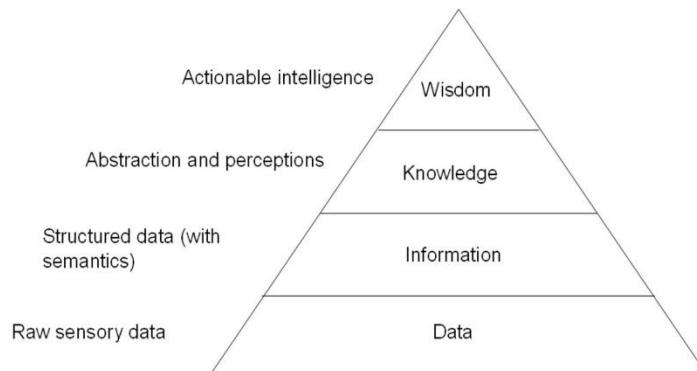
Abstract

This paper addresses the Internet of Things. Indians are known to be a technological consumer, being noted for their interest in automobiles, consumer electronics, laptop computers, portable gaming devices, social media, e-services and cashless society. Main enabling factor of this promising paradigm is the integration of several technologies and communications solutions to enable a whole new class of applications and services. As one can easily imagine, Mash-ups and end-user programming will enable people to contribute to the Internet of Things with data, presentation and functionality. Also, any serious contribution to the advance of the Internet of Things must be the result of synergistic activities conducted in different fields of knowledge, such as telecommunications, informatics, electronics and social science. In such a complex scenario, this is directed to those who want to approach this complex discipline and contribute to its development. In this paper, I am looking closely on extension of the Internet and the Web into the physical realm, by means of the widespread deployment of spatially distributed devices with embedded identification, sensing and/or actuation capabilities and the present opportunities of technologies, applications and research challenges for Internet-of-Things.

Keywords--*Internet-of-Things; Web; Smart physical world; RFID; Sensors; Interoperability; Security, wireless LAN.*

I.INTRODUCTION: The Internet of Things (IoT) is defined in many different ways, it is the networking of physical devices, vehicles, buildings, and other items embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data for push services. The IoT allows objects to be sensed and/or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems, (whether via RFID, wireless LAN, wide-area networks, or other means) and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention. Some mention one trillion Internet-connected devices by 2025 and define mobile phones as the eyes and ears of the applications connecting all of those connected things. In 2010, the number of everyday physical objects and devices connected to the Internet was around 12.5 billion. In 2013, the Global Standards Initiative on Internet of Things (IoT-GSI) defined the IoT as "the infrastructure of the information society." When IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems, which also encompasses technologies such as smart grids, smart homes, intelligent transportation and smart cities. "Things," in the IoT sense, can refer to a wide variety of devices such as heart monitoring implants, biochip transponders on farm animals, electric clams in coastal waters, automobiles with built-in sensors, DNA analysis devices for environmental/food/pathogen monitoring or field operation devices that assist firefighters in search and rescue operations. Legal scholars suggest to look at "Things" as an "inextricable mixture of hardware, software, data and service". These devices collect useful data with the help of various existing technologies and then autonomously flow the data between other devices. Current market examples include home automation (also known as smart home devices) such as the control and automation of lighting, heating (like smart thermostat), ventilation, air conditioning (HVAC) systems, and appliances such as washer/dryers, robotic vacuums, air purifiers, ovens or refrigerators/freezers that use Wi-Fi for remote monitoring. The concept of the Internet of Things was invented by and term coined by Peter T. Lewis in September 1985 in a speech he delivered at a U.S. Federal Communications Commission (FCC) supported session at the Congressional Black Caucus 15th Legislative Weekend Conference.

II. CONCEPTUAL FRAME WORK: It could be conceptually defined as a dynamic global network infrastructure with self configuring capabilities based on standard and interoperable communication protocols where physical and virtual things have identities, attributes and virtual personalities, use intelligent interfaces and seamlessly integrated into the information network. Services will be able to interact with these **smart things or objects** using standard interfaces that will provide the necessary link via the internet to query and change their state and retrieve any information associated with them, taking into account security and privacy.



"Knowledge Hierarchy" in the context of IOP

The lower layer refers to large amount of data produced by the IoT resources and devices. This layer helps to create structured and machine-readable information from the raw data of various forms to enhance interoperability. However, what *is* required by humans and high-level applications and services often is not the information, but high-level abstractions and perceptions that provide human and machine-understandable meanings and insights of the underlying data. The high-level abstractions and perceptions then can be transformed to actionable intelligence (wisdom) with domain and background knowledge to exploit the full potential of IoT and create end-to-end solutions.

III. VISION: The vision of the Internet of Things (IoT) can be seen from two perspectives — “Internet-centric” and “thing-centric.” The Internet-centric architecture involves Internet services as the main focus, as data is being generated by the “things.” In the thing-centric architecture, smart devices take the center stage. It could allow people and things to be connected anytime, anywhere with anything and anyone, ideally using any path/network and any service. The vision of what exactly the IoT will be and what will be its final architecture, are still diverging.

IV. IoT ELEMENTS

Radio Frequency Identification (RFID) -RFID technology is a major breakthrough in the embedded communication paradigm which enables design of microchips for wireless data communication. They help in the automatic identification of anything they are attached to acting as an electronic barcode. The passive RFID tags are not battery powered and they use the power of the reader’s interrogation signal to communicate the ID to the RFID reader. This has resulted in many applications particularly in retail and supply chain management. The applications can be found in transportation (replacement of tickets, registration stickers) and access control applications as well. The passive tags are currently being used in many bank cards and road toll tags which are among the first global deployments.

Wireless Sensor Networks (WSN) - Recent technological advances in low power integrated circuits and wireless communications have made available efficient, low cost, low power miniature devices for use in remote sensing applications. The combination of these factors has improved the viability of utilizing a sensor network consisting of a large number of intelligent sensors, enabling the collection, processing, analysis and dissemination of valuable information, gathered in a variety of

environments. Active RFID is nearly the same as the lower end WSN nodes with limited processing capability and storage. The scientific challenges that must be overcome in order to realize the enormous potential of WSNs are substantial and multidisciplinary in nature. Sensor data are shared among sensor nodes and sent to a distributed or centralized system for analytics. The components that make up the WSN monitoring network include: WSN hardware, WSN communication stack, WSN Middleware, Secure Dataaggregation.

Addressing schemes - Theability to identify 'Things' is critical for the success of IoT. This willnot only allow us to uniquely identify billions of devices but also to control remote devices through the Internet. The few most critical features of creating an address are: uniqueness, reliability, persistence and scalability. Every element that is already connected and those that are going to be connected, must be identified by their identification, location and functionalities. Furthermore, the scalability of the device address of the existing network must be sustainable. The addition of networks and devices must not hamper the performance of the network, thefunctioning of the devices, the reliability of the data over the network or the effective use of the devices from the user. To address these issues, the Uniform Resource Name (URN) system is considered fundamental for the development of IoT. Wireless sensor networks (considering them as building blocks of IoT), which run on a different stack compared to the Internet,a subnet with a gateway having a URN will be required. At the subnet level, the URN for the sensor devices could be the unique IDs rather than human-friendly names as in the www, and a lookup table at the gateway to address this device. The entire network now forms a web of connectivity from users (high-level) to sensors (low-level) that is addressable (through URN), accessible (through URL) and controllable (through URC).

Data storage and analytics -One of the most important outcomes of this emerging field is thecreation of an unprecedented amount of data. Storage, ownership and expiry of the data become critical issues. The internet consumes up to 5% of the total energy generated today and with these types of demands, it is sure to go up even further. Hence, data centers that run on harvested energy and are centralized will ensure energy efficiency as well as reliability. It is important to develop artificial intelligence algorithms which could be centralized or distributed based on the need. State-of-the-art non-linear, temporal machine learning methods based on evolutionary algorithms, genetic algorithms, neural networks, and other artificial intelligence techniques are necessary to achieve automated decision making. These systems show characteristics such as interoperability, integration and adaptive communications. They also have a modular architecture both in terms of hardware system design as well as software development and are usually very well-suited for IoT applications. More importantly, a centralized infrastructure to support storage and analytics is required.

V. IoT TRENDS: It is possible to identify, for years to come, a number of distinct macro trends will shape the future of IoT by creating significant opportunities in the markets of consumer electronics , automotive electronics, medical applications etc. such trends are towards the autonomous and responsible behavior of resources. The ever growing complexity of systems, possibly including mobile devices, will be unmanageable , and will hamper the creation of new services and application , unless the system will show "self" functionality , self management, self -healingand self -configuration. Research is looking for ultra low power autonomic devices and system from tiniest smart dust to the huge data centres that will self- harvest the energy they need. Miniaturisation of devices is also taking place at a lightning speed, and the objective of a single-electron transistor, which seems to be (depending on new discoveries in physics) the ultimate limit, is getting closer.

VI. APPLICATIONS AREAS: Potential applications of the IoT are numerous and diverse, permeating into practically all areas of every day life of individuals, enterprises and society as whole

Smart environment application domains

	Network size	Users	Internet connectivity	IoT devices	Examples
Smart living	small	Very few , FamilyMembers	Wifi , 3G,4G, LTE backbone	RFID, WSN	Intelligent Shopping applications, Remote control applications, Smart home appliances, Safety monitoring
Smart health	small	General Public	Wifi , 3G,4G, LTE backbone	RFID, WSN	Fall detection, Physical activity monitoring for aging people, Medical fridge, Sportsmen care, Patient surveillance, Chronic disease management, Ultra violet Radiation
Smart buildings	Small	Resident	Wifi , 3G,4G, LTE backbone	RFID, WSN	Perimeter access control, Indoor climate, Intelligent thermostat, Intelligent fire alarm, Art and goods preservation.
Smart transport and mobility	Large	General Public	Wifi, satellite communication	RFID, WSN, single sensors	NFC payment, Quality of Shipment conditions, Item location, Fleet tracking, Vehicle autodiagnosis, Management of cars, Road pricing
Smart city	medium	Many policy maker, General Public	Wifi , 3G,4G, LTE backbone	RFID, WSN	Smart parking, Noise urban maps, Traffic Smart lighting, Waste management, Safe city
Smartwater/food monitoring	large	Few,government	Satellite Communication, Microwave links	Single sensors	Water quality, Water leakage, River floods,

					Supply chaincontrol,
Smart energy	medium	Few,government,	Wifi , 3G,4G,LTE backbone	RFID, WSN,sensors	Smart grid,Photovoltaicinstallations,Wind turbines, Radiation levels,Green houses
Smart Environment monitoring	medium	Few, landowners,PolicyMakers	Wifi, satellite Communication	WSN	Forest fire detection, Air pollution,Landslide and Avalanche prevention,Protecting wildlife Marine and coastal surveillance.
Smart retail	small	Few, Community level	Wifi , 3G,4G,LTE backbone	RFID, WSN	Retail centers

VII. CONCLUSION: The proliferation of devices with communicating-actuating capabilities is bringing closer the vision of an Internet of Things, where the sensing and actuation functions blend into the background and new capabilities are made possible through access of rich new information sources. IoT is an ideal emerging technology to influence this domain by providing new evolving data and the required computational resources for creating revolutionary apps. Allowing for the necessary flexibility to meet the diverse and sometimes competing needs of different sectors, we propose a framework enabled by a scalable cloud to provide the capacity to utilize the IoT. This framework allows networking, computation, storage and visualization themes separate thereby allowing independent growth in every sector but complementing each other in a shared environment. In proposing the new framework associated challenges have been highlighted ranging from appropriate interpretation and visualization of the vast amounts of data, through privacy, security and data management issues that must underpin such a platform in order for it to be genuinely viable.

REFERENCES

- [1] "Internet of Things Global Standards Initiative". Retrieved June 2015.
- [2] "Internet of Things : Science Fiction or Business Fact. ". Harvard Business Review. November 2014.
- [3] Vermesan, Ovidiu; Friess, Peter (2013). "Internet of Things : Covering technologies for smart environment and integrated ecosystem. . "
- [4] Reddy, Aala Santhosh (May 2014). "Reaping the benefits of Internet of Things".
- [5] Höller, J.; Tsatsis, V.; Mulligan, C.; Karnouskos, S.; Avesand, S.; Boyle, D. (2014). "From Machine -to-Machine to the Internet of Things – Introduction to a new age of intelligence."
- [6] J. Belissent, Getting clever Forrester Research, (2010) . about smart cities: new opportunities require new business models,
- [7]. Google Trends, Google (n.d.). <http://www.google.com/trends>.
- [8] Sino-Singapore Guangzhou Knowledge City. Retrieved (July 2014). "A vision for city today, a city of vision tomorrow

WATER LEVEL DETECTION AND UNDERGROUND WATER PIPELINE LEAKAGE MANAGEMENT SYSTEM USING SENSORS AND GPR

Geeta Sahu & Janhavi Vadke

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: geeta.sahu@vsit.edu.in Mobile: 8108088512

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai Email: janhavi.vadke@vsit.edu.in Mobile: 9920454483

Abstract

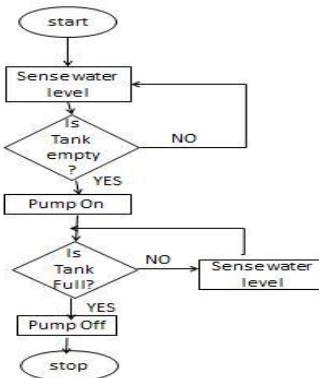
Water is vitally important for creatures, agriculture, industries etc. With the usage of water, large amount is also getting wasted in the form of leakage, overflow. Hence it is mandatory to save, efficiently and effectively utilize water. The proposed system is classified into two categories – Water Level and Leakage Detection systems. Water monitoring and controlling will be used to continuously monitor and control the overflow of water in water tanks using water level detection system which will check water levels at various points with the help of copper electrodes. Water leakage detection system is based on the principle of change in water pressure and sound waves whenever there is a leak in the underground/buried pipelines. Underground pipes will consist of various sensors which will check the inside water pressure or sound, any leakage in the pipe will immediately change the inside water pressure or changes the sound waves then the sensors will send signal to the transmitter connected via internet. These sensors will be GPR (Ground Penetrating Radar) that will locate the exact leakage position which can be detected and rectified.

Keywords: Water, Pipeline, Overflow, Leakage, Sensors and GPR.

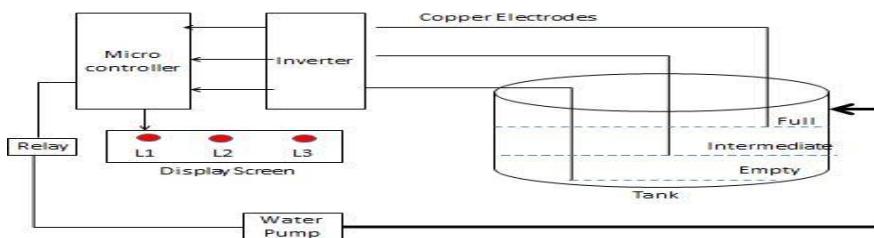
I. INTRODUCTION: Water is the precious gift to our life on the earth from the God. Everything on the earth needs water like human beings, animals, trees, plants, insects, and other living things. Balance of water on the earth goes through the process of water cycle through raining and evaporation. Three-fourth surface of the earth is surrounded by the water however, contains very less percentage of the water fit for human being. According to the present statics the wastage of water due to overflow of tanks has a major impact on the water scarcity. Only 3% of the total water consumption is used for drinking and cooking on daily basis and rest of the water usage in other works like watering plants, toilet, bathing, laundry, showering, there should be proper supply of water for future generations without contaminating it. Thus water controlling and monitoring can be done using water level and leakage detection which is one of the motivations for this research

II. WATERLEVELDETECTIONSYSTEM: In the current method to control the water level for home appliance and offices is simply to turn ON water pump at a low level and allow it to run for a specific time period until a higher water level is reached in the tank and then turn OFF the pump. This results in the unnecessary wastage and sometimes non availability of water in case of emergency. This system employs a mechanism to detect and maintain the water level in a tank by switching ON/OFF the pump/motor automatically when needed.

Automatic water level controller switches ON the motor when the water level in the overhead tank drops below a pre fixed level (ON point) and switches OFF the motor when the water level rises to another pre fixed level (OFF point). The water level controller completely stops overflow of water from the overhead tank or dry running of pump, thereby saving electricity and water.

**Fig. 1 Flowchart of water level detection**

WORKING: In our system we have used 8 bit microcontroller, copper electrodes immersed in water tank, relay, display screen and motor/pump. The basic operation is, when nozzles of the sensor are drawn into water, nozzle and rod becomes connected due to water conductivity. Then nozzle gets connected with the input of microcontroller which makes LEDs on/off, acts as user display unit. Water pump is connected with an output pin of microcontroller via a relay circuit which is connected with a transistor. The output of relay circuit is connected with motor pump.

**Fig. 2 Architecture of Water Level Detection**

Copper electrodes are immersed in water are connected with an inverter through R1, R2 and R3 pins. These pins will send the input signal to the microcontroller which will do the processing and generates output signal which will be given to the LED display screen and based on the signal the LEDs will light up. If three pins R1, R2 and R3 gets ground signal i.e. zero volts that means that there is no water in the tank and all LEDs are off then the pump will automatically switch ON. If all three pins have +5v volts then the water tank is full all three LED's are ON then the pump will automatically switch Off. When water is decreasing from the tank by home use, the displays LED are OFF one after another from left to right. If all the LEDs are OFF that means the tank is empty again and the water pump should automatically ON again exactly after the last LED becomes OFF. These operations will be automatically performed as a cycle.^[2]

Table.1 Water Level status using LED Indicator

Sr. No	LED 1	LED 2	LED 3	TANK STATUS	Action
1	Off	Off	Off	Empty	Pump On
2	On	Off	Off	Low level	No action
3	Off	On	Off	Does not exist	-----
4	On	On	Off	Sufficient level	No action
5	Off	Off	On	Does not exist	-----
6	On	Off	On	Does not exist	-----
7	Off	On	On	Does not exist	-----
8	On	On	On	Full	Pump Off

III. WATERLEAKAGEDETECTIONSYSTEM: This paper presents the design, working and

development of leak detection in underground water pipelines using underground sensors which are in network using wireless connectivity via internet or Cellular phones. It is based on the principle of change in internal pressure of the pipes. Leaks will alter the normal pressure in the pipe and hence monitoring the pressure using sensors will help to identify the leaks using Ground Penetrating Radar (GPR) which will locate the exact position. These sensors are capable of measuring pressure changes due to leaks. In the current system, the Brihanmumbai Municipal Corporation (BMC) sends its “sounding mukadams with a sounding rod to detect the underground pipeline leakages. They tap the sounding rod on the ground over a buried pipeline and place their ear on the other end of the rod to detect the exact point of the leakage. The vibration due to the leak is detected by the rod and sound waves emitted by water underground. Inconsistency in the wave pattern at a spot will indicate that there is a leak. In the proposed system there are two techniques used for water leakage detection –first is change in internal pressure of the water and second is change in sound.

A.Leakage Detection Using Pressure: This method is completely based on change in internal pressure of water. The underground pipelines are connected with sensors spaced few meters apart from each other. These sensors will have a master sensor that will send and receive data together on behalf of other sensors. Each sensor consists of Micro Controller Unit (MCU), Transmitter, Input and Output power supply. The Micro Controller Unit (MCU) is a device consisting of chip and processor which is responsible for taking inputs from the sensors, process the data, and sends data to the transmitter. Transmitter is responsible for transmission of data which is collected by MCU to other nodes via RF signals. The master sensor should be able to connect to the internet and transmit the received data from the sensors to the database. Data from the database can then be accessed via different devices (computer, laptop, android based cell phones) with internet connectivity.

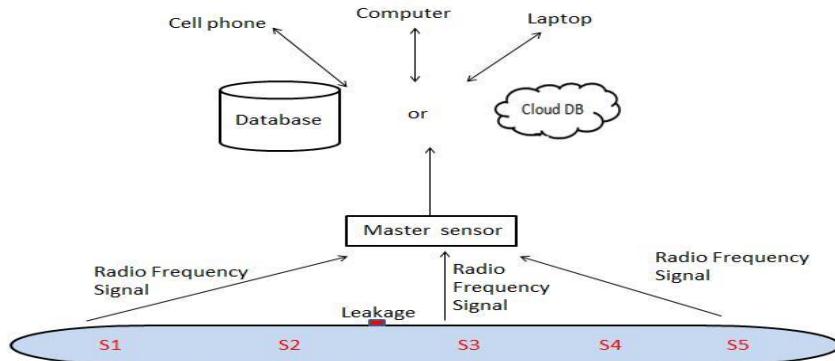


Fig. 3 Water Leakage Detection Assembly

For demonstration purpose assume 5 sensors are used – S1, S2, S3, S4, S5. These sensors are placed few meters apart from each other. Flow of water direction is from left to right. Assuming that the leakage is present between S2 and S3. Initially the pressure of water is decided and with that pressure the flow will start. This pressure is known as Threshold value. Water will start flowing and passes S1, S2, when it passes through S3 immediately the sensor S3 will detect change in pressure due to leakage then S4 and S5. Since with that same pressure the water will pass from S4 and S5 sensors. All the sensors will send signal to the master sensor through the transmitter. Master sensor will store the information in the cloud and from the cloud the status of the sensors will be given to the user through internet on their cell phones or laptop or computer etc. The following table shows the status of sensors on the user screen (laptop, Cellphone or Internet).^[3]

Table.2 Pressure Measurement

Sr.No	Sensors	Pressure Measurement (On Threshold Value)
1	S1	Normal
2	S2	Normal
3	S3	Dip in Pressure
4	S4	Dip in Pressure
5	S5	Dip in Pressure

B. LEAKAGE DETECTION USING SOUND: In this proposed system sound sensors are placed inside the pipeline. When the water is passed through the sensors, it will detect the sound waves and when there is a leakage the sensor will read the dip in sound waves. All the sound waves will be amplified and can easily check if water is flowing smoothly and whether the pipe has a leak at master node, and then master node will communicate with other devices (computer, laptop or cell phones). Sound sensors will have microcontroller with GPR based which will help to identify the exact location. Thus the user will come to know about the leakage with its exact position.

IV. ADVANTAGES

- This method is applicable for all types of pipes (plastic and iron) since the sensors will be placed inside.
- Low cost with high efficiency sensors should be used.

CONCLUSION: Water Level Detection and Underground Pipeline Water Leakage Management System Using Sensors and GPR will meet the requirement of water supply department with maximum utilization. This paper presents the design, working and development of water level and leak detection in underground water pipelines using sensors and GPR which are in network using wireless connectivity via internet through cellular phones. It is based on the principle of change in internal pressure of the pipes. Leaks will alter the normal pressure in the pipe and hence monitoring the pressure using sensors will help to identify the leaks.

REFERENCES

1. *Smart Water Monitoring System Using Wireless Sensor Network at Home/Office* by T.Deepiga, Ms A.Sivasankari International Research Journal of Engineering and Technology Volume: 02 Issue: 04 July-2015.
2. *SmartPipes: Smart Wireless Sensor Networks for Leak Detection in Water Pipelines*
3. *Ali M. Sadeghioon , Nicole Metje , David N. Chapman and Carl J. Anthony Journal of Sensor and Actuator Networks*
4. *A Water Leak Detection Service Based on Sensors and ICT Solutions* FUKUSHIMA Kei, MARUTA Yuuji, IZUMI Kazuo, ITO Yusuke, YOSHIZAWA Ayumi, TANAKA Toshiaki.
5. *Water Level Indicator with Alarms Using PIC Microcontroller* Ahmed Abdullah, Md. Galib Anwar , Takilur Rahman , Sayera Aznabi.
6. *Application of Ground Penetrating Radar to Civil and Geotechnical Engineering*, Richard J. Yelf. *International Journal of Antennas and Propagation*, Volume2012(2012), ArticleID826404,7pages Research Article *GPR-Based Landmine Detection and Identification Using Multiple Features*
7. https://en.wikipedia.org/wiki/Pressure_sensor

INTELLIGENT INSTRUMENTATION: BIOMEDICAL APPLICATIONS

Umesh koyande, Amita Gaonkar & Ashwini Koyande

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: umesh.koyande@vsit.edu.in, Mobile: 9768119077

Research Scholar, Dept. of physics, Institute of Chemical Technology, Matunga, Mumbai. Email: ami.gaonkar@gmail.com Mobile: 986716768

Assistant Professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: Ashwini.walunj@vsit.edu.in Mobile: 8286539077

Abstract

The medical Instrumentation is designed to measure various medical and physiological parameters. Most of measurement parameter ranges are quite low compared to non-medical parameters with low frequencies, microvolts range and contains direct current. These properties restrict the practical choice to designer for instrumentation design. This study focuses on the electronic components and subsystems that make up the diverse instruments that are used in biomedical instrumentation. The goal of these intelligent biomedical devices is to assure high quality of life by providing health care, diagnosis, and surgical procedures. Microprocessor and microcontroller based instruments enables to incorporate the ability to make intelligent judgment and provides diagnostic signals. New concept of Virtual Bioinstrumentation can be applied to Biomedical and health care sector, as the biggest challenge facing clinicians today is managing the flow of information across the entire enterprise and virtual bioinstrumentation provides Information management and advanced user interface capabilities will be used to gather data to help physicians care for their patients and provide information in easy-to-access formats.

Keywords: Medical Instrumentation, Virtual Bioinstrumentation.

I. INTRODUCTION: From last quarter of the century, there has been a tremendous increase in the use of electrical and electronic equipment in the medical field for clinical and research purposes. In a medical instrumentation system, the main function is to measure or determine the presence of some physical quantity that may be useful for diagnostic purposes. Biomedical signals can be subdivided into two major classes: Endogenous signals and exogenous signals [1]. Biomedical signal processing aims at fetching useful information from biomedical signals. The main focus was on processing the biomedical signal to extract the original signal and removal of noise. Detection of biomedical signals is a very challenging task as signals consists of very weak amplitude in the order of mV with almost equivalent to noise signal levels. These signals also have a very low frequency range usually below 1KHZ. Microelectronics and embedded design have more applications that require very weak amplitude signal detection and measurement. There are some additional constraints, which need to be considered while designing a measurement system for medical applications like Inaccessibility of the Signal Source, Variability of Physiological Parameters, and Interference among Physiological Systems, Transducer Interface Problems, Safe Levels of Applied Energy, Patient Safety Considerations, Reliability Aspects, Human Factor Considerations, and Government Regulations. In addition to these, there are general considerations, which need to be considered into the initial design and development of a medical instrument. These considerations are:

- Signal Considerations: Type of sensor, sensitivity, range, input impedance, frequency response, accuracy, linearity, reliability, differential or absolute input.
- Environmental Considerations: Signal-to-noise ratio, stability with respect to temperature, pressure, humidity, acceleration, shock, vibration, radiation etc.
- Medical Considerations: Invasive or non-invasive technique, patient discomfort, radiation and heat dissipation, electrical safety, material toxicity etc.

- Economic Considerations: Initial cost, cost and availability of consumables and compatibility with existing equipment
-

II. ELECTRONIC INSTRUMENTATION

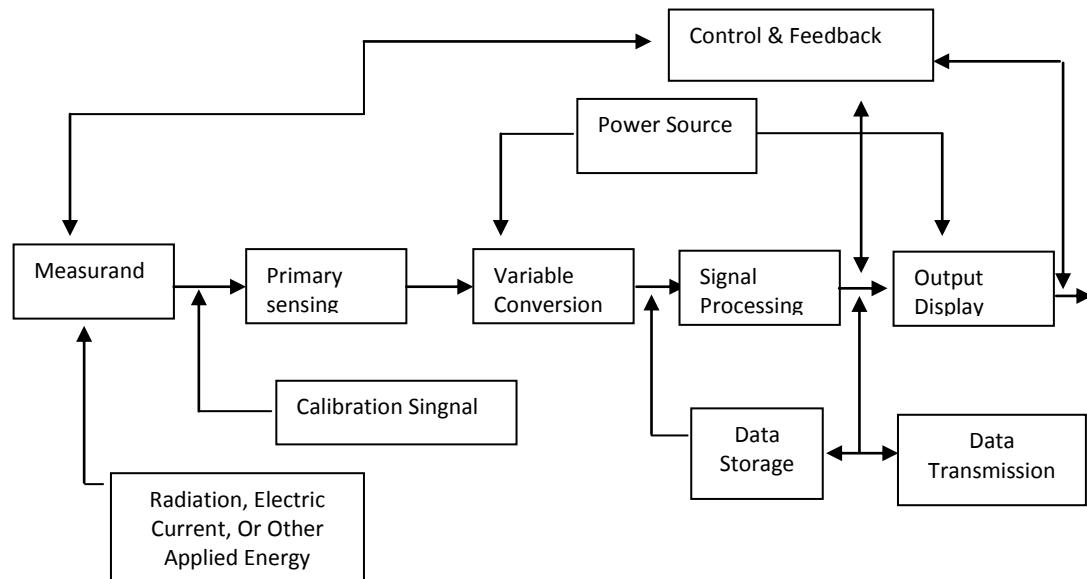


Fig.1. Generalised Instrumentation System

Figure1. Shows Generalised Instrumentation System which include different types of electronic Instruments. This includes:

Instrumentation Amplifier: Bio signals are acquired and transferred to the voltage signals with amplitude of several millivolts by transducer or sensor. The bio signal amplifier must have high input impedance, low output impedance, a limited bandwidth, and low power consumption. Additionally, it must have an adequate gain, a high power-supply rejection ratio and common-mode rejection ratio. The input offset voltage is a key element of the amplifier performance, since it can limit the dc accuracy of the system. Many techniques have been developed for minimizing the offset voltage of the instrumentation amplifier (IA). For discrete- time applications, the correlated double-sampling technique for implementing the switched-capacitor IA has been presented in and requires only a single internal amplifier. In continuous-time applications, an IA that has an auto-zeroed topology was reported, and requires a main amplifier and an auxiliary amplifier. Chih-Jen Yen, showed a micro-power low-offset CMOS IA using a novel offset cancellation technique is proposed to amplify the input ECG signal of the patient monitoring system. The wide-swing cascade for designing the bias circuit have a very high PSRR, and to work properly at single supply voltage in the range between 2.5–7.5 V. Given the characteristics of low offset voltage, low noise, accurate gain, low power consumption, and small chip size, this proposed IA could be applied to various types of processing biomedical signals [3].

Imaging spectrometer based on acousto-optic tunable filter (AOTF) allows using possibilities of imaging spectrometry in full and developing new techniques of biological objects investigation, medium optical properties measurement. The use of AOTF Imaging Spectrometer for research of biological objects makes possible to solve two problems:
 o spectral contrast enhancement of micro biological objects against background and in comparison with each other;
 o Estimation of chemical characterization of samples (including biological samples) via detection of optical properties distribution and tracing time variation of these properties. AOTF Imaging Spectrometers can be used in different kinds of luminescence spectroscopy, in particular for photoluminescence diagnostics of

tumors, for investigations based on bioluminescence and cathode-ray luminescence technique, in capillary spectroscopy, for biophysical and biochemical researches. It can be resumed that double AOTF Imaging spectrometers possess very-useful features: strong suppression of out-of-band pass radiation, image spectral drift compensation. High imaging quality of double AOTF Imaging spectrometers make possible their implementation in different applications, in particular in cell morphological analyses and capillary spectroscopy

Microprocessor: Microprocessors simply replaced conventional hard wired electronic systems that were used for processing data. This resulted in more reliable and faster data. This was followed soon by use of the microprocessor to control logic sequences required in instrumentation. Thus, the microprocessor replaced programming devices as well as manual programming, making possible digital control of most of the functions of the medical instruments. With the availability of more powerful microprocessors and large data storage capacity, it has become possible to optimize the measurement conditions. Extensive use has been made of microprocessors in medical instruments designed to perform routine clinical measurements. The decision-making capability increases the degree of automation of the instrument and reduces the complexity of the man-machine interface. Life support systems have been designed with numerous safety back-up features and real-time self-diagnostics and self-repair facilities. Microprocessor based instrumentation is enabling to incorporate the ability to make intelligent judgement and provide diagnostic signals in case of potential errors, provide warnings or preferably make appropriate corrections. Already, the microprocessors are assisting in instruction-based servicing of equipment [4].

Microcontroller: is a self-contained device, which does not require a host of associated support chips for its operation as conventional microprocessors do. It offers several advantages over conventional multichip systems. Which has a cost and space advantage as extra chip costs, printed circuit board and connectors required to support multichip systems are eliminated. The other advantages are low maintenance, decreased hardware design effort and decreased board density, which is relevant in portable medical equipment. Now day's microcontrollers have applications in data acquisition system and control. They have analog-to-digital converters on chip, which enable them direct use in instrumentation. Another type of microcontroller has on-chip communication controller, it's designed for applications requiring local intelligence at remote nodes and communication capability among these distributed nodes [4].

Interfacing analog signal to Microprocessor: Virtually, all information we need to acquire from the human body and eventually analyze is in the analog form. It basically comprises a multiplexer, instrumentation amplifier, a sample-and-hold circuit, analog-to-digital converter, tristate drivers and control logic. These components operate under the control of interface logic that automatically maintains the correct order of events. Depending on its input configuration, the multiplexer will handle either single ended or differential signals. The address logic of multiplexers can perform random and sequential channel selection. For real time systems, the random mode permits the multiplexer to select any channel when the program responds to a peripheral service request. Sequential channel selection, as the name employs involves addressing each channel in order [4].

III. BIOMEDICAL INSTRUMENTS

Electrocardiogram –One of the most important electrophysiological measurements in medical diagnosis and patient care is that of the electrocardiogram (ECG or EKG). Heart generates a spatiotemporal electric field which is coupled through the anatomically complicated volume conductor of the thorax and abdomen to the skin where a spatiotemporal potential difference can be measured. The amplitude and wave shape of the normal ECG depends on where the measuring electrode pair is located on the skin surface. The important pacemaker, cardiac muscle and conduction bundle trans membrane potentials in the normal human heart, and their relation to the classic, Lead III

ECG wave. ECG QRS spike can range from 400 μ V to 2.5 mV peak. ECG amplifiers are reactively coupled (r-c) with standardized -3 dB corner frequencies at 0.05 and 100 Hz. A important requirement of all ECG amplifiers is that they have galvanic isolation. Galvanic isolation is required to protect the patient from electroshock accidents. Galvanic isolation places very high impedance between the patient, the ECG electrodes, and ECG amplifier input ground, and the ECG amplifier output and output ground. This limits any current which might flow through the patient to single micro amps if the patient accidentally makes contact with the power mains while connected to the ECG system and is otherwise not grounded. Other Biopotential amplifiers used in a clinical or research setting with humans, such as for measurement of the EEG, the electroretinogram (ERG), the electrooculogram (EOG), and the electrocochleogram (ECoG). All of these signals are low amplitude (100s of μ V peak) and contain primarily low frequencies (0.01–100 Hz). EEGs The EEG is used to diagnose brain injuries and brain tumors noninvasively, as well as in neuropsychology research. EEGs are generally recorded from the scalp, which means the underlying, cortical brain electrical activity must pass through the pia and dura mater membranes, cerebrospinal fluid, the skull, and the scalp.

Medical isolation amplifiers (MIAs) are basically IAs that have an ultralowconductance pathway between the input (patient) terminals and the output terminals, the power supply, and ground. These ultralow conductance pathways provide what is called ohmic or galvanic isolation for a patient. In medical applications, this isolation is required for reasons of patient safety. The DC resistance between input and output terminals is typically on the order of gigaohms, and for AC, the capacitance between input and output terminals is on the order of single picoFarads. MIAs used to record biopotential signals from humans (ECG, EEG, EMG, EOG, etc.) must meet certain safety standards for worst-case voltage breakdown and maximum leakage currents through their input leads which are attached to electrodes on the body, and maximum current through any driven output lead attached to the body. Some important Medical Isolation Amplifiers - Amplifier IA294, IA296, BB3652, BB Iso121, Ad210

Medical-grade power supplies- The only practical way to achieve extreme galvanicisolation and still couple significant power from the mains to a low-voltage regulated DC supply that powers a medical amplifier is by a toroidal transformer. The transformer can operate at line frequency, but for lighter weight and improved efficiency, should operate at frequencies in the 10–100 kHz range. A power oscillator is used to drive the transformers primary in the latter case. If a high-frequency oscillator is used, the transformer can be made smaller and lighter, and the output filter capacitor can be smaller and lighter. A toroidal transformer is used for efficiency in magnetic coupling the primary to secondary windings, and the toroidal core also allows the primary and secondary windings to be physically separate on the core to minimize capacitive coupling between them. By physically separating the windings, and insulating them from the core with special insulation, breakdown voltages between primary and secondary can be made 8 kV or greater, and primary-to-secondary DC resistance can be on the order of 1012 W and greater. The secondary AC voltage is rectified by the usual means, the raw DC is low-pass filtered by a capacitor, and then regulated by a feedback regulator. The net result is a DC supply with guaranteed, extreme galvanic isolation between the input power lines (high, low, and ground) and the output DC terminals (ground and VCC).

Power Amplifiers(PA): In biomedical applications, PA are used to drive a variety ofloads; the following list describes some of their applications:

- a) Resistive Loads: In thermal control systems, battery chargers, incandescent lights used in endoscopes, and X-ray tubes.
- b) Resistive/Inductive Loads: Motion control, including servomotor windings, solenoids in valves, audio transducer, and Magnetic CRT beam deflection.

- c) Capacitive Loads: Electrostatic electron beam deflection in small CRTs, electrostatic ion beam deflection in mass spectrometers used in laboratory medicine applications, piezoelectric actuators used below their resonant frequency.
- d) Piezoelectric Transducers: In medical ultrasound imaging systems.

Wireless Patient Monitoring (WPM): also called as wireless medical telemetry services (WMTS), is a rapidly growing technology applied to the monitoring of the vital signs of patients in all hospital departments as well as ambulatory patients undergoing physical therapy and exercise. Analog sensors attached to patients measuring parameters such as blood pressure (BP), ECG, EEG, blood O₂ saturation and heart rate, body temperature, etc. send their output signals to IC battery-powered digitizers, modulators, and RF transmitters, generally operating around 600 MHz, 1.4 GHz, or in the wireless local area networking (WLAN) bands at 2.4 and 5.1 GHz. These RF data transmissions are received at central stations where they are displayed in real time for nurses and clinicians and stored as part of a patient's permanent medical record. They are screened by computer for unacceptable physiological values, which if present, sound alarms. WPM offers the flexibility of data interception by authorized nursing staff, residents, and attending physicians on their RF-equipped portable computers, as well as the ability to collect data from ambulatory patients as they exercise. Physicians can also access patient's electronic health records (EHRs) with their laptops and mobile PDAs, also by an RF link using protocols such as WiFi or Bluetooth. The sensors used in WPM are basically those used in conventional, wired patient monitoring. The ECG, respiratory effort, and temperature can be displayed continuously as time signals on a monitor. If the BP is measured by a catheter sensor or a servo finger cuff, it can also be displayed. Heart rate can be measured beat-by-beat, by instantaneous pulse frequency demodulation (IPFD) of the QRS complex of the ECG waveform. Pulse oximeters (POs) generate a smooth, sawtooth-shaped, periodic analog voltage waveform at heart rate.

Computed Tomography: A diagnostic computed tomography (CT) scanner comprises an x-ray tube with collimation to provide the slice thickness, a linear array of detector elements, and a reconstruction computer. Third-generation CT scanners, The x-ray tube and the detector fan array are mechanically coupled and rotate together at high speed. Detectors used in CT are 1D photon counters that must be efficient and fast. Currently, many CT scanners use scintillating ceramics coupled to photodiodes, due to the high bulk density of the ceramics. Nuclear medicine techniques use radiopharmaceuticals that are injected into the body to monitor or measure physiological function. Central to nuclear medicine is the role of the radiopharmaceutical as a tracer, that is, an agent with a predictable physiological action that is introduced without perturbing the function of the system. An external detector is used to record radioactivity emanating from the patient to determine the spatial distribution of the radiopharmaceuticals in specific organs or tissues. Each radiopharmaceutical has an expected bio-distribution that a radiologist evaluates to diagnose the medical status of a patient.

Ultrasound Imaging: Ultrasound scanning provides a safe and noninvasive way to image the body. With this modality, brief pulses of sound are emitted by a transducer coupled to the skin surface. The sound pulse propagates through tissue at a fixed speed. Interfaces and other objects reflect portions of the acoustic energy back to the transducer, where they are detected as echoes. The ultrasound scanner forms 1D, or more commonly 2D, images of anatomic structures from the reflected echo patterns. In general imaging applications, ultrasound imaging uses frequencies in the 2–10 MHz range. Some newer ultrasound devices, for example, those used in emerging ophthalmology applications, use frequencies as high as 50 MHz. Any interface, large or small, can reflect a fraction of the ultrasound energy and produce an echo. Examples of reflectors include organ boundaries, blood vessels, and small scatterers distributed more or less randomly throughout most organs. [4]

IV. VIRTUAL BIOMEDICAL INSTRUMENTATION(VBI)

Virtual instrumentation is an interdisciplinary field that merges sensing, hardware and software technologies in order to create flexible and sophisticated instruments for control and monitoring applications. Increasing number of biomedical applications use virtual instrumentation to improve insights into the underlying nature of complex phenomena and reduce costs of medical equipment and procedures. We can classify biomedical applications of virtual instrumentation in four categories:

- Examination, where a physician does online or off-line examination of patient measurements,
- Monitoring, which can be used as a basis for real-time alerts and interactive alarms,
- Biofeedback, where measured signals are presented back to a patient in real-time, and
- Training and education, where a virtual instrument may simulate or playback earlier measured signals

Because the user controls the technology through software, the flexibility of virtual instrumentation is unmatched by traditional instrumentation. The modular, hierarchical programming environment of virtual instrumentation is inherently reusable and reconfigurable. In the fields of healthcare and biomedical engineering, virtual instrumentation has empowered developers and end-users to conceive of, develop, and implement a wide variety of research-based biomedical applications and executive information tools. The following highlights some of these emerging trends and technologies that prediction will make significant strides in the near future.

- One of the biggest challenges facing clinicians today is managing the flow of information across the entire enterprise. Specifically, there is an abundance of clinical information such as medical images, lab results, and vital signs data that need to be brought together to help physician make the most effective treatment decisions for their patients.
- Telemedicine and communications technologies will eliminate time and space and seamlessly connect patients with care providers through advanced technologies.
- As VBI can now be embedded into microprocessors and run under real-time operating systems, VBI technology will play a significant role in the area of integrated sensors and smart devices.
- Imaging, visualization, and navigation advances integrated into products will help physicians accurately assess the location and characteristics of the tissue or organ of interest, decide on the course of action, and precisely deliver a desired therapy to that point. Enhanced diagnostic capabilities, three-dimensional modeling, digital image storage, and teleradiology and Picture Archiving and Communication Systems (PACS) will continue to revolutionize diagnostic and therapeutic procedures.
- New implanted diagnostic systems will fully integrate sensors, electronics, and telemetry to enhance a physician's ability to determine patient status and conveniently access meaningful diagnostic information.
- New developments in electro stimulation therapy will build on today's knowledge and understanding of the use of electrical stimulation in physiological systems to further enhance and discover yet unknown therapeutic solutions for patients with chronic disease.
- New ideas in tissue engineering and use of advanced materials will allow researchers to develop therapies that combine traditional engineering and living cells, promote the in-growth of cells in tissue scaffolds, grow new structures.
- Strides in biological and gene therapies will enable scientists and researchers to appropriately integrate molecular biology-based and gene therapies into evolving medical technologies

CONCLUSION: Biomedical instrumentation component has been discussed in detail with applications. The major benefits of virtual instrumentation include increased performance and reduced costs. Virtual Biomedical instruments can be a significant part of these developing fields if people like you apply it in earnest.

REFERENCES

- [1]ROBERT B. NORTHRUP. “analysis and Application of Analog electronicCircuits to biomedicalInstrumentation”.
- [2]I.B.Kutuza, V.E.Pozhar, V.I.Pustovoit, “AOTF-based Imaging Spectrometer for Research of Small-Size BiologicalObjects”.
- [3]Chih-Jen Yen, Wen-Yaw Chung, and Mely Chen Chi, “Micro-Power Low-Offset Instrumentation Amplifier IC Design for Biomedical System Applications”.
- [4]John G. Webster, Helit Eren. “Measurermnt, instrumentation and sensors Handbook”.
- [5]Jon B. Oansen, Eric Rosow, “Virtual Bio-Instrumentation”.
- [6]Željko Obrenovic, Dušan Starcevic, Emil Jovanov. “Virtual Instrumentation.

NEURAL NETWORKS UNSUPERVISED APPROACH - IN SUPERVISING MY INBOX

Ms. R. Santha Maria Rani & Ms. B. Virginmary Fernando

Assistant Professor, S.I.W.S. College, Wadala, Mumbai – 400031.

Assistant Professor, S.I.W.S. College, Wadala, Mumbai – 400 031.

Abstract

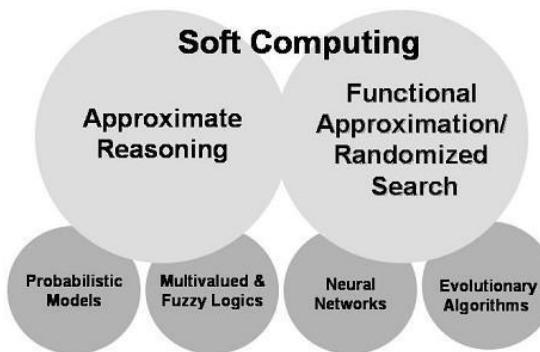
Every day we spent our crucial time in trashing the Spam messages from the inbox or retrieving the genuine messages from the spam box back to inbox. Our web based mail account is not a dustbin to store all anonymous unwanted details. And it's also about using the storage space of our web based mail account. If these anonymous messages get piled up on a daily basis then the needed messages won't have space to be stored. And deleting these spams also becomes a tedious task. Why not this task be performed without a supervisor and with a minimum human intervention. Through this paper we are trying to propose a computing procedure and a solution to get rid of the anonymous spam messages.

Keywords—Artificial Neural Network (ANN), Adaptive Resonance Theory 2 (ART 2), Heteroassociative Memory Network, Unsupervised Learning

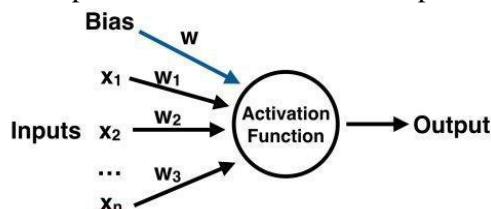
INTRODUCTION

Soft - Computing is a broad field and a general term to describe its sub fields like artificial intelligence, neural network, genetic algorithms and fuzzy logic.

To get an accurate and optimized output by dealing probably with vague, improbable, undecidable data is soft computing. ANN is composed of highly interconnected processing elements working together to provide a solution to specific problems. Artificial Neural Network is about computing the unrealistic data, with the help of procedures. Artificial neural network has got its own advantages such as adaptive learning, self –organization, real-time operation and redundant information coding. Soft Computing multi-disciplinary can be viewed in different point of view.



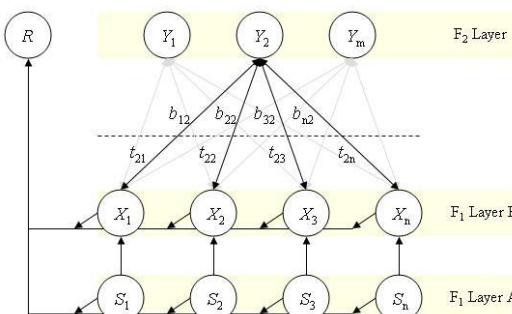
In ANN the processing elements are said as units or neurons or artificial. A connecting link ties the neuron. A weight is associated with each connecting link containing information about the input signal. The function of the input the neuron receives is the internal state said as the activation of neuron. This activation signal is then transmitted to other neuron with a limitation of only one signal at a time. The following figure depicts the architecture of a simple artificial neural net.



Here, X_1 and X_2 are input units connected with a weighted interconnection links to the output unit Y . X_1 and X_2 are input signals transmitting signal to another neurons and Y is the output signal receiving the signal. The net input is calculated as $=_1 1+2 2$ here, 1 and 2 are the activations of the input neurons 1 and 2 . The output y of the output neuron Y is obtained by applying the activations over the net input $y=f()$. The network architecture is the arrangement of neurons to form layers (stages) and the connection pattern formed within and between layers. It defines about five connection architecture namely single layer feed-forward e.g. Perceptron model, multilayer feed-forward e.g. Back-Propagation neural network, single node with its own feedback, single layer recurrent and multilayer recurrent network.

LEARNING AND ITS TYPES: ANN has the capability to learn and adapt, where in learning or training is a process by which neural networks responds to a stimuli by adjusting to a specific parameter. Learning process in ANN is generally classified as supervised, unsupervised and reinforcement learning. Supervised learning is accompanied with the teaching pair. Each input vector needs its appropriate target vector to provide the desired output. In this the actual output is compared with the desired output if it doesn't match then the error signal is generated which is used for adjusting the weights. This process is done till the desired result is met. Thus the error could also be minimized. In Unsupervised learning there is no feedback from the environment to suggest the correctness of the output. In unsupervised learning the input vectors of similar types are grouped without any training set. In the training process the network receives the input and organizes the pattern to form clusters. It responds the output by indicating the class the cluster belongs to. If the class is not found for any specific input then a new class gets generated and trained. Here the network has to discover the pattern, regularities, features or categories on its own from the input vector and its relation over the output vector by undergoing the necessary changes in the parameter. The process of finding the similarities and dissimilarities between the entities is said as self-organizing. In reinforcement learning, the accurate target patterns are known to each input pattern. The type of supervised learning is based on critic information and the feedback is sent to the reinforcement signal.

STORING PATTERNS: The set of patterns can be stored with a key pattern in the associative memories. There are two types of associative memory. In autoassociative memory the determination of weights is known as storing of vectors where in the training input and output vectors are same. In hetero associative memory network the input and output neuron, the training vectors are different. Adaptive Resonance theory is an unsupervised learning which overcomes the instar – outstar network instability. ART is based on the combination of bottom-up and top-down competitive learning autonomously. ART2 is a continuous value based input neurons. ART2 is a three stages feedback system. This continuous valued input vectors is of two forms: noisy binary and truly continuous. Noisy binary continuous valued is adopts a fast mode learning where in the patterns are based on "on or off" components. Truly continuous adopts a slow learning mode where in there is a range of crucial information and the clusters weights vectors have to be interpreted based on the patterns provided in the element.



PROCEDURE

- Top Layer – The contact details are fed into the account with the help of heteroassociative memory network (Initial weights and activation signals are set)
- For each email received its accepted as input neuron and processes.
- Bottom Layer – the email received is fed as an input (the input unit)
- The F1 Layer – the top-down and bottom-up signals comparison and reset mechanism (usually the hidden layer)
- The email received is compared with the stored contact details if it does not match, the email is tagged as „Spam” and the necessary pattern is generated and clustered in a class; and the feedback for the same is maintained in memory.
- If a new contact is added with the email contact similar to Spam email then an appropriate reset mechanism is applied. This reset mechanism helps in retrieving the spam mail to be a mail from known contact and the pattern for the same is clustered in the class.
- This process continuous for each email received and the weight parameters get adjusted accordingly

CONCLUSION: This procedure if implemented in an effective way could help us to minimize the spam messages we receive in day-to-day life. This could make us maintain a clean inbox thus optimizing the storage space of our web based accounts

REFERENCES

1. *Principles of Soft Computing* – S.N. Sivanandam & S.N. Deepa
2. <http://airccse.org/journal/ijsc/papers/2311ijsc03.pdf>
3. <http://www.ijecscse.Org/papers/April2015/A%20Review%20on%20Hybrid%20Soft%20Computing%20Methods%20of%20Pattern%20Recognition%20Techniques.pdf>
4. <https://www.computer.org/cSDL/proceedings/hicss/2014/2504/00/2504b334.pdf>
5. <http://ijcsmc.com/docs/papers/May2015/V4I5201535.pdf>
6. <http://www.academicscience.co.in/admin/resources/project/paper/f201503071425748652.pdf>
7. <https://pdfs.semanticscholar.Org/9574/a22130d0dddb18efb188aaa82b307953fc7.pdf>

THERMAL IMAGING FOR SAFETY AND EFFICIENCY IN PUBLIC TRANSPORTATION(RAILWAY)

Ms. Prachi Mahajan & Ms. Tanvi Gawade

Assistant Professor, Information Technology, Vidyalankar School of MscIT, Mumbai, India

prachi04@gmail.com 9222202461

Vidyalankar School of Information Technology, Mumbai, India

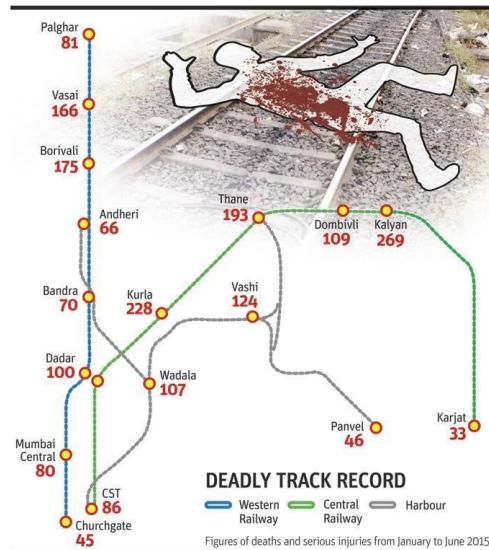
tanvigawade1995@gmail.com7506016011

Abstract

Considering the ever increasing accidents involving commuters travelling by local and long-distance trains, we thought of proposing a solution that can ensure timely help to such commuters. Although CCTV cameras are reliable tools for video analysis, they have several limitations and need additional algorithms to those. In order to work at night, the existing light may not be enough and some additional light may be needed. CCTV cameras can also be blinded by light from the sun or approaching train. The gap between the platform and footboard of the train is a fatal trap for all the commuters. During the peak hours there is a lot of rush and in the hurry of getting into trains there are chances that the person may lose his/her control and in worst case slip in between the gap of the train and the platform. Since there is no technique for informing the motorman about this incident, the train starts moving and that unlucky person may get severely injured and in worst case may lose his life. Increasing the platform's height is a permanent solution to this problem. But this solution is not cost and time efficient. This paper therefore proposes a possible solution to save precious lives in such situations. We propose a program that would raise an alarm on the platform itself near the motorman's coach that would warn the motorman about the mishap as well as give the exact location of accident to the control room. The immediate alarm can help the motorman take quick action and the train can stop even though it's started because it is at a very slow speed, and thus severe injuries could be avoided.

Keywords: *thermal imaging, gap between platform and footboard, local train mishaps*

INTRODUCTION: On average, about 2,000 people die annually on the Mumbai Suburban Rail network; between 2002 and 2012, more than 36,152 people died and 36,688 people were injured. A record 17 people died every weekday on the city's suburban railway network in 2008. The causes of the deaths are many. One of them is falling in the gap between platform and footboard of the train. As many as 34 passengers died after falling in this gap. This gap acts as a fatal trap not just for local trains but even for the long distance trains. Currently there is no mechanism by which the motorman will be immediately notified of a person falling in the gap. As a result of this, the motorman starts the train and the trapped person is run over by the train. Everyone realises about this accident only after the mishap has occurred ie. after the train has left the platform and almost always precious lives are lost in the process. We, through this paper propose a technique that uses thermal cameras to detect a person falling in the gap between the platform and the train footboard. On detection, an alarm will sound on both ends of the platform by which the motorman realises that such an accident has occurred. He can thus respond quickly by applying brakes or not starting the train at all. This will help avoid fatal injuries. Also it would help the railway officials know about the accident and its exact location and help them take appropriate action in time (such as giving an immediate call to the local hospital and asking them to be prepared and making timely arrangements of first aid and ambulance).



HARDWARE IMPLEMENTATION

a) Thermal Cameras: Infrared thermography is a technique addressed to the visualization and acquisition of thermal images. A body capable of absorbing radiation is also capable in the emission of radiation, according to the Kirchhoff's law. This emission is characterized by radiation of wavelength beyond the visible spectrum, and thus, it is called infrared radiation. The total emissive power of a body is measured through the Stefan-Boltzmann's law that states the total radial emittance is proportional to the forth power of its absolute temperature. Measuring this kind of energy is possible to evaluate the temperature distribution onto the object surface. This can be realized thanks to suitable thermo-cameras that detect the intensity of the emitted radiations, convert it into digital signals making it possible to display data in numerical or graphical form.

Infrared cameras come in three basic types: short wavelength, mid-wavelength, and long wavelength. Each type has its own place in facilities maintenance, depending on use and operation. *Short-wavelength infrared cameras* typically detect infrared wavelengths in the spectral range of 0.9-1.7 microns, which is very close to the visible light spectrum. This type of camera delivers very high resolution, relative to the visible light spectrum in its shadow contrast and detail. *Mid-wavelength cameras* typically detect infrared wavelengths in the spectral range of 2-5 microns, and they deliver higher resolution with accurate readings. The images are not as detailed as those produced by long wavelength cameras, due to an increased amount of atmospheric absorption within this spectral range. Cameras in this range are used for extreme high-temperature readings, such as scanning boiler applications and ballasted, single-ply roofing systems.

Long-wavelength cameras—the most popular infrared camera—typically detect infrared wavelengths in the range of 7-12 microns. Cameras operating in this spectral range provide great deal of detail because atmospheric absorption is minimal. Both long- and mid-wavelength cameras provide accurate temperature measurements and can produce detailed differences across small or large temperature ranges.

Alarm: Any normal alarm that would produce a sound loud enough, simulating a siren so that it would be audible to the motorman even during the noisy peak hours.

SOFTWARE IMPLEMENTATION: The algorithm functions by processing digital video, frame by frame to identify pixel groups with similar thermal signature values. These pixels are then grouped into objects that are then associated with other objects near them in subsequent video frames within a predetermined time window. The time window would be set to 2 seconds. Parameterization of the algorithm was based on the pre-existing sample video. Sample video would be already added to the

database. These sample video would contain records of normal platform environment under normal circumstances. Any differences between the normal predefined frames and the current frames would trigger the alarm logic. Once the alarm logic is triggered it would start ringing the alarm fitted at platform near the motorman's coach. The alarm would tell the motorman about the accident and he could apply urgent brake to stop the train. Applying urgent brakes won't cause any other problem as the train is already at a very minimal speed. At the same time it would also help the control room know which camera has captured that different frame and thus make it easy to locate the position of the mishap. The graphical image produced by the thermal camera on the monitor screen can help identify the intensity and severity of the situation as to how far the person is from wheels or if it is possible to simply pull the person out or do they need to take some extra measures.

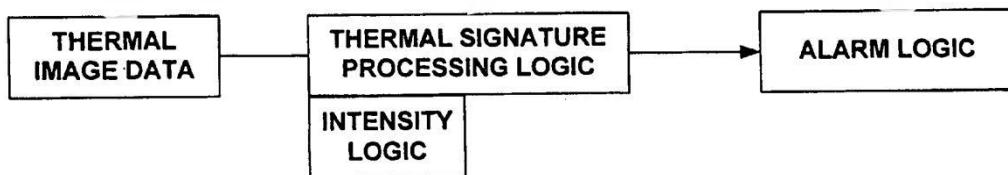


Figure 2: Flow chart – level 1

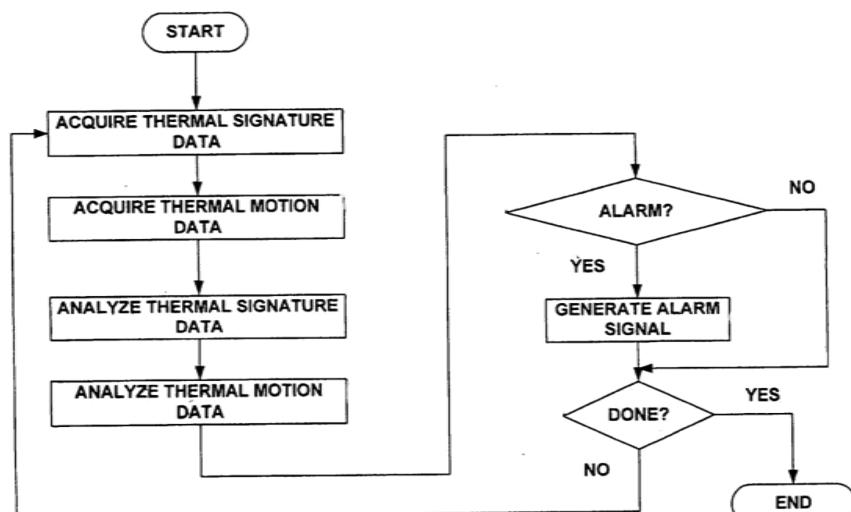


Figure 3: Flow chart – level 2

If we observe the figure 2 below, then we may find that in a single coach there are 3 to 4 doors. Among these, two doors are exactly above the wheels (marked with red circles) whereas 1 door is in between the two wheels of each coach. Considering the worst case possible, if a person falls from any of these doors and train starts then there is a time gap of around 6 to 7 seconds for the wheels to reach that person. Using our technique if an alarm is raised at the very 3rd second and the motorman applies brakes then there is a chance that the train could be totally halted within 4 to 5 seconds, just in the nick of time and that person's life could be saved.



Figure 4: highlighting the position of wheels of a coach.

IV. COMPARISON WITH OTHER POSSIBLE SOLUTIONS

Increasing platform's height: Increasing platform's height is definitely a permanent solution to these types of accidents, but the entire process of increasing the platform height is quite tedious. It is time consuming, non-economic and is highly labour intensive. In addition, due to regular wear and tear, the height of the platform will have to be raised every few years. As compared to this solution, our solution with thermal cameras, is easy to install. Additionally, it involves a one-time investment (of buying the cameras) and they are easy to maintain as well.

CCTV cameras: Thermal cameras come with some added features as compared to CCTV camera such as working efficiently even in absence of light. As there is less amount of visibility in the gap between the footboard and platform, this feature of thermal camera becomes essential and useful. Figure 3 below shows comparison between images taken by normal CCTV camera and thermal camera. The man hidden behind the bushes is not visible in normal CCTV camera image whereas he is completely visible in the thermal image. The cost difference between thermal cameras and CCTV cameras is not much and considering its added features it is definitely worth paying for it.



Figure 5: comparison between Normal camera image and thermal camera image

FURTHER IMPLEMENTATIONS

Further implementations possible with this technique are as follows:

- [1] We could use this technique for under body component monitoring system of railway vehicles.
- [2] This technique could also help us do easy and quick analysis of railway track to find any minute fractures or deformations.

It could also be used to analyse overhead wire and give a warning of any defect.

CONCLUSION: Through this paper we have tried to provide a very cost-effective, quick-response solution to a very common and frequently observed problem of people falling in the gap between the platform and the train footboard. This solution is easily implementable, user friendly and can be easily maintained throughout the vast network of local as well as long distance trains.

REFERENCES

- <http://www.flir.com/traffic/blog/details/?ID=78385>
- <https://scholar.google.co.in>
- <http://www.facilitiesnet.com>
- Figure 1- <http://images.mid-day.com/images/2015/jul/Train-accidents.jpg>
- Figure 2, 3- <https://www.google.com/patents/US20060242186>
- Figure 4- <http://images.mid-day.com/images/2016/apr/DC-train-2.jpg>
- Figure 5- <http://1.op ht/original/opplanet-howto-info-page-thermalvsnv-3>

APPLICATION OF NANOTECHNOLOGY IN BIOMEDICAL

Mrs.Suchita .U.Revankar& Mrs. Mona Marwaha

M.Phil(IT),M.Sc,Diploma (cyberlaw)

M.Sc, Diploma (cyberlaw)

Abstract

This paper discusses about the recent development of Nanotechnology in the field of Biomedical. Nanotechnology is used for treatments of various diseases .The paper gives the detail about the treatment of cancer and replacement of damage skin tissue. The s advance development in nano instruments the diagnosis of human bodyhas changed tremendously. The accurate diagnosis leads to high degree of treatment.

What is Nanotechnology?

The prefix "nano" stems from the ancient Greek for "dwarf". In science it means one billionth (10 to the minus 9) of something, thus a nanometer (nm) is one billionth of a meter, or 0.000000001 meters. A nanometer is about three to five atoms wide, or some 40,000 times smaller than the thickness of human hair. The ability to manipulate structures and properties at the nanoscale in medicine is like having a sub-microscopic lab bench on which you can handle cell components, viruses or pieces of DNA, using a range of tiny tools, robots and tubes.

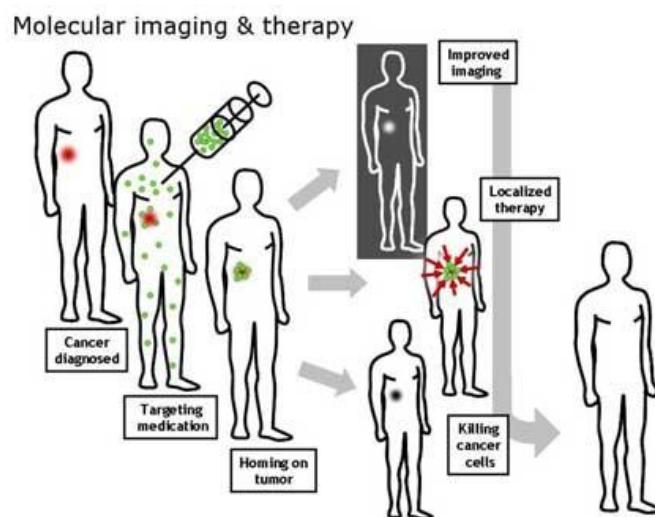
Manipulating DNA: Therapies that involve the manipulation of individual genes, or the molecular pathways that influence their expression, are increasingly being investigated as an option for treating diseases. One highly sought goal in this field is the ability to tailor treatments according to the genetic make-up of individual patients. This creates a need for tools that help scientists experiment and develop such treatments. Imagine, for example, being able to stretch out a section of DNA like a strand of spaghetti, so you can examine or operate on it, or building nanorobots that can "walk" and carry out repairs inside cell components. For instance, scientists at the Australian National University have managed to attach coated latex beads to the ends of modified DNA, and then using an "optical trap" comprising a focused beam of light to hold the beads in place, they have stretched out the DNA strand in order to study the interactions of specific binding proteins.

Nanobots and Nanostars: DNA-based nanobots are also being created to target **cancer** cells. For instance, researchers at Harvard Medical School in the US reported recently in *Science* how they made **an "origami nanorobot" out of DNA** to transport a molecular payload. The barrel-shaped nanobot can carry molecules containing instructions that make cells behave in a particular way. In their study, the team successfully demonstrates how it delivered molecules that trigger cell suicide in **leukemia** and **lymphoma** cells. Nanobots made from other materials are also in development. For instance, gold is the material scientists at Northwestern University use to make "nanostars", simple, specialized, star-shaped nanoparticles that can deliver. In a recent paper in the journal *ACS Nano*, they describe how drug-loaded nanostars behave like tiny hitchhikers, that after being attracted to an over-expressed protein on the surface of human cervical and **ovarian cancer** cells. The researchers found giving their nanobot the shape of a star helped to overcome one of the challenges of using nanoparticles to deliver drugs: how to release the drugs precisely. They say the shape helps to concentrate the light pulses used to release the drugs precisely at the points of the star.

Nanofactories that Make Drugs In Situ: Scientists are discovering that protein-based drugs are very useful because they can be programmed to deliver specific signals to cells. But the problem with conventional delivery of such drugs is that the body breaks most of them down before they reach their destination. But what if it were possible to produce such drugs *in situ*, right at the target site? Well, in a recent issue of *Nano Letters*, researchers at Massachusetts Institute of Technology (MIT) in the US show how it may be possible to do just that. In their proof of principle study, they demonstrate the

feasibility of self-assembling "nanofactories" that make protein compounds, on demand, at target sites. So far they have tested the idea in mice, by creating nanoparticles programmed to produce either green fluorescent protein (GFP) or luciferase exposed to UV light. The MIT team came up with the idea while trying to find a way to attack metastatic tumors, those that grow from cancer cells that have migrated from the original site to other parts of the body. Over 90% of cancer deaths are due to metastatic cancer. They are now working on nanoparticles that can synthesize potential cancer drugs, and also on other ways to switch them on

Nanofibers: Nanofibers are fibers with diameters of less than 1,000 nm. Medical applications include special materials for wound dressings and surgical textiles, materials used in implants, tissue engineering and artificial organ components. Nanofibers made of carbon also hold promise for medical imaging and precise scientific measurement tools. But there are huge challenges to overcome, one of the main ones being how to make them consistently of the correct size. Historically, this has been costly and time-consuming. Nickel nanoparticles are particularly interesting because at high temperatures they help grow carbon nanofibers. The researchers also found there was another benefit in using these nanoparticles, they could define where the nanofibers grew and by correct placement of the nanoparticles they could grow the nanofibers in a desired specific pattern. Lead is another substance that is finding use as a nanofiber, so much so that neurosurgeon-to-be Matthew MacEwan, who is studying at Washington University School of Medicine in St. Louis, started his own nanomedicine company aimed at revolutionizing the surgical mesh that is used in operating theatres worldwide. Currently, the surgical meshes used to repair the protective membrane that covers the brain and spinal cord are made of thick and stiff material, which is difficult to work with. The lead nanofiber mesh is thinner, more flexible and more likely to integrate with the body's own tissues, says MacEwan. Every thread of the nanofiber mesh is thousands of times smaller than the diameter of a single cell. The idea is to use the nanofiber material not only to make operations easier for surgeons to carry out, but also so there are fewer post-op complications for patients, because it breaks down naturally over time. They carried out further experiments, such as adding metal-recognizing amino acids and different metals, and found they could control fiber formation, alter its shape, and how it bound to small molecules. This new method will greatly improve the delivery of drugs to treat cancer, heart disorders and Alzheimer's disease. They can also see applications in regeneration of human tissue, bone and cartilage, and even as a way to develop tinier and more powerful microprocessors for use in computers and consumer electronics



A schematic illustration showing how nanoparticles or other cancer drugs might be used to treat cancer. This illustration was made for the Open source Handbook of Nanoscience and Nanotechnology.

What of the Future and Concerns Surrounding Nanomaterials?

Recent years have seen an explosion in the number of studies showing the variety of medical applications of nanotechnology and nanomaterials. In this article we have glimpsed just a small cross-section of this vast field. However, across the range, there exist considerable challenges, the greatest of which appear to be how to scale up production of materials and tools, and how to bring down costs and timescales change over the next few years as the technology develops. Nanomaterials are already used to lower levels of fat and sugar without altering taste, or to improve packaging to keep food fresher for longer, or to tell consumers if the food is spoiled. But, there are also concerned parties, who highlight that while the pace of research quickens, and the market for nanomaterials expands, it appears not enough is being done to discover their toxicological consequences. For instance, one area that concerns the committee is the size and exceptional mobility of nanoparticles: they are small enough, if ingested, to penetrate cell membranes of the lining of the gut, with the potential to access the brain and other parts of the body, and even inside the nuclei of cells. Another is the solubility and persistence of nanomaterials. What happens, for instance, to insoluble nanoparticles? If they can't be broken down and digested or degraded, is there a danger they will accumulate and damage organs? Also, because of their high surface area to mass ratio, nanoparticles are highly reactive, and may for instance, trigger as yet unknown chemical reactions, or by bonding with toxins, allow them to enter cells that they would otherwise have no access to. For instance, with their large surface area and activity and electrical charge, nanomaterials create the conditions for what is described as "particle aggregation" due to physical forces and "particle agglomeration" due to chemical forces, so that individual nanoparticles come together to form larger ones. This may lead not only to dramatically larger particles, for instance in the gut and inside cells, but could also result in disaggregation of clumps of nanoparticles, which could radically alter their physicochemical properties and chemical reactivity. It would appear, therefore, whether actual or perceived, the potential risk that nanotechnology poses to human health must be investigated, and be seen to be investigated. Most nanomaterials, as the NCI suggests, will likely prove to be harmless. But when a technology advances rapidly, knowledge and communication about its safety needs to keep pace in order for it to benefit, especially if it is also to secure public confidence. We only have to look at what happened, and to some extent is still happening, with genetically modified food to see how that can go badly wrong.

Nanotech medicine to rebuild damaged parts of human body: According to the World Health Organisation (WHO), an estimated 322,000 deaths globally per year are linked to severe injuries from fire and in many of these cases death could have been avoided with surgical intervention. In this type of intervention, when major burn patients have insufficient skin left to graft on the most damaged part of their body, new skin has literally to be grown from the patient's own skin cells. However, the long delay in growing the skin can expose the burns patient to increased risk of infection and dehydration; so to help those cells to multiply, specialists use a particular kind of component called polymeric material. Because of their extraordinary range of properties, polymeric materials play a ubiquitous role in our daily life. This role ranges from familiar synthetic plastics: plastic bags or yoghurt cups, to natural biopolymers such as wood or proteins that are present in the human body.

New nano-structured materials: It has been known for the last few years that man made synthetic polymeric materials have the potential to grow and multiply human cells. About 10 years ago, scientists discovered the important influence that nano-structures had on the way a line of cells would develop. In the case of human skin cells, re-implantation of the tissue can be performed once a sufficient amount of skin is obtained, by growing it on a polymeric material surface. However, in many cases, imperfections in the material structure can make the process relatively long and sometimes inefficient, with cells developing erratically. The team of Austrian, Czech and Polish scientists involved in the research project managed to develop a new and simple way to create nano-

structured materials that would allow a better development of human cells. The Polish partner in the team, the Military University of Technology of Warsaw, has been in charge of the development of the new laser-based technology called EUV (Extreme Ultra-Violet) that was used for the creation of the nano-structured polymer surfaces. A beam of EUV light formed with a unique mirror developed by the Czech partner REFLEX S.R.O is directed on the surface allowing the creation of new kinds of polymeric materials. This innovative technique allows for a very high degree of precision, from 10 to 20 nanometres, whereas conventional techniques allowed only for a maximal precision level of 100 nanometres. 'One of the newest theories in the field of cell growing is that the smaller the structure, the wider the possibilities to manipulate cells,' says Professor Heitz

A wide range of human cells: The EUV technique, thanks to its particular level of precision, also allows for the conservation of the material's structure, which was not the case with other methods used to modify the polymer. 'A regular structure is essential if the material is to be used for the purpose of growing human cells. Nano-structures built through the EUV technique have the ability to influence the behaviour of organic cells and different kind of cells can be grown better and faster depending on the type of polymer surface used. The variety of material used to grow human stem cells will determinate the way cells will differentiate, meaning that they will transform into another human cell type. In other words: 'Using one type of polymer material or another will help you grow different types of muscle, nerves, cells adapted to a human heart, bone or any other part of the human body. Thanks to their affinity to human tissue and cells, polymeric materials could also be used for designing entire artificial implants. Indeed, many types of implants are already being made out of polymer materials, such as heart valves and blood vessels. Using the EUV technique would reduce the odds of implant rejection, as the range of new materials created could be adapted to interact perfectly with specific parts of a patient's body.'

Broad applications: The next step is to bring their innovation to the market. The Military Institute of Technology has already handled several EUV installations to laboratories in the USA, Germany, the Czech Republic, France, Japan, China and South Korea. It is now preparing for a full commercial phase, in partnership with the Polish company PREVAC, a leader in the market of high-precision instruments. Applications of this novel technique could go far beyond nano-medicine and biotechnologies. An important potential market could be the one of micro-electronics, with its ever-expanding need for high-precision lithography; applications could be proposed to every type of industry where nano-structures are used. For instance, in micro-mechanics, integrated optics, wear reduction or the production of nano-composite materials.

References

- Nanoelectronic Device Applications Handbook*
James E. Morris and Krzysztof Iniewski
J. Nanotechnol. Eng. Med. 4, 036501 (2014) (pages); doi: 10.1115/1.402666
"Nanotech medicine to rebuild damaged parts of human body." *ScienceDaily*. *ScienceDaily*, 19 January 2011.
<www.sciencedaily.com/releases/2011/01/110118092140.htm>
- Ratner M, Ratner D. *Nanotechnology: A Gentle Introduction to the Next Big Idea*. Prentice Hall: 2003.
Jones RAL. *Soft Machines: Nanotechnology and Life*. Oxford University Press: 2004.
Nanotechnology: Big Things from a Tiny World. National Nanotechnology Coordination
http://nanotechnology.wmwikis.net/file/view/nanotechnology_bigtthingsfromatinyworld-print.pdf
http://nanotechnology.wmwikis.net/file/view/Nanotech_0611.pdf.
www.scientificamerican.com

MY LANGUAGE; A SIMPLIFIED CONCEPT TO CREATE YOUR OWN PROGRAMMING LANGUAGE

Sohrab A. Vakharia

Mumbai. (+91 8080178198), sohrabvakharia@gmail.com

Abstract

By the Grace of God Almighty, this paper is being presented on a new concept of developing a programming language of your own type. We always wonder how these programming languages are developed and we want to have a programming language of our own flavour. This research paper will give us the exact idea how we can make it possible. The name “myLanguage” is given to this programming language. “myLanguage” is not just a programming language but it is a concept for developing a language for oneself. We might know couple of programming languages and might be some are very much professional with few. But still we always have some hidden complains about the language and we want that language to be like our personal choice. “myLanguage” gives an opportunity to fulfil our dream. “myLanguage” is a concept by which any complex programming language can be simplified. Here “myLanguage” also stand as an example to prove the statement. “myLanguage” will do all basic arithmetic operations and writes their output and shows on the command prompt.

Introduction: There are several languages existing in the world. As everyone knows there are varieties of languages used, not only in INDIA but all around the world. Somewhere it is said that the mother of all the Indian languages is regarded as “Sanskrit” and also many of its words are used in English. Sanskrit is a language which has very different grammar than our routine languages. The best part is you can write the words anyhow and still the meaning is the same. Now, let's compare Computer Languages with our regular languages. Like languages C, C++, Java, python and so on. Now let's consider “C Programming” Language as “Sanskrit” (i.e. mother of all programming languages) and there are various other languages discovered out of it. It is very difficult for us to learn and understand Sanskrit. Let's consider Hindi is an outcome of our difficulty. Easier than Sanskrit; means user friendly. Now second powerful language is “JAVA”, like we can say “English”; but again, both are most complex. Unfortunately till now we did not have an easier version of Java, but now we have an option to it. “myLanguage” is an option and an approach to overcome the complexity of Java. Like we can compare “Hindi” and “Sanskrit”, we can also compare “myLanguage” and “Java” respectively. Let's hope for the best and hopefully this approach will give back something to the society.

What was the need to develop “myLanguage”?

General perception of the world for JAVA is that it is amongst those very complex programming languages. But at the same time java is most beautiful, powerful but complex language. And you see the beauty for Java, it is written in Java itself. As you can see lots of classes in the bin folder of Java. Then considering the concept of JSP and Servlets, conclusion can be derived to write a your own programming language using “User Friendly” commands, “Easier” to remember and implement than Java and again most “Powerful” as java. And see the beauty of Java again; Java it will help to create your own language and write its commands in Java itself. Hence, myLanguage uses Java compiler and Java runtime environment. myLanguage delivers all the benefits of Java in a less complex way.

For an argument, why to develop myLanguage when there are already easier versions of languages available in the market, I would just like to say one thing; “If there are many restaurants available in the market for food, why do we cook our food ourselves?”

Purpose of the Paper: The purpose of this document is to present a detailed description of the “myLanguage”. It will explain the purpose and features of the research.

Scope of the Paper: This programming language will do all basic arithmetic operations and writes their output and shows on the command prompt.

Study and analysis:

When the chronicle of computer languages is written, the following will be said:

B led to C, C evolved into C++, and C++ set the stage for Java. And now hopefully myLanguage will add up ease to Java. To understand Java is to understand the reasons that drove its creation, the forces that shaped it, and the legacy that it inherits. Like the successful computer languages that came before, Java is a blend of the best elements of its rich heritage combined with the innovative concepts required by its unique environment. Hence, that is one of the reason why “myLanguage” is developed using Java.

About Java: Java is related to C++, which is a direct descendent of C. Much of the character of Java is inherited from these two languages. From C, Java derives its syntax. Many of Java’s object-oriented features were influenced by C++. In fact, several of Java’s defining characteristics come from or are responses to its predecessors. Moreover, the creation of Java was deeply rooted in the process of refinement and adaptation that has been occurring in computer programming languages for the past several decades. As you will see, each innovation in language design was driven by the need to solve a fundamental problem that the preceding languages could not solve. “MyLanguage” is no exception.

About “myLanguage”:

“myLanguage” is not just any direct descendent nor even like a pure programming language. It is a simplification to the great Java Language and will be an added advantage to those who are not so well off with Java or want to learn Java. It can even serve as a preliminary language for the beginners who want to have a taste of computer programming. The keywords of myLanguage are written in simple English language and easy to remember. The long keywords of java are simply replaced small English words; easy to understand by a layman and easy to code. Also the beginner may not have to worry about the programming, saving and executing constrains which some other programming languages have.

myLanguage for other Languages: “myLanguage” commands are processed using Java and every myLanguage file is converted into a Java file before executing. Same way it is possible to convert and run myLanguage file to any other programming language file. The beauty of myLanguage is that it saves the converted Java programming files into a specific folder of the same name as of the myLanguage file. This concept was adapted from the Java server pages concept, like when you write a JSP code, it first creates a Java Servlet file then processes the output in real time. “myLanguage” does similar work by converting every myLanguage file to pure java file and executes it. Best thing about myLanguage is that you need not run separate commands for compilations and executions. All that is taken care by “myLanguage” compiler itself. Similarly, other languages can also be created using myLanguage commands. For that some changes in the myLanguage programming is needed, that’s it. Hence myLanguage is not only a programming language but it can serve as a *concept* to ease any other programming language.

myLanguage and Java: People tend to do silly mistakes in Java programming as they have code keeping several things in mind about java. Like type safety features of Java, then keeping the same file name as the class name, then creation of main class and so on. All these things can be overlooked in myLanguage. Still we cannot forget Java is most powerful programming language and functionalities of Java had given birth to myLanguage. And simultaneously best part about myLanguage is that it extends all the features of Java in a simplified way to the user.

Methodology: Below mentioned are the steps to be followed for executing myLanguage program.

System requirements and software needed:

- Any operating system with java support.

- Java development kit 1.7 and above.
- Java runtime environment.
- Notepad or Notepad++ or any equivalent code writing environment.

myLanguage software(jar file + batch file)

Setup before running:

- Install JDK and make sure that JRE is present in the operating system.
- In windows operating system set environment variable path to till the bin folder of java.
For e.g.: “C:\Program Files\Java\jdk1.7.0_51\bin”
- Save the myLanguage software folder namely “myLanguage” in the “C:” drive of your windows operating system.
For e.g.: “C:\myLanguage”
- myLanguage software folder contains “myLanguage.bat” file and “myLanguage.jar” file.

Basics for myLanguage:

- myLanguage programming is done in a simple notepad and after writing the code name the file of your choice and save it with the extension “.msf” (my source file).
- Extension of myLanguage was chosen to “.msf” to avoid the confusion between other files and myLanguage files.
- After creating the myLanguage file open command prompt and change the directory to the path where the myLanguage file is saved.
- Then simply run the “myLanguage.bat” file and get the output in the command prompt.

Writing the myLanguage Code:

- Writing myLanguage code is quite simple than other programming languages.
- Unlike Java in myLanguage there is no need to import any package to write the code.
- Whole myLanguage code must retain between “start []”.

For e.g.: start

```
[  
....myLanguage code  
]
```

- Like Java in myLanguage we can also write code in separate classes but the main code which is to be executed first should retain between “main []”.

For e.g.: start

```
[  
main  
[  
....(some code)  
]  
]
```

- Grammar of myLanguage is very simple and follows all natural mathematical and formal rules.

Some of the syntaxes used in myLanguage:

- num = used to specify numbers.
- char = used to specify string of alphabets.
- dec = used to specify the decimal numbers.

printcons = used to print the output on the console(i.e.: command prompt)

- [] = brackets used in myLanguage to keep the code and conditions between these open and close brackets.

Symbols (Operators) in myLanguage:

- All arithmetic operators (+ , - , * , /)(i.e. plus, minus, multiply, divide).
- All the logical operators (< , > , =) (i.e. less than, greater than, equals to).
- “not=” in myLanguage symbolize “not equals to” condition.
- “\n” is used to leave a one line space in the output.
- “\t” is used to leave a one tab space in the output.

Grammar of myLanguage mapped with Java as shown below:

myLanguage commands	Java commands
start	public class class_name
main	public static void main(String args[])
printcons	system.out.println
num	int, double
char	String
dec	Float
[]	{ }
+	+
-	-
*	*
/	/
=	=
not=	!=
<	<
>	>
\n	\n
\t	\t

Code execution in myLanguage:**Theory**

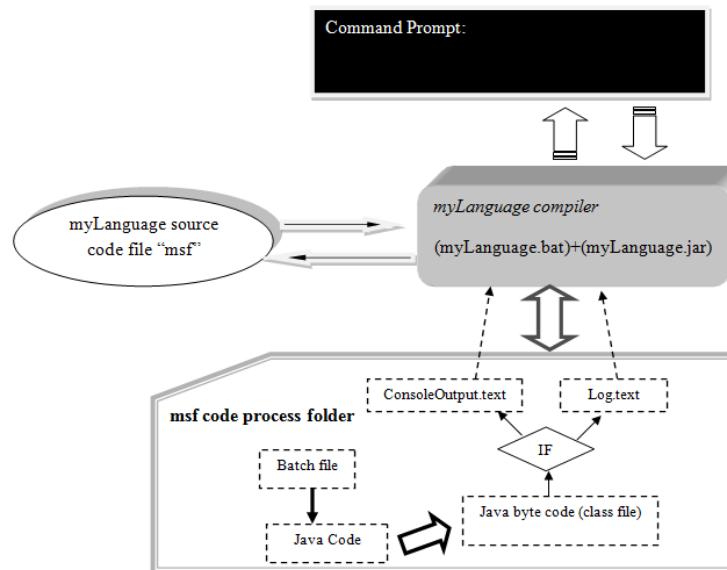
- In myLanguage, once the file (.msf “my source file”) is written, place this file in the same folder of myLanguage software.
- Then simply open the command prompt and change the directory path to the myLanguage folder.
- Once all set then simply run the “myLanguage.bat” file and you will be able to see the output on the command prompt.
- Upon clicking the batch file, it will call the “myLanguage.jar”, which is present in the folder.

It will create a code process folder with the same name of the “msf” file

- Inside this folder there will a java file written automatically by the myLanguage compiler(i.e. msf file converts to java source code file).
- Along with there will be another batch file created of the same name as the “msf” file name.

This batch file will run the inside java code and will deliver the output. If there is successful run of the code and output is derived then this output will be saved in the “consoleoutput.text” file, which will be read by the myLanguage compiler and simultaneously displayed on the command prompt. If there are any errors then those errors will be saved in the “log.text” file and simultaneously displayed by the myLanguage compiler on the command prompt.(error checking is discussed in the separate topic later in this document)

Diagrammatic flow of the myLanguage:

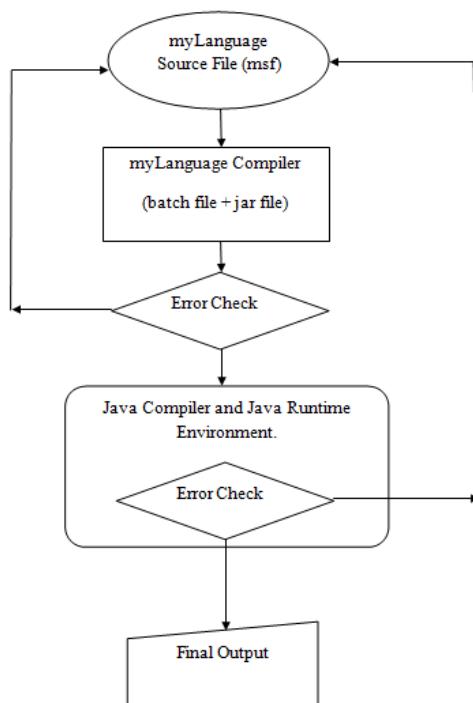


Shown above is the flow of myLanguage compiler.

- Command prompt will start the myLanguage compiler by invoking its batch file.
- It will process the “msf” file and will create folder (msf code process folder).
- Inside code process folder; java file and batch file to run that java file is created, which in turns produces a byte code.

If the output is successfully processed then it will go in “consoleoutput.txt” file else error will go in “log.txt” file and simultaneously outputs or errors will be shown in the command prompt.

Flow graph of processing of myLanguage:



Error Checking in myLanguage:

Theory: Error checking is a very vast topic. It is said that in programming that, “**it is easier to code but difficult to debug**”. Error handling is really a tedious task, hence in myLanguage the errors are made easier to understand and solve by the layman. In myLanguage, the errors are defined in two ways. Error checking is done twice in myLanguage to get the best output.

Errors of myLanguage are classified into 2 types;

1. **Compile time errors or Format check errors (while converting the myLanguage file to java file).**

For this there is a validation check is set in the myLanguage compiler to catch the errors and display them on console and make user correct the errors before proceeding.

It has 3 important types of errors.

- A) start [] block should be kept always for any myLanguage code.
- B) main [] block should contain the main logic of the code.
- C) Number of open and close brackets “[]” and parenthesis “()”.

2. **Run time errors or Coding errors (errors generated from the converted java file).**

For this process the errors of java file are stored in “log.txt” file which is and the output is stored in the “ConsoleOutput.txt” file which is generated via batch file used to run myLanguage converted java code.

To avoid any confusion, these java code errors are displayed to the user in regard to correction in the “msf” file.

Experiment Result:

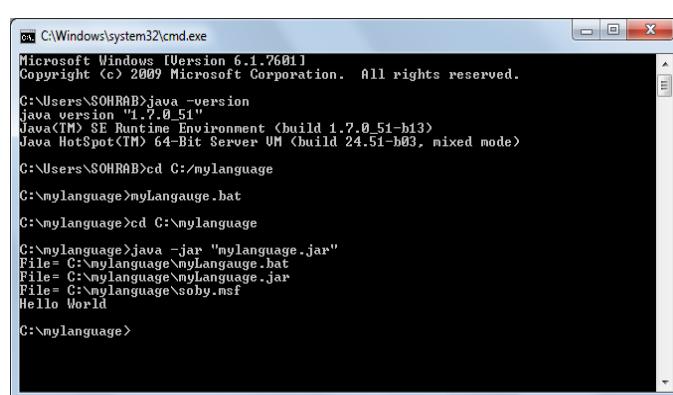
1. Example 1

“Well known Hello World program...”

msf code:

```
start
[
main
[
printcons ("Hello World");
]
```

Output:



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Sohrab>java -version
java version "1.7.0_51"
Java(TM) SE Runtime Environment (build 1.7.0_51-b13)
Java HotSpot(TM) 64-Bit Server VM (build 24.51-b09, mixed mode)

C:\Users\Sohrab>cd C:/mylanguage
C:\mylanguage>myLangauge.bat
C:\mylanguage>cd C:/mylanguage
C:\mylanguage>java -jar "mylanguage.jar"
File= C:\mylanguage\myLangauge.bat
File= C:\mylanguage\myLanguage.jar
File= C:\mylanguage\sohy.nsf
Hello World

C:\mylanguage>
```

1. Example 2

Addition of two variables.

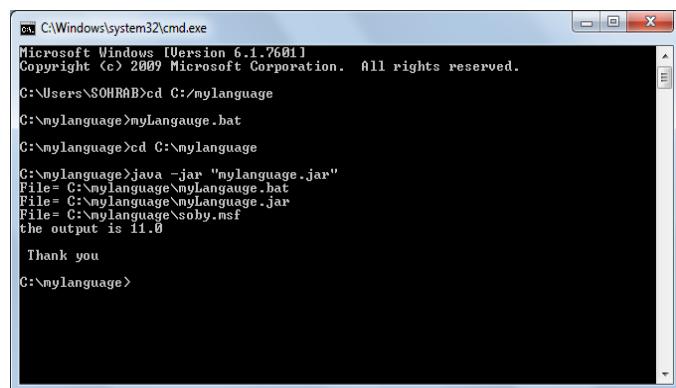
msf code:

```
start
[
```

```

main
[
num a = 8;
num b = 3;
num c;
c = a + b;
printcons ("the output is " +c);
printcons ("\n Thank you");
]
]

```

Output:


```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\SOHRAB>cd C:/mylanguage
C:\mylanguage>myLanguage.bat
C:\mylanguage>d C:\mylanguage
C:\mylanguage>java -jar "mylanguage.jar"
File= C:\mylanguage\myLanguage.bat
File= C:\mylanguage\myLanguage.jar
File= C:\mylanguage\sohy.nsf
the output is 11.0
Thank you
C:\mylanguage>

```

1. Example 3

Program showing compile time errors (missing brackets []).

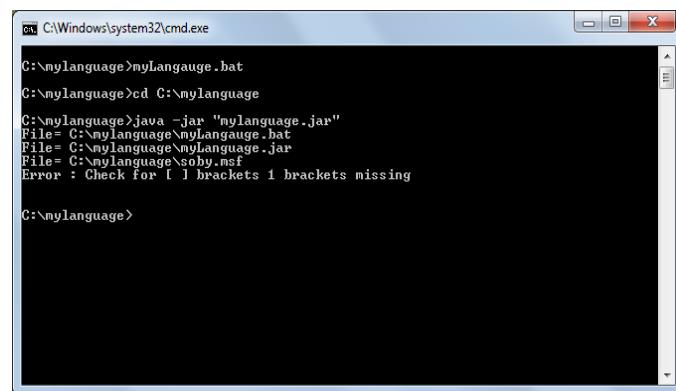
msf code with errors

```

start
[
Main

[
printcons ("Hello world");
]

```

Output:


```

C:\Windows\system32\cmd.exe
C:\mylanguage>myLanguage.bat
C:\mylanguage>cd C:/mylanguage
C:\mylanguage>java -jar "mylanguage.jar"
File= C:\mylanguage\myLanguage.bat
File= C:\mylanguage\myLanguage.jar
File= C:\mylanguage\sohy.nsf
Error : Check for 1 brackets 1 brackets missing

C:\mylanguage>

```

2. Example 4

Program showing runtime errors (spelling mistake in “printcons” keyword).

msf code with errors

```

start
[

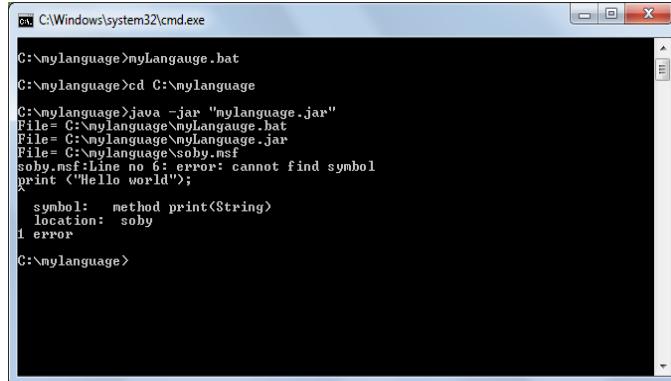
```

```

main
[
print ("Hello world");
]
]

```

Output:



```

C:\Windows\system32\cmd.exe
C:\mylanguage>myLangauge.bat
C:\mylanguage>cd C:\mylanguage
C:\mylanguage>java -jar "myLangauge.jar"
File= C:\mylanguage\myLangauge.bat
File= C:\mylanguage\myLangauge.jar
File= C:\mylanguage\soby.nsf
soby.nsf:Line no 6: error: cannot find symbol
  print ("Hello world");
               symbol:   method print<String>
               location:  soby
1 error
C:\mylanguage>

```

Conclusion: Here is the conclusion that finally a programming language can be developed. The scope of this language may be very less right now but it can gradually increase. It is concluded that creating a programming language may not be an easy task but it is still possible. Also not to deny that Java is a very powerful programming language which contains numerous functions but a little complex. So there comes “myLanguage” to remove that complexity of “Java”. myLanguage will not only simplify java but also gives a concept to the programming society that any most complex language can be simplified by itself. All what needed is immense of hard work, dedication and slightest overhead to that language. But as sometimes simplification is a better choice over a small overhead of time and space. This is not the end. This is a beginning of “myLanguage” and it will go ahead with more better scope.

Future Work: To cover all the operations which “Java Programming Language” does and making “myLanguage” coding more user friendly and easy to operate. The main goal would be to achieve the full functionality of Java and removing all its complexities. myLanguage may also be able to ease many other programming languages like it does for Java.

Limitations: myLanguage will add a slightest overhead of files and compilation time to the routine Java. More limitations shall be overcome as discovered.

Applications:

- Educational institutes for as an Introduction to programming languages.
- Industries where Java development is done, it can serve as an alternative to pure and direct Java coding.

Cost of myLanguage:

- Freeware; free of cost.

Since this project is mend for the society and such projects are priceless and provided free of any monetary gain. Also languages are considered as natural entities and incur no monetary valuation

References

Web Links used:

- <http://stackoverflow.com/questions/19122708/java-program-to-write-text-file-using-separator-and-in-first-line-write-record>
- <http://www.vogella.com/tutorials/JavaIO/article.html>
- http://www.cs.swarthmore.edu/~newhall/unixhelp/Java_files.html
- <http://courses.cs.vt.edu/~cs1705/CreditByExam/JavaIOTutorial.html>

<http://pastebin.com/peKYBb12>

<http://stackoverflow.com/questions/2320402/how-to-define-a-grammar-for-a-programming-language>

<http://shelf3d.com/3Ce6tfvIIS8#how-to-make-your-own-programing-language-part-three>

<http://www.codeproject.com/Articles/50377/Create-Your-Own-Programming-Language>

<https://www.youtube.com/watch?v=sA67g6zaKOE#t=76>

Books Referred:

The Complete Reference- Java 2

FINANCIAL GOAL PREDICTION USING DATA MINING

Pallavi Devendra Tawde

VSIT, Wadala, Mumbai

Abstract

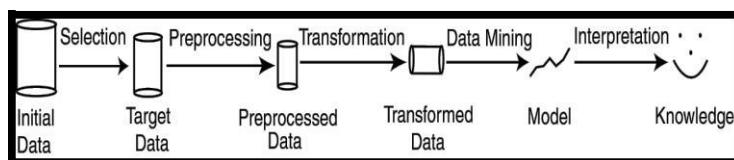
Most of the financial companies initiate the marketing based on financial goals decided by individuals. This research paper will present a proactive approach to go one step back to predict and suggest appropriate goals based on socioeconomic traits of an individual. This mechanism will analyses financial and social attributes to determine investment aspirations of an investor and accordingly investment instruments can be suggested. Financial companies, investment consultants can use this mechanism by converting their customer information into structured socioeconomic categories database. These categories in combination with the age and personal aspirations will generate feasible goals for short and medium term duration. The objective of this paper is to design a mechanism to systematically arrive at an investment goal by routing through data mining algorithms based on historic data. This goal setting process will evaluate each attribute of a person to create a lead to financial parameter for analyzing and predicting future goal.

Keywords: Data Mining, Prediction, decision tree, classification, clustering

Introduction: Everyone earns money with an objective to fulfill one's life goals and attain financial independence. Money plays an important role in our lives. On one side it is a tool for wealth creation for future needs and on the other it serves as a transaction instrument for satisfying present needs. While financial planning allows individuals to meet life goals by prudent management of money and finances, it may be observed that identifying precise financial goals is the first step towards bigger goal. As often said "if goal setting and planning is perfect, you are already half-way towards success." This also highlights the importance of systematic financial goal setting. Goal setting as a generic term refers to the exercise of deciding what to achieve in future systematically analyzing current scenario and predicting future events. Data plays a vital role in all types of analyzing and predicting exercise as it's the most realistic source of accurate information. This research advocates use of latest data mining technology to systematically analyze all current financial aspect and providing most accurate and achievable financial goal to an individual.

Knowledge Discovery in Databases (KDD): Simply stated, data mining refers to extracting or "mining" knowledge from large amounts of data. Data mining techniques are used to operate on large volumes of data to discover hidden patterns and relationships helpful in decision making.

The sequences of steps identified in extracting knowledge from data are shown in diagram1



This technique will first gather all data of the targeted individual and match with the best possible scenarios in the past to determine suitable and achievable goals. Though in finance, a past return doesn't guarantee future results but they are definitely the directors to predict future events with certain deviation. By analyzing past success stories, an outline path of achieving future goal can be certainly drawn with the help of data mining exercise. Currently financial goal setting tasks are mostly done manually by financial expert based on their knowledge and experience. This research proposes systematic conversion of the financial expertise using past data as experience to build a comprehensive mechanism to decide future financial goal.

Decision Tree: A decision tree is a tree structure which classifies an input sample into one of its possible classes. Decision trees are used to extract knowledge by making decision rules from the large amount of available information. A decision tree classifier has a simple form which can be compactly

stored and that efficiently classifies new data. This goal prediction tool can be an effective tool for all financial institutions as well as individual portfolio managers to serve their customers effectively. Since this tool works independently without any preconceive notion the results will be purely based on data analysis and unbiased. This will eliminate any human error as well as judgmental mistakes. A mostly individual doesn't process enough information to decide their financial goals or due to poor financial literacy, the decisions are taken by following incorrect concepts like roomers or under influence of other people. This tool will help individuals to ascertain their goals and objectives. Also by predicting financial goals of individuals financial institutions can do focused and targeted marketing of their financial products to their potential investors.

Data mining Techniques: As discussed above this mechanism will use historic data to analyses current scenario and propose next financial goal. The information provided will be used for dual purpose i.e. for analyzing present-day financial condition to predict goal and this information will be also stored in the existing database with individual consent for future reference. The information provided by individual will go in analytically designed decision making workflow to arrive at some of the proposed financial goals. This workflow is further divided into sub-processes to determine individual's financial personality based on current financial position and risk tolerance level. This financial personality will decide further workflow to arrive at predicted financial goal. Below is the step-wise presentation of goal predicting workflow.

Step 1 - Sample Data Evaluation: Knowledge Database Details - Below table 1.1 list down the risk tolerance factor of an individual based on the age limits and other factors. This table explains the relationship of Investment Risk tolerance level and other socio-economic factors of an individual

Sample data Table 1.1

Lower Age Limit	Upper Age Limit	Marital Status	Dependents	Risk Factor	Financial Personality	High Risk Investment (%)	Low Risk Investment (%)
20	25	UM	0-1	78	UM - 78	78	22
20	25	M	2-3	78	M - 78	78	22
25	30	UM	1-2	73	UM - 73	73	27
25	30	M	2-3	73	M - 73	73	27
30	35	UM	1-2	68	UM - 68	68	32
30	35	M	2-3	68	M - 68	68	32
35	40	UM	1-2	63	UM - 63	63	37
35	40	M	2-3	63	M - 63	63	37

Step 2 - Determining Financial Personality: After gathering basic information of the investor the data is saved in the existing database and it's processed using the investment principle of determining risk appetite. The universal thumb rule of investment is applied here as $100 - (\text{Age of investment})$ will determine the high risk investment percentage of overall investment portfolio. We go a step further to even factor other elements like marital status and No. of dependents to ascertain financial personality.

The process of defining financial personality is depicted in below process diagram 2



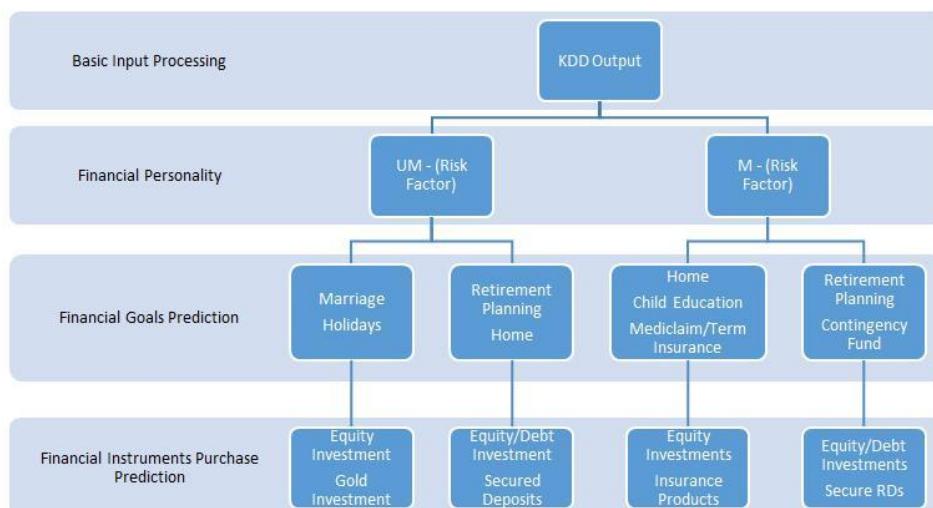
Classification is a classic data mining technique based on machine learning. Basically classification is used to classify each item in a set of data into one of predefined set of classes or groups. A Rule based classification extracts a set of rules that show relationships between attributes of the data set and the class label. It used a set of IF- THEN rules for classification.

If (Age=24 and Marital status=M and Dependents =0) then Financial personality = M-78

If (Age=31 and Marital status=UM and Dependents =1) then Financial personality = UM-68

If (Age=28 and Marital status=UM and Dependents =1) then Financial personality = UM-73

Step 3 - Investment Goals Prediction based on Financial Personality: Initial two sub-processes of this mechanism will determine the Financial Personality of an individual investor. Once Financial Personality is determined, the system will predict the most probable financial goals of that person in near future based on pre-existing data of similar financial personalities. These goals are classified as Short Term and Long Term goals which can be achieved by using the Risk appetite percentage. The risk appetite will decide the investment ratio of high and Low risk financial instruments. Below is the decision tree with collaboration of all steps involved in predicting financial goal of an individual.



Conclusion: Financial Goals setting is the most important exercise for every individual to attain growth and financial stability. This research paper presents a formulated approach to predict and determine financial goal of an individual using data mining principles. The input is treated a raw data and then classification is done based on association rule mining and clustering techniques. This is an ever-evolving process based on change in financial scenarios and available data. Data mining principles are effectively used in this mechanism to convert raw data into categories using KDD principle. The defined categories then flow in a decision tree to reach a conclusion on the financial goals and related instruments which are based on pre-existing data. Once the exercise is complete, the data is stored in database and then

compared to actual records to measure the effectiveness of the tool and use it for further reference. A financial institution can use this approach to narrow down the marketing strategy and then do selective marketing of their products to targeted individuals. The data used to predict financial goals may change in future based on new additions in financial instruments and avenues. Once the database is updated the same will be incorporated in the tool as pre-existing data to predict future. This is reusable and sustainable tool which can be used and enhanced further using other data mining principles.

References

- A Survey on Decision Tree Based Approaches in Data Mining* Shahrukh Teli 1,
Prashasti Kanikar 2
International Journal of Advanced Research in Computer Science and Software Engineering Volume 5, Issue 4,
2015 ISSN: 2277 128X
- Application of Higher Education System for Predicting Student Using Data mining Techniques* - P.Veeramuthu
1, Dr. R. Periasamy 2
International Journal of Innovative Research in Advanced Engineering (IJIRAE) ISSN: 2349-2163 Volume 1
Issue 5 (June 2014)
- STUDY OF DATA MINING TECHNIQUES FOR STUDENT INFORMATION SYSTEM**
Ms Vaishnavi Shende 1, Miss Pallavi Sandanshiv 2, Miss Naziya Shaikh 3, Prof. R. R. Shelke 4, *International Research Journal of Engineering and Technology (IRJET)* e-ISSN: 2395 -0056
- Design of Decision Support System for Loans Based on Data Mining Techniques* Ahmed A. Saleh 1
Hazem M. El-Bakry 2 Mohammed K. Kolkas 3
International Journal of Electronics Communication and Computer Engineering Volume 7, Issue 1, ISSN
(Online): 2249-071X ISSN (Print): 2278-4209
- A Review on Mining Students' Data for Performance Prediction*
Ms. Kavyashree K R1, Mrs. Lakshmi Durga2
International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 4,
April 2016,
ISSN (Online) 2278-1021 ISSN (Print) 2319 5940
- Students' Employability Prediction Model through Data Mining*
Tripti Mishra 1, Dharminder Kumar 2, Sangeeta Gupta 3
International Journal of Applied Engineering Research ISSN 0973-4562 Volume 11, Number 4 (2016)

GREEN CLOUDS WITH ARTIFICIAL :HOW MAJOR CLOUD PROVIDERS USE ARTIFICIAL INTELLIGENCE FOR ENERGY CONSERVATION.

Ansari Neha

Visiting Lecturer (Msc I.T)

Abstract

The data centers which are the heart of cloud infrastructure are made up of millions of servers. All of these servers are not utilised at the same time. Most of the time more than fifty percent are idle but yet they consume power since they are left on. The amount of energy consumed by big data centers have always been a headache for its owners. Most of the major cloud service providers like Google Microsoft etc have found their solution in artificial intelligence. To save energy the focus should not only be on unused or under utilised servers but also it should be on active servers. Artificial Intelligence can help to solve these problems as well. Using artificial intelligence efficient applications conserving less amount of computing resources can be developed which can help consume less electricity thus conserving energy. Any system is made up of various layers and our cloud systems are no exception, it is also made up of network layer, resource layer, middleware layer and application layer. When trying to achieve energy conservation in cloud system made up of these layers we can implement artificial intelligence based solutions on each of these layers that can sum up for the conservation of energy for the entire cloud system. My analysis is on how big cloud providers make use of artificial intelligence at these layers for making their cloud Go Green. Google's Deepmind artificial intelligence unit is used to manage power usage in parts of its data center is one such innovative initiative of its kind. This power management helps in controlling energy consumption in its data center. Microsoft offers cognitive services that incorporate artificial intelligence capabilities in application without having to invest in expensive artificial intelligence infrastructure. IBM's Watson is also one such implementation on artificial intelligence.

Keywords:-data centers, cloud system, energy conservation, energy consumption, artificial intelligence

INTRODUCTION: Cloud computing has become a mainstream element of modern software solutions that aims at delivering on-demand computing to any consumer who has access to the internet. Cloud systems can run software on virtual machines that can be created on-demand in large data centres. As a user's demand for computing power increases, new virtual computers can be created and configured; as demand decreases, unused hardware resources can be made available again. The cloud computing market is a race vastly dominated by four companies: Amazon, Microsoft, Google and IBM. Google have their data centers in approximately 30 data centers in the world that include locations like Iowa, Chile, Tennessee, Berkeley County, Oklahoma, Taiwan, Singapore, Dublin, Finland, Belgium etc. Even Microsoft have more than 30 data centers in countries like New Zealand, Japan, Mexico, France. IBM has around 40 data centers in the world (with its partnership) with Equinix. Even Amazon has data centers at various regions in the world. The amount of energy consumed by big data centers has always been a headache for tech companies. Keeping the servers cool as they crunch numbers is a big challenge. Artificial intelligence (AI) is the type of technology with the potential to not only improve the existing cloud platform incumbents but also power a new generation of cloud computing technologies. Every major cloud provider today implements AI based technology in their data centers to conserve energy consumption. With this they not only help reduce their big investment but also contribute in a global cause of maintaining ecological balance.

Google's Deepmind: Google put its DeepMind artificial intelligence unit in charge for using AI to manage power usage in parts of its data centers with this Google managed to achieve 40 percent reduction in the amount of electricity needed for cooling, which Google describes as a "phenomenal step forward." After accounting for "electrical losses and other non-cooling inefficiencies," this 40 percent reduction translated into a 15 percent reduction in overall power saving, says Google. Considering that the company used some 4,402,836 MWh of electricity in 2014 (equivalent to the amount of energy consumed by 366,903 US households), this 15 percent will translate into savings of

hundreds of millions of dollars over the years. In UK-based DeepMind Google invested around \$600 million back in 2014 but saved more with Deepmind's AI-based venture. Data centers, depending on their size, sometimes use millions of gallons of water per year to fuel cooling systems that keep servers cool and operating. Evans and Gao (engineers at Deepmind) noted that this is "typically accomplished via large industrial equipment such as pumps, chillers and cooling towers." Data centers are complex environments and are often difficult to operate optimally because the equipment, the method by which it operates, and how it interacts with the environment often interact in complex, nonlinear ways. "Traditional formula-based engineering and human intuition often do not capture these interactions," they add. Additionally, the system cannot adapt quickly to internal or external changes (like the weather), because engineers cannot develop rules and heuristics for every scenario, the engineers added. "Each data center has a unique architecture and environment," they wrote. "A custom-tuned model for one system may not be applicable to another. Therefore, a general intelligence framework is needed to understand the data center's interactions." On this context DeepMind implemented machine learning technology to boost data center efficiency. Machine learning technology is a form of AI that learns from, and makes predictions based upon, data it accesses. DeepMind researchers began working with Google's data center team to significantly improve the system's utility. Using a system of neural networks trained on different operating scenarios and parameters within data centers they created a more efficient and adaptive framework to understand data center dynamics and optimize efficiency. The researchers took historical data that had already been collected by thousands of sensors within the data center — measuring temperatures, power, pump speeds, setpoints, and more — and used it to train deep neural networks.

"Since our objective was to improve data center energy efficiency, we trained the neural networks on the average future PUE (power usage effectiveness), which is defined as the ratio of the total building energy usage to the IT energy usage," the engineers wrote. "We then trained two additional ensembles of deep neural networks to predict the future temperature and pressure of the data center over the next hour. The purpose of these predictions is to simulate the recommended actions from the PUE model, to ensure that we do not go beyond any operating constraints." The end result was that the machine learning system was able to consistently achieve a 40 percent reduction in the amount of energy used for cooling, "which equates to a 15 percent reduction in overall PUE overhead after accounting for electrical losses and other noncooling inefficiencies." The system also produced the lowest PUE the site had ever seen.

Microsoft's cognitive science based applications: Implementation of artificial intelligence in cloud application is as beneficial as its implementation in data centers because AI-based applications help to utilize hardware resources to its best on servers they run on. As mentioned in the abstract the cloud system is a mixture of various layers. Energy conservation should be done at each layer. Some implementation of artificial intelligence in Microsoft's platform Azure to put cognitive features in applications are Text Analytics API, Web Language Model API etc.

IBM's Watson: Watson is a question answering computer system capable of answering questions posed in natural language, developed in IBM's DeepQA project by a research team led by principal investigator David Ferrucci. In February 2013, IBM announced that Watson software system's first commercial application would be for utilization management decisions in lung cancer treatment at Memorial Sloan Kettering Cancer Center, New York City, in conjunction with health insurance company WellPoint. IBM built Watson to apply domains of artificial intelligence that include advanced natural language processing, information retrieval, knowledge representation, automated reasoning, and machine learning technologies. Watson uses IBM's DeepQA software and the Apache UIMA (Unstructured Information Management Architecture) framework. The system was written in various languages, including Java, C++, and Prolog, and runs on the SUSE Linux Enterprise Server.

11 operating system using Apache Hadoop framework to provide distributed computing. The system is workload-optimized, integrating massively parallel POWER7 processors and built on IBM's DeepQA technology, which it uses to generate hypotheses, gather massive evidence, and analyze data. Watson employs a cluster of ninety IBM Power 750 servers, each of which uses a 3.5 GHz POWER7 eight-core processor, with four threads per core. In total, the system has 2,880 POWER7 processor threads and 16 terabytes of RAM.

Conclusion : Thus this biggest cloud players in market makes use of artificial intelligence at various layers in cloud system that help them to conserve not only their investments i.e they are not only beneficial in monetary terms but also helps them to contribute in the biggest mantra "Go Green" by greening their data centers.

References

- <http://www.cloudcomputing-news.net/news/2016/oct/12/power-machine-learning-and-artificial-intelligence-data-centre/>
- <http://www.theverge.com/2016/7/21/12246258/google-deepmind-ai-data-center-cooling>
- <http://www.lifelinedatacenters.com/data-center/artificial-intelligence/>
- <http://www.biztechmagazine.com/article/2016/08/ai-helping-businesses-make-data-centers-more-efficient>
- <http://www.recode.net/2016/7/19/12231776/google-energy-deepmind-ai-data-centers>
- <https://en.m.wikipedia.org/wiki/Watson>
- <https://azure.microsoft.com/en-in/services/cognitive-services>

Distributed and Cloud Computing by Kai Hwang ,Geoffrey Fox, Jack Dongara Morgan Kaufmann Publishers

WATER CONSERVATION AND PURIFICATION USING SMART WATER TANK

Pushpa Susant Mahapatro

MCA, M. Phil. Computer Science, Assistant Professor, Vidyalankar School of Information Technology, member of ACM pushpa.mahapatro@vsit.edu.in, Mobile No. 8108038035

Abstract

The research paper is aimed at providing pure water for usage at homes. Although the water supply in Mumbai is drinking water, but it sometimes gets polluted due to various reasons. This paper aims at cleaning water at different stages, just to ensure that we get safe drinking water. The paper presents a solution to scarcity of water supply during summer. Water scarcity is one of the major problems in major cities of India; this is one of the motivations for this research, to deploy computing techniques in creating a barrier to wastage in order to provide more financial gains and energy saving. This paper presents a research in embedding a control system in a water tank through the use of different technologies in its design, development, and implementation. The system uses eight 2.2K resistors, two 330 resistor, four Red led, one Linear voltage regulator, four 2N2222 NPN transistor and Valve opener to automate the process of water flow from an over-head tank storage system and has the ability to detect the level of water in a tank and display the status using four red LED. This research will provide an improvement on existing water level controllers by its use of calibrated circuit to indicate the water level and use of DC instead of AC power thereby eliminating risk of electrocution.

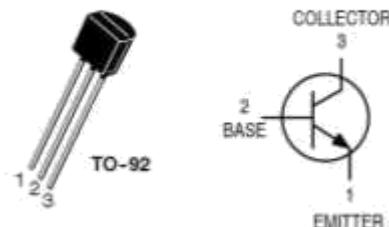
Index Terms—Water purification, Water controlling outlet valve

INTRODUCTION: Lots of people don't realize the true importance of drinking water. Most of the time water is wasted by many people due to uncontrolled usage of water. This problem is quietly related to poor water allocation, inefficient use, and lack of adequate and integrated water management [2]. Every living thing on earth needs water to survive. Human bodies are made up of more than 60 percentage of water. We use clean water to drink, grow crops for food, operate factories, and **stage control, water management, conservation**, for swimming, surfing, fishing and sailing. Water is vitally important to every aspect of our lives. By using water monitoring and purification system, we avoid the water wastage, power consumption, water pollution and easily prevent the water for our generation. Tank Water Level Monitoring, is used to avoid overflowing and intimate level of water in the tank. Water controlling system implementation makes potential significance in home applications. The existing automated method of level detection is described and that can be used to make a device on/off.

PROPOSED METHOD: In Summer, there is a scarcity of water, i.e. most of the time the tank is half full. By the end of the day we realize that water needs to be used very carefully, till next day when water supply is available. If we know the level of water in the tank, then we will be able to better manage the water available for the day. So, basically four levels of water are indicated using four LED's – 100%, 75%, 50% and 25% full. Based on the level of water, LED will glow. Now, we can connect this circuit to the outlet of the tank. The outlet will have a valve which will open accordingly. If the tank is 100% full with water, the valve will fully open. When the water level decreases to below 75%, the valve will close by 25%, so speed at which water is dispensed is reduced to 75% of its original speed. This will help in less water consumption for household work. Now, if the level of water decreases to 50%, the valve will close by 50%, so speed at which water is dispensed is reduced to 50% of its original speed. Now some household machines like washing machine, bathroom shower will not work. This will help in reducing the consumption of water. Eventually, the level of water may decrease to 25%, the valve will close by 75%, so speed at which water is dispensed is reduced to 25% of its original speed. Now only some low laying pipes will work. By using the monitoring system we can easily prevent wastage of water and the water will be available for the entire day. Every day,

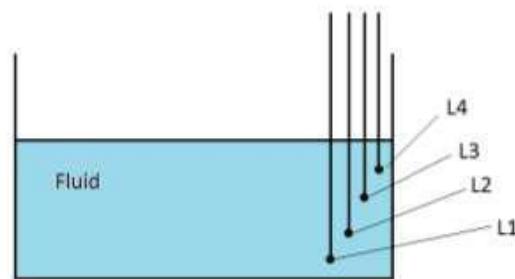
as we fill the overhead water, the fresh water is mixing with the stale water. The purity of water is reduced depending on the percentage of stale water mixed with the fresh water. So, we can install a small dispenser which will dispense iodine or chlorine tablets at a duration of 24 hours (at night) to purify the stale water in the tank

2N2222



ARCHITECTURE OF WATER MONITORING AND PURIFICATION SYSTEM

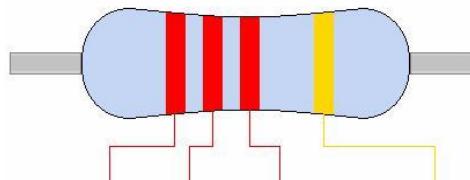
The water level detector is triggered when it touches the water level at specified level. Figure illustrates the four low levels of the water in the tank that to be alerted. The four levels are called as *level L1*, *level L2*, and *level L3 and level L4*. A signal is sent to each detector circuit and sent signal to Red LED when the level of water rises. A dispenser will be installed at the top of the tank to dispense chlorine or iodine tablet in water tank at night.



COMPONENTS USED

Resistors:-A resistor is an electrical component that limits or regulates the flow of electrical current in an electronic circuit. Resistors can also be used to provide a specific voltage for an active device such as a transistor.

2k2 / 2.2k ohm Resistor Colour Code



Resistor of 330K:-The purpose of the resistor is to "drop" voltage that is not required to operate the LED, when the LED is operating at the desired current. As the forward voltage of LEDs varies both with colour and chemistry used and with current, and as the "desired" current varies with the user's needs, there is NO single correct value. This is to limit current through LED, without resistor LED will eat current until it melts.

Transistor as switch:-Transistor is a semiconductor device used for switching and amplification of weak signals. To realize the exact working principle, an LED (Light Emitting Diode) is connected to the collector of NPN transistor. It glows according to the base current. The 2N2222 is a common NPN bipolar junction transistor (BJT) used for general purpose low-power amplifying or switching

applications. It is designed for low to medium current, low power, medium voltage and can operate at moderately high speeds.

Working principle of transistor switch

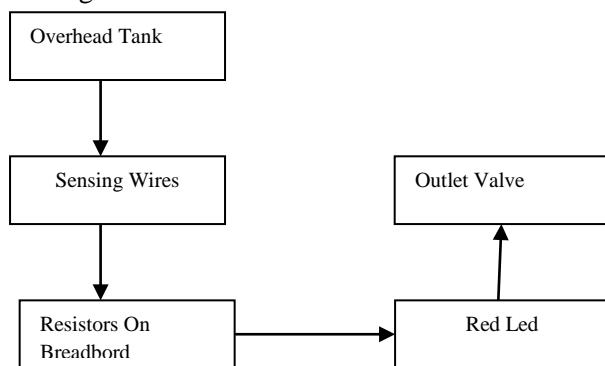
- A NPN transistor is closed then the transistor is said to be in ON state (similar to a short circuit between Vcc and Ground) so the collector voltage is very low (0.02V approx)
- B Whole current from Vcc will flows through the transistor, no current flow through the LED because current chooses low resistance path.
- C Therefor LED connected at the Collector is in OFF state since the voltage at the anode of LED is 0.02V.
- D When the voltage at the base terminal removed (open circuit), the transistor become OFF (means an open circuit between Vcc and Ground) then its collector voltage will be Vcc (Supply voltage)

Since the transistor is in OFF state, the whole current will flows through the LED, Then the LED glows.

Linear voltage regulator 7805: A regulated power supply is very much essential for several electronic devices due to the semiconductor material employed in them have a fixed rate of current as well as voltage. The device may get damaged if there is any deviation from the fixed rate.

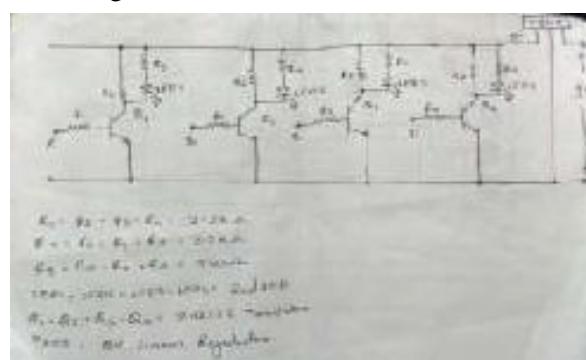
BLOCK DIAGRAM

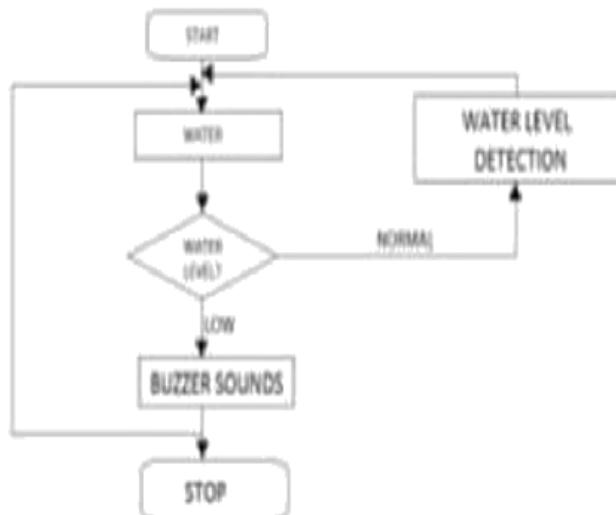
The block diagram is as given below:



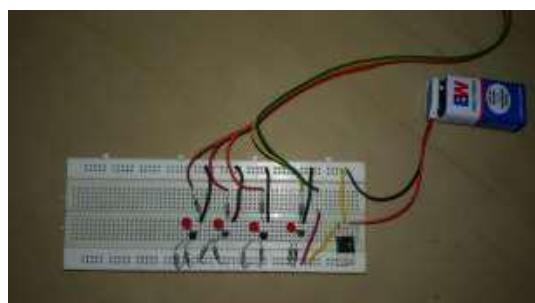
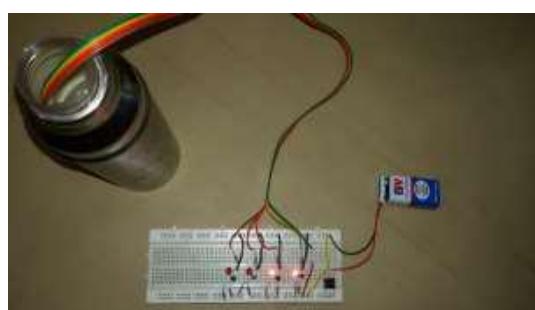
CIRCUITDIAGRAM

The circuit diagram is shown in figure:



FLOWCHART

The flowchart of the initial proposed system is given below:

**ACTUAL IMPLEMENTATION**

4. **Use purification tablets:** Purification tablets can be purchased at sporting goods and adventure stores. Keep in mind that this is not the best tasting method, but protection from bacteria is worth a bitter taste in your mouth. Iodine tablets are the most commonly sold

purifying tablets, but you can also use chlorine tablets with the same result. These tablets are most effective when the water you are purifying is 68 degrees F(21 degrees C) or higher. These chemical tablets will kill bacteria living in your water. These tablets are most often used by campers in the wilderness. Pregnant women, women over 50, and people with thyroid problems or taking Lithium should consult with a doctor before using iodine tablets.

Strain the water if it has large particles floating around in it. This can be done by fitting a water filter on the outlet which pours water into the tank. The filter acts as a strainer that removes the particles floating in the water.

Put the tablets in the water. In general, use one tablet for each quart or liter of water you wish to purify. Be aware that these tablets generally have an expiration date. If you use them after this date, they are much less likely to be effective. Always check the bottle before using these tablets.

Mix the tablets into the water until they dissolve. The tablet must be completely dissolved so that they can mix most effectively with the water. Wait for 30 minutes before drinking the water, as the tablets need that time to effectively kill any bacteria in the water. This auto dispensing should be preferably done at night. Be aware that tablets are generally less effective in water that is very cold. If the water is 40 degrees F (4 degrees C), you should wait at least an hour after the tablets have dissolved before drinking the water. You can place the water in the sun to warm it up before using the tablets if you have the time to do so. To lessen the strange taste the tablets give the water, add flavoring to the water. Powdered lemonade mixes or a pinch of salt will mask the tablet flavor.

CONCLUSION: This paper presents a method of preventing wastage of water. This system will measure the level of water in the tank. In Summer, there is a scarcity of water, i.e. most of the time the tank is half full. By the end of the day we realize that water needs to be used very carefully, till next day when water supply is available. If we know the level of water in the tank, then we will be able to better manage the water available for the day. So, basically four levels of water are indicated using four LED's – 100%, 75%, 50% and 25% full. Based on the level of water, LED will glow. Now, we can connect this circuit to the outlet of the tank. The outlet will have a valve which will open accordingly. Some household machines like washing machine, bathroom shower will not work. This will help in reducing the consumption of water. By using the monitoring system we can easily prevent the water and the water will be available for the entire day. By using the monitoring system we can easily prevent wastage of water and the water will be available for the entire day. Every day, as we fill the overhead water, the fresh water is mixing with the stale water. The purity of water is reduced depending on the percentage of stale water mixed with the fresh water. So, we can install a small dispenser which will dispense iodine or chlorine tablets at a duration of 24 hours (at night) to purify the stale water in the tank.

REFERENCES

- Water conservation using Smart Water Tank – Pushpa Mahapatro, Sandhya Ganpuram, Management Guru: Journal of Management Research, Volume IV, Issue No. 9, October 2016, ISSN 2319-2429.
- Purification of water with application of Natural Extracts, Journal of Global Biosciences, ISSN 2320-1355, Volume 4, Special issue 1, 2015, pp 1861-1866.
- Cost Effective Automated Water Filtration and Recycling System - International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, (An ISO 3297: 2007 Certified Organization) Vol. 3, Issue 1, January 2014.
- Feasibility of Water Purification Technology in Rural Areas of Developing Countries - Dana M. Johnson, PhD, Michigan Technological University
- Design and Implementation of a Fully Automated Water Level Indicator - Neena Mani, Sudheesh T.P., Vinu Joseph, Titto V.D., Shamnas P.S., International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 3, Issue 2, February 2014
- Smart Water Monitoring System Using Wireless Sensor Network at Home/Office – Ms. T. Deepiga, Ms. A. Sivasankari, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056

Volume: 02 Issue: 04 / July-2015

Microcontroller based Automatic Water level Control System - Ejiofor Virginia Ebere, Oladipo Onaolapo Francisca, International Journal of Innovative Research in Computer and Communication Engineering, Vol. 1, Issue 6, August 2013

Tank Water Level Monitoring System using GSM Network - Ayob Johari, Mohd Helmy Abd Wahab, Nur Suryani Abdul Latif, M. Erdi Ayob, M. Izwan Ayob, M. Afif Ayob, Mohd Norzali Haji Mohd, International Journal of Computer Science and Information Technologies, Vol. 2

A Novel Water Level Monitoring and control of large building -Rajat Thakral, Dr. S. Chatterji, Shimi S.L, International Journal of Emerging Technology and Advanced Engineering (ISSN 2250-2459, Volume 2, Issue 7, July 2012)

GSM Based Water level and Temperature Monitoring System - Usama Abdullah, Ayesha Ali, International Journal of Recent Development in Engineering and Technology, (ISSN 2347-6435(Online) Volume 3, Issue 2, August 2014)

Automatic Water Level Control System - Asaad Ahmed Mohammedahmed Eltaieb, Zhang Jian Min, International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064

An Implementation of Automated Water Tank Based on Graph Theoretical Approach Using IOT and Raman Spectroscopy - Sharmila Mary Arul, Blessing Solomon B.C, P. Gopinath

Wireless Automatic Water Level Control using Radio Frequency Communication - Muktha Shankari K, Jyothi K, Manu E O, Naveen I P, Harsha Herle, International Journal of Pure and Applied Mathematics, Volume 106, 2016

Water Tank Monitoring and Visualization System Using Smart-Phones - Haesung Tak, Daegeon Kwon, and Hwan-Gue Cho, International Journal of Machine Learning and Computing, Vol. 3, No. 1, February 2013

A Remote System for Water Tank Level Monitoring and Control - Nuno Brito1, Paulo Ribeiro, Filomena Soares, Carlos Monteiro, Vitor Carvalho, Rosa Vasconcelos

Fiber Optic Bending Sensor for Water Level Monitoring: Development and Field Test: A Review - Joao Batista Rosolem, Danilo Cesar Dini, Rivaal Strobel Penze, Claudio Floridia, Ariovaldo Antonio Leonardi, Marcelo Dias Loichate, and Anderson Stano Durelli, IEEE SENSORS JOURNAL, VOL. 13, NO. 11, NOVEMBER 2013

Ground-Water-Level Monitoring and the Importance of Long-Term Water-Level Data - by Charles J. Taylor, William M. Alley, Denver, Colorado

Construction of Automatic Water Level Controller for Both Overhead and Underground Tanks – Ogbidi Joseph Abang

Wireless Sensor Network application to Centralize the Water Tanks Filling & Monitoring System of Indore City - Vandana Dubey, Nilesh Dubey, Dr. Aaquil Bunglowala

Automatic Water Level Controller with Short Messaging Service (SMS) Notification - Sanam Pudasaini, Anuj Pathak, Sukirti Dhakal, Milan Paudel, International Journal of Scientific and Research Publications, Volume 4, Issue 9, September 2014.

Remote water level monitoring and control system in Menengai geothermal field - Martin Waswa

Low-Power Wireless Liquid Monitoring System using Ultrasonic Sensors - Samarth Viswanath, Marco Belcastro, John Barton, Brendan O'Flynn, Nicholas

Holmes, Paul Dixon, International Journal on Smart Sensing and Intelligent Systems, VOL. 8, NO. 1, MARCH 2015

Implementation of Fuzzy and PID Controller to Water Level System using LabView, International Journal of Computer Applications (0975 – 8887), Volume 116 – No. 11, April 2015

Implementation of Simulated Water Level Controller - Volume 3, Issue 11, November 2013 ISSN: 2277 128X, International Journal of Advanced Research in Computer Science and Software Engineering

A STUDY ON HADOOP 1.X AND HADOOP 2.X ECO SYSTEM ALONG WITH DATA SCIENCE PERSPECTIVE

Dr.Lakshma Reddy Bhavanam, Akshatha.C.Jain& Umapavan Kumar.Kethavarapu

Principal,Bangalore City College, Bangalore Email:Prof.reddy99@gmail.com,

Mobile:9867925326

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: akshathaariga@vsit.edu.in Mobile:9867925326IT Department, AIMS institute, Bangalore, umapavanmtech@gmail.com

Abstract

The current trend in the information technology is big data with Hadoop context. The usage of Hadoop frame work is mandatory as we are moving very rapidly to digital era. The volume of the data populated by individual members to huge companies is in the speed of exponential manner. Apache release a frame work to handle the bulk data with variety and velocity as main components. The frame work provides the solution to the big data problems like rapid changes in the data, various formats and current systems are not able to handle too much amount of the data. The current article is giving a simple overview of Hadoop architecture with both Hadoop 1.x and Hadoop 2.x along with Hadoop distributed file system and map reduce aspects, the article covers the other tools in the eco system with Sqoop, Flume ,Pig ,Hive along with oozie and zookeeper. We are also giving the integration of Hadoop with data science.

Keywords: Hadoop; Big data; eco system; NoSql; data science; Machine learning.

Introduction: Data is everywhere, the usage of the data will give meaningful insight to the business, that insight might be getting the interest of the students in a particular course by observing a survey, or knowing the interest of the customers from a click stream analysis of a shopping web site log, or else the sentiment analysis by observing the tweets or Facebook shares or comments. But all the companies need to do is to hold the bulk data and to process the data as per the requirements of the business and apply some statistical or machine learning algorithms so as to get the above mentioned benefits. The tools like flume and sqoop are used to ingest the data into Hadoop distributed file system, the tools Pig and Hive are used to implement programming aspects by using scripts and Hive query language so as to implement some logics as an alternative to map reduce. The tool oozie is used to schedule the jobs provided if there are multiple jobs existing in the job pool. The tool zookeeper is used to monitor the environment for secured and protected activities. The other component in the Hadoop eco system is NoSql which not only sql, will give some set of tools like HBase, Mongo DB and Cassandra so as to implement the bulk data base storage with simple and flexible commands. The major components of Hadoop eco system are Hadoop distributed file system (HDFS) and Map Reduce (MR). The HDFS is storage model which provide a distributed environment so as to manage the data with fault tolerant mechanism and with the support of replications. The MR is a programming model with parallel and distributed environments which is also having fault tolerance. The key success factor of Hadoop eco system is MR. The flexibility here is the user can implement MR either through java if he is having the command on java, otherwise with various other tools such as python, R, Hive, Pig and many more.

The organization of the paper is as follows. The section II describes the source of big data in the current scenarios, the section III describes how Hadoop is going to solve the big data problems, the section IV gives the Hadoop 1.x and Hadoop 2.x architectures and section V describes the data science integration with Hadoop frame work.

Big data scenarios and Terminology: An airline jet collects 10 TB of sensor data for every 30 minutes of flying time, NYSE generates about 1TB of new trade data per day to Perform stock trading analytics to determine trends for optimal trade, Data is everywhere, we either ignore or destroy it,

Rolling web data, Network Logs, System Logs, Click information from websites Stock Trading Data
 ○Personal data like Photo Stream, Social Media Stream. Exclusively we will see face book example which is generating bulk data in every data, every second and every minute.

- As of 2011, there are 500,000,000 active Facebook users.
- Approximately 1 in Every 13 People on earth.
- Half of the them are logged in on any given day.
- A record-breaking 750 Million Photos were uploaded to Facebook over New Year's weekend.
- There are 206.2 million internet users in the US.
- That means 71.2% of the US web audience is on Facebook.
- Facebook users spend 10.5 billion minutes (almost 20,000 years) online on the social network.
- Facebook has an average of 3.2 Billion Likes and comments are posted every day
- Similarly we will see twitter example with the following statistics.
- Twitter has over 500 million registered users.

The above scenarios are enough to observe the amount of data we are generating and out of that how the companies are struggling to store, process and analyse the data. We are trying to answer the questions after describing the terminology of the big data, Hadoop.

- **Big data:** From the past 3 years the word is a buzz in the industries like health care, banking, retail, insurance and even in research and development also, the reason is simple when data becomes as a part of the problem then the organization should think about the big data, since big data is that when data itself is a problem in the context of storage and processing.
- **Data may be structured, semi-structured or unstructured:** Any relational data can be treated as a structured data otherwise the schema based data can be known as structured, the transaction data also belongs to the structured data. Semi-structured data involves the E-Mails, XML category of the data. Unstructured data can be observed from log files, videos, and human readable text. The JSON kind of the files also treated as semi structured

JSON representation

If I want to represent a data through JSON then

```
{
  "researchers": [
    {"Name": "Lakshma", "Qualification": "Ph.D."},
    {"Name": "UmaPavan", "Qualification": "M.Tech"},
    {"Name": "Hanumantappa", "Qualification": "Ph.D."}
  ]
}
```

The same can represent in XML as below:

```
<researchers>
  <name>Lakshma</name>
  <qualification>Ph.D.</qualification>
</researchers>
<researchers>
  <name>UmaPavan</name>
  <qualification>M.Tech.</qualification>
</researchers>
<researchers>
  <name>Hanumantappa</name>
  <qualification>Ph.D.</qualification>
</researchers>
```

These are most commonly used formats in the big data problems.

- Hadoop is a frame work that allows the distributed processing of the large data set across cluster of commodity computers using a simple programming model. It is an open source data management with scale-out storage and distributed processing. It scales horizontally to manage peta-bytes of data; abstracts away distributed storage and computing.
- Here cluster refers to group of machines with the support of distributed storage and parallel processing of the data.
- Hadoop architecture and services

As mentioned before Hadoop is a frame work to solve big data problems. Hadoop is available in the format of eco system interface. The eco system consists of various components

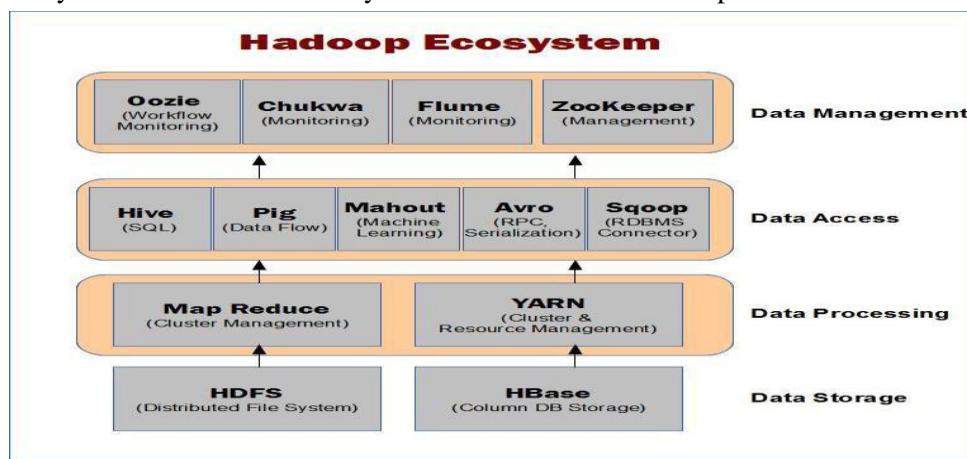


Fig .1: Hadoop eco system. (Source: Google)

Hadoop solves big data problems by providing a distributed file system known as HDFS with the support of scale-out architecture. In scale-out we can add plenty of systems so as to accommodate the bulk data, the same can't be achieved in traditional architecture like scale-in which supports addition of RAM and HDD to the system where beyond support of the mother board we can't add RAM and HDD. Another solution given by Hadoop to big data problems is parallel and distributed programming with fault tolerant mechanism known as Map Reduce [MR]. Through which a program can be moved to the data like the MR code can be export as jar file and we can access the HDFS through services so as to execute the logic with parallel and distributed manner. To describe the services we need have a distinction between Hadoop 1.x and Hadoop 2.x in Hadoop 1.x model the architecture is single point failure of the meta data node and there the job scheduler is overburdened where as in case of Hadoop 2.x there is no single point failure and with the support of YARN (Yet Another Resource Negotiator) the burden is reduced on the job scheduler. Hadoop 1.x services or daemons are as below.

Name Node, Data Node, Job Tracker, Task Tracker and Secondary Name Node.

Whereas Hadoop 2.x consists of Name Node, Data Node, Resource Manager, Node manager and optional secondary name node. Hadoop 2.x gives high availability and HDFS federation.

Hadoop 1.x and Hadoop 2.x architecture: Hadoop framework initially having the architecture of Hadoop 1.x and now the architecture is available in Hadoop 2.x format. The main distinction of these two architectures is in case of high availability and hdfs federation. High availability The Hadoop 1.x is having the issue of Name node single point of failure, where as in case of Hadoop 2.x the frame work is loaded with multiple name nodes such that one is active and other is standby, where active name node handles the client operations and standby name node manages metadata as that of back up copy. Coming to HDFS Federation in Hadoop 1.x the name node only maintains a single name space in a whole cluster once that name node is down we can't access full cluster data, in case of Hadoop

2.x multiple name spaces are managed by multiple name nodes so two different directories are managed by two active name nodes at a time.

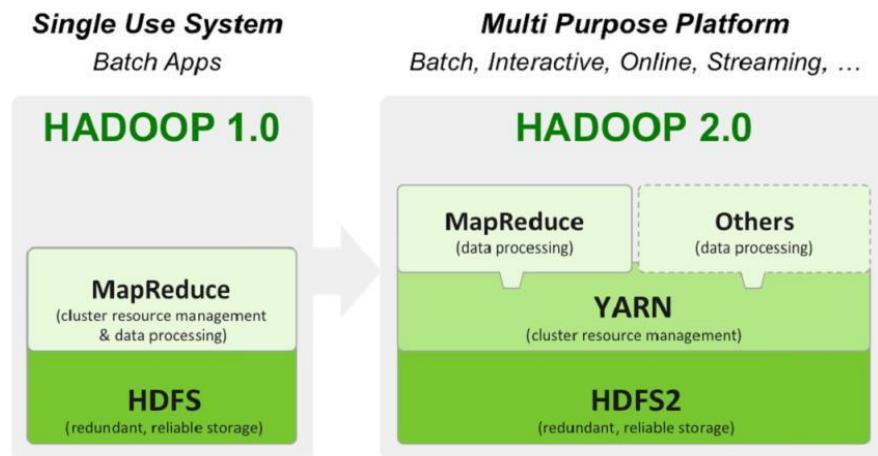


Fig.2: Hadoop 1.x vs. Hadoop 2.x

The clear cut difference we can observe from the Hadoop 1.x and Hadoop 2.x is the sharing of the work load between the daemons. In case of Hadoop 1.x the job tracker has to manage storage and processing aspects like scheduling of the jobs and cluster management. Hadoop 2.x resolves the over burden by sharing the tasks like data processing and cluster resource management. In Hadoop 2.x MR takes care about data processing and YARN is responsible for cluster resource management. Coming to difference between hdfs 1 and hdfs 2 is in case of command execution.

Suppose if we want to view the contents of file in Hadoop 1.x

>**Hadoop fs–cat file.txt**

Where as in case of Hadoop 2.x

>**Hadoop dfs–cat /user/file.txt**

Other than that no difference is there between Hadoop 1.x

In case of MRV1 the job tracker has to take care about the data processing and cluster resource management, whereas MRV2 consists of support of YARN where MR focus on data processing and YARN manages cluster resources.

The process of running MR jobs we are giving in abstract format.

The first step is to configure eclipse and create 3 classes such that Mapper, Reducer and Driver. Mapper is consists of business logic to be implemented, reducer class consists of aggregation logic which is reduction phase of the mapper output. The driver class consists of job configurations like name of the job, mapper class information, reducer class information, details about the number of reducers required, if we want to use combiner class we can mention in the driver class, and then specifying the input and output path of the program. The second step is to build the path in eclipse by notifying about the Hadoop API to the driver class, the third step is to export the project in the format of jar files so as to submit the job to the client. We have to make sure that the input path specified along with the file is available or not in the HDFS and output must be directory with unique name. The command can be given as

>**Hadoop jar <jarfile name><pacakagename.Driverclassname><HDFS I/P file/dir><HDFS O/P dir.>**

>**Hadoop jar ex1.jar com.eng.demo.wiki.WikiDriver wiki123.txt wikia**

After issuing the above command Hadoop launches the job to execute by checking the jar file and then verify the package along with the driver class name then checks about input path and the generated output we can verify in wikia. **>Hadoop dfs-cat /user/wikia/**

Which will displays the output as part-r-00000.

Now if we want to get the output issue the command.

>Hadoop dfs-cat /user/wikia/part-r-00000

The part-r-00000 consists of log file data, success information about the job and exact output of the program.

Hadoop and Data science: Hadoop is a frame work to store data with HDFS and process data with MR, in the real time scenarios like online shopping, click stream analysis and sentiment analysis the purpose is not achieved with Hadoop. The reason is Hadoop is not meant for analysing the data of course the pig and hive are available to analyse the data but limited. The extensive analytical capabilities we can get from the statistical tools and data science applications. In this session we will see the importance of statistical tools and data science and integration of Hadoop and data science.

The statistical tools like SAS, SPSS and R are very much helpful in the data preparation, data analysis by applying the packages, functions provided by above software all are meant for achieving the analytical aspects of data. To find out maximum, minimum and aggregation, ranking etc., so extensive statistical logics are available and Hadoop provides a space to handle the statistical implementation with the integration of Hadoop and which is RHadoop along with RHDFS, RMR, RHive and so on. With the simple configuration of R and Hadoop we can achieve the analytics capabilities through the eco system. The problem with R is unable to store bulk data the same can be solved by Hadoop. The issue with Hadoop is not able to analyse the data the same can be solved by R. Data science is a study of data mining, machine learning along with statistical models. In the real time scenarios the combination of Hadoop with HDFS and MR is used to store bulk data, R, SAS and SPSS are used to statistical analysis. The other dimension is usage of data mining and machine learning algorithms. Data mining is a process of searching for hidden and interesting patterns the algorithms likes clustering, classification and frequent item set are having many applications in e-commerce and other online shopping sites, and similarly learning from data is also one of the important concerns in the recommendation systems. Machine learning will give the combination of supervised, unsupervised and recommendation algorithms like decision trees , random forest and support vector machine along with user based, item based and collaborative filtering. Even in the Google recruitment they are insisting on knowing about the machine learning logics.

Conclusion: The article is a simple attempt to notify about the Hadoop eco system along with the support of statistical tools and data science logics. The integration of these components allow the storage solutions, less complex processing , applicability of statistical models to estimate the betterment in the study and usage of machine learning to describe, and predict the valuable insights of the data which may not be possible with simple analysis.

References

www.cloudera.com

Hadoop in action,orielley publications

Hadoop definite guide by tom white

INCREASING TRADE AMONGST BRICS NATIONS USING EASE OF DOING BUSINESS AS TOOL

Ketan Vira & Poonam Mirwani

Associate Professor- GNVs Institute of Management, Mumbai

Assistant Professor- Vidyalankar School of Information Technology

Abstract

Doing Business provides an aggregate ranking on the ease of doing business based on indicator sets that measure and benchmark regulations applying to small and medium-size through their life cycle. Economies are ranked from 1 to 190 by the ease of doing business ranking. Doing Business presents results for 2 aggregate measures: the distance to frontier score and the ease of doing business ranking. The ranking of economies is determined by sorting the aggregate distance to frontier scores, rounded to two decimals. An economy's distance to frontier score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the frontier. In the latest "Doing Business" report, which ranks 190 nations on how easy it is for private companies to follow regulations in 11 areas, India comes in 130th. This represents an improvement of one place over last year. Study tries to compare the Ranks and DTF of Brazil, Russia, India, China and South Africa and suggest the Trade Policy decisions which can improve trade of India with the other BRICS Nations. Further study is based on only one area of the 11 areas i.e. Trading across Borders

Keywords: Ease of Doing Business, World Bank, India, Frontier Score

Introduction: Ease of Doing Business Index:*Doing Business 2017: Equal Opportunity for All*, a World Bank Group flagship publication, is the 14th in a series of annual reports measuring the regulations that enhance business activity and those that constrain it. *Doing Business* presents quantitative indicators on business regulations and the protection of property rights that can be compared across 190 economies—from Afghanistan to Zimbabwe—and over time. *Doing Business* measures regulations affecting 11 areas of the life of a business. Ten of these areas are included in this year's ranking on the ease of doing business: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. *Doing Business* also measures labor market regulation, which is not included in this year's ranking. Data in *Doing Business 2017* are current as of June 1, 2016. The indicators are used to analyze economic outcomes and identify what reforms of business regulation have worked, where and why.

Trading across Borders: In the past 10 years international trade patterns have been defined by the rise of developing economies, the expansion of global value chains, the increase in commodity prices (and the growing importance of commodity exports) and the increasingly global nature of macroeconomic shocks. Each of these trends has reshaped the role of trade in facilitating development. The restoration of more open trade following World War II involved major multilateral and preferential trade agreements aimed at lowering tariff and nontariff barriers to trade. For the first time economic relations and international trade were governed by a multilateral system of rules, including the General Agreement on Tariffs and Trade (GATT) and the Bretton Woods institutions. These trade agreements, combined with tremendous advances in transport and communications technology, have led to unprecedented rates of growth in international trade. Between 1950 and 2007, for example, real world trade grew by 6.2% a year while real income per capita grew by 2% a year. Greater international trade is strongly correlated with economic growth. A study using data from 118 countries over nearly 50 years (1950–98) found that those opening up their trade regimes experienced a boost in their average annual growth rates of about 1.5 percentage points. Evidence suggests that one important channel by which international trade leads to economic growth is through imports of technology and associated gains in productivity. A study of 16 OECD countries over 135 years revealed a robust relationship between total factor productivity and imports of knowledge (measured by imports of patent-based technology).

Indeed, the study found that 93% of the increase in total factor productivity over the past century in OECD countries was due solely to these technology imports. These results suggest that international trade is a critical channel for the transmission of knowledge, which in turn improves capital intensity and economic growth. The relationship between trade and economic growth can also be observed at the firm level. Substantial evidence suggests that knowledge flows from international buyers and competitors help improve the performance of exporting firms. A review of 54 studies at the firm level in 34 countries reveals that firms that export are more productive than those that do not (though exporting does not necessarily improve productivity). This is in large part because firms participating in international markets are exposed to more intense competition and must improve faster than firms that sell their products domestically. While access to international markets is important for all economies, developing economies are uniquely affected by trade policy. Because they are skewed toward labor-intensive activities, their growth depends on their ability to import capital-intensive products. Without access to international markets, developing economies must produce these goods themselves and at a higher cost, which pulls resources away from areas where they hold a comparative advantage. In addition, low income per capita limits domestic opportunities for economies of scale. A trade regime that permits low-cost producers to expand their output well beyond local demand can therefore boost business opportunities. Thus while international trade can benefit developed and developing economies alike, trade policy is clearly inseparable from development policy. In many economies inefficient processes, unnecessary bureaucracy and redundant procedures add to the time and cost for border and documentary compliance. Only recently has the relationship between administrative controls and trade volumes attracted the attention of multilateral trade networks. In 2013, for example, members of the World Trade Organization (WTO) concluded a Trade Facilitation Agreement aimed at streamlining trade procedures. The Organization for Economic Co-operation and Development (OECD) estimates that fully implementing the WTO Trade Facilitation Agreement could reduce trade costs by 14.1% for low-income economies, 15.1% for lower-middle income economies and 12.9% for upper middle-income economies. Adopting even its simple (though often still costly) recommendations, such as automating trade and customs processes, could reduce costs for these income groups by 2.1– 2.4%. In measuring the time and cost associated with border and documentary compliance across 189 economies, Doing Business supports more efficient regulatory practices for trading across borders.

BRICS: BRICS brings together five major emerging economies, comprising 43% of the world population, having 30% of the world GDP and 17% share in the world trade.

The acronym BRIC was first used in 2001 by Goldman Sachs in their Global Economics Paper, "The World Needs Better Economic BRICs" on the basis of econometric analyses projecting that the economies of Brazil, Russia, India and China would individually and collectively occupy far greater economic space and would be amongst the world's largest economies in the next 50 years or so. As a formal grouping, BRIC started after the meeting of the Leaders of Russia, India and China in St. Petersburg on the margins of G8 Outreach Summit in 2006. The grouping was formalized during the 1st meeting of BRIC Foreign Ministers on the margins of UNGA in New York in 2006. The 1st BRIC Summit was held in Yekaterinburg, Russia, on 16 June 2009. It was agreed to expand BRIC into BRICS with the inclusion of South Africa at the BRIC Foreign Ministers' meeting in New York in September 2010. Accordingly, South Africa attended the 3rd BRICS Summit in Sanya, China on 14 April 2011. Seven BRICS Summits have taken place so far. The 8th BRICS Summit was hosted by India during its Chairmanship in 2016. Starting essentially with economic issues of mutual interest, the agenda of BRICS meetings has considerably widened over the years to encompass topical global issues. BRICS cooperation has two pillars – consultation on issues of mutual interest through meetings of Leaders as well as of Ministers of Finance, Trade, Health, S&T, Education, Agriculture, Communication, Labour, etc. and practical cooperation in a number of areas through meetings of

Working Groups/Senior Officials. Regular annual Summits as well as meetings of Leaders on the margins of G20 Summits are held.

Literature Review: World Bank Flagship Report on India (2017) examines economy profile of India in terms of indicators which are useful for comparison with the selected economies (comparator economies) for each indicator. The data in this report are current except for paying tax indicators. The Trading across Borders is referred in the report includes time and cost to export the product of comparative advantage and import. Doing Business data show that economies that perform well on the trading across borders indicators tend to have lower levels of corruption. For example, there is a strong positive association between the economies' distance to frontier score in the trading across borders indicators and their score in Transparency International's Corruption Perceptions Index. Similarly, the distance to frontier score on the trading across borders indicators is strongly and negatively correlated with the percentage of firms that are expected to give gifts to obtain an import license. The distance to frontier score tends to be higher in economies where fewer firms need to offer a bribe to get things done. Performance on the trading across borders indicators is also strongly and significantly correlated with the Doing Business data show that economies that perform well on the trading across borders indicators tend to have lower levels of corruption. World Bank Flagship Report (2017) on Brazil, Russia, China and South Africa has also been referred to understand the areas under the study Baumann/Ng (2012), provides an appraisal of trade flows between Brazil and the other BRICS from a different perspective than has been adopted by other studies so far. Emphasis was given to the roles of the indicators of comparative advantage, as well as to the role of different tariff barriers imposed on Brazilian products and on Brazil's potential competitors in the neighborhood of each BRIC.

Objectives of the study:

To compare and analyze the position of BRICS economies on the indicator of trading across the borders

To study the areas where Intra- BRICS trade can improve

To suggest the measures in the selected parameter to improve India's ranking on selected indicator.

Analysis: To compare and analyze the position of BRICS economies on the indicator of trading across the borders

Country	DB 2016 Overall Rank	DB 2017 Overall Rank	DB 2016 Trading Across Borders Rank	DB 2017 Trading Across Borders Rank	DTF 2016 Score on Trading Across Borders Rank	DTF 2017 Score on Trading Across Borders Rank	Observation on Trading Across Borders Rank and DTF
Brazil	121	123	150	149	54.20	55.57	Rank: +1
							DTF: +1.37
Russian Federation	36	40	138	140	57.96	57.9	Rank: -2
India	131	130	144	143	56.45	57.61	Rank: +1
							DTF: + 1.16
China	80	78	94	96	69.13	69.13	Rank: +2
							DTF: 0
South Africa	72	74	137	139	58.01	58.01	Rank: -2
							DTF: 0

Source: Prepared

Overall increase on DTF of the entire BRICS nation together is 2.53 with India and Brazil increased performance and increase in the aggregate rank is zero as Russian Federation and South Africa constant performance. Fall in the ranks on the indicator of Trading across the Borders is not because of the fall in the performance but due to some other countries performing better.

To study the areas where Intra-BRICS trade can improve:

Country	Exports			Imports		
	Country	% of total trade	Rank	Country	% of total trade	Rank
Brazil	China	18.6%	1	China	17.9%	1
Russia	China	8.2%	2	China	19.3%	1
India	China	3.6%	5	China	15.8%	1
China	None	-	-	China (re-import)	8.6%	4
South Africa	China	8.3%	1	China	18.3%	1
	India	-	-	India	5%	5

Source: Prepared

China being the major trading partner with other BRICS nation there is the potential. However, there is potential for Russia to increase its exports to India and India's exports to China should also improve. There is also potential for India to increase its exports to Russia. To suggest the measures in the selected parameter to improve India's ranking on selected indicator Good Practices as suggested by World Bank on indicator of trading across the borders

Includes: Allowing electronic submission and processing, linking agencies through an electronic single window, using risk-based inspections, overcoming geographic barriers through regional cooperation, sparking competition by making private participation easier, promoting efficiency in product-specific inspections.

The factors to be considered and measures to be taken are:

Factors	Measures
Time	Can be reduced by reducing Documentary and Border Compliances
Cost	Can be reduced by reducing Documentary and Border Compliances
Documentary Compliances	Can be reduced by using electronic single window, which India to major extent as introduced through reforms
Border Compliance	Effective Inspection System
Domestic Transport	Improving Infrastructure

Source: Prepared

Conclusion: Looking at the present scenario of reverse globalization and increasing protectionism increasing trade amongst BRICS nations can help to improve their role in the global economy. Further this will help the BRICS nation to increase their distance to frontier. However, study tries to conclude that Brazil, Russia, India, China and South Africa can use the best practices as followed by the countries that lead on the indicator of trading across the borders and can use it to their advantage. Further, BRICS success depends on many other criteria as all the BRICS nations are not in proximity. BRICS nations can evaluate its indicator on each of the parameter as mentioned in Ease of Doing Business and can use it as the tool to enhance the trade amongst the member nations.

References

- <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB17-Full-Report.pdf>
<http://www.doingbusiness.org/data/exploreconomies/india>
<http://www.doingbusiness.org/data/exploreconomies/brazil>
<http://www.doingbusiness.org/data/exploreconomies/russia>
<http://www.doingbusiness.org/data/exploreconomies/china>
<http://www.doingbusiness.org/data/exploreconomies/southafrica>
<http://www.doingbusiness.org/data/distance-to-frontier> <https://www.tralac.org/Reports/Intra-BRICS/2016.pdf>
R. Baumann, F.Ng (2012). Trade among BRICS: Still a Bumping Road from a Brazilian perspective. p.p 1-26

DISASTER MANAGEMENT

Mohan Iyer

Assistant Prof., Vidyalankar School Of Information Technology Wadala (E)
Mumbai 4000437

Abstract

Disasters are unforeseen sudden occurrences responsible for devastation which jolts the nation and society at large. These may either originate due to natural upheavals e.g. cyclones, earthquakes, floods; or as a result of variety of failures of man-made ventures which are equally disastrous e.g. wars, blasts, etc. All types of disasters cause loss to property and human lives. This paper, therefore, explains in brief the different activities likely to be associated with the management of different types of disasters. A brief description of different types of disasters reveal that management activities vary with its type and intensity, which is difficult to forecast. This, therefore, calls for the necessity to prepare a roadmap according to geography of the area and past experience. Also to manage the likely devastation a training programme needs to be prepared with the co-operation of governmental agencies and experts from different specialisations. To make the management popular the help of local agencies is always more useful. One can even plan mock drills to generate concern and consciousness among the common masses regarding the hardships of disaster and a methodology to encounter them. The study indicates that the collective efforts of the persons has always been rewarding. The installation of censors, emergency measures, communication, accessibility of different personnel, availability of necessary fire-fighting equipment, medical aids are equally prominent. All this requires additional funds for which local organisations have to plan in advance.

Key Words: Disaster-causes, activity, management, human consideration, equipment.

INTRODUCTION: One can appreciate that earthquakes occur when the earth's tectonic plates release stress. This release of pressure creates vibrations-commonly known as earthquakes causing damage to surroundings. They occur around fault zones where tectonic plates meet and consequently wide and deep cracks develop and structures surrounded in that area get collapsed, roads are destroyed, pipe lines get uprooted. A tornado results from thunderstorms which are violent, rotating columns of air moving at high speed, in the shape of funnel with a narrow end. Likewise hurricanes also being swirling storm over sea cause upheaval. In the recent years tsunami occurring due to immense quantity of water coupled with lot of energy can devastate coastal regions. The speed with which tsunami travels is much more than that of a man. Volcanic eruptions occur when pressure on a magma chamber forces magma up alongwith gases and silica flowing on ground as lava. Flow of snow down a slope occurring in mountain terrain as avalanches also carry part of soil and kankars. Floods are caused due to escape of overflow water spreading beyond usual boundaries endanger land area, city or other inhabited area. Cloud burst in Uttarkashi and Himachal Pradesh are the recent examples. Blast in fireworks factory at Shivkasi Chennai was also a major accident. The Bhopal Gas Tragedy occurred in Bhopal in the Union Carbide Limited on Dec. 3, 1984 is the World's biggest tragedy in which more than 8000 persons died. This accident took place due to contamination of Methayl Isocynate with water catalytic material. In the literature other events like explosives fire, oil spilling in sea, boiler burst in factory, collapse of factory, fire in tunnel are also documented. Environmental projects if not handled properly also sometimes turn into hazards. It has always been a challenge to face different kinds of disasters, may it be natural or manmade. Adequate attention needs to be given to preparedness and mitigation, and a definite methodology which may prove to be acceptable as compared to others. This also involves defining the goals and deciding the organisations and different wings who can accomplish the purpose. For the smooth sailing a training programme, mock drills and the codes of practice may prove to be better proposition to minimise the adverse influence.

MATERIALS: During the disaster heavy equipment on weight becomes difficult to be handled with. strength and purpose of the equipment new prevalent account of its dimensions and Without

compromising with the composites are becoming more. That way nanomaterial (0.1 to 100 nm) in size are being preferred. As regards the design of structural members, theory of design of columns, beams, plates, arches, and catenaries are the conventional practices still being followed with the requisite degree of reliability and confidence. For reliability the proposed design synchronising with the actual conditions, likely to prevail in the field, has always been difficult. The remedy to this requires to incorporate suitable factor of safety in design. Other conventional materials include: wrought iron, steel, stainless steel, aluminium, alloys, timber, high strength steel, fibre reinforced plastic.

PRESENT SCENARIO: Present day disaster management in real sense has acquired very wide dimensions. It is becoming difficult to fix the limits. What used to be an activity earlier, with the advance of knowledge no it has become a full-fledged project of its own kind. This also includes a reliable system of communication even during distress, Safety of Atomic Reactors, Prevention of accidents (rail, road, Air), Cyclones, and preservation of Natural Reserves. After all there is a certain limit to which one can do the needful to face the agony of disaster. Beyond this collective wisdom plays its role.

CONCLUSION: In view of the above discussion a strong necessity is felt to review the existing practices and take steps to develop a roadmap for different activities. Manuals, training programmers, comprehensive policy schedule, new strategies are required to be imbued with the existing norms based on field observations and actual experience.

REFERENCES

- <http://ndma.gov.in/ndma/index/htm>
<http://www.icbse.com/projects/communication-facilities-disaster-management-2012-13>.
Disaster Management in India, D.Kaul et.al., IIT-K.

RIGHT TO INFORMATION ACT – AN AGENT OF GOOD GOVERNANCE

Ashwini Joshi

Assistant professor, Dept. of Commerce & Management, Vidyalankar School of InformationTechnology, Wadala, Mumbai. Email: ashwini.joshi@vsit.edu.in, Mobile: 9403381522

Abstract

Right to Information is the fundamental human right provided by the Constitution of India. The participants in a democratic system have a right to know what, how and why of any decision, change or continuity, regarding or of its functioning. The right is inherent in citizens by virtue of their owning the system. In this Age of Information, its value as a critical factor in socio-cultural, economic and political development is being increasingly felt. In a fast developing country like India, availability of information needs to be assured in the fastest and simplest form possible. This is important because every developmental process depends on the availability of information. Right to know is also closely linked with other basic rights such as freedom of speech and expression and right to education. Its independent existence as an attribute of liberty cannot be disputed. Viewed from this angle, information or knowledge becomes an important resource. An equitable access to this resource must be guaranteed. Right to know is the basic indivisible from a democratic polity. By realizing this fact, Indian parliament has passed Right to information act, 2005 to make government, accountable, responsible, efficient and transparent. This paper tries to highlight the positive & powerful impact of RTI on scam retrieval along with case studies. This paper shows how RTI Act is being used as a mechanism to fight corruption so as to promote effective aid delivery in India.

Keywords: Information, governance, transparency etc.

1. INTRODUCTION: In India, the movement for the right to information has been as vibrant in the hearts of marginalized people as it is in the pages of academic journals and in the media. This is not surprising since food security, shelter, environment, employment and other survival needs are inextricably linked to the right to information. The National Campaign for People's Right to Information (NCPRI) formed in the late-1990s became a broad-based platform for action. As the campaign gathered momentum, it became clear that the right to information had to be legally enforceable. As a result of this struggle, not only did Rajasthan pass a law on the right to information, but in a number of panchayats, graft was exposed and officials punished. In 1997, two states passed right to information legislation (Tamil Nadu and Goa) and the Government of India appointed a working group, headed by former bureaucrat and consumer rights activist HD Shourie, to draft what was reworked into the Freedom of Information Bill, 2000.

1.1 Making People Aware of Their Right To Know: The Right to Information Act, 2005 got the assent of the President of India on 15.6.2005 and was published in The Gazette of India on 21.6.2005. It applies to whole of the country except the State of J&K w.e.f 15th June, 2005. The West Bengal Right to Information Rules, 2006 were framed by the Administrative Reforms Cell of Personnel and Administrative Reforms Department of Government of West Bengal and published in the Kolkata Gazette Extraordinary on 29.3.2006. From 1997 onwards in several landmark judgments Supreme Court of India and High Courts of different States observed that Articles 19(1) and 21 of Constitution of India, i.e., right to freedom of speech and expression and right to life and liberty include right to information. Right to live loses much of its meaning if a citizen's right to information is denied. In the preamble to the Act this has been widely acknowledged as a necessity by way of commitment for creation of an informed citizenry, to contain corruption and enhance accountability and transparency in the working of every public authority.

1.2 Constitutional Aspect of Right To Information: Article 19(1)(a) of the constitution guarantees the fundamental right to free speech and expression. The prerequisite for enjoying this right is

knowledge and information. The absence of authentic information on matter of public interest will only encourage wild rumours and speculation and avoidable allegation against individuals and institutions. Therefore, the Right to Information becomes a constitutional right, being an aspect of the right to free speech and expression which includes the right to receive and collect information. This will also help the citizen perform their fundamental duties as set out in article 51A of the Indian constitution. Thus access to information would assist citizen in fulfilling these obligations.

1.3.Right To Information - Is Not Absolute: As no right can be absolute, the Right to Information has to have its limitations. There will always be area of information that should remain protected in public and national interest eg. National security. Moreover, this unrestricted right can have an adverse effect of an overload of demand on administration. So the information has to be properly, clearly classified by an appropriate authority.

1.4.Need For Right To Information: The Right to Information has already received judicial recognition as a part of the fundamental right to free speech and expression. An Act is needed to provide a statutory frame work for this right. This law will lay down the procedure for translating this right into reality. Information is indispensable for the functioning of a true democracy. People have to be kept informed about current affairs and broad issues political, social and economic. Free exchange of ideas and free debate are essentially desirable for the Government of a free country.

2.Objectives:

- To study the impact of RTI on scam retrieval.
- To study the scams which is the outcome of RTI.

3.Limitations of the study: The study is totally based on secondary data.

4.Research methodology Type of research: The type of research adopted for the project is Descriptive Research. Sources of data: Secondary

5.Impact of RTI on scam retrieval in India:

A survey conducted estimates that in the Act's first three years alone, close to two million RTI requests were filed in different parts of the country.

a) **Pond Scam:** In 2010, K.S. Sagaria, a resident of Kushmal village in rural Orissa, filed an RTI application seeking information on the number of ponds constructed in his village under the government's national wage employment scheme. The information he received was revealing: the ponds had never been constructed even though money had been allocated and spent. Following complaints from villagers, the local administration was forced to take action and suspend the officials involved in the pond scam. While activists are split on whether the RTI has led to a reduction in corruption in India, most agree that the law is a critical step in the right direction. The main objective of India's RTI movement was to empower people, concluding that "this law has done that – given the people the power to challenge their government. That is no small thing."

b) **The Adarsh Scam:** The Adarsh Housing Society, a 31-storey building, which came up in the prime real estate area of Colaba, Mumbai, was originally supposed to be a six-storey structure to house war widows and heroes of the 1999 Kargil War. Shortly after the RTI came into force, activists Simpreet Singh and Yogacharya Anandji embarked on a quest to expose how politicians, bureaucrats and military officials had flouted rules to acquire flats below market rates, which culminated in the resignation of Maharashtra Chief Minister, whose own relatives were the beneficiaries in the building. The RTI applications sent by these two activists to several public bodies revealed that the land on which the building was constructed did not belong to the government of Maharashtra, but to the Ministry of the Defence under the central government. It also revealed that while the allottees grew from 31 to 103 from 2003 to 2008, an environmental clearance was never received to construct the high-rise in a Coastal Regulation Zone. Besides the flouting of rules, which the public regards as routine, the most disturbing aspect of the Adarsh Scam was how ministers, politicians, top army officials and bureaucrats were making a beeline to get flats in a building meant for war widows. Some

of the prominent names included high profile leaders from ruling political party, Former Army Chiefs, close relatives of bureaucrats, highly placed diplomats, and family members of Congress Party leader. The most significant takeaway from the Adarsh Scam is that it "exposed the modus operandi of corruption." The unfolding of the scam showed how corruption happens. The nexus between corruption and the custodians of the law, and how they break the law. Another takeaway was – No matter how powerful you are, if you do it, face the consequences. A strong signal of transparency & governance.

c) 2G Scam: The 2G scandal involved the Telecom Ministry, led by Andimuthu Raja, undercharging mobile phone companies for frequency allocation licenses, allegedly for bribes, which ended up costing the Indian government Rs1,76,645 crores. As the scam unfolded over months, the RTI helped to uncover how the rot spread in the Congress Party led government. An RTI application filed by Subhash Chandra Agrawal, for instance, revealed that Raja had a "15-minute-long" meeting with then Solicitor- General Goolam E. Vahanvati in December 2007 following which a "brief note was prepared and handed over to the Minister," but no minutes were recorded.

d) Commonwealth Games: The questioning dealings of Suresh Kalmadi, a lawmaker from Pune, who was charged with transforming the 2010 Commonwealth Games into a world-class event. Instead, he allowed CWG to become an glaring example of corrupt deals which led to the entire country being humiliated. The entire infrastructure developed was in entire chaos & pathetic. Though the bills of crores were submitted in actual nothing was done. Just a week ahead of the athletes moving into their accommodation at the CWG village near the Yamuna River, to the utter shock it was observed that the rooms were filthy with piles of rubble and dust, dirty sheets with paw prints, paan stains on the walls, no electricity and plumbing, and human waste on the bathroom floor and sink. On April 26, 2011, he was arrested for allegedly handing out an inflated contract of Rs. 141-crore to Swiss Timing for its timing and scoring equipment, which caused a loss of Rs. 95 crores to the Indian government.

CONCLUSION: Every citizen has a right to impart and receive information as part or his right to know. The state is not only under the obligation to respect this right of the citizen but equally under an obligation to ensure condition under which this right can be meaningful and effectively enjoyed by one and all. Right to know is the basic indivisible from a democratic polity. This right include right to acquire information and it disseminate it. Right to information is necessary for self-expression, which is an important means of free conscience and self - fulfillment. It enables people to contribute on social and moral. issue .it is the best way to find a truest model of anything, since it is an only through it that widest possible of ideas can be circulated .the right can be only limited by reasonable restriction under a law for the purpose mention in article 19(2)of our constitution. Right to Information laws, or "sunshine" laws as they are commonly called, grant citizens the legal right to access information held by their governments, bringing much-needed transparency in the otherwise opaque functioning of government. Over the last some years, the RTI has been used extensively by ordinary Indian citizens to demand a vast range of information from their government. It is also instrumental in retrieving a number of scams. The most important objective of check balance on public authority & their functioning is being fulfilled. It is also playing an important role in checking & curbing the growing menace of corruption in India. RTI, an act which is an agent of good governance is a tool of empowerment of public so as to ensure greater accountability & transparency in governance administration. This Act & its use has sent a message across all quarters that no one will be spared if found dealing in unlawful & illegal activities. The act has removed the distinctions between those in power and the commoners.

"Information is the currency of democracy; use it for transparency & governance"

REFERENCES

- Gupta Namita, —*Implementation of Right to Information Act : A challenge to government.//*
Kundu, Subhrajyoti, —*Democratic need for Right to Information in India//*, *Global Media Journal*, 2010, December.
- Rani, RK, —*Right to Information act, 2005: objectives, challenges and suggestions.//*
Goel, S.L, —*Right to Information and Good governance//*, Deep& Deep publication, Delhi.
- Gupta, RK, —*Some basic aspects of procedure and constitution of administration under RTI act.//*
Guide on Right to information act, 2005, Government of India, Ministry of personnel, public grievances & pensions, Department of personnel and training.// North blocks New Delhi, 5 Oct, 2009.
- Right to Information empowering citizens, Annual report (2011-12), by CIC.
- Sivakumar, C.L.V, —*The Right to Information act: 2005 Perspective -practice -issues//*, *IJMBS* vol.1, issue2, June 2011.
- The RTI act, 2005 recommended report*, by CIC.

STRATEGIC PLANNING TO CURE BREAST AND CERVICAL CANCER

Maria Achary & Niti Salvi

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: maria.achary@vsit.edu.in, Mobile: 8898650475

Assistant Professor, Dept of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: niti.parab@vsit.edu.in, Mobile: 9619344013

Abstract

As in today's world Health Sector has become a key factor in everyone's life. Due to busy competitive world Health Care is not been noticed carefully the major issues we can see in Women rather than men. In our Paper we have focused on "Cancer Disease" Which have being evolved like a viruses in human body due increase in Technologies and Busy Schedule .we are focusing on Breast and Cervical Cancer which have been Rising incidence in India.Breast cancer is now been the most common cancer in most cities in india, and 2nd most common in the rural areas. This implies, practically, one fourth (or even approaching one thirds) of all female cancer cases are breast cancers.on the other hand we are also focusing on Cervical cancer in women in HBCRs in Bangalore, chennai, Guwahati and Chandigarh whereas it was the second most common cancer in Mumbai and Dibrugarh and the third leading site of cancer in Thiruvananthapuram. We are providing a solution to these problems by using Strategic Medical Care and Using Some Technology Technique and additional to it the Strategy used for medical diet.

Keywords: Taichi Model, SWOT Analysis, Supply Chain Management, Medical Diet Chart, Johari Model.

INTRODUCTION: As in Today's Sector for Health has been a tremendous disaster of died for different reasons we have been noticed the major died in women and men is due to Cancer's. Our Paper is focusing on Mainly Breast and Cervical Cancer's Which have been more Dangerous in Indian Country. **Cancer Statistics in India** Estimated number of people living with the disease: around 2.5 million. Every year, new cancer patients registered: Over 7 lakh. Cancer-related deaths: 5,56,400

Deaths in the age group between 30-69 years

- Total: 3,95,400 (71% of all cancer related deaths)
- Men: 2,00,100
- Women: 1,95,300

In Our Paper we are focusing on this two sectors due to "Breast cancer" is the most common cancer in women in India and accounts for 27% of all cancers in women .Globo can 2012 data: New cases registered: 1,44,937, Deaths: 70,218. The incidence rates in India begin to rise in the early thirties and peak at ages 50-64 years .Overall, 1 in 28 women is likely to develop breast cancer during her lifetime. In urban areas, 1 in 22 women develops breast cancer during her lifetime as compared to rural areas where 1 in 60 women develops breast cancer in her lifetime . "Cervical cancer" is the second most common cancer in India in women accounting for 22.86% of all cancer cases in women and 12% of all cancer cases in both men and women. Globo can 2012 data :New cases registered: 1,23,000, Deaths: 67,500 Median age: 38 years (age 21-67 years). Rural women are at higher risk of developing cervical cancer as compared to their urban counterparts .Cervical cancer is less common in Muslim than in Hindu women .Cervical cancer is the third largest cause of cancer mortality in India accounting for nearly 10% of all cancer related deaths in the country .Survival rate The relative five year survival averages to 48.7%. Length of survival depends on the cancer stage at the time of diagnosis. The survival chance of a person becomes better if the cervical cancer is diagnosed and treated at earlier stages. Therefore it is important to avail of cervical cancer screening.

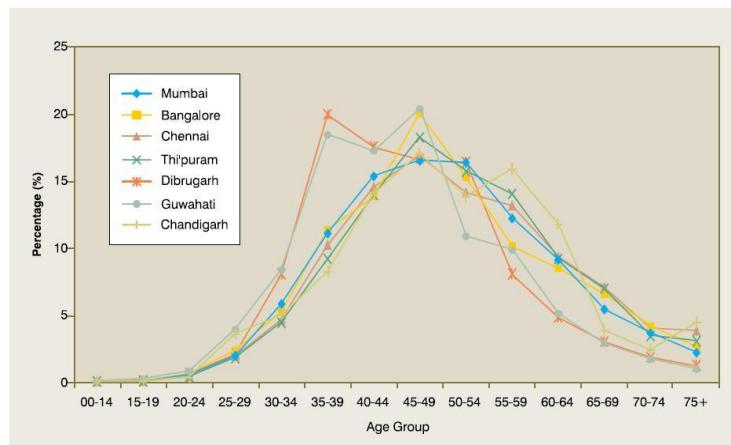
II Literature Survey(Secondary Data): The relative Proportion of breast cancer in females varies from 14.4% in Guwahati to 30.3% in Mumbai.

Fig 1:

Number (#), Relative Proportion (%) and Rank (R) (2007-2011) Female Breast (ICD-10: C50)				
Registry	Total	#	%	R
Mumbai	18528	5620	30.3	1
Bangalore	13125	2052	15.6	2
Chennai	17499	3921	22.4	2
Thi'puram	18809	5354	28.5	1
Dibrugarh	2276	336	14.8	1
Guwahati	4679	674	14.4	2
Chandigarh	2092	341	16.3	2

Fig :1.1

Five Year Age Group Distribution (2007-2011) - Female Breast (ICD-10: C50)



The proportions of breast cancers presenting with localised disease varied from 1.0% in Dibrugarh to 22.3% in Thiruvananthapuram whereas regional spread of the disease varied from 27.4% in Mumbai to 87.9% in Dibrugarh

Fig:2 :

Number (#) and Relative Proportion (%) according to the Clinical Extent of Diseases
(Excludes Patients Previously Treated)(2007-2011) – Female Breast (ICD-10:C50)

Registry	Localised (L)		Regional (R)		L+R		Distant		Others		Unknown		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	483	12.2	1085	27.4	1568	39.5	268	6.8	4	0.1	2125	53.6	3965	100.0
Bangalore	179	16.1	922	83.1	1101	99.3	-	-	7	0.6	1	0.1	1109	100.0
Chennai	175	5.2	2705	80.2	2880	85.4	489	14.5	2	0.1	-	-	3371	100.0
Thi'puram	697	22.3	2081	66.4	2778	88.7	354	11.3	-	-	-	-	3132	100.0
Dibrugarh	3	1.0	262	87.9	265	88.9	31	10.4	2	0.7	-	-	298	100.0
Guwahati	29	7.2	299	74.2	328	81.4	73	18.1	2	0.5	-	-	403	100.0
Chandigarh	5	2.5	155	77.1	160	79.6	37	18.4	4	2.0	-	-	201	100.0

Fig 3: Gives the Picture of the different types of treatment given to these patients

Fig:3.1 :

Number (#) and Relative Proportion (%) according to Type of Treatment Given at Reporting Institution (2007-2011) - Female Breast (ICD-10: C50)

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh		Guwahati		Chandigarh	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Total Patients	1845	100.0	872	100.0	2174	100.0	2863	100.0	271	100.0	274	100.0	172	100.0
Specific Treatments														
Surgery (S)	277	15.0	67	7.7	33	1.5	141	4.9	64	23.6	15	5.5	2	1.2
Radiotherapy (R)	19	1.0	7	0.8	4	0.2	8	0.3	18	6.6	8	2.9	6	3.5
Chemotherapy (C)	83	4.5	122	14.0	87	4.0	171	6.0	16	5.9	60	21.9	53	30.8
S + R	57	3.1	29	3.3	18	0.8	25	0.9	25	9.2	13	4.7	14	8.1
S + C	151	8.2	217	24.9	105	4.8	827	28.9	132	48.7	68	24.8	12	7.0
R + C	12	0.7	31	3.6	170	7.8	38	1.3	8	3.0	9	3.3	28	16.3
S + R + C	526	28.5	280	32.1	465	21.4	564	19.7	8	3.0	99	36.1	49	28.5
Hormone Therapy (H)	11	0.6	1	0.1	55	2.5	50	1.7	-	-	-	-	2	1.2
S + H	66	3.6	7	0.8	58	2.7	97	3.4	-	-	-	-	-	-
R + H	9	0.5	1	0.1	11	0.5	6	0.2	-	-	-	-	2	1.2
C + H	38	2.1	1	0.1	97	4.5	76	2.7	-	-	-	-	1	0.6
S + R + H	65	3.5	3	0.3	45	2.1	52	1.8	-	-	-	-	-	-
S + C + H	74	4.0	22	2.5	157	7.2	309	10.8	-	-	1	0.4	-	-
R + C + H	11	0.6	1	0.1	161	7.4	35	1.2	-	-	-	-	-	-
S + R + C + H	446	24.2	83	9.5	707	32.5	452	15.8	-	-	1	0.4	3	1.7
Others	-	-	-	-	1	0.0	12	0.4	-	-	-	-	-	-
Modality of Therapy														
Single	390	21.1	197	22.6	179	8.2	370	12.9	98	36.2	83	30.3	63	36.6
Combination	1444	78.3	674	77.3	1833	84.3	2446	85.4	173	63.8	191	69.7	109	63.4
Type of Any Treatment														
Any Surgery	1002	34.1	708	35.1	1588	24.8	2467	34.3	229	50.7	197	34.7	80	23.8
Any R	1145	23.5	435	21.5	1581	24.7	1180	16.4	59	13.1	130	22.9	102	30.4
Any C	1341	27.5	757	37.5	1949	30.4	2472	34.4	164	36.3	238	42.0	146	43.5
Any H	720	14.8	119	5.9	1291	20.1	1077	15.0	-	-	2	0.4	8	2.4

Fig 3.2

Number (#) and Relative Proportion (%) of Types of Treatment according to Clinical Extent of Disease (2007-2011)-Female Breast(ICD-10:C50)

Clinical Extent	Mumbai		Bangalore		Chennai		Tirupuram		Dibrugarh		Guwahati		Chandigarh	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Localised														
Surgery (S)	28	6.6	20	14.3	7	4.4	54	7.9	2	66.7	5	21.7	-	-
Radiotherapy (R)	-	-	-	-	-	-	-	-	-	-	-	-	1	50.0
Chemotherapy (C)	2	0.5	7	5.0	1	0.6	2	0.3	-	-	-	-	-	-
S + R	12	2.8	14	10.0	6	3.8	5	0.7	-	-	2	8.7	-	-
S + C	37	8.8	45	32.1	16	10.0	201	29.5	1	33.3	3	13.0	-	-
R + C	-	-	5	3.6	6	3.8	2	0.3	-	-	1	4.3	-	-
S + R + C	124	29.4	28	20.0	19	11.9	125	18.3	-	-	12	52.2	-	-
Hormone Therapy (H)	1	0.2	-	-	12	7.5	1	0.1	-	-	-	-	-	-
S + H	30	7.1	4	2.9	20	12.5	42	6.2	-	-	-	-	-	-
R + H	-	-	-	-	1	0.6	-	-	-	-	-	1	50.0	-
C + H	-	-	-	-	1	0.6	-	-	-	-	-	-	-	-
S + R + H	45	10.7	1	0.7	11	6.9	11	1.6	-	-	-	-	-	-
S + C + H	28	6.6	5	3.6	23	14.4	114	16.7	-	-	-	-	-	-
R + C + H	-	-	-	-	5	3.1	-	-	-	-	-	-	-	-
S + R + C + H	115	27.3	11	7.9	32	20.0	125	18.3	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All Treatments	422	100.0	140	100.0	160	100.0	682	100.0	3	100.0	23	100.0	2	100.0
Regional														
Surgery (S)	35	3.9	46	6.8	25	1.4	90	4.5	59	24.5	10	4.7	2	1.4
Radiotherapy (R)	1	0.1	5	0.7	2	0.1	1	0.1	15	0.2	4	1.9	3	2.2
Chemotherapy (C)	33	3.7	88	13.1	32	1.8	88	4.4	5	2.1	30	14.2	41	29.5
S + R	4	0.4	15	2.2	11	0.6	22	1.1	22	0.1	11	5.2	14	10.1
S + C	75	8.3	159	23.7	84	4.9	632	31.7	127	52.7	62	29.4	12	8.6
R + C	1	0.1	19	2.8	125	7.2	17	0.9	5	2.1	6	2.8	22	15.8
S + R + C	347	38.5	247	36.8	438	25.3	447	22.5	8	3.3	86	40.8	40	28.8
Hormone Therapy (H)	2	0.2	-	-	31	1.8	25	1.3	-	-	-	-	1	0.7
S + H	34	3.8	2	0.3	37	2.1	57	2.9	-	-	-	-	-	-
R + H	-	-	1	0.1	7	0.4	1	0.1	-	-	-	1	0.7	-
C + H	5	0.6	1	0.1	14	0.8	22	1.1	-	-	-	-	-	-
S + R + H	17	1.9	2	0.3	34	2.0	42	2.1	-	-	-	-	-	-
S + C + H	41	4.5	18	2.4	128	7.4	197	9.9	-	-	1	0.5	-	-
R + C + H	-	-	1	0.1	93	5.4	8	0.4	-	-	-	-	-	-
S + R + C + H	307	34.0	70	10.4	668	38.6	339	17.0	-	-	1	0.5	3	2.2
Others	-	-	-	-	1	0.1	3	0.2	-	-	-	-	-	-
All Treatments	902	100.0	672	100.0	1730	100.0	1991	100.0	241	100.0	211	100.0	139	100.0
Distant														
Surgery (S)	1	0.5	1	1.8	1	0.4	2	0.7	2	8.0	-	-	-	-
Radiotherapy (R)	11	5.9	2	3.6	2	0.7	7	2.4	3	12.0	3	7.7	2	6.5
Chemotherapy (C)	43	23.2	24	43.6	54	19.1	91	31.3	11	44.0	30	76.9	12	38.7
S + R	3	1.6	-	-	-	-	-	-	2	8.0	-	-	-	-
S + C	16	8.6	13	23.6	5	1.8	14	4.8	4	16.0	3	7.7	-	-
R + C	10	5.4	7	12.7	39	13.8	21	7.2	3	12.0	2	5.1	6	19.4
S + R + C	24	13.0	5	9.1	8	2.8	7	2.4	-	-	1	2.6	9	29.0
Hormone Therapy (H)	8	4.3	1	1.8	12	4.2	25	8.6	-	-	-	-	1	3.2
S + H	1	0.5	-	-	1	0.4	-	-	-	-	-	-	-	-
R + H	9	4.0	-	-	3	1.1	5	1.7	-	-	-	-	-	-
C + H	30	16.2	-	-	82	29.0	62	21.3	-	-	-	-	1	3.2
S + R + H	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S + C + H	1	0.5	1	1.8	6	2.1	7	2.4	-	-	-	-	-	-
R + C + H	11	5.9	-	-	63	22.3	29	10.0	-	-	-	-	-	-
S + R + C + H	17	9.2	1	1.8	7	2.5	10	3.4	-	-	-	-	-	-
Others	-	-	-	-	-	-	11	3.8	-	-	-	-	-	-
All Treatments	185	100.0	55	100.0	283	100.0	291	100.0	25	100.0	39	100.0	31	100.0

Fig:3.3

Number (#) and Proportion (%) of Any Specific Treatment Relative to All Treated Patients According to Clinical Extent of Disease (2007-2011) - Female Breast (ICD-10: C50)

	Mumbai		Bangalore		Chennai		Thirupuram		Dibrugarh		Guwahati		Chandigarh	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Localised														
Any Surgery	419	33.8	128	41.4	134	31.8	663	37.6	3	75.0	23	41.8	-	-
Any Radiotherapy	296	23.9	59	19.1	80	19.0	259	14.7	-	-	15	27.3	2	66.7
Any Chemotherapy	306	24.7	101	32.7	103	24.4	557	31.6	1	25.0	17	30.9	-	-
Any Hormone Therapy	219	17.7	21	6.8	105	24.9	286	16.2	-	-	-	-	1	33.3
Any Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Procedures	1240	100.0	309	100.0	422	100.0	1765	100.0	4	100.0	55	100.0	3	100.0
Regional														
Any Surgery	860	31.3	557	34.6	1425	26.4	1766	35.6	216	52.6	179	36.5	71	25.6
Any Radiotherapy	677	24.6	360	22.3	1378	25.5	846	17.1	50	12.2	113	23.1	83	30.0
Any Chemotherapy	809	29.4	601	37.3	1582	29.3	1686	34.0	145	35.3	195	39.8	118	42.6
Any Hormone Therapy	406	14.8	93	5.8	1012	18.7	660	13.3	-	-	3	0.6	5	1.8
Any Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Procedures	2752	100.0	1611	100.0	5398	100.0	4961	100.0	411	100.0	490	100.0	277	100.0
Distant														
Any Surgery	63	16.7	21	23.3	28	4.8	38	7.9	8	23.5	4	8.5	9	16.1
Any Radiotherapy	85	22.5	15	16.7	122	20.7	75	15.6	8	23.5	6	12.8	17	30.4
Any Chemotherapy	152	40.3	51	56.7	264	44.9	229	47.5	18	52.9	37	78.7	28	50.0
Any Hormone Therapy	77	20.4	3	3.3	174	29.6	131	27.2	-	-	-	-	2	3.6
Any Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Procedures	377	100.0	90	100.0	588	100.0	482	100.0	34	100.0	47	100.0	56	100.0
Others														
Any Surgery	3	100.0	2	22.2	1	50.0	-	-	2	66.7	-	-	-	-
Any Radiotherapy	-	-	1	11.1	1	50.0	-	-	1	33.3	1	50.0	-	-
Any Chemotherapy	-	-	4	44.4	-	-	-	-	-	-	1	50.0	-	-
Any Hormone Therapy	-	-	2	22.2	-	-	-	-	-	-	-	-	-	-
Any Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Procedures	3	100.0	9	100.0	2	100.0	-	-	3	100.0	2	100.0	-	-

Cervical Cancer:

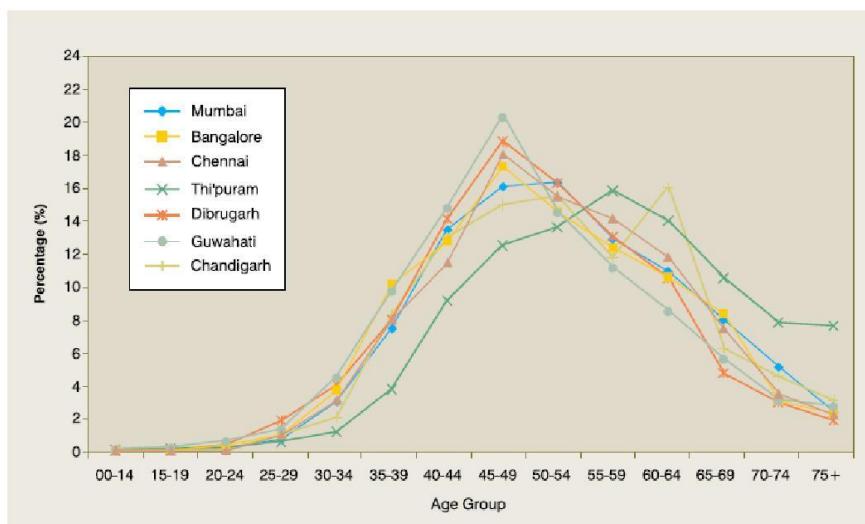
The relative proportion of cervix cancer varied from 9.3% in Thiruvananthapuram to 27.3%
In Bangalore

Fig:4

Number (#), Relative Proportion (%) and Rank (R) (2007-2011)
Cervix (ICD-10: C53)

Registry	Total	#	%	R
Mumbai	18528	2480	13.4	2
Bangalore	13125	3585	27.3	1
Chennai	17499	4462	25.5	1
Thi'puram	18809	1743	9.3	3
Dibrugarh	2276	266	11.7	2
Guwahati	4679	764	16.3	1
Chandigarh	2092	385	18.4	1

Five-Year Age Group Distribution (2007-2011) - Cervix (ICD-10: C53)



Since Even the Treatment was at top level then to we have lakh number of Died Every month So, In our paper had made a Research Solution for the above problem by using Taichi Technique using by Medical Diets and Using Strategic Management to apply it in Proper Supply chain management by doing SWOT analysis of it. We have analysed the Death series in Breast and Cervical Cancer the statically Reports:

III Breast and Cervical cancer Reports:

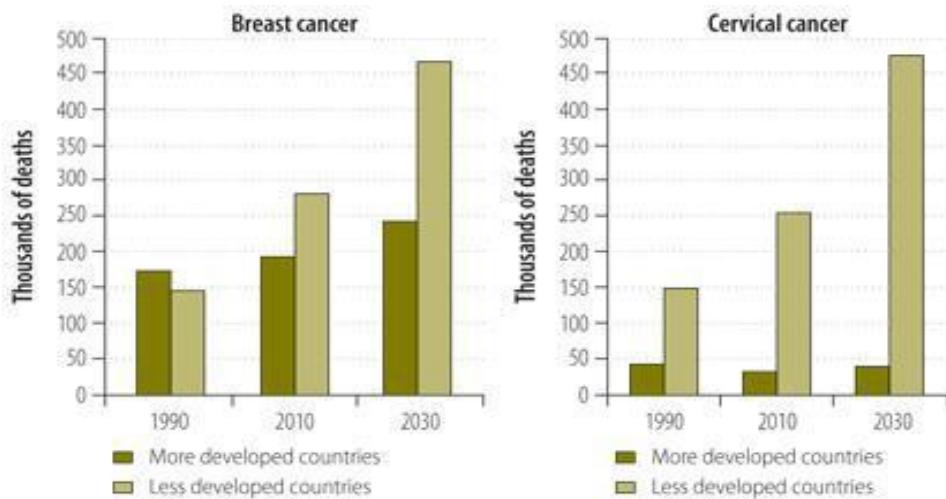


Fig 5 :Shows the death rate of More Developed and Less Developed countries.

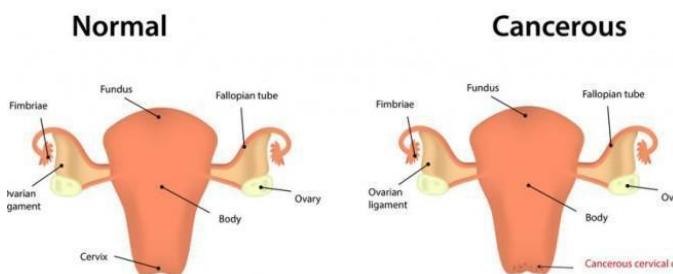
IV Reasons for Breast and Cervical Cancer in women: *Breast cancer* is referred to as an "urban phenomena". There are no certain causes but it could be attributed to:

Fig:6 Breast Cancer's

- Late marriage
- No children (no breast feeding)
- Bearing a child after 30 years
- Improper diet
- Little or no physical activity
- Too much stress
- Family history

Fig 7:Cervical Cancer:

Cervical Cancer



Cervical cancer has beaten breast cancer as the leading cause of cancer deaths in women in India; it kills around 33,000 women every year in India. Cervical cancer is known to occur because of a virus called the Human Papilloma Virus (HPV) transmitted through sexual contact. Bad local hygiene, too many children, not enough spacing between children, low nutrition levels and early marriage all contribute to the risk factors. The high risk group includes girls who have had premature sex as teenagers, those who have had multiple pregnancies or multiple sex partners and don't use contraceptives. The disease remains asymptomatic for a long time till it starts invading neighbouring tissues.

Causes: Cervical cancer is the commonest cancer in Indian women and a quarter of the world's cervical cancer patients live in India! Caused by infection with the Human Papilloma Virus (HPV), cervical cancer involves the opening of the uterus into the vagina. It occurs more commonly in

women who start sexual activity at a young age and is also more common in women with many childbirths and partners.

V Research Methodology:

To Reduce the number of Deaths in women as girl is more important in the world

Step I] We have also done SWOT analysis for success results in few sectors:



Fig 8 :SWOT Analysis

As it States us what are our Strength in health sector it made our research to think in a very different sectors wise.

Step II] Technical Treatment:

- Treatment for Cervical Cancer



Fig: 9 Pap smear and other tests

Papanicolaou (Pap) Smear is a test used to detect cancerous cells in the cervix early. It also helps detect pre-cancerous conditions. The test is usually conducted during a pelvic exam. During a Pap smear, a cell sample from the cervix is taken with a small wooden spatula or brush and examined under the microscope. If the results are normal, no further evaluation is recommended

Frequency of Pap tests: Talk to your doctor about what age to begin testing, how often to be tested and when you can stop. In general, the guidelines are:

- If you're **younger than 21**: Have your first Pap test at age 21. Repeat every 2 years. If you are 30 years and older and have had three normal Pap tests in a row, you can then have one every 3 years.
- If you are **older than 65** with normal Pap test results, you may not need any further tests. Discuss this with your doctor.
- If your cervix has been removed as part of a hysterectomy and the surgery was not due to cancer, you may not need further Pap tests.

HPV Test is used as a follow-up to abnormal changes detected with a Pap smear. The HPV test is used as a follow up in case of abnormal changes detected by a Pap smear. It's recommend for all women under 30 and over 21.

Some other tests common tests include:

- **Colposcopy:** The colposcope has a bright light with a magnifying lens and is used by the doctor to look more closely at the cells of the vagina and cervix. It is not inserted into the vagina.
- **Biopsy:** A tissue sample from the lining of the uterus is removed under local anaesthesia and checked under a microscope for abnormal cells. This procedure may cause some bleeding or discharge. Some women feel some pain similar to menstrual cramps. The area usually heals quickly.
- **Chest X-rays, CT scan, MRI and PET** (positron emission tomography) scan may be used to determine the stage of cervical cancer and its spread to other parts of the body.

VI Recommendations:

- **Limit the number of sexual partners.** Studies have related the number of sexual partners to HPV and thus cervical cancer.
- **Quit smoking and avoid second-hand smoke.** Research has shown that tobacco smoke combined with HPV infection accelerates the rate of cervical dysplasia.
- **Always use condoms.** Unprotected sex exposes you to HPV and other sexual infections which increase your risk for cervical cancer. Use them even if you are vaccinated for HPV as the vaccine may not be effective against all types of the virus.
- **Schedule your Pap tests.** The most important thing you can do to help prevent cervical cancer is to have regular screening tests (Pap test and HPV test). Cervical cancer can be prevented by prevention of HPV infection, as well as detection and treatment of precancerous changes to the cervix.
- **Follow-up on abnormal Pap smears** diligently as per your doctor's instructions.
- **Get the HPV vaccines** (Cervarix and Gardasil). They can protect girls and young women against infection with two high-risk types of HPV (HPV 16 and HPV 18) that cause most cervical cancers. These vaccines prevent infection with HPV but do not treat existing infections or cervical cancer. They are safe and effective for females ages 9 through 26 years. The vaccine is likely to have the greatest effect when administered before the teen years, before the person is sexually active.

Technical Treatment for Breast Cancer:

The main types of treatment for breast cancer are:

- Surgery
- Radiation therapy
- Chemotherapy
- Hormone therapy
- Targeted therapy
- Bone-directed therapy

Fig 10:

Treatments can be classified into broad groups, based on how they work and when they are used.

Local therapy: Local therapy removes the cancer from a limited (local) area, such as the breast, chest wall and lymph nodes in the underarm area (axillary nodes). It also helps to ensure the cancer does not come back (recur) to that area. It usually involves surgery, with or without radiation therapy to the breast area.

Systemic therapy (adjuvant therapy): Systemic therapy aims to get rid of cancer cells that may have spread from the breast to other parts of the body. This usually means drug therapy, which travels throughout the body to get rid of cancer cells that may have spread. Systemic therapy includes chemotherapy, hormone therapy and targeted therapy. Because systemic therapy is in addition to (an adjunct to) breast surgery, these treatments are often called adjuvant therapy.

Common problems of "Young Breast Cancer Survivors"

1. Survivorship: After being diagnosed at a very young age, people don't know what is ahead of them. They must learn to fight for survival.

2. Sexuality: Women who get the cancer after they've got married have a fear that the partner may turn away and the relationship still at a nascent stage may suffer. The long drawn treatment needs reassurance and emotional support and not all partners are capable of it. Those unmarried have a bigger issue - who will marry them?

3. Having children: For those who have not yet had a child, will radiation and the hormonal treatment be a deterrent to childbearing for her?

4. Unsupportive in-laws: In India, urban, rural and even educated parents of the husband/partner may create a rift in the relationship of the couple. Most of them want their son to leave the "diseased woman" and marry again. Some consider it a curse and send her back to her parents, as they cannot afford the expensive treatment. At times, they keep the children separated from their mother.

5. Stress at work: Most of them are educated professionals with successful careers. Medical leaves become an issue and quitting the job may not solve the problem either.

Since we also find that Technology based causes Side effects after the treatment .

VII] Non-Technical Treatment

So we have made in Non-Technical Treatment to Cure Breast and cervical cancer's

Step1: Johari Model: The Johari Window model can also be used to assess and improve a group's relationship with other groups. The Johari Window model was devised by American psychologists Joseph Luft and Harry Ingham in 1955, while researching group dynamics at the University of California Los Angeles. The model was first published in the Proceedings of the Western Training Laboratory in Group Development by UCLA Extension Office in 1955, and was later expanded by Joseph Luft. Today the Johari Window model is especially relevant due to modern emphasis on, and influence of, 'soft' skills, behaviour, empathy, cooperation, inter-group development and interpersonal development. The Johari Window concept is particularly helpful to understanding employee/employer relationships within the Psychological Contract.

It basically Relates to Psychological Thinking of Humans.

Fig 11:



Step2: Taichi Model:Tai chi is an exercise that combines slow, graceful movements with meditation and breathing techniques. Because the body is constantly in motion, tai chi is sometimes called "moving meditation." Although tai chi has developed into an exercise for health purposes, it originated as a martial art in 12th-century China. Many practitioners believe that there is a vital energy flowing throughout the body, called qi (pronounced "chee") and that tai chi helps prevent the flow of qi from being blocked.

Research in breast cancer patients has shown that tai chi may help to increase:

- strength
- balance
- flexibility
- heart and lung function
- feelings of well-being

Research on tai chi in women with breast cancer

In a few small studies, tai chi was shown to improve heart and lung function, strength, flexibility, self-esteem, and quality of life in women who had had breast cancer.

A 2004 study at the Wilmot Cancer Center in Rochester, NY, assigned 21 women who had been treated for breast cancer to either 12 weeks of tai chi or 12 weeks of participation in a psychosocial support group, both for 1 hour, 3 times a week. The women who practiced tai chi showed significant improvements in self-esteem and quality of life when compared with the women in the psychosocial support group. According to researchers, tai chi may have more of a positive impact on self-esteem than the psychosocial support group because:

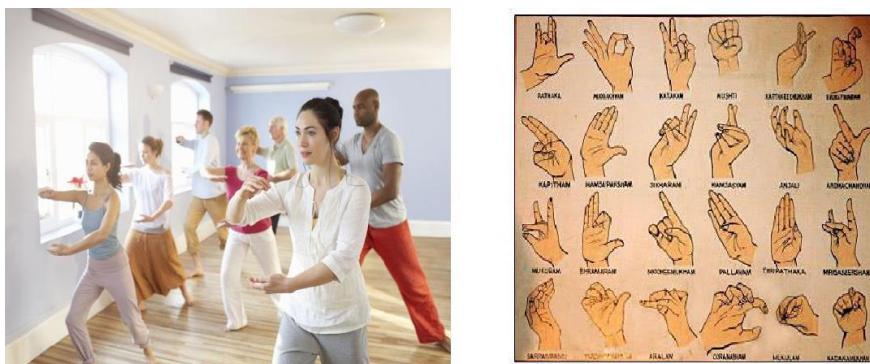
- The physical aspects of self-esteem might have more meaning for breast cancer survivors than for other groups of people.
- Since tai chi is a more active practice than participation in a support group, tai chi might help create a sense of being in control.

In a more recent Wilmot Cancer Center study published in 2006, 21 women who had been treated for breast cancer were randomly assigned either to practice tai chi or to participate in a psychosocial support group, both for 1 hour, 3 times a week for 12 weeks. This time, researchers studied the women's heart and lung function, muscular strength, and flexibility. While the women in the psychosocial support group showed improved flexibility, the women in the tai chi group showed improvements in all 3 categories, as well as a slight reduction in percentage of body fat.

Important things to consider before trying tai chi

Tai chi is a low-impact exercise and is considered to be relatively safe. However, as with any practice, there are precautions you should take if you've had breast cancer. If you're considering tai chi, here are a few things to keep in mind:

- **Tell your doctor.** Before starting tai chi, tell your doctor. It's particularly important to talk to your doctor if you've recently had surgery, if you haven't exercised in a while, or if you have osteoporosis or joint problems.
- **Start slow.** Gradually build up your tai chi experience. Learn how to position your body properly, and take your time. Overdoing it during practice can result in muscle strains or sprains.
- **Know when not to practice.** Don't practice tai chi immediately after a meal, if you have any type of infection, or if you're tired.
- **Know your limits.** If you're unable to stand for long periods of time, modified versions of tai chi can be done in a chair or bed. Talk to your instructor about other ways you can do tai chi.

Fig 12 :Taichi Mudra's**Step 3:Medical Chart Designed Based on Taichi and Johari Model:****Fig 12 :Mediacal Diet Chart**

Intake for avoidance: Tea contains polyphenol compounds, particularly catechins, which are antioxidants and whose biological activities may be relevant to cancer prevention.

Step 4:Supply chain management: If people follow the proper chain of our mentioned research we make sure the number of deaths can be reduces and even rural area can equally contribute for it as no heavy treatment is required to been followed if they maintain a proper strategy management of their health as they try to maintain for their Job's we will have less number of Deaths. People are aware of many solution but to apply when and how and why is more important in today's world as our Human Body is also a machine so it need a proper supply chain management.

Step 5:Experts Advice for Prevention rather cure

Treatment

Breast cancer prevention

- Get married once settled, by 26-27
- Have a child by 30 and breast feed the child

Eat a healthy diet with fiber, fresh fruits and vegetables and less fat

- Be active. Exercise regularly
- Avoid stress
- Be aware of a family history; more so, if there are more than 3 members of the immediate family

Awareness tests to detect breast cancer

- Breast self examination is the best tool that can be done by the individual without any difficulty.
- A regular clinical breast examination by a gynaecologist
- A mammogram at 40 as a baseline and every two years thereafter.
- With a family history, the first mammogram should be done at 35.

Cervical Cancers:

Prevention: Cervical cancer can often be prevented by having regular screening to find any precancers so they can be treated. Preventing precancers means controlling possible risk factors, such as:

- Delaying first sexual intercourse until the late teens or older
- Limiting the number of sex partners
- Avoiding sexual intercourse with people who have had many partners
- Avoiding sexual intercourse with people who are obviously infected with genital warts or show other symptoms
- Quitting smoking

IX] CONCLUSION: Through our Research Paper we have focused on major two factors of cancers i.e. Breast and cervical Cancer .We have made a strategic Study behind it as though many technology available and they are solution then too the number of deaths are not reduced its going on increasing but, through our research we have proved that death has decreased till 80% as many people are not aware of the strategy management to also be applied in our human body Our research has been implemented in many normal consumers home we have end results also. We are glad to say we are saving a life of a girl which even Doctor's are failing in today's World.But we will try to reach the end consumers soon so that we can save our Girls of the world

“Save Girl Save World”

REFERENCES

- <http://cancerindia.org.in/cp/index.php/know-about-cancer/statistics#breast-cancer>
- <http://cancerindia.org.in/cp/index.php/know-about-cancer/statistics#cancer-statistics>
- https://images.search.yahoo.com/search/images?fr=tightropetb&p=breast+and+cervical+cancer+death+statistics&fr2=p%3As%2Cv%3Ai&.bcrumb=YnxwTrlhPDH&save=0#id=6&iurl=http%3A%2F%2F4.bp.blogspot.com%2F8OrMJB1NpFI%2FUQLeXPzhs_I%2FAAAAAAAAAls%2F9sFoEGoYpJU%2Fs1600%2FBreast%2BCancer.png&action=click
- <http://timesofindia.indiatimes.com/life-style/health-fitness/health-news/Breast-cancer-Causes-prevention-and-awareness/articleshow/20457051.cms>
- <http://www.thehealthsite.com/diseases-conditions/cervical-cancer/001/>
- http://2016discounts.com/topic/20/Breast+Cancer+Treatments?utm_campaign=uTK46D5&utm_term=technology%20based%20treatment%20for%20breast%20cancer&utm_medium=b&g_ti=kwd-77721744355305&g_de=c&g_ci=287061313&g_ai=1243547667796481&utm_content=1&utm_source=bing

A STUDY ON THE INTERRELATIONSHIP OF ECONOMIC DEVELOPMENT AND ENTREPRENEURSHIP

Prof. Saraswathy Kumar & Prof. Dr. C. Vethirajan

BBI Department, Lords universal college, Goregaon west,

Mumbaisaraswathy.kumar@universal.edu.in 9987450817

*Department of Corporate seretaryship, Alagappa University, Karaikudi,
TamilNadu*

Abstract

Several dynamic forces, such as technological disruption, fluctuating economies or demographical changes, have brought new opportunities and threats for organizations, and transformed societies from all over the world. In order to cope with these shifting forces, governments, public and private organizations, and the public are more and more aware of the importance of entrepreneurship. Entrepreneurship is a multifaceted phenomenon, being analysed as a process, a resource or a state-of-being. According to the Schumpeterian view, the entrepreneurial process constitutes one of the key factors in the economic development of a country/region. However, researchers have expressed different views about the relationship between the stages of economic development and entrepreneurship during the time. The aims of the paper are to examine in brief the concepts of economic development and entrepreneurship, and to emphasize the role of entrepreneurship in economic development. The methodological approach is literature review. The paper provides a theoretical model that highlights some of the main factors involved in the relationship between entrepreneurship and economic development. More than ever in the history, economic development and entrepreneurship have become strongly interconnected.

Keywords: *Entrepreneurship, economy, opportunities, development*

I. Introduction: In the past decades, there has been a growing interest regarding the concepts of economic development and entrepreneurship. The story of the Indian entrepreneurship is filled with paradoxes. During the pre-colonial and colonial era, the entrepreneur was seen more as a trader-money lender merchant, bound rigidly by caste affiliations and religious, cultural and social forces ranging from the philosophy of fate to the system of joint family. Entrepreneurship as the present era understands was definitely not forthcoming from this social segment. Political & economic factors had an extensive effect on the entrepreneurial spirit. There were many issues that impact negatively on Indian entrepreneurship like Lack of political unity and stability, absence of effective communication systems, existence of custom barriers and oppressive tax policies, prevalence of innumerable currency system until around the third decade of the 19th century. Indian Entrepreneurship ruled by the community system in the Historical past. Brahmins were learned men who had assisted the kshatriyas (rulers) in the administration, vaishyas have performed trading and industrial productive activities and shudras engaged in an agricultural occupation. Also, the people were organized in a very simple type of economic and social system. In the way to implement this concept to modern entrepreneurship, it can compare with the villages are the organization and an entrepreneur is called as a craftsman. The independent India could claim to have created a conducive climate for spread of entrepreneurship. It is in this broad backdrop that the later evolution and growth of Indian entrepreneurship has to be located. Researchers have concluded that although “economic development theory can still be argued to lack a ‘general theory’ of entrepreneurship, one that could encompass a variety of development outcomes, progress has been made in extending the notion and understanding of entrepreneurship in economic development” (Naudé, 2008, p. 1). On the other hand, international organizations, governments and policy makers have shown a greater attention to the function fulfilled by entrepreneurship in generating economic development. Economic experts have abandoned their traditional approach to economic development based mainly on recruiting large companies with different financial and fiscal inducements. Today they are relying more on the small

and medium enterprises(SMEs) and new ventures than in the past. Entrepreneurship is spreading recognized by government officials throughout the world not only as "a key mechanism for enhancing economic development, particularly in regions where entrepreneurial activity was once vibrant and is now lagging", but also as "a good solution because it provides a relatively non-controversial way to increase the proverbial pie, creating jobs and enhancing per capita income growth" (Shane, 2005, p. 1). That is why "entrepreneurs need access to resources and markets to succeed, and this is where national policies play a vital role" (Kressel and Lento, 2012, p. 6). However, when it comes to know how the mechanism operates, little is known, either on how entrepreneurship can be best promoted or on how entrepreneurship influences economic performance (Wennekers and Thurik, 1999). Arising from the above discussion emerges the following question: What is the relationship between economic development and entrepreneurship? The aims of the paper are to examine in brief the concepts of economic development and entrepreneurship, and to emphasize the role of entrepreneurship in economic development. Also, our paper provides a theoretical model that highlights some of the main factors involved in the relationship between entrepreneurship and economic development. The methodological approach is literature review.

II. Definition: The term *entrepreneur* is defined as an individual who organizes or operates a business or businesses. Credit for coining this term generally goes to the French economist Jean-Baptiste Say. However, the Irish-French economist Richard Cantillon defined the term first in his *Essai sur la Nature du Commerce en Général*, or *Essay on the Nature of Trade in General*, a book published in 1755. William Stanley Jevons considered the "cradle of political economy". Cantillon used the term differently; biographer Anthony Breen noted that Cantillon saw the entrepreneur as a risk-taker while Say considered the entrepreneur a "planner". Cantillon defined the term as a person who pays a certain price for a product and resells it at an uncertain price:

making decisions about obtaining and using the resources while consequently admitting the risk of enterprise."The word first appeared in the French dictionary entitled "Dictionnaire Universel de Commerce" compiled by Jacques des Bruslons and published in 1723

"An entrepreneur searches for change, responds to it and exploits opportunities. Innovation is a specific tool of an entrepreneur hence an effective entrepreneur converts a source into a Resource." - Peter Drucker, Management Guru

III. Objectives of the Study:

1. To elucidate the history of entrepreneurship in India.
2. To analyze the role of entrepreneur in economic development
3. Understanding the role of entrepreneurship and entrepreneurs in the process of economic development

IV. Methodology of the Study: The data and information has been collected from secondary sources like magazines, business newspapers, journals, periodicals, reports, text books and websites. Lots of review of literature is done for the purpose of the study

V Theoretical perspectives on economic development and entrepreneurship: Understanding the role of entrepreneurship and entrepreneurs in the process of economic development requires the decomposition of the concepts. There are hundreds of definitions for the notions of entrepreneur and entrepreneurship. Ever since the first writings about entrepreneurship there has never been an accord over a definition of the concept. The central explanation lies in the fact that entrepreneurship represents a multifaceted phenomenon, being analysed as a process, a resource or a state-of-being (Naudé, 2013). During the time, the scholarly views of entrepreneurship have evolved into three main categories (Naudé, 2013): behavioral definitions (e.g., Schumpeter, Kirzner); occupational definitions (e.g., Evans and Jovanovic); synthesis definitions (e.g., Gries and Naudé). 438 *Sorin-George Toma et al. / Procedia Economics and Finance 8 (2014) 436 – 443*

In some ways, the entrepreneur has intrigued the researchers in social sciences in the same way in which the elementary particles challenged the physicists (Rogoff and Lee, 1996). The effect may be observed, but the thing is in itself evanescent and invisible. Just like the physicists, who study the traces of the particle action on the electronic microscope screen, the researchers from the entrepreneurship domain have examined its economic results: new enterprises, more jobs, new products invented and services offered. But when it comes to determining what exactly created these phenomena, very few experts agree with each other. The term 'entrepreneur' seems to have been introduced by R. Cantillon. In his opinion, the central component of the definition of the entrepreneur gravitates around risk assuming. Later, J.-B. Say stated that the entrepreneur shifts economic resources out of an area of lower productivity and moves them into an area of higher productivity. The progress achieved in understanding entrepreneurship is largely due to J. A. Schumpeter. He adopted a different approach, underlying the role of innovation. Entrepreneurs are not only innovators and, therefore, agents of change, but also coordinators of production. He suggested that entrepreneurship occurs under five conditions of newness: new goods, new production methods, new markets, new sources of materials, or new organizations

Growth of Entrepreneurship: The growth of entrepreneurship particularly in the small scale sector can be traced to the Second World War boom which brought many enterprising people from various walks of life including businessmen, artisans, etc., into the small industrial sector as entrepreneurs. During this period, quite a number of skilled workers established small firms using older machines and investing capital from private sources. During the post-independence period, India launched planned economic development programmes in all sectors of the economy including small industries. One of the steps taken to encourage indigenous entrepreneurship was to ban the imports of a large number of consumer and other goods. This created a big vacuum in the Indian domestic market. Some of the businessmen, traders, agents themselves became entrepreneurs, taking advantage of the prevailing market situation.

C.K.Prahalad (2008), Indian entrepreneurs seek domestic opportunities for serving around 400million people living below the poverty line. There is a need to focus on creating wealth rather than sharing wealth,|| —The poor represent an opportunity, a source for innovation,|| —It's a great innovation to be able to leapfrog the west,|| a company cannot be so profitable despite serving customers who are basically poor

VI. Relating entrepreneurship to economic development through a theoretical model: Entrepreneurship is important because it is the economic mechanism through which inefficiencies in economies are identified and mitigated (Baum et al., 2007). According to OECD (1998) "entrepreneurship is central to the functioning of market economies". The U.S. Small Business Administration (1998) went even further, to declare that "the crucial barometer of economic freedom and well-being is the continued creation of new and small firms in all sectors of the economy by all segments of society". Let us regard things in retrospection. When human society entered the 20th century the spotlights were on the 'big things' - 'big' used to be beautiful and respectable, or the political 'establishment'. 'Big' was the future. It provided a scale economy based on mass production which brought welfare to the people, if not exactly wealth. In this way, the Western democracies kept the ordinary man in his place. Those times bore their own professional elite: the managers (Burns, 2011). In most developed economies, the first two post-war decades represented a success for the great enterprise, considered the only one capable to conform itself to the code of the industrial society, expressed in six essential principles: standardization, specialization, synchronization, concentration, maximization and centralization. The small enterprise seemed doomed to remain the Cinderella of the economies, maybe even a brake on their way towards development. At the beginning of the 1970s, the literature started to refer to the role of the SMEs in the economy. There was sample evidence that economic activity moved away from large firms to small firms in the 1970s and 1980s.

But did this mean that the small companies, a David of business, had triumphed over the Goliath of the big enterprises? In fact, the small companies, the new companies and the entrepreneurs had always been there. Therefore, in the latter part of the past century the perception began to change. Schumacher (1973) asserted that the giant organizations and the growth of specialization would lead to economic inefficiency at the macroeconomic level, to pollution and to improper working conditions and offered as an alternative a system of intermediary technologies based on small production units. It seemed that the orthodoxy of the big enterprise had not brought mankind the economic success it had expected (Burns, 2011). In the 1980s stagflation and high unemployment caused a higher interest in the supply side economics and in identifying the factors determining economic growth and development. Simultaneously, the 1980s and 1990s witnessed a re-evaluation of the role of small firms and a renewed attention for entrepreneurship (Wennekers and Thurik, 1999). People started to value the importance of the SMEs. Around the 1980s the special contribution that the SMEs brought to the labor market began to be much more appreciated as more than 80% of all new jobs were created by small enterprises (below 500 employees) in the United States of America (USA). Since then this pattern has been kept until today. In the USA, the SMEs generate more than a half of the gross domestic product (GDP) and more than 50% of all the exports are carried out by companies with less than 20 employees. After being focused for years on massive investments and having courted the multinational companies, governments from Latin America realized that the SMEs are the true source of jobs. As the vast majority of companies (80-90%) are micro-enterprises, they have reduced the bureaucracy a lot to make sure that the requirements of the SMEs have been taken into account. As far as the Asian world is concerned, it is a well-known fact that some of the best performing economies in the world (e.g., Taiwan, Hong Kong), are deeply anchored in the small enterprises. More than 80% of the total number of Japanese employees is working in SMEs, where an enterprise hires an average of 9 employees, as compared with an average of 4 employees in the European Union (EU). In Germany, enterprises with fewer than five hundred employees produce two-thirds of the GDP, train nine out of ten apprentices, and employ four of every five workers. In recent years, entrepreneurship has constituted a major source for job creation and has contributed to economic 440 *Sorin-George Toma et al. / Procedia Economics and Finance 8 (2014) 436 – 443* growth, and to national prosperity. As a consequence, considerable efforts have been made in the attempt to understand the phenomenon. All over the world, researchers have analyzed behaviors and put forth hypotheses; the result was a rich and complex literature belonging to several schools, each with its own theory. The explanations which seem to very well fit a group of entrepreneurs are less suitable for another group. Entrepreneurship has to do with individuals, people with their own traits and actions (roles). Various roles of the entrepreneur can be distinguished in the business world. In order to express the connection between entrepreneurship and economic growth and development, two major roles of the entrepreneur can be singled out. The first has to do with 'new entry' and the second with 'newness' in general.

Firstly, the entrepreneur is the founder of a new business: "... someone who creates and then, perhaps, organizes and operates a new business firm, whether or not there is anything innovative in those acts". Secondly, the entrepreneur plays a more general innovative role in economic life: "... the entrepreneur as the innovator – as the one who transforms inventions and ideas into economically viable entities, whether or not, in the course of doing so they create or operate a firm" (Wennekers and Thurik, 1999). Thus, newness through start-ups and innovations are some of the most relevant factors linking entrepreneurship to economic growth. The traditional theories tended to suggest that entrepreneurship impeded rather than encouraged growth. Classical economics focused on optimising existing resources within a stable environment and treated any disruption, such as entrepreneurial new firms creating whole new industries, as "God sent" external forces. Schumpeter created the connection between entrepreneurship, innovation and growth. It stimulates competition by increasing

the number of enterprises. Whilst this increases growth in itself, it is a cumulative phenomenon because competition is more conducive to knowledge externalities- new ideas – than is local monopoly. In the earlier stages of economic development, the contribution of entrepreneurship is considered to be less important than in the later stages (Naudé, 2013). Moreover, entrepreneurship can be productive, unproductive or destructive (Baumol, 1990) in all stages, and, consequently, may affect economic development in a positive or in a negative manner.

VII. Conclusions: The focus of scientific research on the topic of economic development and entrepreneurship has evolved during the time. Both concepts have proved to be important subjects of study for scholars all over the world. Moreover, the relationship between economic development and entrepreneurship has gained a growing interest in explaining economic performance from one historical period to another. As an omnipresent aspect of human activity, entrepreneurship plays a key role in economic development. Today entrepreneurship is widely recognized both by academics and practitioners as a fundamental factor of economic development throughout the world. However, entrepreneurship may influence economic development positively as well as negatively.

References

- Global Entrepreneurship and Development Index*”, Edward Elgar Publishing, Chelthenham .352. *The Global Entrepreneurship and Development Index (GEDI)*, DRUID Conference, London, <http://www2.druid.dk/conferences/viewpaper.php?id=502261&cf=%2043>.p. 286.
- Global Entrepreneurship Monitor, 2012.GEM 2012 Global Report*, <http://www.gemconsortium.org/docs/download/2645>.
- Gries, T., Naudé, W., 2011. *Entrepreneurship and human development: A capability approach*, *Journal of Public Economics*, 3(1), pp. 216-224.
- International Economic Development Council (IEDC). *Economic Developmen Reference Guide*, p. 68, http://www.iedconline.org/clientuploads/Downloads/IEDC_ED_Reference_Guide.pdf.
- Kressel, H., Lento, T. V., 2012. “*Entrepreneurship in the Global Economy: Engine for EconomicGrowth*”, Cambridge University Press,
- Naudé, W., 2013. *Entrepreneurship and Economic Development: Theory, Evidence and Policy*, .C.K.Prahad, *Entrepreneurs to Explore domestic opportunities*, 2008.

DETERMINANTS OF MIND PROCESSING FOR SOLUTION OF A PROBLEM STRATEGICALLY

Abhijit Kumar Pathak

Assistant Professor and Corporate Behavioural Trainer, Department of Management,

Vidyalankar College of Information Technology Wadala, Mumbai

abhijit.pathak20@gmail.com Mobile. 7506466261

Abstract

Strategic thinking process is indispensable for major domain of management. Strategy is accumulative action plan for a long term impact. Problems are situation of process part of system analysis. Every problem is actual ambiguity of action in next step. Solving a problem require blend of chemistry of all the factors associated with the context. A smart mind will have blend to analyse all factors associated with a problem. The determinants mind process evaluates solution of a problem. The research is an attempt to understand what is required for a problem solving. Three distinct determinants are observed which are essential to find solution for problem in this research. In the research twenty senior management level executives have been rated on scale of three determinants. The reliability test has been made by self-assessment, consideration of view point of Human Resource Assessment and e-interview. Three determinants have been found positively correlated with problem solving. The three determinants: creativity, cognitive ability and ability to influence.

Keywords: Problem Solving, Strategic Management, Cognitive Ability, Creativity, Leadership, Mind Processing

Introduction: Problem solving is inevitable part of management but it has most complex path to trace its destiny. Problem solving accepts external factor which affects from or probably could affect problem and on the other hand it overall summation of the internal factors affecting it. Problem in management have different scenario with respect to situation in an organization and also variable of contingency also affects it. Among different methods of problem solving some prominent methods are considered to make baseline of the research. Heuristics are most commonly known as "rules of thumb," a term first thought to have been coined by James Durham in his book, "**Heaven upon Earth**," which was published in 1685. In it, Durham referred to "foolish builders, who build by guess, and by rule of thumb. Heuristic method is convenient mental shortcuts that you can use to narrow down your options when you're faced with several different choices, to ease your cognitive mechanism of brain, or to solve problems. Perhaps you're a hiring executive, and you may decide to dismiss any number of resumes that contain structure mistake. Being a grocery shop owner you have to make a cognitive guess about the amount of grocery you need to order every month. In both instances, you are using a heuristic method to meet your objective. Second method for problem solving is more projected to research determinants. Means-End Analysis was created by researchers Allen Newell and Herbert Simon in the late 1950s, published in the book, "**Human Problem Solving**." Newell and Simon were creating an effective problem-solving program for early computers, and Means-End Analysis was a direct result of this research. They named the tool "Means-End" because it helps you define the means needed to reach a desired end. Means-End Analysis might seem quite simplistic at first glance. However, when you begin using it, you'll find that it's a practical and useful method for solving simple problems. MEA is based on the most effective method of action between present state and desired state which is also solution to problem. In management solution to a problem is approaching a goal of desired result. It again needs a creativity to think and ration ability to formulate the best effective course of action. Another method of problem solving is The Productive Thinking Model was developed by author and creativity theorist, Tim Hurson. It was published in book, **Think Better.**" The model presents a structured framework for solving problems creatively. You can use it on your own or in a group. The model consists of six steps, as follows:

1. Ask "What is going on?"

2. Ask "What is success?"
3. Ask "What is the question?"
4. Generate answers.
5. Forge the solution.
6. Align resources.

These methods of problem solving involve application of creativity, cognitive ability and ability to influence. Not only for these models but for any model related to problem solving exercises the three determinants. In 1992, Finke proposed the "Geneplore" model, in which creativity takes place in two phases: a generative phase, where an individual constructs mental representations called pre-inventive structures, and an exploratory phase where those structures are used to come up with creative ideas. Honing theory, developed principally by psychologist **Liana Gabora**, posits that creativity arises due to the self-organizing, self-mending nature of a worldview. The creative process is a way in which the individual hones (and re-hones) an integrated worldview. Honing theory places emphasis not only on the externally visible creative outcome but also the internal cognitive restructuring and repair of the worldview brought about by the creative process. Cognitive ability is the acumen of acquiring information, gathering knowledge and understanding by rationality processing. The cognitive ability has origin from cognition which means thinking and awareness. Psychologist William James focused on the human learning experience in everyday life and its importance to the study of cognition. James' major contribution was his textbook **Principles of Psychology** that preliminarily examines factors of cognition like perception, memory, reasoning, and attention. Cognitive ability is thinking as processing of information. Ability to influence is one of the winning factors for effective solution of a problem. A problem is not only related to a person but to a team and solution is only possible by influence of problem solver on team. Ability of influence comprises of ability of persuasion, reflective rationality and systematic imbibing a pathway to all. Influence makes you get things done. It is conformity, affecting behaviour and opinion with skill and knowledge of able personality.

Methodology: The research is based on primary data collected through LinkedIn. The questionnaire for exemplifying problem solving ability is measured along with items for creative, cognitive ability and ability to influence. The items in particular questionnaire is limited to 12 so that respondents do not lose interest. Total 20 managers of high profile are selected. Reliability test for the response is confirmed by telephonic interview method. Sample size is restricted to the persons who get involved in strategic decision of the organization and they have minimum experience of 10 years in related field. Marketing being most challenging profile is selected for optimum result. The mean value is taken for each set of questionnaire for each of dependent and independent variables to find out correlation. Data analysis is performed through correlation method to explore relationship.

1	3	4	4	3
2	4	4	5	4
3	4	4	4	4
4	3	4	3	5
5	2	1	2	1
6	2	1	3	3
7	4	4	5	5
8	4	5	5	5
9	3	5	3	3
10	2	2	1	1
11	1	1	1	2
12	1	2	2	1
13	4	5	5	5
14	3	4	3	3
15	4	4	5	5
16	4	5	4	5
17	4	4	5	5
18	3	5	4	4
19	3	5	4	3
20	2	2	1	1

	Problem			Ability
	Solving		Cognitive	to
	Ability	Creativity	Ability	Influence
Problem Solving				
Ability	1			
Creativity	0.803685	1		
Cognitive Ability	0.895718	0.752426	1	
Ability to influence	0.868599	0.73777	0.871382	1

Finding and Result: The test statistic of the research has shown problem solving is positively correlated with the determinant factors. Creativity is positively correlated with problem solving by co-efficient 0.803, cognitive ability with 0.895 and ability to influence by 0.868. All the measurements are more than 0.5 that says it is highly correlated and positively correlated. It is not cause and effect study. While interview with respondents they said problem solving has involvement of these determinants on higher degree. Also different methods of problem solving described by other researcher have shown inclusion of the determinants directly. Creativity, cognitive ability and ability to influence are the important determinants for problem solving. If a personality has higher degree of the determinant that person will have better acumen to solve a problem. Solving a problem is much related with brain and brain needs certain ability to process information.

Conclusion: Management is incomplete without the art of solving a problem. It is indispensable for managers, executives and strategic profile to understand the art. The three determinants of problem solving as creativity, cognitive ability and ability to influence can be trained to the employees to obtain better and effective solution of a problem. The training on determinants can develop strategic way to solve a problem. A problem needs a creative ways to look for the steps and pathway. It must be cognitive otherwise it will not be effective. Cognitive ability has always long term impact and best think for optimum outcome. Ability to influence is essential for execution part of solution for a problem. A problem is not just solved by direction but it has to travel to evaluate contingency factors. The ability to influence supports for that and takes complete team together. The research inherently progressed towards developing strategic way to solve a problem.

Reference

The Goal by Brian Tracy, Book

Winning by Jack Welch, Book

Leadership by Swami Vivekananda, Book

Leadership report of McKinsey

Harvard Review

REVERSE MORTGAGE – A GOLDEN STICK FOR THE ELDERLY

Vivek Ramprakash Gupta

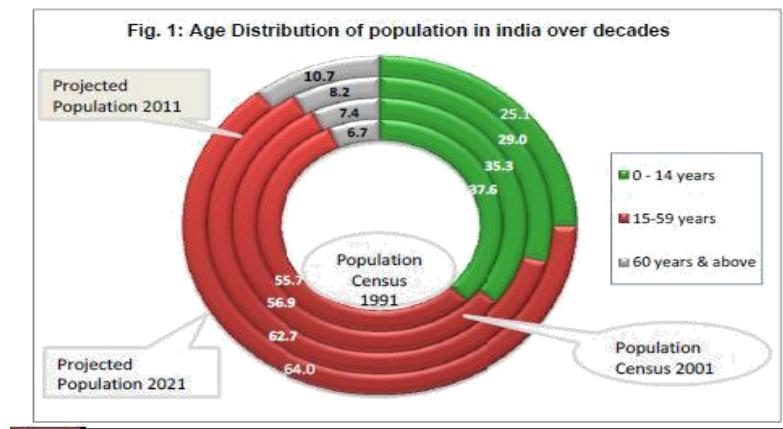
Assistant Professor, Department of Accountancy, Vidyalaknar School of Information Technology, Wadala (E) Mumbai 400037. Email – vivek.gupta@vsit.edu.in

Abstract

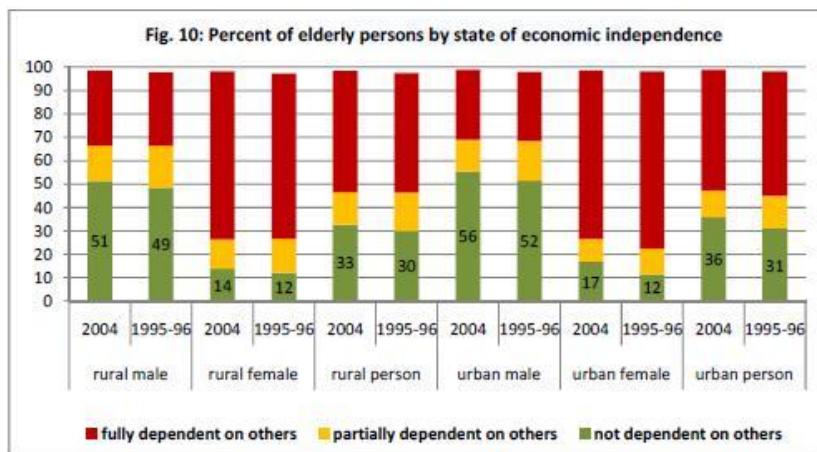
In India with majority of its population aged less than 30, the problems and issues of its grey population has not been given serious consideration and only a few studies on them have been attempted in our country. To reap the advantage of demographic dividend, the focus is mainly on the children and the youth and fulfillment of their basic needs for proper development. Also the traditional Indian society and the age-old joint family system have been instrumental in safeguarding the social and economic security of the elderly people in the country. However, with the rapid changes in the social scenario and the emerging prevalence of nuclear family set-ups in India in recent years the elderly people are likely to be exposed to emotional, physical and financial insecurity in the years to come. This has drawn the attention of the policy makers and administrators at central and state governments, voluntary organizations and civil society. This study focuses on the problem faced by elderly in India and the possible solutions for the same. The study is largely based on secondary data along with interview methodology.

Keywords: Reverse Mortgage , Elderly, Annuity , Retirement

Introduction: A quote in Hindi by Munshi Premchand comes to mind which says “*Budhapa Bachpan Ka Punaragaman Hota Hai*”, which means, old age is like the beginning of a new Childhood. And leaving the elderly all alone to fend for themselves, even with financial assistance, is like leaving a child alone. After all they have dedicated their lives for us. Can we not give a few moments of our lives to them? India will have another kind of a problem as despite of rapid and consistent economic growth, it will have a huge ageing population who may be far poorer than their counterpart in the West. In India, most of those who have worked in organized sector get pension and other retirement benefits after attaining the age of superannuation varying between 60 to 65 years. But for others, Government of India and State governments, at present, have very nominal old-age pension coverage. It varies from Rs. 75/- to 150/- in a month. In addition some other additional benefits for the elderly are also being provided by the Central and State Governments. But much is to be done as at the old age their medical expenses go up and dependency on children / relative goes up for physical, mental and economic support. Thus in India, though percentage wise greying is not very rapid, but due to its mammoth size planning for the elderly is a huge challenge for the policy makers. The problems faced by the females are more critical compared to that of men due to low literacy rate, customary ownership of property by men and majority of women being not in labour force during their prime age with only very few in the organized sector. Therefore, the policy for elderly may also keep a realistic achievable gender component. It is to be remembered that sensitizing the issue and deliberate public action can dilute some of the adverse consequences of ageing. Educating the mass with high investment in human resource development can overcome these problems up to a great extent. To develop requisite policy programmes for the elderly population, there is a need for a study of elderly persons on various aspects and initiate social, economic and health policy debate about ageing in India. But there is a serious dearth of datasets and analyses to identify the emerging areas of key concern and immediate intervention. If the population is divided into three major age groups i.e. 0-14 , 15 -59, 60 & above we find that the share of children's (0 -14 years) is decreasing from 37.6% in 1991 to about 25.1% in 2021 (projected). On the other hand the population in the age group (15 – 59 years) and the aged 60 years and above are increasing. The grey population which accounted for 6.7% of the total population in 1991 is expected to increase to 10% by the year 2021.

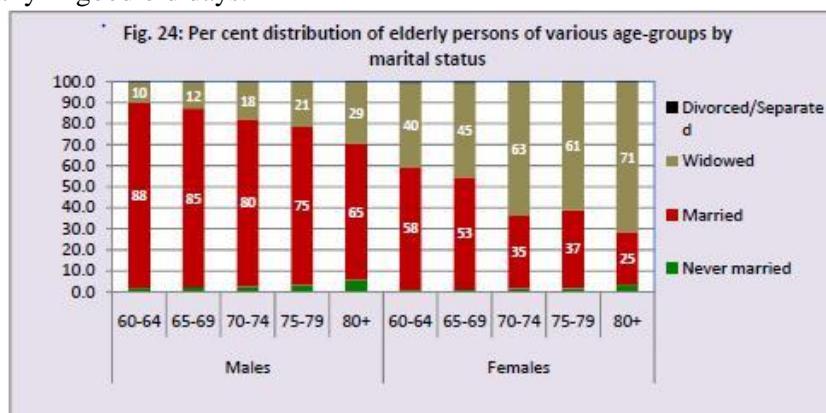


About 65% of the aged have to be depended on others for their day to day maintenance. The situation was worse for elderly females with about only 14 to 17 % are living economically independently in rural & urban areas respectively while the rest are dependent on others either partially or fully. The elderly males are much better off as majority of them (51% to 56%) are not dependent on others for their livelihood.



From the marital status of elderly an interesting stats emerges . In all the age groups the percentage of elderly females married were remarkably lower than percentage of elderly males married. As for example in the age group of 60 -64 88% of the males & only 58% of the females were married and 40% of the females were widowed. Similarly for the other higher groups also such huge difference between the men & women were quite apparent

This may be due to the prevalent practice of men getting married to women of relatively much lower age groups especially in good old days.



Review of Literature

Agewell – The Hindu Business Line October 3 2016: India, known for its ‘demographic advantage’ of a burgeoning young population, also faces a “demographic disadvantage” with every tenth person of over 1.2 billion population crossing the age of 60, and a majority (65 per cent) of them either facing a financial crisis or financially dependent on others. As per a new survey, only one-third of the elderly population in India feels “financially secure”, with a majority (41.43 per cent) citing pension/family pension as its main source of income, followed by interest on savings or rent from property. Four-fifths of the 15,000 rural and urban respondents in the nationwide survey of the financial status of the elderly by Agewell Foundation, on the occasion of the International Day of Older Persons on October 1, said their major financial problems were related to medical and healthcare. Overall, however, the study found that the net worth value of older persons had increased, primarily due to the sharp increase in real estate prices over the past two decades. However, this often also led to “younger family members often manipulating their decisions”, the survey said, adding that “despite good net worth value, a majority of 70+ elderly lead lonely/neglected and miserable lives.

Also, older persons suffer from a lot of medical, social and financial problems even after having good net worth value, because there are hardly any dedicated and elderly sensitive schemes for senior citizens, said the survey. “Financially insecure old people expect social security, free healthcare and subsidies, so that they can lead a comfortable and respectable life in old age, at the same time older people with sound financial health look forward to risk-free investment schemes, so that they can earn good returns to meet financial needs in old age,” said Agewell Foundation’s founder Chairman Himanshu Rath. To make life comfortable and respectable for this section, the survey called for coverage under existing and/or new social security schemes, life and medical insurance for longer years, covering properties, movable/immovable under general insurance schemes and dedicated healthcare facilities.

Viji Athreye – Maps of India October 14 , 2014: A Time To Fight Back The elderly should not lose the most important part of a human life and that is Dignity. They need to know that the Government of India has introduced various schemes for their benefit. Some of them being-

The **National Housing Bank** - has introduced a ‘reverse mortgage’ scheme under which a senior citizen owning a house in India can avail of a steady monthly stream of income against mortgage of the house. The senior citizen remains the legal owner and occupies the house throughout his or her lifetime, without repayment of the loan. Regulations are to be initiated for creation of mortgage guarantee companies. Exclusive health insurance schemes for senior citizens offered by select Insurance Companies.

The **Maintenance of Parents and Senior Citizens Bill of 2007** - This bill facilitates care for the maintenance of aged parents, establishment of old homes, provision of medical care and protection of life and property of senior citizens.

The elderly should once again educate themselves, this time about the rights and privileges that they have.

Declining Joint Family and Emerging Crisis in Old Age Security -R.Vaidyanathan

Percentage distribution of households by household size and number of aged persons 60 years and above per household

Number of aged	Household Size							
	Total	1	2	3	4	5	6	7+
	Total							
At least one aged 60 +	100.0	5.3	9.9	7.8	10.0	14.0	14.4	38.5
1	100.0	7.5	7.8	8.0	11.2	16.0	15.1	34.4
2	100.0	0.0	15.8	7.4	7.3	9.5	13.0	47.0
3	100.0	0.0	0.0	8.9	6.0	6.7	9.1	69.3
4+	100.0	0.0	0.0	0.0	4.8	3.9	4.4	86.9

China's "Godfather of real estate" pitches Reverse Mortgage to Sceptical Elders

SUI-LEE WEEDEC. 26, 2016 New York Times

The apparatchik turned businessman, who now runs a Chinese [private equity](#) firm, argues that it is not practical for retirees to live on slow-growing pension benefits while home prices have soared over the past two decades. "Under these circumstances, participating in the house-for-pension plan can be regarded as an important option for China's elderly to improve their living conditions and live better in their later years," he said.

Problem Area: The life expectancy in India has been rising steadily in the last few decades. However, so have the costs of medical treatment. For senior citizens, who have a lack of regular income or financial support from children, this could lead to a financial crisis. Further, gone are the days when the elderly lived with their sons and daughters, depending on them for their amenities and medical needs.

Suggestions & Recommendations: The reverse mortgage, introduced by the Union Government in 2007, is an answer to such issues faced by senior citizens, giving them a life of dignity.

What is reverse mortgage?

Mr. Sharma, a central government retiree, has been living with his wife in an independent home for the last 35 years. His two sons, both settled in New York, have no intention of moving base to India. Husband and wife, well past in their sixties do not wish to live with their sons in a foreign country. Mr. Sharma, a heart patient and his wife a diabetic, have a substantial monthly medical expenditure. Not satisfied with his pension, and not wanting to depend on his sons, for household expenditure as well as medical care, he approached his bank for a solution. The bank advised him to opt for Reverse Mortgage, to ease his monthly expenses.

In simple terms, a reverse mortgage is the "opposite" of a conventional home loan. A reverse mortgage enables a senior citizen to receive a regular stream of income from a lender (a bank or a financial institution) against the mortgage of his home. The borrower (i.e. the individual pledging the property), continues to reside in the property till the end of his life and receives a periodic payment on it.

How does a reverse mortgage work?

When the home is pledged, its monetary value is arrived at by the bank, on the basis of the demand for the property, current property prices, and the condition of the house. The bank then disburses a loan amount to the borrower in the form of periodic payments, after considering a margin for interest costs and price fluctuations. The periodic payments also known as reverse EMI are received by the borrower over fixed loan tenure. With each payment, whether monthly or quarterly, the equity or the individual's interest in the house decreases.

A reverse mortgage is an ideal option for senior citizens who require regular income, or if the property is of illiquid nature for some reason.

General guidelines for reverse mortgage

- The Reserve Bank of India has formulated the following guidelines for a reverse mortgage.

- Maximum loan amount would be up to 60% of the value of the residential property.
- Maximum tenure of the mortgage is 15 years and minimum is 10 years. Some banks are now also offering a maximum tenure of 20 years.
- Option of monthly, quarterly, annual or lump sum loan payment.
- Property revaluation to be undertaken by the lender once every 5 years.
- If at such time, the valuation has increased, borrowers have the option of increasing the quantum of the loan. In such a case, they are given the incremental amount in lump-sum.
- Amount received through reverse mortgage is a loan and not income. Hence it will not attract any tax. However, a borrower is liable to capital gains tax, at the point of alienation of the mortgaged property by the mortgagee for the purposes of recovering the loan.
- Reverse mortgage interest rates could be either fixed or floating. The rate would be determined by the prevailing market interest rates.

Eligibility Criteria for reverse mortgage

- House owners above the age of 60 years. If spouse is a co-applicant, then she should be above 58 years.
- Owners of a self-acquired, self-occupied residential house or flat, located in India. The titles should be clear, indicating the prospective borrower's ownership of the property.
- Property should be free from any encumbrances.
- The life of the property should be of minimum 20 years.
 - Property should be the permanent primary residence of the individuals.

Settlement of a reverse mortgage: A reverse mortgage loan becomes due when the last surviving borrower dies, or if the borrower chooses to sell the house. The bank first gives an option to the next of kin to settle the loan along with accumulated interest, without sale of property. If the next of kin is unable to settle the loan, the bank then opts to recover the same from the sale proceeds of the property. Any extra amount, after settlement of the loan with accrued interest and expenses, through the sale of the property, will be passed on to the legal heirs. If the sale proceeds are lower than the accrued principal plus interest amount, the loss is borne by the bank. This loss could happen in cases where the banks original estimation is not in line with the real estate market movement.

Other Highlights of reverse mortgage

- Prepayment of loan: Borrowers could prepay the loan at any time during the tenor of the loan, at no prepayment penalty or charges.
- Outliving the tenure of the loan: If the borrower outlives the tenure of the loan, he could continue to stay in the house. The lending institution may however cease the monthly payments. Settlement of the loan is done only after the borrower's death.
- Death of one of the spouses: If one of the spouses dies, the other can still continue living in the house. Only on death of both, settlement of the loan takes place.
- Foreclosure: The loan could be foreclosed by the lender if
 - The borrower has not stayed in the house for a continuous period of one year.
 - The borrower has not paid property taxes and fails to insure the home
 - If the borrower declares himself as bankrupt.
 - If the mortgaged property is donated or abandoned by the borrower.
 - If the borrower makes changes in the residential property, that could affect the security of the loan for the lender. This could be renting out part or entire house, addition of a new owner to the house's title or creating further encumbrance on the property.

If the government under statutory provisions, seeks to acquire or condemn the residential property for health or safety reasons

Drawbacks of reverse mortgage

- Lengthy documentation procedures: Banks require various documents of the property. For a senior citizen this procedure could be tedious, complicated and difficult to understand.
- Fixed monthly amounts: The monthly payouts are fixed. There is no provision to increase this amount in case of an emergency or contingency.

Popularity of the scheme in India

Though introduced in 2007, Reverse Mortgage has not gained much popularity in India for the following reasons.

Inadequate marketing of the product. Recent reports indicate that many of the senior citizens are not aware of the existence of such a product.

- Many banks which offer Reverse Mortgage have capped the maximum loan amount available for individuals to a maximum amount of Rs. 50 lakhs to 1 crore.
- Children have resentment for a reverse mortgage as they see it as giving away their family home or legacy.

Reverse Mortgage is a relatively new concept in India. It would take some time for a change in mind set of individuals to accept it. As a financial tool, Reverse Mortgage is ideal to augment a senior citizen's income in his years ahead. Despite all its shortcomings in India, it could make good the shortfall in one's pension or income to live a quality life ahead. Reverse mortgage loan (RML) was introduced in India in 2007 with a lot of expectations for the asset-rich-but-cash-poor senior citizen. But eight years down the line, planners, RML counsellors and bankers unanimously say that there is very little demand for the product. "One of my clients' children who lives overseas asked me about reverse mortgage. It was discussed as an option for this client because his children were familiar with the product in the West. In India, people don't opt for it," said Nisreen Mamaji, certified financial planner, and founder, Moneyworks Financial Advisors. RMLEA is a reverse mortgage backed with annuities and hence it works like a pension product that pays for lifetime. If you opt for RMLEA, you will get the money from a life insurer as the lender gives the loan amount to an insurance company. The insurer then annuitises the corpus and gives you pension money for the rest of your life.

Why RMLEA is superior: In a regular RML, lender will make a payout till the end of the tenure. For instance, say your property value is Rs.1 crore and loan-to-value (LTV) ratio is 90%. At an interest rate of 12.75%, monthly payout will be Rs.8,218 for 20 years. Say you survive this tenure, though you can still stay in the house, regular income from the lender will stop. In RMLEA, however, the LTV is lower at 60-75% depending on the borrower's age. Here the lender makes a one-time payment to an insurer. The insurer works out a monthly payment based on actuarial calculation that it will pay for life. Usually annuities are offered at an interest rate of 6% a year. The payout in RMLEA is much higher than RML. So, for a property worth Rs.1 crore, with an LTV of 60%, the lender will give the insurer Rs.60 lakh in lump sum. The insurer will calculate a monthly payout for life. And the payout is likely to be around Rs.25,000 per month.

Lack of interest: RML failed to take off due to three reasons: emotional attachment to a property, lack of understanding of the product and lack of awareness. "We have seen a lukewarm response for reverse mortgage. In India, the tradition is to pass on the property to the next generation. Hence, people are not keen on using their property for their day-to-day needs," said Jairam Sridharan, president-retail lending and payments, Axis Bank Ltd. Axis Bank offers both regular RML and RMLEA. He also mentioned that people find the product complicated unlike a plain vanilla home loan. Furthermore, people prefer other options to reverse mortgage. Senior citizens who are asset-rich-but-cash-poor don't opt for reverse mortgage. Instead, they prefer to sell their bigger house and relocate to a smaller one, and use the proceeds from sale of the older house for their day-to-day expenses. However, bankers and financial planners say that RML may take-off in the next 10-15

years. But for now if you are looking for regular income and don't have enough savings or investments, reverse mortgage could be an option.

Conclusion: To conclude Elderly in India are ignored to a Large extend. Its time when we seriously start thinking about them, if not in social or emotional context but from business point of view. Elderly as a customer class has a lot of potential to explore economically but unfortunately zero to very less research has been done in this regards. Its time we accept them as one of the potential customer class and start creating products as per their requirement. One of the biggest innovation in financial services for elderly has been the acceptance of Reverse Mortgage by our Banking system but unfortunately the same has failed to gather momentum due to reluctance from both the bankers and potential customers due to various reasons. It has been universally agreed that reverse Mortgage is one of the best Tools to guarantee an Independent financial life for Elderly's. It's the need of the hour for the banks in India to aggressively pursue reverse mortgage as a product by educating the elderly regarding the benefits of the same.

Bibliography

Census report 2011

Hindustan Times

IGIRD

APPLICATION OF THE TEACHING OF THE JESUS CHRIST TO THE STRATEGIC MANAGEMENT AND PROBLEM SOLVING

Prof.Vinod Adagle

R.D.National College, Mob: 8108764905 / 9819072170, E-mail:vinodadagle@rediffmail.com

Abstract

Strategic management and problem solving is one of the important ongoing activity of the managers in the corporate world. New ideas are immersing day by day to solve the problems. In the literature of management since the beginning of the corporate world ideas play an important role to solve the problems. These ideas may be adopted from the culture or the traditional literature or any religious scripture. This paper presents a Briefing on the development of the concept of management decision and it Illustrates summarized models of decision-making process. The author's Contribution to the paper is a conceptualization of the decision making process On the basis of the teachings of the Jesus Christ and its application to the corporate world. The model takes into Account the decision making as a long term problem solving and is a useful tool to Managers in any field.

THE STORY OF 666- First Century: “11Then I saw another beast coming up out of the earth, and he had two horns like a lamb and spoke like a dragon. 12And he exercises all the authority of the first beast in his presence, and causes the earth and those who dwell in it to worship the first beast, whose deadly wound was healed. 13 perform great signs, so that he even makes fire come down from heaven on the earth in the sight of men. 14And he deceives those who dwell on the earth y those signs which he was granted to do in the sight of the beast, telling those who dwell on the earth to make an image to the beast who was wounded by the sword and lived. 15He was granted power to give breath to the image of the beast, that the image of the beast should both speak and cause as many as would not worship the image of the beast to be killed. 16He causes all, both small and great, rich and poor, free and slave, to receive a mark on their right hand or on their foreheads, 17and that no one may buy or sell except one who has the mark or the name of the beast, or the number of his name.18Here is wisdom. Let him who has understanding calculate the number of the beast, for it is the number of a man: His number is 666”.

Christ already mentioned the digitalization in the bible: “Those dwell on the earth “ ”buy or sell’ - According to scripture (bible), nobody can sell or buy on the earth .This prophecy requires the fulfillment of the Globalization.Globalization means free flow of money, capital from one country to another.Critics on WTO are that it is for “free trade”. Through digitalization it is possible to trade throughout the earth.

Trading will be universal concept: “on Earth”- the term shows that now in the world everything is available .A person can get it anything from anywhere. World has become global village.

Demonetization is through digitalization: Demonetization is only possible because of digitalization .if there is no digitalization demonetization cannot happen .Demonetization requires sound financial system, well developed technology and matured administrative system.It can be occur in the 21st century itself and was not possible in any century.

Dependency of Nations: Country depends on another country for trade purpose (raw material and finished goods).every country is interconnected with each other because of trade .It has become the chain like concept.all will be affected if there is problem in major countries

Trade need to be there in the world: Trade was there in-between the countries before Christ also. Arab Countries were involved in were trades international trade before Christ and after Christ also. In 15th century, competition for “making colonies “started among the European countries like UK,FRANCE ,SPAIN ,PORTUGAL etc.these countries entered into the different continental for

making colonies .but they entered into it as traders .so trade become universal aspect. Due to the industrialization, these countries developed. Same thing was followed by other developing countries like India .so trade spread. Now due to the immense development of transportation technology, communication technology, computer technology, and competition among the companies, trade spread everywhere in the world and the WTO make trade free among the 160 member countries due to which world become global village for trade-everything is available anywhere from anywhere .It is just the matter of “click” and product or service you can purchase.

STRATEGY AND PROBLEM SOLVING FOR INDIA

Application of above problems for Indian economy.

CONCLUSION

India is going through the process which is fulfilling the prophecy of the bible.

THE STORY OF BRITISHERS (Entered India-Divided)-17th century

Britishers came in india as the traders but they became rulers of the INDIA

THE STORY OF WTO (IMF Case- Special reference to INDIA)-20th century

THE STORY OF DEMONETIZATION –A way towards the bible prophecy-21st century

Demonetisation startedChrist already mentioned the digitalization in the bible Also it is mentioned as this will be universal Demonetization is through digitalizationGlobalization, Global Village, Interconnectivity of nation, Dependency of Nation, Trade Requirement,

Following are the goals of WTO:This is the number which is declared in the book of revelation, in the bible which is called the number of Anti-Christ .It is mentioned in the Bible that this number is the number everybody has to bear either on the hand or on the forehead .Nobody can sell or purchases anything without this number. It is the case for digitalization which is mentioned in the bible 2000 year ago. The prophecy in the BIBLE already mention about the cashless payment in the future.

IMPACT OF SURROGATE ADVERTISEMENT ON YOUTH OF INDIA

Anindita Banerji

Assistant Professor Department of Commerce and Management Vidyalankar School of Information and Technology, Wadala (E)

Abstract

Surrogate advertising is done when the original product is not allowed to advertise itself on mass media. In India, alcohol brands are not allowed to advertise on television, so alcohol marketing firms use surrogate products like mineral water, soda, juice and music CDs to remind consumers of the brand name. The brand name of the alcohol product is the same as the surrogate product. Intention behind such advertisement is to popularize the whisky, liquor products. In the context of Alcohol and tobacco marketing, the only way to succeed to present a surrogate advertisement which reminds regular consumers as well as creating curiosity among potential consumers. One essential function that surrogate advertising does is that of brand recall and not necessarily an exercise in increasing sales. The product shown in the advertisement is called the 'surrogate.' The surrogate could either resemble the original product or could be a different product altogether, but using the established brand of the original product. These advertisements call the attention of viewers towards the liquor products. The sponsoring of sports/cultural/leisure events and activities using a liquor brand name also falls in the category of surrogate advertising. This paper critically examines the various factor of surrogate advertising like evolution of surrogate advertising, their impact, and emerging trends in surrogate advertising, increased awareness about it. It also studies the continuously changing scene of different aspects of surrogate advertising and its impact on the youth of India.

Keywords: Surrogate Advertising, Legislative Measures, Advertising Standard Council of India(ASCI) code.

INTRODUCTION: Surrogate advertising is a form of advertising that is used to market commodities such as alcohol, cigarettes, tobacco and narcotic products, which cannot be advertised directly under applicable Indian laws. The term "surrogate advertising" refers to duplicating the brand image of one product extensively to promote another product of the same brand. Surrogate products like playing cards, soda, water, bottles, apple juices etc. often being used to promote liquor and tobacco related brands normally do not actually exist or even if they exist, they are manufactured as "limited edition" i.e. in very small numbers. The concept of surrogate advertising is believed to have started from UK, where the housewives protested against "Surrogate advertisements" as they felt that those ads were weaning their husbands away from them. In order to fight this resistance, the liquor manufacturers started advertising harmless products like fruit juices, sodas under the same brand name as that of popular liquors. Currently tobacco and liquor ads are banned from TV and radio in India. The print media allows only tobacco ads with statutory warning of "cigarette smoking is injurious to health." The Government of India amended Cable TV Act in order to curb advertisements, which promoted directly or indirectly the promotion, sales or consumption of cigarettes, other tobacco products like gutkha, pan masala, liquors like wine, alcohol, any other intoxicants, breast milk substitution products like feeding bottle or infant food. This led to increase in surrogate advertisements of liquor and various tobacco-related products. Surrogate advertisements mostly play the role of reinforcing brand recall rather than inducing consumption and help major tobacco and liquor brands to be alive in the minds of the consumers. The advent of Surrogate Advertising in India was during 1994 / 1995 after Cable Television Networks (Regulation) Act 1995 read with Cable Television Networks Rules, 1994, came into force, which banned direct liquor, tobacco and cigarette advertisements. Reason for banning advertisements of these commodities is because their usage is harmful for the health of people. However, since these commodities generate high revenues and a way had to be found to make the commodities available to general public without directly advertising and circumventing law, the said concept "Surrogate Advertising" came into being and various reputed companies started advertising "surrogate products" such as audio cassettes, drinking water, soda,

juices, etc., under the same brand name under which they advertised prohibited products / commodities. Advertising is done through these surrogate products simply to ingrain the brand names of alcohol in the mind of consumers , which would increase sales of commodities and ultimately result in generation of revenue to the companies. Few examples from tobacco industry of companies engaged in Surrogate Advertising in India are: Red & White Bravery Awards, Wills Lifestyle Clothing Line, Four Square White Water Rafting and Godfrey Phillips Bravery Awards. Few Examples from liquor industry of companies engaged in Surrogate Advertising in India are: Bagpiper Soda, Cassettes & CDs, Haywards Soda, Royal Challenge Golf Accessories & Mineral Water, Kingfisher Mineral Water, White Mischief Holidays, Smirnoff Cassettes & CDs, Imperial Blue Cassettes & CDs and Teacher's Achievement Awards.

LITERATURE REVIEW: In the context of Alcohol and tobacco marketing, the only way to succeed is to present a surrogate advertising which remind to regular users as well as creating curiosity among non-users Evaluation of Surrogate Advertising and Its Legal Measures with Special Reference to India. (Chandrashekhar Singh).Surrogate advertising can be an issue which needs to be understood with respect to India's legal and ethical environments of Promotions. (Kruti Shah & Alan D'Souza 2009) Surrogate advertising is commonly seen for liquor and tobacco products whose advertising is banned in many countries. (Ajit Arun Parulekar 2005) This paper examines the impact of surrogate advertising of alcohol brands on their brand equity (as defined by Keller 1993).The purpose of the study was masked through the experimental design in order to minimize manipulation effects. In the main study, subjects were sequentially exposed to television ads, one ad at a time, of the 20 brands used in the pre-test. The findings of the paper.support the notion that brand equity will be least affected in consumers with prior consumption experience, ad exposure or brand knowledge of the alcohol brand. (Dr. S. G. Khawas Patil, Laxmikant S. Hurne 2011) studied the effectiveness of surrogate advertising and found few whisky brands are powerfulin market like Royal Stag / Officers Choice / McDowell's as their advertisements are more creative and powerful.

ACTION TAKEN BY MINISTRY OF INFORMATION AND BROADCASTING MINISTRY

In June 2002, the Information and Broadcasting Ministry of India ("I&B Ministry") ordered television broadcasters ("TV channels") to ban telecast of two surrogate ads of liquor brands, McDowell's No. 1 and Gilbey's Green Label. The I&B Ministry also put other brands like Smirnoff Vodka, Hayward's 5000, Royal Challenge Whiskey and Kingfisher beer on 'watch list. The surrogates used by these advertisements ranged from audio-cassettes, CDs and perfumes to golf accessories and mineral water. By August 2002, I&B Ministry banned 12 advertisements. TV channels, including Zee, Sony, STAR and Aaj Tak were issued show-cause notices asking them to explain their reason for carrying surrogate liquor advertisements. The channels were asked to adhere strictly to the Cable Television Networks (Regulation) Act 1995 and Cable Television Networks Rules, 1994. As a result, Zee and STAR stopped telecasting surrogate advertisements; Aaj Tak and Sony soon followed suit.

RELEVANT LEGISLATION AND REGULATIONS IN INDIA

The Cable Television Networks (Regulation) Act 1995 ("CTNA") and Cable Television Networks Rules, 1994 ("CTNR") -

- On February 25, 2008, Government issued a notification amending CTNR to the effect that Rule 7(2)(viii)(a) read as follows – "No advertisement shall be permitted which promotes directly or indirectly production, sale or consumption of cigarettes, tobacco products, wine, alcohol, liquor or other intoxicants." The said 2008 notification amending CTNR, completely closed the window of opportunity for Surrogate Advertising provided to liquor and cigarette companies.

However, subsequently on February 27, 2009, I&B Ministry issued a notification amending the said Rule to allow advertisements of products which shared a brand name or logo with any tobacco or liquor product with several caveats : (i) the story board or visual of the advertisement must depict

only the product being advertised and not the prohibited products in any form or manner; (ii) the advertisement must not make any direct or indirect reference to prohibited products; (iii) the advertisement must not contain any nuances or phrases promoting prohibited products; (iv) the advertisement must not use particular colours and layout or presentations associated with prohibited products; (v) the advertisement must not use situations typical for promotion of prohibited products when advertising the other products.

- I&B Ministry issued a directive on June 17, 2010 (“Directive”), to all TV channels to comply with Rule 7(2) (viii) (a) of CTNR and that the notification dated 27.02.2009 cannot be cited as an excuse to telecast advertisements of products in violation of Rule 7(2) (viii) (a) of CTNR, as the guidelines under the amended rule have not been framed. I&B Ministry further directed the TV Channels to including news and current affairs channels to stop carrying any advertisement of a product on their Channel that uses brand name or logo, which is used for cigarettes, tobacco products, wine, alcohol or other intoxicants, and strictly follow the Rule 7(2) (viii) (a) of CTNR. Any violation of this Directive and provision ASCI Code shall entail stringent action in future including suspension or prohibition of broadcast.

□ Advertising Standard Council of India (“ASCI”): ASCI which is a voluntary self-regulatory body, has through its Code laid down basic guidelines prohibiting Surrogate Advertising. Section of Chapter III (dealing with the promotion of products that are harmful or hazardous to society at large) states - “Advertisements for products whose advertising is prohibited or restricted by law or by this Code must not circumvent such restrictions by purporting to be advertisements for other products the advertising of which is not prohibited or restricted by law or by this Code....”. The ASCI Code also lays down factors to be considered in deciding whether an advertisement is a direct or indirect one.

3. Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (“COTPA”)

Section 5(1) of COTPA states that “No person engaged in, or purported to be engaged in the production, supply or distribution of cigarettes or any other tobacco products shall advertise and no person having control over a medium shall cause to be advertised cigarettes or any other tobacco products through that medium and no person shall take part in any advertisement which directly or indirectly suggests or promotes the use or consumption of cigarettes or any other tobacco products.” Further, Rule 2 of the COTPA Rules 2005, clearly sets out that the use of a name or brand of Tobacco Products for marketing, promoting or advertising other products would constitute a form of “indirect advertisement”.

4. Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Rules, 2004:

Section 2 (e) of COTPA Rules states that “indirect advertisement mentioned in section 5(1) of the Act means (i) the use of a name or brand of tobacco products for marketing, promoting or advertising other goods, services and events; (ii) the marketing of tobacco products with the aid of a brand name or trademark which is known as, or in use as, a name or brand for other goods and service; (iii) the use of particular colors and layout and/or presentation those are associated with particular tobacco products; and (iv) the use of tobacco products and smoking situations when advertising other goods and services.”

DECISION OF SEVERAL OF COURTS OF INDIA

a) The Indian Government passed COTPA in 2003, before becoming a party to the FCTC (Framework Convention on Tobacco Control). In 2005, the Ministry of Health and Family Welfare exercised the powers granted to it by COTPA by promulgating rules on tobacco advertising. These rules included restrictions on advertising allowed at point-of-sale, such as requiring a health warning, limiting the size of the advertising, and prohibiting lighting or pack images. The rules also included a definition of “indirect advertising” (Rule 2(e) of the COPTARules). The tobacco industry challenged

the Rules in the Mumbai High Court, and the Court issued an interim order staying the implementation of the Rules on March 27, 2006. In 2013, a petitioner alleged that interim stay on Rule 2(e) of 2005 Rules resulted in rampant “surrogate advertisements” of tobacco products and thus the Supreme Court banned surrogate advertisement of tobacco products by lifting a seven-year-old interim order of the Bombay high court on 22nd July 2013.

- b) A PIL was filed against the IPL team “Royal Challengers” due to its obvious connection with “Royal Challenge”, a liquor brand promoted by the same company. However, Supreme Court pointed that since the team was named “Royal Challengers” and not “Royal Challenge”; only those people who are alcoholics / drinkers will be attracted by it and the non-drinkers / non-alcoholics will not be affected. The Court exercised its judicial acumen in this decision as it liberally interpreted the concept in light of the facts before it.
- c) A public interest litigation had been filed in the Delhi high court on September 3, 2014 seeking a ban on surrogate advertising of tobacco and liquor products. However, this matter is still under discussion

CURRENT STATUS: It is very evident from the aforesaid existing law and regulations and recent Supreme Court judgment in 2013 that any direct or indirect form of advertising of the prohibited products in India is not permitted in India. Hence, Surrogate Advertising, being an indirect form of advertising prohibited products is also not permitted in India.

Objectives of the Study

- To recognize the different types of surrogate advertisements
- To recognize the impact on the youth
- To understand the perception of surrogate advertisements
- To analyze the ethicality of surrogate advertisements.
- To recognize the media that companies use to display surrogate advertisements

RESEARCH METHODOLOGY: Research methodology is a systematic process of identifying and formulating by setting objective and method of collecting, editing and tabulating to find a solution. On defining the objective of the project, a plan was developed to gather information most efficiently. Decisions were taken on the data sources, sampling plan, and research tools. Research is essentially a systematic enquiry seeking facts through objective verifiable methods in order to discover the relationship among them to deduce from them broad principles of laws.

Type of study: As the characteristics of a certain group the certain variables are to be determined, a descriptive method is chosen for this study. The descriptive research portrays accurately the characteristics of a particular individual, situation or a group. The descriptive research includes surveys and fact enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs, as it exists at present. The major characteristics of this method is the researcher has no control over the variables, we can only report what has happened or what is happening.

SOURCE OF DATA

- Primary Data: it includes data collected directly from the young students and customers in Mumbai City so as to meet the direct requirements of the investigation at hand.
- Secondary Data: it includes data from the magazines, websites and reference books.

Method

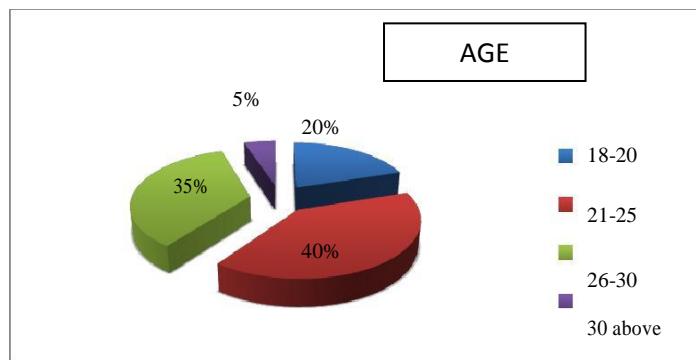
- The research is done through a survey in the form of an interaction with about 15 main questions as point of reference. The interaction is done with the target group at different places in the city

LIMITATIONS OF STUDY

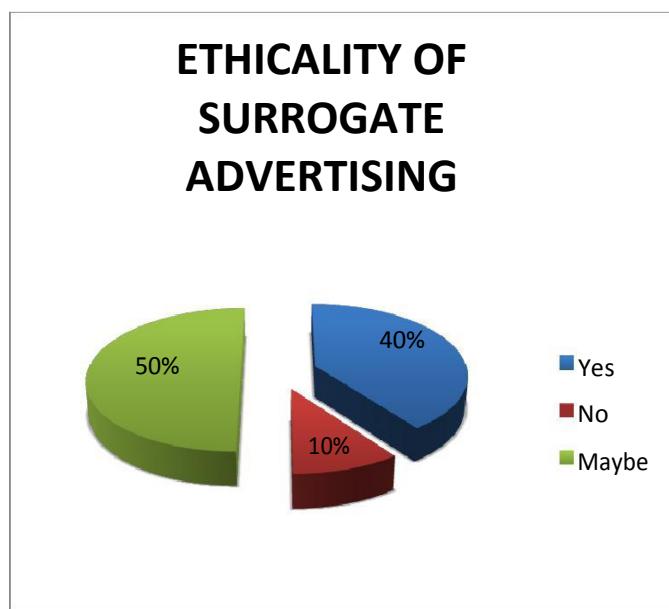
- Personal bias of the respondents might have entered into the response
- The size of respondents is very limited
- Time constraints

The sample size of 100 respondents is small and doesn't generate sufficient detailed information.

- Many refused to answer the questionnaire due to busy schedules.

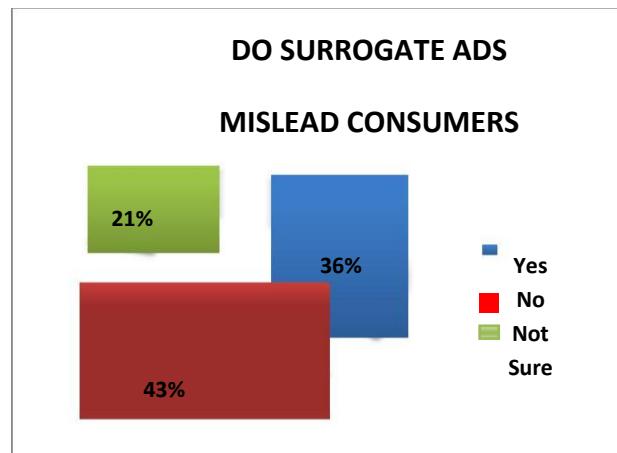


Inference it can be inferred from the chart above that majority of the respondents belong to the 21-25 category and the least number of respondents belong to the 30 and above category



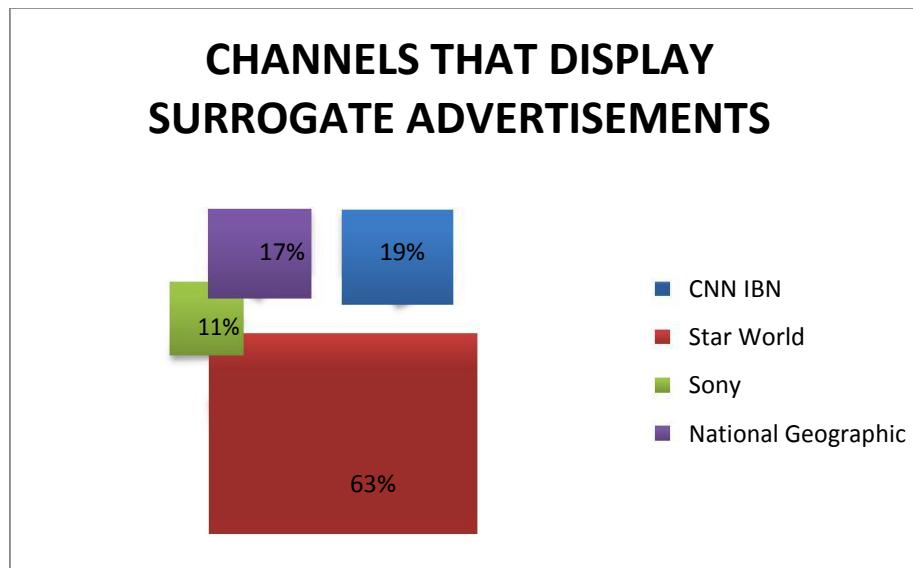
Inference

It can be inferred from the above chart that 50% are unsure if surrogate advertising is ethical and 10% don't think its ethical.



Inference

It can be inferred from the chart above that 43% think surrogate advertisements mislead consumers and 21% don't think they mislead consumers



Inference

It can be inferred from the chart above that Star World (63%) has the highest views of surrogate advertisements and Sony (11%) has the lowest

SUMMARY OF FINDINGS

- It can be seen that majority of the respondents belong to the 21-25 category and the least number of respondents belong to the 30 and above category.
- It can be observed that 55% have heard of the term and 45% have not.
- It can be seen that 70% surrogate advertising, is used by alcohol companies and 1% is used by financial companies
- It can be observed that 40% of the respondents consider Advertising as an important tool and 10% consider Personal selling as an important tool.
- It can be inferred that 40% consider social media as an effective marketing tool and 10% as personal selling.
- It can be observed that 50% are unsure if surrogate advertising is ethical and 10% do not think it to be ethical.
- It can be seen that 70% advertising media used for surrogate ads is Television and 5% use newspapers.
- It can be inferred from the above chart that 73% agree and 27% disagree to banning of ads.
- It can be observed that 45% think that TVC has maximum impact and 14% think that newspaper has least impact.
- It can be seen that 43% think surrogate advertisements mislead consumers and 21% don't think they mislead consumers.
- It can be observed that 80% that surrogate ads are meant for liquor companies and 20% disagree
- It is seen that Bacardi has the highest likes (55%) and Royal Stag has the lowest (5%)
- It is seen that TVC (51%) is the most popular method of advertising and the lowest is Newspapers (5%)
- It can be observed that Star World (63%) has the highest views of surrogate advertisements and Sony (11%) has the lowest
- It can be observed that TV (74%) has the most view and the least is Newspapers (1%)

- It can be observed that the advertisements (44%) is the most popular method by which the products are remembered and Music cd's (1%) is the least popular.
- It can be seen that Pan Parag (33%) is the most remembered advertisement and the least remembered ad is of Rajani Ganda (16%).
- It can be observed that the ads are remembered most due to the creativity (55%) and least due to the celebrity (11%)
- 19. It can be seen that 55% agree that surrogate ads are required in India and 16% don't.
- It can be seen that 44% think its creative and 3% think its educative.
- It can be observed that 27% think that surrogate ads should be banned in India and 73% don't.
- It can be observed that 70% agree that sales will reduce and 30% disagree.
- It can be observed that Priyanka Chopra (33%) is the highest and Saif Ali Khan (14%) is the lowest to star in surrogate ads
- It can be seen that 50% agree and 6% disagree on surrogate ads being banned in India
- It can be observed that Blenders Pride (35%) has the best ad and Absolut Lounge (7%) is the least.

SUGGESTIONS

- The company should practice ethicality in surrogate ads as the target audience for such products is the youth.
- They should avoid creating a “Cool” impression about alcohol and tobacco so as to not further encourage the youth to consume such products.
- Companies need to target the older age group through the ads instead of the young boys and girls.
- The effective surrogate advertisements will create a considerable change in the companies’ performance; hence there is a huge opportunity for the company to develop more advertising strategies to increase the company’s performance
- The Government has created laws to restrict the advertising of alcohol and liquor but the youth are exposed to it through surrogate ads. So the Govt. and the Advertising Standards Council of India should be stringent regarding the portrayal of the youth in advertising.
- It is the moral obligation of celebrities to not to mislead the youth of the country. So celebrities in surrogate advertisements can be fined and questioned about their involvement in promotion of alcohol.

CONCLUSION: Though the television broadcasters are regulated by I&B Ministry and their failure to comply with the aforesaid Directive and/or any other guidelines of I&B Ministry will expose them to stringent action of I&B Ministry including cancellation / suspension of their broadcast. It has been observed that the manufacturing companies and brands of such prohibited products continues to promote their prohibited products by way of Surrogate Advertising on billboards, hoardings, out of home media properties and other street furniture(s), in spite of advertising on such foregoing properties being regulated by ASCI Code. Thus, there is a greater need for more stringent action to be taken by the Government in respect to Surrogate Advertising of prohibited products in all forms of mode, media and format, until the such products are completely banned from being manufactured and sold in India.

BIBLIOGRAPHY AND WEBLIOGRAPHY

*EVALUATION OF SURROGATE ADVERTISING AND ITS LEGAL MEASURES WITH SPECIAL
REFERENCE TO INDIA* by Chandrashekhar Singh

Surrogate Advertising : A Successful Marketing Strategy for Liquor,

Whisky products Author : Dr. S. G. Khawas Patil [Yeshwant Mahavidyalaya, Nanded] Laxmikant S. Hurne [Yeshwant Mahavidyalaya, Nanded]

Ajit Arun Parulekar (2005), " Surrogate Advertising and Brand Equity ", Consumer Personality and Research Methods 2005 Conference Dubrovnik, Croatia, September 20-24, 2005.

- Dr. S. G. Khawas Patil, Laxmikant S. Hurne (2011), "Surrogate Advertising: A Successful Marketing Strategy for Liquor, Whisky products", Indian Streams Research Journal, Vol - I, ISSUE - V [June 2011] : Commerce.
- George E Belch, Michael A Belch, Keyoor Purani(2010), "Advertising and Promotions-An Integrated Marketing Communications Perspective", Special Indian Edition-7th Edition, Tata McGraw Hill, 2010, pp- 881,893
- HRIDAY (Health Related Information Dissemination Amongst Youth),2008, New Delhi, in Consultation with Ministry of Health and Family Welfare, Government of India, " Tobacco Control Laws A Resource Manual ",(New Delhi, India) First Edition. January 7, 2008 |
- HRIDAY (Health Related Information Dissemination Amongst Youth), 2009,New Delhi, " Tobacco Control Laws : A Resource Manual ",(New Delhi, India) Second Edition: May 10, 2009 | 6. HRIDAY (Health Related Information Dissemination Amongst Youth), 2010,New Delhi, " Tobacco Control Laws : A Resource Manual ", (New Delhi, India) Third Edition: August 20,2010 |
- Kotler, Philip. (2000). Marketing Management.10th Ed. New York: Free Press. 9. Kruti Shah, Alan D'Souza (2011)"Advertising and Promotions-An IMC Perspective", Tata McGraw Hill, 2011, pp 935- /News Broadcasters Association, 5th Annual Report 2011-2012, New Delhi, India.
- Ramaswamy V.S. and Namakumari, S. (2002). Marketing Management.3rd Ed. New Delhi: Mac Millan India Ltd.
- Telecom Regulatory Authority of India (TRAI) Recommendations on Restructuring of Cable TV Services 25th July 2008 Mahanagar Doorsanchar 13.Bhawan Jawahar,New Delhi. | 12. www.ccsenet.org/journal.html | 13. www.trai.gov.in |
- <http://abcbreakingnews.blogspot.in/2011/07/2-indian-brands-in-top-10-alcohol.html?m=1> |
- http://articles.timesofindia.indiatimes.com/2002-07-15/india-business/27298503_1_surrogate-advertising-mineral-water-surrogate-promotional-methods |
- http://articles.timesofindia.indiatimes.com/2009-03-14/india/28031616_1_surrogate-advertising-i-b-ministry-products |
- <http://articles.timesofindia.indiatimes.com/keyword/surrogate-advertising> | 18. <http://gbr.sagepub.com/content/10/1/33.abstract> |
- http://indiankanoon.org/doc/1327029 |
- http://indiankanoon.org/doc/1809429 |
- <http://indiankanoon.org/doc/1989453>
- http://indiankanoon.org/doc/454661 |
- http://mib.nic.in/writereaddata/html_en_files/content_reg/PAC.pdf |
- http://www.academicjournals.org/AJBM |
- <http://www.acrwebsite.org/search/view-conference-proceedings.aspx?Id=6476> |
- http://www.apan.pt/media/97249/aef_digital_marketing_and_advertising_to_children.pdf
- <http://www.buzzle.com/articles/types-of-advertising-appeals.html> |
28. <http://www.cpr2005.info>
- . [http://www.docstoc.com/docs/48591169/The-Cable-Television-Networks-\(Regulation\)-Act-1995-The-Cable-Input=unfair%20trade%20practice](http://www.docstoc.com/docs/48591169/The-Cable-Television-Networks-(Regulation)-Act-1995-The-Cable-Input=unfair%20trade%20practice) |
- <http://www.livemint.com/articles/2011/11/23210054/Boom-time-for-country-liquor.html> |
- <http://www.mbakool.com/business-articles/marketing/1359-surrogate-to-survive-surrogate-marketing.html> 34.
- <http://www.mondaq.com/india/x/192428/advertising+marketing+branding>
- <http://www.nbanewdelhi.com/pdf/Annual%20Report%202011-12.pdf> |
- http://www.tribuneindia.com/2013/20130123

START-UP IN INDIA: A NEW BUSINESS PERSPECTIVE

Ms. Rohini Sankalp Madavi

Assistant professor, Department of Commerce, M.L.Dahanukar College of Commerce, Vile Parle (E), Mumbai, Email: rohinimadavi@gmail.com, Phone: 9870121689

Abstract

India is a large country with large population which means great potential market, at the same time it also leads to heavy pressure on employment. Making job available to such a huge population will require time, hence there is a need for self-employment. A great way to solve the problem of unemployment is to boost start-up. Start-up is an entrepreneurial venture which is typically a newly emerged, fast-growing business that aims to meet a marketplace need by developing or offering an innovative product, process or service. This paper intends to explore the main difficulties faced by startups in India, and discuss the financing resources of startups in India.

Keywords: Startup, India, self-employment.

Introduction: A startup company or startup or start-up is a young company that is just beginning to develop. Startups are usually small and initially financed and operated by a handful of founders or one individual. These companies offer a product or service that is not currently being offered elsewhere in the market, or that the founders believe is being offered in an inferior manner. In the early stages, startup companies' expenses tend to exceed their revenues as they work on developing, testing and marketing their idea. As such, they often require financing. Startups may be funded by traditional small business loans from banks or credit unions, by government sponsored Small Business Administration loans from local banks, or by grants from nonprofit organizations and state governments. Paul Graham says that "A startup is a company designed to grow fast. Being newly founded does not in itself make a company a startup. Nor is it necessary for a startup to work on technology, or take venture funding, or have some sort of "exit". The only essential thing is growth. Everything else we associate with startups follows from growth."

Unemployment Rate in India: A survey by the British Council has shown that 51% of companies hire only from the top 20 Indian institutions, and less than a quarter of these firms hire only from the top 10 in any discipline."(Economic Times). While about 39 per cent of the graduates from foreign universities are considered ready for the job, only about 14 per cent students from Indian universities are considered suitable for jobs." Unemployment Rate in India decreased to 4.90 percent in 2013 from 5.20 percent in 2012. Unemployment Rate in India averaged 7.32 percent from 1983 until 2013, reaching an all time high of 9.40 percent in 2009 and a record low of 4.90 percent in 2013. Unemployment Rate in India is reported by the Ministry of Labour and Employment, India. One out of every three persons in the age group 15 to 29 years who have completed at least their graduation has been found to be unemployed in the report on „Youth employment-unemployment scenario,2012-13“ which is based on a survey by the Labour Bureau in Chandigarh. Moreover, the survey found that the unemployment rate among the persons who cannot read and write any languages or are considered illiterate was the lowest with 3.7 per cent without work in the 15-29 age groups. Under such circumstances, some graduates try to find a way out for themselves and choose to start their own business, thus to reduce the employment pressure. In recent years the self-employment consciousness among college students are increasing and the students are less likely to rely on parents or schools or wait for opportunities. Instead, they tend to take initiative to look for new chances for themselves

Challenges:

World Bank's Report: Doing Business

- India is ranked 130th out of 189 economies on the ease of doing business, 133rd on the ease of trading across borders and 157th on the ease of paying taxes.
- India is ranked 155th in case of starting a business
- On an average, Indian businesses need to make 33 tax payments annually with around 243 hours spent to prepare and pay taxes in a year
- In contrast, China requires just nine tax payments annually, while the US doesn't trouble its taxpayers more than 11 times annually for tax payments
- Among South Asian economies, India made the biggest improvement in business regulation, increasing its distance to frontier score

Main Problems Faced by Startups in India:

1) The Imperfect Education System and Conservative Lifestyle the education system is one of hindrance for startups. In college, students are usually trained with advanced techniques but lack of marketing, sales and operational ability and leadership skills needed to advance their own enterprises. In addition, conservative lifestyle also contributes as one of obstacles. As a culture of family remains, family remains skeptical to change and prefer options that are able to provide a steady income rather than engaging risk. This places pressure on the budding entrepreneur who fall victim to the dichotomy of providing for the family instead of following some "whimsical" dream.

2) Lack of Support Networks and Entrepreneurship Ecosystem One of the major challenges is that there is severe shortage of startup support networks and entrepreneurship ecosystems. In many western countries, there are special institutions serve as incubators, startup accelerators, startup competitions for entrepreneurs to put their ideas to test and obtain necessary guidance. In India, incubators, startup accelerators, and startup competitions are slowly making their way into the first tier cities, but there truly are not enough to go around. As a result of this shortage, many startups fail at the "idea" stage of their business. The ecosystem usually does not directly provide funding to startups; they just serve as platforms that link investors and entrepreneurs so that entrepreneurs can obtain necessary funding to test out their ideas. The lack of these facilities makes it more difficult for entrepreneurs to find investors. In return, investors are more difficult to find entrepreneurs as well. Even if entrepreneurs are able to find investors, they will face an entirely different set of challenges. Indian culture inherently does not promote entrepreneurship. Conversely, it encourages stability, employment at large state-owned or private organizations and, above all, teaches people to be risk averse. Even if young Indian individuals have intention to start their own business, their family usually places a considerable amount of negative pressure on them to forget entrepreneurship and look for a "stable job" instead.

3) India lacks enough angel investors to fund start-ups Unlike the West, India does not have an adequate number of angel investors who can fuel the growth of the country's thriving start-up ecosystem, industry body Nasscom has said. "For a successful start-up ecosystem there is a need for enough angel investors who can support budding entrepreneurs from an early stage. But this is not happening in India and there is a serious lack of it," Nasscom Vice-President Rajat Tandon told PTI. "High net-worth individuals and corporate executives, among others, should come forward and participate in this growth story," he said. A recent report by Nasscom had said India ranks third among global start-up ecosystems, with more than 4,200 new-age companies. Tandon said, "The case is very different in countries like the US. People are just waiting to invest in good companies. We should also have something like that." "Mainly, investors (in India) are afraid because there is a high risk of failure in these investments and also there is a lack of policy on such investments," he added. "Why will investors put money in such companies? They need tax benefits and a number of other things to put in their money. We have already written about these things to the Government and I am sure we can expect something by the year-end," he said. In his Independence Day speech, Prime

Minister Narendra Modi had announced a new campaign „Start-up India; Stand up India“ to promote bank financing for start-ups and offer incentives to boost entrepreneurship and job creation in the country. “At Nasscom, we are not only encouraging investors but also asking people to mentor start-ups. Like someone has a design business, they can help start-ups develop UIs and guide them in the process. In return they take some equity,” he said. “And there are people like Ratan Tata and Azim Premji, who are making a slew of investments and helping these young entrepreneurs. They are the inspiration,” he said. Ratan Tata has invested in a number of companies including Ola, Snapdeal, Paytm, Urban Ladder, and Bluestone. Wipro boss Azim Premji has funded companies such as Mynta and Amagi, among others, through his investment arm Prenji Invest.

4) Human Talent Compared to large mature enterprises, small startups are in an exponentially more difficult dilemma and encountering much severe challenging in recruiting due to the reason that it cannot pay high salary to its employees or offer any career development opportunities aside from building their business from the ground up. What is worse is that working for a startup in China is far less glamorous than working for a startup in the west due to culture differences. It is a disaster for a company who needs to execute on their business plan with minimal errors to just survive the month.

Scope of growth: Inspite of all the obstacles there is scope of growth in future as government has taken number of initiatives.

1) Make in India In September 2014, Prime Minister Narendra Modi introduced a big initiative “Make in India” to promote the manufacturing sector by promoting companies to invest in the sector. The intent of the campaign is to attract foreign investments and encourage domestic companies to participate in the manufacturing thereby contributing to the growth story. The government also took various steps to build a favourable environment to do business in the country. For example, an online system for environment clearances, filling income tax returns and extension of validity of industrial licenses to three years have been put in place. 1. The government increases the foreign Direct Investment limits for most of the sectors 2. Protection of the intellectual property rights of innovators and creators by upgrading infrastructure, and using state-of-the-art technology Digital India This is an initiative led by the Indian government to ensure that government services are made available to every citizen through online platform. In July 2015, the PM announced the Digital India initiative that aims to connect rural areas by developing their digital infrastructure. This translates into a huge business opportunity for startups. E-Commerce companies in India are planning to break into India’s rural market as a part of the government’s Digital India initiative. In September 2015, PM Modi visited Silicon Valley, US and had meetings with a number of founders of technology firms and industry leaders such as Satya Nadella and Sundar Pichai to talk about his ambitions of developing a better startup ecosystem According to NASSCOM startup report 2015, every year more than 800 tech startups are being set up in India. By 2020, a projected 11,500 tech-startups are going to emerge and will employ around 250,000 people. **Standup India** The Prime Minister also aims to build systems for enabling startups and wants to make the country as a number one destination for startups. In August 2015, he announced a new campaign “Standup India” to help startups with bank funding and encourage entrepreneurship among the young Indians. He also requested all 1.25 lakh bank branches to fund at least one startup founded by tribals and dalits.

2) Standup India: On 6th January 2016, the Union Cabinet has given approval to Standup India campaign which aimed at promoting entrepreneurship among women and scheduled castes and tribes. Some of the salient features include: • Loans under the scheme would be given for greenfield projects in the non-farm sector, • Intention of the scheme is to facilitate at least two such projects per bank branch, • The scheme is expected to benefit at least 250,000 borrowers in 36 months from the launch of the Scheme. It also plans to ease out the existing regulatory regime for startups and is considering extending tax incentives to them. The Department of Industrial Policy and Promotion

(DIPP) is currently working around a clear definition for startups to ensure that the regime is available to businesses.

3) Digital India This is an initiative led by the Indian government to ensure that government services are made available to every citizen through online platform. In July 2015, the PM announced the Digital India initiative that aims to connect rural areas by developing their digital infrastructure. This translates into a huge business opportunity for startups. E-Commerce companies in India are planning to break into India's rural market as a part of the government's Digital India initiative. In September 2015, PM Modi visited Silicon Valley, US and had meetings with a number of founders of technology firms and industry leaders such as Satya Nadella and Sundar Pichai to talk about his ambitions of developing a better startup ecosystem. According to NASSCOM startup report 2015, every year more than 800 tech startups are being set up in India. By 2020, a projected 11,500 tech-startups are going to emerge and will employ around 250,000 people. Standup India The Prime Minister also aims to build systems for enabling startups and wants to make the country as a number one destination for startups. In August 2015, he announced a new campaign "Standup India" to help startups with bank funding and encourage entrepreneurship among the young Indians. He also requested all 1.25 lakh bank branches to fund at least one startup founded by tribals and dalits. Standup India: On 6th January 2016, the Union Cabinet has given approval to Standup India campaign which aimed at promoting entrepreneurship among women and scheduled castes and tribes. Some of the salient features include:

- Loans under the scheme would be given for greenfield projects in the non-farm sector,
- Intention of the scheme is to facilitate at least two such projects per bank branch,
- The scheme is expected to benefit at least 250,000 borrowers in 36 months from the launch of the Scheme. It also plans to ease out the existing regulatory regime for startups and is considering extending tax incentives to them.

The Department of Industrial Policy and Promotion (DIPP) is currently working around a clear definition for startups to ensure that the regime is available to businesses

4) Financial assistance In his Union Budget speech for 2015-16, Finance Minister Arun Jaitley announced government's plan to set up Micro Units Development Refinance Agency (MUDRA) Bank and a Credit Guarantee Fund with a refinance capital of INR 20,000 cr and INR 3,000 cr. •

In April 2015, the government launched Mudra Bank to boost the growth of small businesses and manufacturing units - The newly Bank would provide a credit facility of up to INR 50,000 to small businesses, loan of up to INR 5 lakh to little bigger businesses and loan of up to INR 10 lakh to the MSME sector MUDRA Scheme: On 6th January 2016, the Union Cabinet has given approval.

5) Startup Exchange The SEBI announced a new set of listing norms for startups, including e-Commerce ventures, planning to raise funding from listing on stock exchanges. These new norms will provide relaxations in disclosure related requirements, takeover and Alternative Investment Fund regulations for IT, data analytics, intellectual property, bio-technology or nano-technology companies.

6) Self-utilisation and Talent Utilisation (SETU) The government is planning to set up a mechanism called SETU, under the newly formed NITI Aayog, to provide technical assistance and incubation to startups. In 2015 Union Budget, Finance Minister, Arun Jaitley, has set aside INR 1,000 crore for support startups.

Conclusion: Doing business is not an easy task. To be successful one needs to be focused and positive about the business ideas. Having an correct aptitude for research can also be of great use to not only retain in the business but also succeed. The nation is very supportive for the start-up; the only thing required for it to be successful is support of youth.

References

grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/grant_thornton-startups_report.pdf
http://www.ijstm.com/images/short_pdf/1448976924_243D.pdf
wikipedia.org/wiki/Startup_company

ROLE OF CORPORATE COMMUNICATION IN CRISIS MANAGEMENT

Mrs. Booma V Halpeth & Mrs Pushbham Shivkumar

*Assistant Professor, the SIA College of Higher Education Dombivli (e) 9967030340
vibha_halpeth@yahoo.co.in*

*Assistant Professor the SIA College of Higher Education Dombivli (e) 9930039868
shivpush@rediffmail.com*

Abstract

Crisis is inseparable part of any organisation. Crisis can be a turning point for an organisation as it may result in the betterment of the organisation if it is able to handle it efficiently. Organisation must use crisis as an opportunity for developing insights about their performance. During Crisis organisation should ensure that the stakeholders are given proper information about the situation and the measures that are being taken by the organisation to overcome the crisis. Maintaining continuous communication with the stakeholders especially during crisis goes a long way in building and retaining relationships. Communication builds and maintains image, goodwill and credibility. Corporate Communication is an imminent part of an organisation which plays a vital role in protecting and rebuilding the image of the organisation during the crisis. The advent of technology has brought a lot of changes in the way communication takes place within and outside the organisation. During crisis technology has been found to play a positive as well as negative role in either rebuilding or tarnishing the image. This paper focuses on three major organisational crisis and the role of Corporate Communication in overcoming and rebuilding the faith and trust of the stakeholders.

Keywords: Crisis management, Technology, Media, Stakeholders, Corporate image

Introduction: Crisis is an unexpected turn of events that disrupts the normal functioning of the organisation. It sends the organisation out of gear and the organisation need to undertake measures to protect the image and retain the credibility or rebuild the trust. In this regard, the Public Relations play a very prominent role. The communication that is made by the PR department during the crisis will determine whether it is going to build or the break the relationship with the stakeholders. This paper examines three such cases where the corporate communications has played a strong role in addressing the concerns of the stakeholders and the resultant effect.

Objectives

- To understand the role of communication during crisis
- To analyse the different tools used by the companies for communication during crisis

Research Methodology: This study is a case study method where the news articles regarding 3 major crisis that shook the Indian market and how these firms used PR communication to handle them. The information has been collected from different sources like internet, Mint and other newspapers and the same has been analysed and interpreted.

Scope of the study: This study gives an insight into the actual history of the cases and the events surrounding it and has opportunity for future research

Limitations of the study: The study has been done using secondary research method due to paucity of time.

Discussions and findings

Case Study 1 – Cadbury Dairy Milk

Cadbury has dominated the Indian chocolate market as it holds more than 70% of the total share of the market. It has enjoyed a good reputation among stakeholders. But it was disturbed because of worm controversy on October 2003, just a month before Diwali. The worm controversy resulted in Cadbury's brand image taking a beating and had taken a toll on Cadbury's bottomline. The Food and Drug Administration commissioner received complaints about infestation in two bars of Cadbury Dairy Milk. (The crisis erupted after certain Cadbury chocolate bars were discovered to be infested

with worms). Within three weeks the news was spread and the company's credibility was under intense scrutiny. Sales volume came down drastically in the first 10 weeks, which was the festival season; retailer stocking and display dropped, employee morale – especially that of sales team – was shaken. The challenge was to restore confidence in the key stakeholders and build back credibility for the corporate brand.

Rebuilding trust and Image: Instead of taking any short term measures, Cadbury used this opportunity to take action and rebuild the brand image and trust of the people. They planned and launched project 'Vishwas' which educated retailers and wholesalers on storage and other aspects apart from educating customers. They had also taken special care for packing and decided to communicate the measures it had taken to safeguard quality standards.

Building Credibility: Simultaneously they focused on media to gain back their brand image and in order to add credibility to its pitch, they took recourse to Amitabh Bachhan's deep baritone. With Bachhan they also launched their new positioning by catchy new Mantra "kuch Meetha ho Jaaye" bringing in the Indian traditional way of celebrating joyous occasion with sweets. The commercial did wonders. The company had spent a huge amount for endorsement and the recovery began in March 2004. So they were able to position themselves in the market and claimed that consumer confidence was back. The reason behind the Cadbury's success was that it took immediate and effective measures to overcome the crisis and managed it by utilizing the sources in proper manner. Cadbury's case could be considered as a sweet recovery from crisis. Finally they build back credibility for the corporate brand through the same channels i.e. the media that had questioned it

Case Study 2 Satyam Computer Services Ltd: Mahindra Satyam, formerly known as Satyam computer services limited. Satyam, was mentioned as a \$2bn revenue company, operating in 65 countries with 53,000 employees. The confessions by its promoters led to a drastic fall in its share price, filing of lawsuits, apprehensive employees, angry investors and worried clients. A crisis situation that threatens the integrity or reputation of the company. Effective public relations and communications help in protecting and defending an organisation's reputation during and after such a crisis. Satyam arranged a press conference within two days of the promoter disclosing accounting and financial irregularities in the company. Various avenues, like help desks, floor meetings and daily emails, were initiated to address employee queries. A focussed team of senior management who are privy to all information related to the crisis should be informed immediately so as to strategize precisely and plan accordingly. The spokesperson should be readily available to the media. The person should be competent to answer all the media questions.

Communication strategy: The first step is to draft a clear consistent message in response to the crisis in hand. If the organisation is responsible, it is better to accept responsibility and detail out an action plan for the remedy. In this regard, Satyam had organised a press meet within two days of the disclosure about the alleged financial and accounting irregularities.

Communication with the associates: The crises time is generally followed by apprehension among the employees regarding layoffs, salaries not being paid in time, cost cutting measures etc. All efforts should be taken to allay such fears of the associates and ask for their continued support. In this regard Satyam engaged in constant communication with the customers' using help desks, floor meetings and daily emails.

Communication to the customers: Board members/senior management should talk to the customers to apprise them about the steps taken by the company to ensure such incidents do not happen again. Satyam used different channels to communicate with the customers too.

Communication to Investors: Such crisis makes the company vulnerable to the market sentiments and leads to the erosion of value for investors. The organisation should apprise them and the regulatory bodies like SEBI about the crisis plans taken by the management to tackle them. With the

investors too, Satyam constantly communicated using various platforms. In this regard, Satyam created the following platform to communicate with its associates:

News Today: Daily news sent through email giving updates on current happenings, new developments, facts and rumours, business continuity, new clients, current client updates and highlights by some senior leaders, etc.

FAQTS: A link on the Intranet giving organisation perspective on management, finance, business, people, legal and the bidding and acquisition process. Under each head, Satyam dealt with the respective facts and figures

Planet Satyam: A video web cast on the intranet showing senior leaders talking to the associates, board of directors and the CEO about the crisis and business continuity.

Surf the Board: A mailer giving updates by the Board of Directors was also periodically sent.

Rumours Quashed: A link was given on the internet dealing with rumours. They specifically clarified the rumours by giving information

Direct from the media: A mailer giving information on Satyam news being telecast on television channels, schedule of interviews with the board of directors, senior leaders and associates by news channels.

Case Study 3 Maggie

March 2014 – The Uttar Pradesh's **Food safety and Drug Administration (FDA)** sends some samples of Maggi for a routine check and the samples belonged to the batch that was produced in February 2014. The regional Public Analyst Laboratory in Gorakhpur tests the sample and the report states the presence of **Monosodium Glutamate (MSG)** which was not mentioned in its labels. UP FDA sends notice to Nestle.¹

April 2014 – The same Maggi samples were sent to the Central Food Laboratory in Kolkata confirms the presence of MSG and Lead¹

July 2014 – Nestle files appeal against UP FDA notice.¹

April 2015 – UP FDA asks Nestle to recall one batch of 200,000 packs of Maggi noodles produced in February 2014. Nestle claims the products had reached their "best before date" in November 2014, and the company, as a practice, takes back all products from retailers/ distributors before they reach the 'best before' date.¹

May 2015 – UP FDA decides to prosecute Nestle, Central government asks Food Standards Authority of India to look into Maggi issue. Actor Madhuri Dixit served notice by Uttarakhand FDA for endorsing Maggi. Cases were registered in UP courts against the actors¹.

June 2015 – Nestle India says that the lead levels in Maggi are within permitted limits, citing a test by an independent external laboratory. FSSAI says Maggi samples will be tested across the country in all states.¹

June 2015 – Maggi samples fail test in Delhi, Kerala government stops selling Maggi at 1424 govt. owned outlets. A Bihar court orders registration of FIR against Bachchan, Dixit and Zinta for endorsing Maggi.¹

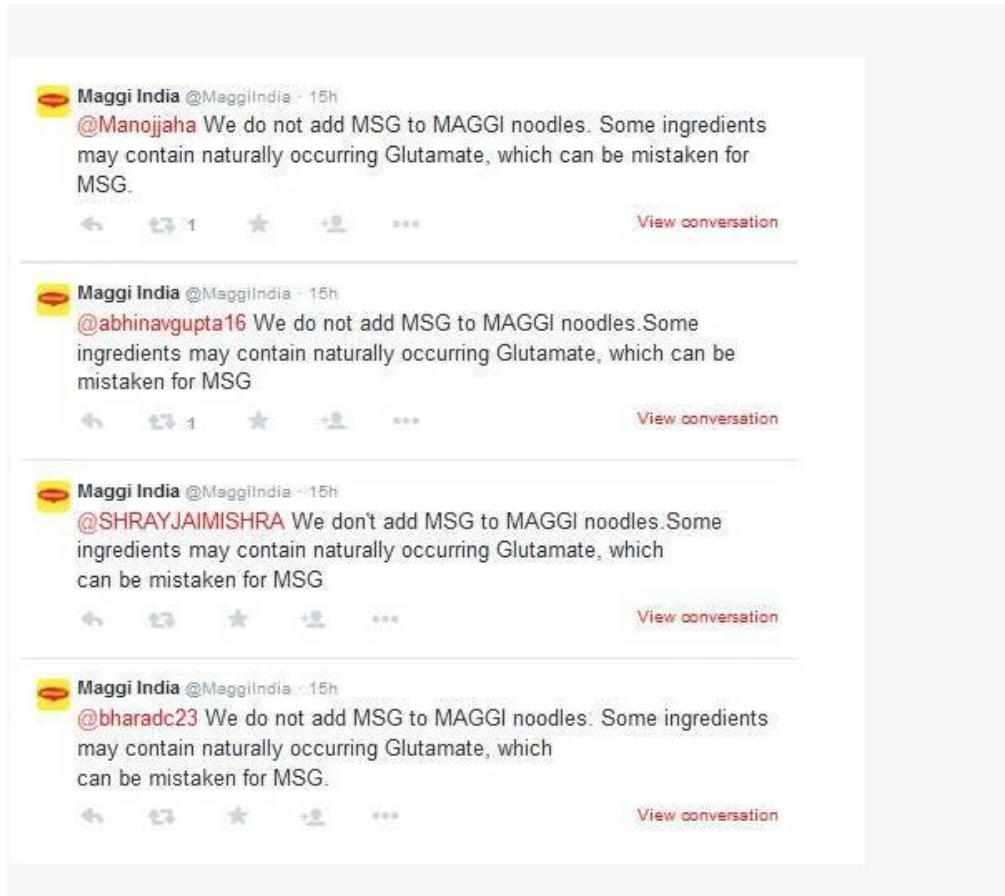
June 2015 – Retailers like Big Bazaar, Hyper city Retail, Twenty Four Seven Convenience stores and Aditya Birla group-owned More take Maggi off their shelves. Delhi govt. bans Maggi for 15 days. Tests were conducted in Karnataka and Haryana and West Bengal govt. to send Maggi for testing.

Maggi had two major crises in hand. One was to quell the rumours on Maggi and the other was to protect its other product range from being affected because of the crisis. Nestle's Maggi is a classic case of PR disaster of modern times. The following blunders were made by Maggi

They had stopped all the lines of communication with their consumers: Nestle for almost 15 days did not release any communication except for the computer generated statement. Media continuously tried to get response from the organisation and Nestle completely avoided the media. This was the

crucial period when the company should have communicated with the consumers to give reassurance but they did not.

Inappropriate social media response: The replies were automated which were accompanied by PDF files and their damage control mechanism using social media became a disaster. They could not connect with the consumer which was evident.



(Photo: Twitter/MaggiIndia)

Nestle was in denial mode: The situation was very tough and the global site of Nestle did not acknowledge about any of the controversy in India. In fact Nestle continued to promote Maggie as a mascot of Nestle in India. This attitude was a major setback for Maggie. In addition, during the entire crisis Nestle avoided communicating either with the media, investors or the consumers thereby leaving the issue to their imagination. Apart from this, the efforts taken to build the brand image was shattered by the different news that was circulated in the media and the lack of reaction from Nestle added to the situation. In addition, in June 2010, Nestle was caught in a PR nightmare when the environmental group Greenpeace said that the company's another product Kit Kat contained palm oil and the production of the chocolate caused destruction of rain forests in Indonesia threatening Orangutans. Greenpeace created a spoof of the Kit Kat commercial showing a bored man eating orangutan's finger. Within few hours Nestle was in the middle of the "Twitstorm". Angry fans lashed out at twitter and the same was trending with 2.15 lakh tweets. Nestle became defensive instead of standing for the cause and warned its users not to use altered versions of the logo.

Conclusions: The above cases clearly indicated the power of communication during Crisis. Whenever a crisis occurs it not only affects the organisation but also the stakeholders. There is a sense of fear, confusion, anger, irritation among the stakeholders. A periodic update on the crisis, the organisations' stand and the measures taken by it to help the stakeholders should be communicated. In addition, the constant communication also ensures among the stakeholders that the organisation is committed to

solving the crisis thereby building credibility and trust. It also goes long way in building relationship that the stakeholders will be willing to extend their support during difficult time. This also will ensure the transparency in the organisation and in addition it will also help in retaining goodwill and the image of the organisation.

References

- www.livemint.com, archives*
Yatish Asthana, Mint, June 4, 2015
Sapna Aggarwal & Sounak Mitra, Mint, June 6, 2015
Sounak Mitra, Mint, July, 2015
Sapna Aggarwal & Priyanka Mittal, Mint, 2015
Sapna Aggarwal & Priyanka Mittal, Mint, August 18, 2015
Sounak Mitra, Mint, July 30, 2015
P R Sanjai, Sounak Mitra, Ashish Mishra, Mint, 2015
Sounak Mitra, Mint, August 5, 2015
Sounak Mitra, Mint, October 27, 2015
Sandeep Jain, Effective Use of Public Relations/Communications during Organizational Crisis, Marketing Mastermind, August 2009
Cadbury crisis management, www.scoop.it, March 18, 2013
Fletcher, Reflections from Practice, fletcher.tufts.edu

EMERGING CSR EXPENDITURE PATTERN UNDER COMPANIES ACT 2013: STATE LEVEL EVIDENCES FROM SELECTED BSE LISTED COMPANIES

Susanta Datta & Vinayak Karande

Assistant professor, Dept. of Economics, R.K.Talreja College of Arts, Science and Commerce, Ulhasnagar, Thane, Maharashtra

Assistant Professor, Dept. of Management, Vidyalankar School of Information, Technology (VSIT), Wadala, Mumbai, Email: vinayak.karande@vsit.edu.in

Abstract

Effective from April 1, 2014, Corporate Social Responsibility (CSR) becomes obligatory to both public as well as private sector enterprises to carry out a range of activities in order to adhere section 135 of the newly enacted Company Act 2013 read with Companies (The Corporate Social Responsibility Policy) Rules 2014. As per new regulatory CSR framework, companies need to spend at least 2% of its average net profit for the immediately preceding three financial years on corporate social responsibility activities. Under this backdrop, this paper tries to explore emerging CSR expenditure pattern of selected BSE listed companies during financial year 2014-15 and 2015-16 with special reference to their financial disclosure through Business Responsibility Reports. Empirical analysis has been carried out at the state level implementation of CSR projects and emerging CSR expenditure pattern has been explored. Our endeavour will definitely help to evaluate companies CSR performance under the new Regulatory framework.

Keywords: Corporate Social Responsibility, strategic CSR, green growth, public policy

JEL classification: D21, M14, Q58

INTRODUCTION

Companies Act 2013 and Corporate Social Responsibility (CSR): The Ministry of Corporate Affairs has notified Section 135 along with Schedule VII of the Companies Act 2013 and the provisions of the Companies (Corporate Social Responsibility Policy) Rules, 2014 which all together came into effect from April 1, 2014. Every company, private limited or public limited, which either has a net worth of Rs 500 crore or a turnover of Rs 1,000 crore or net profit of Rs 5 crore, needs to spend at least 2% of its average net profit for the immediately preceding three financial years on corporate social responsibility activities. (Companies Act, 2013). The CSR activities should not be undertaken in the normal course of business and must be with respect to any of the activities mentioned in Schedule VII of the 2013 Act. The activities that can be undertaken by a company to fulfil its CSR obligations include eradicating hunger, poverty and malnutrition, promoting preventive healthcare, promoting education and promoting gender equality, setting up homes for women, orphans and the senior citizens, measures for reducing inequalities faced by socially and economically backward groups, ensuring environmental sustainability and ecological balance, animal welfare, protection of national heritage and art and culture, measures for the benefit of armed forces veterans, war widows and their dependents, training to promote rural nationally recognized, Paralympic or Olympic sports, contribution to the prime minister's national relief fund or any other fund set up by the Central Government for socio economic development and relief and welfare of SC, ST, OBCs, minorities and women, contributions or funds provided to technology incubators located within academic institutions approved by the Central Government and rural development projects. (The Companies (CSR) Rules, 2014)

Corporate Social Responsibility (CSR) & Public Disclosure: The report of the Board of Directors attached to the financial statements of the Company would also need to include an annual report on the CSR activities of the company in the format prescribed in the CSR Rules setting out *inter alia* a

brief outline of the CSR policy, the composition of the CSR Committee, the average net profit for the last three financial years and the prescribed CSR expenditure. If the company has been unable to spend the minimum required on its CSR initiatives, the reasons for not doing so are to be specified in the Board Report.

- The CSR reporting as per Scheduled VII of Companies Act is mentioned as follows:
- A brief outline of the company's CSR policy, including overview of projects or programs proposed to be undertaken and a reference to the web-link to the CSR policy and projects or programs
- The Composition of CSR CommitteeAverage net profit of the company for last three financial years
- Prescribed CSR Expenditure (two percent of the amount as in item 3 above)
- Details of CSR spent during the financial year
 - a. Total amount to be spent for the financial year:
 - b. Amount unspent, if any: N.A.
 - c. Manner in which the amount spent during the

1	2	3	4	5	6	7	8	9
Sr. No	CSR projects or activity identified	Sector in which the project is covered	Projects or Programs -Local area or others -Specify the state & district where projects or programs were undertaken.	Amount outlay (budget) project or program wise	Amount spent on projects or programs. Subheads: -District expenditures on projects or programs -overheads	Cumulative expenditure up to the reporting period	Amount spent: Direct or through implementing agency	no. of beneficiaries
A								
B								

All these public disclosure on CSR expenditure ultimately demand for evaluation of existing pattern of CSR expenditure incurred by Indian companies under section 135 of newly enacted Companies Act 2013. With this introduction, this research paper is divided into 5 sections. Section I provides basic information pertaining CSR. Section II deals with research design part. Section III provides research methodology in detail. Section IV highlights the significant observations of this research and section V concludes the whole discussion along with policy prescription

II. RESEARCH DESIGN: Our endeavour in this paper is to study the emerging pattern of CSR expenditures. As per National Voluntary Guideline 2009, it is mandatory for top 100 companies based on Market Capitalization to submit Business Responsibility Report (BRR) in order to ensure more transparency on Companies financial performance, its financial risk as well as non-financial risk to its stakeholders and wide public disclosure in order to ensure better Corporate Governance introduced by SEBI. Out of 119 companies submitted their report so far since 2010, we found 85 companies which actually provides information as per the schedule VII of the Companies Act 2013, 17 (20%) companies of them represents public sector enterprises while the rest 68 (80%) companies of them represents private sector enterprises. It has been found that out of prescribed CSR expenditure of Rupees 5236 crore, Private Sector Enterprises contributes 70% while that of public sector is 30%. Out of total actual spending of prescribed CSR fund of rupees 4200 crore, the contributions between private and public sector are 75% and 25% respectively. Public sector enterprises spends their fund much more efficiently as per as unspent amount part is concern, while their respective share are 44%

and 56% out of total unspent amount of rupees 1280 crore. As per as the summary statistics on industry wise allocation of prescribed CSR fund and the actual spending during the financial year 2014-15 is concerned, Public sector enterprises involved in the business like 'exploration and production', 'mining', 'electrical utilities', 'coal' 'defence' etc. are performed well as per as ratio between prescribed budget and actual expenditure are concerned, while, on the other hand, 'banks' and 'IT consulting firms are performed well'. Under this backdrop, an attempt has been made in this paper to explore dynamics pertaining to CSR expenditure data. The research design is mentioned as follows:

General Objective: The general objective of this paper is to analyse pattern of CSR expenditure at the sector specific CSR project level implemented in several States of India.

Specific Objectives: The specific Objectives are mentioned as follows:

To examine the relative share of CSR expenditure incurred at the state level in terms of

Segment wise – Public versus Private Sector Enterprises,

Strategy wise –Strategic CSR versus responsive CSR

Method wise – implement directly or through implementing agency.

To analyze whether Indian companies are promoting green growth through CSR.

To check whether Indian companies are promoting inclusive growth through CSR.

III. RESEARCH METHODOLOGY: This research is completely based on secondary data. The unit of analysis is at the state level CSR expenditure incurred by a company for a particular sector/project. Hence selection of variables is mentioned as follows: (a) dependent variable: state wise sector wise CSR expenditure and (b) independent variables are mentioned as follows:

- Market Segment: whether public sector enterprises or private sector enterprises
- Strategic preference towards selection of CSR projects in different sector: whether strategic CSR or Responsive CSR
- Average CSR expenditure per state per sector paper segment.
- Choice among selecting National level or state level projects.
- Proportion of CSR expenditure in Environment protection as a proxy of green growth.
- Sampling frame has been identified and companies have been arranged based on Question 3 to Q5(c). Simple random sampling without replacement (SRSWOR) has been used while selecting the sample company using BSE listed companies which have been submitted their annual audited statement as per stipulated format. We adopt random number table while selecting 15 sample companies (although number of companies are not the unit of analysis) out of which 11 representatives are from Private Sector Enterprises and the remaining 4 representative companies are from Public Sector Enterprises taking into consideration of 70%
- 30% share of expenditure by private and public sector enterprises respectively. Nature of formatting and heterogeneous kind of CSR project along with different types of reporting style are the main drawback to collect data at the disaggregate level, however, using the basic philosophy of the sample, those problems were taken care of. Total number of observations of State specific project wise CSR expenditure is 652 which are quite sufficient to satisfy small sample properties.

After complied all data from the respective sample companies, we categorise companies into public sector enterprise and private sector enterprise under the heading "segment". We classify different sectors under which CSR expenditure has been made into strategic and responsive CSR under the heading "strategy". The method of implementation of CSR projects is subdivided into -direct, through implementing agency and both – based on the available disclosure without any further verification. Average expenditure per project for state specific projects vis-à-vis Pan India projects. Bifurcation of expenditures has been calculated based on simple average methods wherever required at the time of analysis.

IV.EMPIRICAL FINDINGS: Based on our empirical analysis, in accordance to both general and specific objectives of research stated so far, we try to explore as much as information can be extracted from the available sources of data despite of having severe nature of heterogeneity while trying to homogenizing them into a common database format for analysis. We found our empirical analysis is quite sufficient to address all the states objectives made so far.

Table 1: CSR expenditure (in crores) by segment by strategy of selected Companies in Financial Sum of CSR expenditure by segment by FY

	2014-15	2015-16	Grand Total
Private Sector Enterprise	273.28	1325.30	1598.55
	(61%)	(81%)	(77%)
Responsive CSR	14.14	52.59	66.7274
	(5%)	(4%)	(4%)
Strategic CSR	259.15	1272.70	1531.83
	(95%)	(96%)	(96%)
Public Sector Enterprise	174.69	313.47	488.16
	(39%)	(19%)	(23%)
Responsive CSR	37.53	81.82	119.347
	(21%)	(26%)	(24%)
Strategic CSR	137.16	231.65	368.815
	(79%)	(74%)	(76%)
Grand Total	447.97	1638.70	2086.71
	(100%)	(100%)	(100%)

Source: Authors calculation based on BSE data, Figures in the parenthesis indicates percentage
It is evident that out of total expenditure incurred by the 15 sampled companies during financial year 2014-15 and 2015-16 the ratio of expenditure between private and public sector enterprises is 3:1. Preferences are more towards selecting the strategic CSR as compared to responsive CSR for both types of enterprises. However, public sector contribution is much higher than that of public sector enterprises. The ratio between strategic and responsive CSR for private sector is 96% and 4% for private sector and 76% and 24% respectively for public sector.

Table 2: Temporal Change of CSR expenditure by strategy by enterprises (in crores)

	2014-15			2015-16		
	Responsive	Strategic	Both	Responsive	Strategic	Both
				CSR	CSR	CSR
Private Sector Enterprise	14	259	273	53	1273	1325
	(27%)	(65%)	(61%)	(39%)	(85%)	(81%)
Public Sector Enterprise	38	137	175	82	232	313
	(73%)	(35%)	(39%)	(61%)	(15%)	(19%)
Grand Total	52	396	448	134	1504	1639
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)

Source: Authors calculation based on BSE data, Figures in the parenthesis indicates percentage
Expenditure on Responsive CSR increases from 52 crore in 2014-15 to 134 crore in 2015-16 while that of strategic CSR increases from 396 crore to 1504 crore during the period under consideration. Ratio between spending between responsiveness CSR and Strategic CSR is 1:20 for both the financial year while that ratio changes from 1:5 in 2014-15 to 1:4 in 2015-16. We estimate transaction cost per project per location per by strategy and methods of implementation (Williamson 1975, 1979). It is important to note that transaction cost play a very crucial role while determine the mode of project – either direct implementation or through implementing agency or both-. Under the responsive CSR, the average transaction cost per project for public sector has increased for both Pan India project as well as state specific project while that of private sector has decreased only for state specific project and

initiated Pan India projects in 2015-16. Direct expenditure was remaining the same for both the financial year for private sector while that of public sector increase for state specific projects, but expenditure on Pan India projects increased by 1.5 times of the earlier year expenditure under strategic CSR.

Table 3: CSR Expenditure composition by strategy by mode

		2014-15		2015-16
	Direct	Through Agency	Direct	Through Agency
Responsive CSR	45.07	4.78	86.21	46.07
	(25%)	(2%)	(30%)	(3%)
Strategic CSR	133.01	263.29	200.76	1305.7
	(75%)	(98%)	(70%)	(97%)
Grand Total	178.08	268.07	286.98	1351.76
	(100%)	(100%)	(100%)	(100%)

Source: Authors calculation based on BSE data`

Table 3 depicts during the financial year from 2014-15 to 2015-16 that under direct mode responsive CSR expenditure composition increase from 25% to 30% and that of strategic CSR expenditure decreases from 75% to 70%. Although the magnitude of the change is very small however the behaviour is quite consistent with reference to transaction cost theory (Williamson 1975, 1979). On the other hand, through implementing agency mode, expenditure on both responsive and strategic CSR are more or less remains the same which indicates consistency of maintaining the CSR projects over the period of time.

Table 4: Responsive CSR expenditure composition by strategy by mode of implementation.

		2014-15		2015-16
	Direct	Through Agency	Direct	Through Agency
Environment Sustainability	40.65	3.77	58.26	34.9
	(90%)	(79%)	(68%)	(76%)
Infrastructure & Rural Dev	2.49	0.25	11.31	11.16
	(6%)	(5%)	(13%)	(24%)
Overhead cost	1.93	0.77	16.65	0
	(4%)	(16%)	(19%)	(0%)
Responsive CSR	45.07	4.78	86.21	46.07
	(100%)	(100%)	(100%)	(100%)

Source: Authors calculation based on BSE data

Table 4 depicts the composition of expenditure under responsive CSR which is broadly subdivided into – environmental sustainability projects, Infrastructure & Rural Development projects and overhead cost. Under direct mode initially environmental sustainability projects contributed 90% expenditure in 2014-15 which reduces to 68% in 2015-16 while infrastructure & rural development project expenditure increases from 6% to 13% and overhead cost increase 5 fold from 4% to 19%. Under through implementing agency mode, only infrastructure & rural development project expenditure increases from 5% to 24% which has been compensated by reduction of overhead cost. During FY 2014-15 to FY 2015-16, it is quite evident that 70% - 90% fund under responsive CSR project has been spent in environmental sustainability projects, however, there is a slight decline in expenditure found during the period under study due to diversification of allocation of projects. It is quite interesting to note that Public sector has increased its contribution and spent most of the fund through direct mode while public sector has relied to spend 100 % with the help of specialized agency. Since public sector under the direct control under the ministry and due to mandatory CSR provision since 2010, CPSEs are much more experienced with their earlier CSR and sustainability programme and they try to create sustainable resource base. On the other hand, being new in the CSR field, private sector found less transaction cost involved under through implementing agency mode as compared to direct mode.

CONCLUSION: Government of India Introduced CSR under their corporate governance programme as a component under non-financial risk and for better public disclosure in terms of reduction information asymmetry and risk associated with the investment made by different stakeholders. As a result, Ministry of corporate affairs introduced 9 principle reporting system through National Voluntary Guideline 2009 following UN Global Compact reporting system for private sector enterprises while Ministry of Heavy Industry and Public Affairs introduced mandatory CSR programme vide guideline for CSR for central Public Sector Enterprises (CPSEs) in 2012, which has further revised in 2012. Since it was mandatory for the CPSE, focus has given to create sustainable resource base and to fulfil India's commitment to Millennium Development Goals (MDGs) with a notion of Sustainable Development. As a result, CSR and Sustainability programme became priority for CPSEs vide its revised guideline 2012. The introduction of new companies Act 2013 made CSR as a law and India became the first country in the world who introduced CSR as a statutory requirement. It is expected that over the period of time companies will perform better under the new companies act 2013 and it is too early to predict about their future. But during the short tenure of operation from FY 2014-15 and FY 2015-16, both public sector and private sector enterprises have put their effort to make it success. Over the period of time the proportion of unspent amount volume has reduced and actual spending has increased over time. Initially, focus has been given much more on strategic kind of CSR because of its simple way of implementation in the local areas which also helps companies to improve their existing industrial relationship to the local community through their direct interaction. However, CSR is not directly related to most of the companies day to day operation, and hence Companies are now collaborating with specialized agencies in order to smooth operation of their CSR projects. Through this study, we found a lot of dynamics from the expenditure data. It is quite evident that companies are trying to promote both inclusive nature of growth through their strategic CSR and promoting green growth through responsive CSR. While public sector enterprises are much more concerned for responsive CSR due to its nature of accountability to the government as well as to the society, private sector enterprises are much more concerned with new innovative ideas to solve the social problem, thus we can conclude that through this mix strategy of CSR implementation companies are approaching to become a good corporate citizenship subject to quality and nature of value addition through CSR.

References

- Coase, R. (1937). *The Nature of the Firm*, *Economica*, N.S., pp. 386-405.
- Government of India (2009). *National Voluntary Framework For Corporate Governance*, Ministry Of Corporate Affairs.
- Government of India (2013). *The Companies Act 2013*, Ministry of Corporate Affairs, New Delhi. Government of India, (2010). *Guidelines on CSR For Central Public Sector Enterprise*, Circular No – 15(3)/2007 – OPE (GM) – GL-99, Dated 9th April, 2010, Dept of Public Enterprise, Ministry of Heavy Industries & Public Enterprises, New Delhi.
- Government of India, (2012). "Revised Guidelines on CSR & Sustainability for Central Public Sector Enterprise", Released on 31st December, 2012, Dept of Public Enterprise, Ministry of Heavy Industries & Public Enterprises, New Delhi.
- Porter, M.E. And Kramer, M.R. (2006). *Strategy & Society: Link Between Comparative Advantage & CSR*.
- Williamson, O.E. (1975). *Markets & Hierarchies*, New York: Free Press.
- Williamson, O.E. (1979). *Transaction cost economics: Governance of contractual recoveries*, *Journal of Law & Economics*, pp3-61

Appendix A: Information of sample companies on CSR budget and expenditure for financial year 2014-15 and 2015-16

Company Name	Sector	2014-15		2015-16					
		Average Net	Prescribed	Actual CSR	Amount	Average Net	Prescribed	Actual CSR	Amount
		Profit of the	CSR	spending	unspent	Profit of the	CSR	spending	unspent
		company for last	Expenditure	during FY	(Cr.)	company for last 3 FY	Expenditure	during FY	(Cr.)
		3 FY (Cr.)	(Cr.)	(Cr.)		3 FY (Cr.)	(Cr.)	(Cr.)	
Private Sector Enterprise		16326	327	280	25	18763	375	336	15
Axis Bank	Banks	6689	134	123	0	8151	163	137	0
Aditya Birla Nuvo Ltd	Diversified	470	9	10	0	350	7	7	0
Exide Industries Ltd	Auto Parts & Equipment	685	14	4	10	744	15	5	10
Asian Paints Ltd	Furniture, Furnishing, Paints	1494	30	19	0	1688	34	34	0
Cummins India Ltd.	Industrial Machinery	795	16	8	8	800	16	12	4
Colgate-Palmolive (India) Ltd.	Personal Products	658	13	13	0	709	14	14	0
Dabur	Personal Products	733	15	15	0	863	17	17	0
Cadilla Healthcare	Pharmaceuticals	540	11	11	0	823	16	16	0
Dr.Reddy's Laboratories Ltd	Pharmaceuticals	1831	37	29	7	2094	42	41	1
Adani Ports And Special Economic Zone Ltd.	PORTS & SEZ	1790	36	36	0	2020	40	41	0
DLF Ltd.	Realty	641	13	13	0	520	10	10	0
Public Sector Enterprise		11840	258	177	63	12181	263	208	105
Coal India Ltd. (CIL)	Coal	1202	24	24	0	985	20	20	0
Bharat Electronics Ltd (BEL)	Defence	1119	22	5	0	1261	25	8	0
Indian Oil Corporation Ltd. (IOCL)	Oil Marketing & Distribution	5648	133	114	20	7075	161	157	4
Steel Authority of India Ltd. (SAIL)	STEEL	3872	78	35	43	2860	57	24	100
Grand Total		28166	584	458	88	30944	638	545	120

Source: Annual Report of respective companies for the year 2014-15 and 2015-16

Appendix B: Classification of CSR activities of sampled companies into Strategic and Responsive CSR

Segment	Company Name	Sector				
			Strategic CSR	Responsive CSR	Strategic CSR	Responsive CSR
Private	Axis Bank	Banks	Education- primary secondary	Environmental	Education- primary secondary	Environmental sustainability
Sector			Education financial literacy	sustainability	Education financial literacy	
Enterprise			Education (skill dev)		Education (skill dev)	
			Sanitation		Sanitation	
	Aditya Birla	Diversified	Education		Education	
	Nuvoltd		Health		Health	
			Environment & livelihood		Environment & livelihood	
			Rural development projects		Rural development projects	
			Social empowerment		Social empowerment	
	Exide	Auto Parts &	Prime Minister's National Relief	Environmental	Rural Development	Environmental Sustainability
	Industries Ltd	Equipment	Fund	Sustainability	Promoting health care	
			Swachh Bharat Kosh		Prime Minister's National Relief fund	
			education		Swach Bharat Kosh	
			Healthcare		Sanitation	
			Livelihood		vocational skills	
			Sanitation and safe drinking water		education incl. special education	
					Empowering Women	
					Eradicating hunger, poverty and malnutrition	
	Asian Paints	Furniture,	Education		Education	
	Ltd	Furnishing,	Water		Water	
		Paints	Health & Hygiene		Health & Hygiene	
			Vocational Training		Vocational Training	
	Cummins India	Industrial	higher education	Energy &	higher education	Energy & Environment
	Ltd.	Machine ry	local infrastructure development &	Environment		local infrastructure development
			social Justice			& social Justice
	Colgate	Personal	Promoting preventive healthcare	conserv ation of	Promoting preventive healthcare	conservation of natural resources
	Palmore	Products	woman empowerment	natural resources	Promoting education	
	(India) Ltd.		promoting education		Addressing inequalities HIV	
					Vocational training	

	Da bu r		Personal	Eradicating hunger poverty	environ mental	Eradicating hunger poverty &malnutrition	environmental sustainability
		Products		&malnutrition	sustaina bility	Promoting healthcare including preventive	
				Promoting sanitation and		healthcare	
				healthcare including preventive		Vocational Training	
				healthcare		promoting education	
				vocational training		promoting gender equality	
				promoting gender equality			
				village dev activities			

CORPORATE COMMUNICATION AND SOCIAL MEDIA

Rumeli Sharma

Assistant Professor, Dept. of Management, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: rumeli.sharma@vsit.edu.in Mobile: 9821414720

Abstract

Social media has revolutionized corporate communications, rapidly changing the way that public relations campaigns or programs are distributed and measured. Rather than the traditional method of pure output, social media has forced corporate communications to shift to a dialogue in which the stakeholders, and not just the companies, have power over the message. Social media is a revolutionary communications tool that has quickly changed the ways in which public relations is practiced, becoming an integral part of corporate communications for many companies and offering public relations practitioner's new options for every aspect of the corporate communications process.

Keywords: *public relations, corporate communication, advertising, social media*

I. INTRODUCTION: Social media has revolutionized corporate communications. Social media marketing allows companies to communicate directly and instantly with their stakeholders, marking a shift from the traditional one-way output of corporate communications, to an expanded dialogue between company and consumer. This paper aims to examine the relationship between social media and corporate communications, specifically focusing on the uses of social media for public relations and analyzing the changes that have occurred within the industry as a result of social media tools. Social media marketing is an umbrella term that includes the use of social media for sales, marketing, customer service and public relations, indicating a convergence of these traditionally separate corporate departments. Social media consists of online technologies, practices or communities that people use to generate content and share opinions, insights, experiences and perspectives with each other (Television Bureau of Advertising, Inc., 2009). Examples include blogs (e.g. Blogger, Word press), intranets, podcasts, video sharing (e.g. YouTube), photo sharing (e.g. Flickr), social networks (e.g. Facebook, MySpace), wikis (e.g. Wikipedia), gaming sites, virtual worlds (e.g. Second Life), micro-blogging (e.g. Twitter), videoconferencing, instant message chats, social event/calendar systems (e.g. Eventful), social bookmarking sites (e.g. Delicious, Digg, StumbleUpon), and news aggregation sites, among others. In the last decade these technologies have risen in popularity and ubiquity, and are being utilized by public relations practitioners to perpetuate the ever-changing industry of corporate communications. While it represents many different technologies, social media will be referred to in the singular form throughout this paper.

II. FACETS OF CORPORATE COMMUNICATION: Unrest in the business scene has constrained business to change and adjust the progressions from the business environment. The progressions are changes in customers' inclinations and conduct, changes in the marketplace what's more, innovation. The changes have influenced the correspondence routine of the corporate world as corporate correspondence plays an essential part in making value to a firm. Hierarchical correspondence has been characterized as the procedure by which information is traded and comprehended by at least two individuals, as a rule with the goal to inspire or impact conduct. Notice that this meaning of correspondence focuses on its purpose a reason that may go past just transferring data. The sender has the plan to impact the beneficiary to do what the sender needs. Corporate correspondence partners are separated into two, which are; inner (workers, shareholder, supervisor and so on.) and outside (organizations, channel accomplices, media, government and overall population). As Johansson (2007) appears, meanings of corporate correspondence utilize Web-based social networking has altered corporate correspondences, quickly changing the way that open relations crusades or projects are appropriated and measured. Instead of the conventional technique for immaculate yield, web-based social networking has constrained corporate correspondences to

move to an exchange in which the partners, furthermore, not only the organizations, have control over the message. Online networking is a progressive interchanges device that has immediately changed the routes in which advertising is worked on, turning into a vital piece of corporate correspondences for some organizations and offering advertising experts new choices for each part of the corporate correspondences handle.

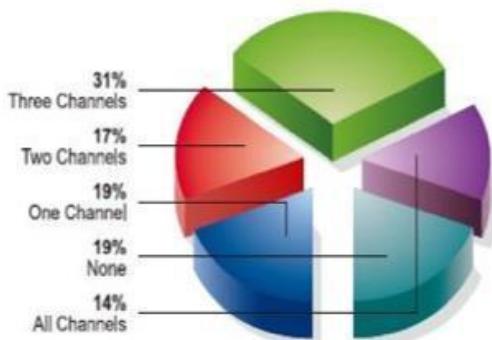
III. NETWORKING: Online networking has reformed corporate interchanges. Online networking advertising permits companies to impart straightforwardly and immediately with their partners, denoting a move from the conventional one-way yield of corporate correspondences, to an extended discourse amongst organization and customer. This paper plans to analyse the relationship between online networking and corporate interchanges, particularly centering on the employments of online networking for advertising and dissecting the progressions that have happened inside the industry accordingly of web-based social networking instruments. Online networking promoting is an umbrella term that incorporates the utilization of web-based social networking for deals, showcasing, client administration and advertising, showing a union of these generally isolate corporate departments. Web-based social networking comprises of online advancements, practices or groups that individuals use to generate substance and impart insights, bits of knowledge, encounters and viewpoints with each other (Television Bureau of Promoting, Inc., 2009). Illustrations incorporate sites (e.g. Blogger, Word press), intranets, podcasts, video sharing (e.g. YouTube), photograph sharing (e.g. Flickr), informal communities (e.g. Facebook, MySpace), wikis (e.g. Wikipedia), gaming locales, virtual universes (e.g. Second Life), miniaturized scale blogging (e.g. Twitter), videoconferencing, moment message visits, get-together/logbook frameworks (e.g. Significant), social bookmarking destinations (e.g. Tasty, Digg, Stumble Upon), and news accumulation locales, among others. In the most recent decade these advancements have risen in notoriety and pervasiveness, and are being used by advertising professionals to sustain the ever-changing industry of corporate correspondences. While it speaks to a wide range of advancements, online networking will be alluded to in the solitary shape all through this paper.

ADVERTISING: In today's corporate world, the achievement or disappointment of any organization relies on open observation. The suppositions of key organization partners, for example, shareholders, speculators, buyers, representatives or individuals of the group in which the association is based, are all significant to the long haul accomplishment of the organization, what's more, ought to be seen in that capacity by administrators. Web-based social networking takes into account corporate correspondences opportunities that 10 years back would not have been conceivable. Advertising is an old industry that has depended on similar strategies and equations for quite a bit of its history, and that has generally been measured by the measure of media scope coming about because of yield company messages. Web-based social networking is quickly changing the way that advertising efforts or projects are dispersed and measured. Instead of the customary strategy for immaculate yield – totally organization controlled messages being communicate to the partners – web-based social networking has constrained corporate correspondences to move to a discourse in which the partners, and not only the organizations, have control over the message. Social media permits partners to make inquiries and have those inquiries addressed straightforwardly by corporate executives, and for corporate officials to get vital input and even thoughts from their partners. Advertising in the customary sense has come to be seen by numerous as "smoke and mirrors," deceptive messages being made by "turn specialists." Because of this, many individuals have come to doubt media the customary means by which the business is measured – and put more trust in the sentiments of their associates, which they have entry to via web-based networking media destinations (Woolf, 2009). Online networking not just offers an open door for immediate and moment corporate correspondence, additionally a chance to return to the perfect fundamentals of open relations – constructing and looking after connections – and to change a portion of the negative generalizations regularly connected with the business. This examination is

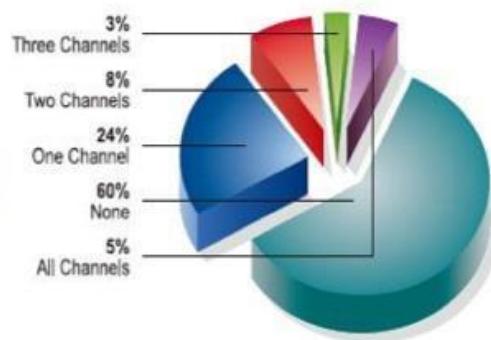
introduced as a basic investigation and elucidation of existing exploration considers, exchange productions, online innovations, contextual investigations, current patterns, advertising speculations and scholarly literature. The reason for this examination is to qualify parts of conventional advertising and parts of open relations using online networking, and through correlation with dissect the progressions that have happened inside industry and make projections for what's to come. Advertising follows its inceptions to the times of build-up, advancement and purposeful publicity and is frequently associated with negative discernments and generalizations. A past filled with misdirecting efforts and exploitative practices go back to the father of advertising, Edward Bernays. While Bernays was a pioneer of the general population relations industry his practices supported the control of general supposition, and it was this pattern of believed that has commanded advertising rehearses for a great part of the business' history.

Number of social media channels with corporate activity

2011



2010



Number of company social media channels used solely or in part for corporate communications & marketing purposes

Fig. 1 Corporate Communication in par with social media

ELECTRONIC MEDIA: Online networking promoting is a progressive specialized instrument that has immediately changed the ways in which advertising is worked on, turning into a fundamental piece of corporate correspondences for some companies. Online networking offers advertising professionals new alternatives for each part of the corporate communications prepare. From research to assessment, web-based social networking instruments can be used to make and convey important substance to more extensive groups of onlookers than customary media permits. This video, "Social Media Revolution," made by Erik Qualman, creator of the web-based social networking blog Socialnomics and a book by a similar name, incorporates a progression of overpowering web-based social networking measurements – illustrating with some stun esteem exactly how intense a device online networking can be and giving a sign of the courses in which it can be used by advertising professionals. Since the appearance of the online networking unrest, open relations has generally turned into the division in charge of arranging and keeping up an organization's online networking presence, driving promoting and different divisions in the reception of these devices. As indicated by the 2009 Digital Readiness Report in view of the review reactions of 278 advertising, showcasing and HR experts with procuring responsibilities, " Advertising is driving the online networking unrest inside associations of different types and sizes" (Schwartzman, Smith, Spetner, and McDonald, 2009)

IV. PUBLIC RELATIONS: PR has gone up against an altogether new part in the association in the course of the last a few years. It's the most sensational move in the business since the innovation of email, however is going on speedier and all the more drastically" (Falls, 2009). One striking change that the convergence of online networking in corporate interchanges has prompted to is the production of new online networking particular employments. As indicated by previous Secretary of Education,

Richard Riley, "The beat 10 sought after employments in 2010 might not have existed in 2004" (Gunderson, Jones, and Scanland, 2004). Companies employing advertising professionals are no longer substance with information of the customary devices of the exchange like news discharges – advertising specialists in the online networking age must have a comprehension of how to utilize online networking for corporate correspondences. The online networking unrest has resoundingly affected the advertising business. It offers new openings and new prerequisites for effective advertising hones. The squeezing requirement for social media skill in advertising has prompted to the making of new professions, and experts must know about how online networking advertising can be utilized for corporate interchanges. Online networking advertising is an extremely compelling apparatus for the advertising business, as it offers new channels for the fundamental communication between an association and its publics, and new open doors for this correspondence to be important furthermore, commonly gainful. As advertising has most broadly embraced web-based social networking showcasing methods, the parts of the conventional RACE recipe have developed. While the essential standards are the same, online networking apparatuses offer practitioners better approaches to actualize the customary components of advertising practices. Research is a significant arranges in the advancement of an advertising effort or program, and online networking offers new opportunities for research to be led. Review appropriation and gathering can be enormously helped using online networking, and as a contrasting option to conventional research techniques like concentration gathering testing, advertising professionals have the chance to witness the discussions partners are as of now having and implement the discoveries into crusades.

V. CONCLUSION: The impression of partners should always be considered in the advancement of crusades, and on the off chance that observations change amid the procedure, the battle should be modified to suit those progressions. The genuine correspondence of an advertising effort or program has a bunch of alternatives for distribution. Advertising is no longer about immersing news rooms with news discharges and media alarms. While customary media still matters, experts need to know how to outline their messages for new gatherings of people. Online networking offers open doors for intelligent news discharges that can be pitched on the Web, to bloggers, as opposed to writers. Assessment has changed also, with web-based social networking devices offering new open doors for measuring the viability of correspondences. The achievement of an advertising effort or program is no longer measured exclusively by the heaviness of news cut-outs it accomplished, however by the quantity of blog entries, discussions, remarks, re-tweets, bookmarks, and so on that it collected on the web. Online networking showcasing is a capable apparatus that loans itself extremely well to the reception of Hunt and Grunig's optimal model of advertising – two-way symmetrical. Advertising rehearses in light of one-way yield or control of reality can't make due in the web-based social networking age. Advertising has changed, and is evolving as yet, underlining hones that are more adjusted to the standards of the business. Basically, open relations rotates around people in general. In the event that online networking is used to its maximum capacity for corporate communications, the industry has a chance to take a stab at its optimal and through straightforward, genuine practices, implement effective crusades and invert negative generalizations. The production of new employments has brought about a requirement for new aptitudes – abilities that are not presently being generally instructed. Current understudies of advertising are as yet taking in the configurations for customary apparatuses like news discharges, and a move needs to happen in the scholarly community to fuse the new parts of the business. Specialists need to know how to make content for new groups of onlookers, and how to utilize online networking to have meaningful discussions with the publics of an association. This industry move from conventional corporate interchanges practices to advertising using online networking is remarkable. The speed with which this move has happened has prompted to a part inside the industry, isolating early adopters from the individuals who are ease back to join the online networking age.

REFERENCES

- Fombrun, Charles J. (2007). *Essentials Of Corporate Communication*: Abingdon & New York: Routledge.
- "Managing Corporate Communications in a Competitive Climate," a Conference Board Study, by Kathryn Troy, 1996.
- Nayyar, P.R. (1990) "Information asymmetries: a source of competitive advantage for diversified service firms", *Strategic Management Journal*, 11: 513-519.
- Aaker, D.A. and Myers, J.G. (1991) *Advertising Management*, New York: Prentice-Hall.
- Brown, T.J. and Dacin, P.A. (1997) "The company and the product: corporate associations and consumer product responses", *Journal of Marketing*, 61 (1): 68-84.
- Gray, E.R. and Balmer, J.M.T. (1998) *Managing Corporate Image and Corporate Reputation*, London: Long Range Planning.
- Pratt, M.G. and Foreman, P.O. (2000) "Classifying managerial responses to multiple organizational identities", *Academy of Management Review*, 25 (1): 18-42.
- Balmer, J.M.T. (1997) *Corporate Identity: Past, Present and Future*, International Centre for Corporate Identity Studies, Working paper series 1997/4.
- Balmer, J.M.T. and Wilson, A. (1998) "Corporate Identity: there is more to it than meets the eye", *International Studies of Management & Organization*, 28 (3): 12-31.
- Argenti, P.A. (2009) *Corporate Communication*, New York: McGraw-Hill/Irwin.
- Charles, F. (1996) *Reputation: Realizing Value from the Corporate Image*, Boston: Harvard Business School Press.

AN APPROACH TO BRING SOCIAL REVOLUTION: MIRCHI AND MIME (A CASE STUDY)

Poonam Mirwani

*Assistant professor, Dept. of Commerce and Management, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: poonam.mirwani@vsit.edu.in,
Mobile: 9766222189*

Abstract

A social entrepreneur identifies practical solutions to social problems by combining innovation, resourcefulness and opportunity. Committed to producing social value, these entrepreneurs identify new processes, services and products, or unique ways of combining proven practice with innovation to address complex social problems. Whether the focus of their work is on enterprise development, health, education, environment, labour conditions or human rights, social entrepreneurs are people who seize on the problems created by change as opportunities to transform societies. The paper focuses on social entrepreneurs and entrepreneurship. Social entrepreneur like is Muhammad Yunus, founder and manager of Grameen Bank has lead a new path in the development of social entrepreneurship in developing countries. He was awarded a Nobel Peace Prize in 2006 for his valuable contribution in social entrepreneurship. Work of such social entrepreneurs has become motivating factor for modern day entrepreneurs that emphasize the enormous synergies and benefits when business principles are unified with social ventures. One of such kind of venture is Mirchi and mime Restaurant, located in Powai, Mumbai. It's staff chiefly consists of people with hearing and speech disability. (Mirchi_and_Mime) Most of the activities are undertaken by the staff who communicates with the patrons through sign language, images of whose variations accompany every single item in the food menu. . The objective of the paper is to study about the different challenges of entrepreneurs while doing something for weaker section society with reference to Mirchi and Mime.

Keywords: *Entrepreneurship, social entrepreneurs, social ventures, Restaurant*

INTRODUCTION: “Some people believe in telling stories. Some believe in doing things about which stories will be told in times to come.” Sharad Vivek Sagar

Social entrepreneurship—the practice of responding to market failures with transformative, financially sustainable innovations aimed at solving social problems—has emerged at the nexus of the public, private, and non-profit sectors. It is a new breed of entrepreneurship that exhibits characteristics of non-profits, government, and businesses—including applying to social problem-solving traditional, private sector entrepreneurship’s focus on innovation, risk-taking, and large-scale transformation. While social entrepreneurship is not a new phenomenon, the field has experienced enormous growth over the past two decades, receiving increasing recognition from journalists, philanthropists, researchers, and policymakers as an important and distinctive part of the nation’s social, economic, and political landscape. The terms social entrepreneur and social entrepreneurship were used first in the literature on social change in the 1960s and 1970s. Social entrepreneurship as a practice that integrates economic and social value creation has a long heritage and a global presence. Social entrepreneurship is the recognition of a social problem and the uses of entrepreneurial principles to organize, create, and manage a social venture to achieve a desired social change. While a business entrepreneur typically measures performance in profit and return, a social entrepreneur also measures positive returns to society. Thus, the main aim of social entrepreneurship is to further broaden social, cultural, and environmental goals. Social entrepreneurs are commonly associated with the voluntary and not-for-profit sectors, but this need not preclude making a profit. Social entrepreneurship practiced with a world view or international context is called international social entrepreneurship. With the current economic climate, it is very likely that social needs will increase and, consequently, the number of people committed to addressing them will increase. Definition of social entrepreneurship has changed over time. From corporate philanthropy to non-profit and now to self-sustainability, Social Entrepreneurship has evolved and will keep evolving with time and needs of

the world (See fig 1.1). Social entrepreneurship is expected to be the next big thing to influence India as the country juggles to achieve a balance between a growing GDP growth, ensuring inclusive growth and attempting to address issues ranging from education, energy efficiency to climate change. (Mahesh U. Daru, Feb 2013)

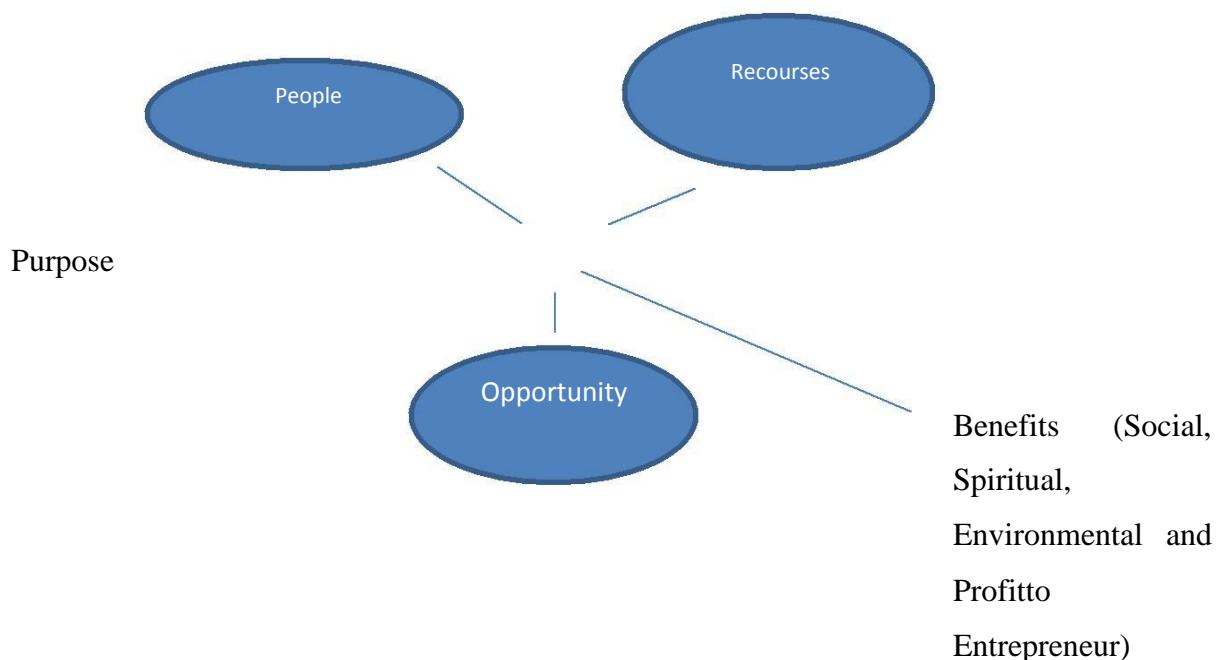


Figure 1. Social Entrepreneurship Model

In recent years, social entrepreneurs have looked beyond the traditional philanthropic and charitable approaches in order to find more effective and sustainable solutions to social problems. They are working with many tools from the world of business, and this shift in the character of social entrepreneurship is evident in a few trends that have emerged over the past twenty years. (C.Silambarasan, November2012) Many societies have become less inclined to see big government or big business as providing solutions for problems be setting the world, and there has been a shift from throwing money at large problems to systemic solutions and social investment. Across all types of government there is increased emphasis on privatization of public services, and experimentation with for-profit and hybrid forms of organization to deliver socially important goods and services, such as education and health care. There is greater scrutiny of social sector funding, and more attention to issues of impact, scale, and sustainability with the hopes of increasing the social return on investment. These trends are creating major changes in how societies around the world are dealing with social issues. They are opening the door to new forms of entrepreneurial behaviour in the social sector. (C.Silambarasan, November2012) For example, one social entrepreneur who criticized his own organization's earlier ineffective approach, noting they originally asked "...'how many people walked in the door' rather than 'how many people are better off for having walked in the door?'" What business entrepreneurs are to the economy, social entrepreneurs are to society? They may, like business entrepreneurs, be interested in profit, but their emphasis is on social change. They are often driven, creative individuals who exploit new opportunities, question accepted norms, and refuse to give up until they have remade the world for the better. Social entrepreneurs have the same core temperament as their business peers but use their talents to solve global social problems, such as why children are not learning, and why available technology is not widely used. William Drayton, founder of the world's first organization to promote social entrepreneurship, 'Ashoka', is credited with coining

the phrase “Social Entrepreneur”, to describe a person who recognizes logjams in society and finds ways to free them. (Hamilton, 2012)

OBJECTIVES: The objective of the paper is to study about the different challenges of entrepreneurs while doing something for weaker section society with reference to Mirchi and Mime.

RESEARCH METHODOLOGY: This paper is based on Primary and secondary data. Primary data was collected through In-depth Interview method and secondary data was collected from websites and newspaper articles.

CASE STUDY- MIRCHI AND MIME: An experiment to merge hospitality and strategic philanthropy has become a roaring success in Powai. Prashant Issar and Anuj Shah , MBA graduates from Henley Business School in the UK, chanced upon each other in Mumbai in June 2014. Prashant came from a restaurateur's background, Anuj from the corporate world. By the time they had called for the cheque, they had decided to start a classy restaurant with a global ambience, but with a difference. This is where dear old Henley kicked in. Over the years, one of the things that the alma mater had dinned into them was values, values, and values. The overriding Henley line at which they thumped the table together was that "integrity and commitment are more important than capability and skill". It was important for their business, they concluded, to generate wealth for society at large more than for themselves A conscious trawling of Facebook threw up a provocative lead. There was this restaurant called Signs in Toronto. Good ambience, good food, and importantly, hearing-impaired waiters. Prashant and Anuj thought they had found it — the characteristic that would set them apart. Their restaurant would use employees at the front desk that nobody bothers recruiting. But when they tested this idea, it came a cropper. The dream might have been buried, but for something that Prashant had seen among the most celebrated gurus in the fine-dining world — Chris Corbin and Jeremy King. They were handson to the point of walking into their various London properties and introducing themselves to guests: "Hello, I am Chris and hope our people are looking after you and you are having a great time." Anuj and Prashant re-moored. If their restaurant did not connect emotionally, it would not connect at all, so their strategy would have to be food-plus. They approached National Society for Equal Opportunities for the Handicapped's (NASEOH) Mumbai division and Rochiram T. Thadani High School for Hearing Handicapped with their idea. The teachers there loved it; the parents distrusted them: "It's a nice ploy to exploit our poor children, so we must assure you that we can look after them, thank you very much." Anuj and Prashant did more than listen. They heard every word the parents had not spoken: that their children would not be of any use ; that they would need to look after their children for life ; that they were scared to let them out of their sight ; that they fretted that the world was out to exploit them in various ways; that their vulnerable children would need to be consigned to a philanthropist who would commit funds for their lifelong maintenance . A happy resolution came around Diwali that year, when the duo decided to remodel their differentiation paradigm. If the parents worried that their children would be exploited, the aspiring restaurateurs proposed a remuneration 35 per cent higher than the industry median, plus service charge plus tips. If the parents fretted about their daughters returning late at night, the two proposed a 9:45 pm exit time in addition to a drop service right up to their building's gate. If they were concerned that their children's inadequacy to communicate would invite the employers' ire, the duo proposed to learn sign language as well. The challenges were considerable. There was no existing model that Powai's Mirchi And Mime —oh, I forgot to mention that's the name of the restaurant — could replicate. So the promoters set about creating one through home-grown common sense. The ordering process was going to be tricky for the clientele as well as the staff, so the promoters engaged the National Institute of Design to create a graphics-based matrix that would list all 72 items on a single page without clutter. The impaired steward could still get it wrong; the promoters devised a system whereby the order would be repeated using tactile tech. The employees came from low-confidence territory; Dr Reddy's Foundation was engaged to train (life sciences, job readiness, English-speaking skills and

hospitality) over eight weeks. What began as a philanthropic decision has now transformed into a successful business strategy. Attrition at the restaurant is zero, in a sector where the average is 70 per cent. The business broke even in the third month, when the corresponding average is about four months. Many of the waiters here have never held a job before. "They've led a very sheltered life, so their specially designed training program included life sciences, job readiness, basic English language and then also how to hold a tray, serve water and so on. But in many ways their abilities exceed those without a disability. They smile consistently, their focus and intuition is outstanding. Pre-empting what the guest wants is probably one of the most important qualities in a server," says Anuj Shah. The 90-cover restaurant serves 250-300 people a day and says a smiling "Sorry, but we don't have place at the moment, so would you want to wait or come another time?" to another 100 a day, or 200 if it's the weekend. Incidentally, the manager who had been hired to supervise the hearing-impaired has become redundant. The promoters are busy scaling up their model. They intend to launch 21 outlets in three years with hearing-impaired front-desk staff. That will need 500 such individuals, and they will most likely have no previous experience or degree for business-critical customer interface. For Anuj and Prashant, the aim now is to make their company the single largest employer of hearing- and speech-impaired individuals in the hospitality sector anywhere in the world. They seem to be well on their way. (Dias, 2015)

CONCLUSION: In the developing world, the Millennium Development Goals (MDG) might provide a valid operationalization of social needs. The MDG refer to the most pressing social problems to be addressed in the immediate future. They include goals such as eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowering women and differently abled, reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria and other diseases (<http://www.developmentgoals.org>). In the developed world, opportunities for social entrepreneurs might arise, for example, from gaps in the social welfare system. More empirical studies are needed to map the opportunity space for social entrepreneurs and to examine whether and how the nature of social opportunities affects the entrepreneurial process.

Bibliography

- C.Silambarasan, D. N. (November2012). *Challenges in Social Entrepreneurship* .InternationalConference on Literature, Management and Education , 17-18.
- Dias, R. (2015, June 06). www.thehindu.com/features/magazine/different-strokes-mirchi-and-mime-restaurant-in-mumbai-is-a-novel-social-experiment/article7286175.ece
- Hamilton, P. B. (2012, september). Social entrepreneurship – a survey of current research. *SwedishEntrepreneurship forum*.
- Mahesh U. Daru, A. G. (Feb 2013). *SOCIAL ENTREPRENEURSHIP - A WAY TO BRING SOCIAL CHANGE. INNOVATIVE JOURNAL OF BUSINESS AND MANAGEMENT*, 26-29.
- Mirchi_and_Mime.(n.d.). Retrieved from [en.wikipedia.org:](https://en.wikipedia.org/wiki/Mirchi_and_Mime)
https://en.wikipedia.org/wiki/Mirchi_and_Mime
- Singh, D. P. (October2012). *Social Entrepreneurship: A Growing Trend in Indian Economy* . *International Journal of Innovations in Engineering and Technology (IJIET)*, 44-52

IMPACT OF BREXIT ON INDIAN ECONOMY AND INDIAN BUSINESS

Sagar B Gaikwad

*Assistant Professor, Department of Commerce and Management, Vidyalankar School of Information Technology, Wadala, Mumbai. Email id: Sagar.gaikwad@vsit.edu.in,
Mobile: 9833376766*

Abstract

The objective of this Research is to find out the effects of BREXIT on Indian business, Indian companies, as this historic move will have greater significance impact on it. The Brexit referendum on June 23, 2016 was an unprecedented global development. The United Kingdom (UK) voting for the 'Leave' from the European Union (EU) is expected to have considerable socio economic and political ramifications in the years ahead. The decision assumes greater significance in context of the changing global order which is moving towards greater multilateralism and where countries are striving to lower their boundaries. Britain exit from EU is expected to open up significantly business and economics opportunities for Indian economy with little immediate negative effects as we have seen the effects on share market, but these effects will no longer in the market as this historic move will take some time to unfold. This paper is basically elaborating the impact of Brexit on Indian export, GDP, FDI and Indian Currency. Brexit will have some effects on Indian Companies as the 800 Indian companies have operating their business with EU through UK as headquarter. The some of the business which will face heat are IT, Automobile, Metal, Pharmaceutical and Garments. There will be more significant opportunities for the Indian Education sector.

The research objective is to find out:

- 1. Challenges which are forthcoming to Indian Business and Indian Economy as the India is 3rd biggest FDI Investor of UK.*
- 2. Favourable and unfavourable impact on business and FDI.*
- 3. Immediate and future effects of Brexit on India.*

Keywords: Referendum, Multilateralism, FDI

1. INTRODUCTION

What is BREXIT?

BREXIT is an abbreviation for “Britain Exit” which refers to the June 23, 2016, referendum whereby British citizens voted to exit the European Union.

Impact on Indian Economy:

While UK has put across its decision to exit from the EU, the actual process of leaving the European Union will be long drawn. The announcement has spelled out more uncertainty for now which is expected to continue with the invoking of the Article 50 and as and when the real negotiations take place. This would at least take a couple of years to shape up. Therefore, the actual ramifications will become clearer in the long run when a tangible working model of the UK-EU relationship is drawn out and established. Given that, the announcement of the Brexit referendum drew an immediate reaction from the stock markets and currencies world over. The Sensex tanked by 450 points (from the opening value) on June 24, 2016 falling below the 26000 mark and the Rupee value crossed 68 for a US Dollar. Nonetheless, both the stock market and the Rupee were quick to recover and find a stable ground. Both the Government and Reserve Bank of India have been on a tight vigil.

2) Export:

India's exports to the UK have been around 3% of our total exports and exports to the European Union are around 17% of total exports. Our exports to both UK and Europe have been on a downtrend in the past two years on account of subdued demand led by a frail and scattered recovery in the region. Post Brexit there is a heightened chance of this trend being amplified over the near term given the possibility of disturbances in currencies and UK facing a further slowdown in growth. However, some safeguards are expected to be put in place to deal with the volatility in currency in the UK. Also measures to boost growth might be rolled out. The situation is expected to even out over the

medium term. Also, much would depend on the currency movement (extent of appreciation vis-à-vis Pound) for countries that are competing with India to export to UK.

- 3) **FDI:** UK's decision to leave EU is expected to impact the confidence level of the business and the investor community and there might be a temporary arrest in outbound investments from India to the UK until more clarity is obtained on the working framework between the EU and UK. However, the Government has considerably liberalised the FDI regime in the country and there has been an increase in FDI inflows over the last two years. This trend is expected to continue. With the slew of measures announced in June 2016, India has opened up almost all sectors for foreign investors barring a very small negative list. India has once again strengthened its position on the investment radar and the growth prospects in the country remain strong. India is expected to get continued attention from the investors including investments from the UK. UK is third largest investor in India and accounts for about 8.0% of the total FDI inflows in the country. In fact, several British companies have exhibited interests in India post launch of the Make in India campaign.
- 1) **Rupee can remain precarious:** The Rupee can witness some volatility in the coming weeks as there is still anxiety in the global markets. However, RBI has been quick to intervene to manage liquidity through open market operations and use the foreign exchange reserves to tackle currency volatility and capital outflows in case of any skewed movements. Respondents expect this to continue.
- 2) **Inflation to remain range bound:** Oil and commodity prices have been subdued and there is no intermittent risks at present that will make the prices shoot. Global growth remains muted and an upward pressure on that account is suppressed for now. On the domestic front, good monsoons have been as predicted. Prices of food articles are likely to remain manageable.

Impact on Indian Business: UK has been a valued economic partner for India and the decision to leave the European Union has created some amount of ambiguity for the Indian businesses. Even though over half of the respondents have reported that they don't intend to set up separate operations in any other EU country because of Brexit, they seemed concerned about the impact on intra company transfers/movement of professionals and Indian migration over the medium term. Indian parties in cross-border contracts commonly include English jurisdiction and governing law clauses. Post-Brexit, there may be uncertainty over the recognition of English judgments in EU countries. In an extreme case, the impact might also lead the parties to invoke 'force majeure' and 'material adverse change' clauses, leading to a surge in litigation. There will be greater clarity on these technicalities and legalities once the details of the negotiations are spelled out. However, companies are anticipating an increase in compliance and administrative costs going ahead. At present, most of the companies have their corporate offices in the UK and are able to operate in other countries of the Union through their UK office only. Nonetheless, the companies do have a cushion period to work out the mitigation strategies as the deal between EU and UK will take some time to materialize.

Some Sectors likely to face the heat: India businesses have presence in a wide array of sectors in the UK which include automobiles, auto components, pharmaceuticals, gems and jewellery, education and IT enabled services. Most of these sectors will be vulnerable to changes in demand and currency values.

2. Auto components: India is a major supplier of auto components to the EU region. The region accounts for about 36% of India's total auto component exports, while the share of UK is about 5%. The UK Passenger Vehicle market is highly export oriented and the segment has close linkages with the EU automotive market. The anticipated slowdown in the UK and the EU region will have a dampening effect on the sector. Also, the depreciating Pound will impact the revenue stream companies of over the near term. The real impact will also depend on imposition of any trade restrictions between the EU and UK, which will become clearer over the medium term.

4. Information Technology: India is one of the largest exporters of IT-enabled services and the sector has significant exposure to the European market especially the UK. UK accounts for about 17% of India's total IT exports. India's IT exports to other European countries is at about 11%. The IT companies thus are expected to face the heat in light of the Brexit. Given the risk of further moderation in growth in the UK and EU, there is an increased probability that the companies lower their IT budgets (a discretionary spend). This would have an impact on the domestic software companies. Uncertainty on account of pricing of contracts spanning European Union which currently

enjoys zero tariffs cannot be ruled out. Skilled labour mobility issues can arise as the multi-location contracts will get deferred on account of lack of clarity at present. Further, the overhead expenses are likely to increase if restrictions are imposed on the mobility of professionals between UK and EU as the companies might have to open an additional office in the EU. Besides, the Indian IT sector has had some issues with the EU data security policies, including rules on transferring personal data. So, on the positive side the UK could look at abandoning the stringent stance on data management post Brexit. Also, UK would be under no obligation to adhere to restrictive localization norms adopted by EU.

5. Metals: With the global recovery remaining frail and an evident moderation in China, the steel and aluminium sectors are already facing the issue of overcapacity. Demand in the EU has been subdued and this latest development is expected to further dampen demand. This might lead to a greater weakening of metal prices giving rise to earning pressures for companies.

6. Pharmaceutical: United States is India's biggest market for Pharmaceutical exports, while EU accounts for 10-13% of India's total pharma exports. The share of UK in India's pharma exports is about 3-4%. The pharma companies do not really expect a big hit following the Brexit and have indicated a limited impact of Pound depreciation. The pharma companies reported having hedged their exposure to the Euro. Further, the companies pointed out that the rules, regulations and product registrations are already different for UK and EU and hence any adverse impact on the sector can be ruled out.

7. Garment: Readymade garment is one of the key export items to the UK from India. Readymade garments account for about 20.0% of India's total exports to the UK. The sector is expected to feel the pinch on account of moderation in demand; the spend on readymade garments is primarily discretionary. Also, the drop in the Pound is expected to impact the un-hedged export contracts with British counterparts. Nonetheless, some of the garment exporters have also opined that they might be insulated if a Free Trade Agreement is negotiated with the UK post Brexit.

CONCLUSION: The Brexit referendum on June 23, 2016 was an unprecedented global development. The United Kingdom (UK) voting for the 'Leave' from the European Union (EU) is expected to have considerable socio economic and political ramifications in the years ahead. Brexit will have positive impact on Indian economy for long term perspective. There will be major short term impact on Indian Economy as we have seen the immediate fall in Share market, while the impact of this great decision will take some time to unfold. Also, investment flows to the UK are likely to be affected over the near term as the decision is expected to cause skepticism among investors.

REFERENCES

www.ficci.in

<https://en.wikipedia.org/wiki/Brexit>

<https://www.youtube.com/watch?v=UTMxfAkxfQ0>

<https://www.youtube.com/watch?v=b2O4pxNah80>

SUPPLY CHAIN AGENT-BASED MODEL FOR BETTER BUSINESS PROCESS MANAGEMENT IN MAKE IN INDIA

Shajil Kumar P.A & Amrutha Nair

Assistant professor, Dept. of Information Technology, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: shajil.kumar@vsit.edu.in

Assistant Teacher, Saraswati Vidyalaya Jr. College of Science and Commerce Anand Nagar, Ghodbunder Road, Thane. Email: amruthanair4@gmail.com Mobile: 9967218262

Abstract

This paper illustrates supply chain agent based model, and provides thoughts on the appropriate contexts for agent-based model versus conventional modeling techniques. Supply Chain Agent-based Model provides a better business process management that ensures a systematic approach to make an organization's workflow more effective, more efficient and more capable of adapting to an ever-changing environment. As business process management is a key sector in Make In India campaign this model will provide a better decision making in Supply chain businesses. Agent-based model is a new approach to modeling systems comprised of interacting autonomous agents. It promises to have far-reaching effects on the way that businesses use computers to support decision-making. Some have gone so far as to contend that agent based modeling is a new way of doing science. Computational advances make possible a growing number of agent-based applications across many fields. Applications range from modeling agent behaviour in the stock market and supply chains, to predicting the spread of epidemics and the threat of bio-warfare, from modeling the growth and decline of ancient civilizations to modeling the complexities of the human immune system, and many more.

Keywords: supply chain management, business process management, Make In India, Agent-based model, Modeling techniques

INTRODUCTION: Historically, the complexity of scientific models was often limited by mathematical tractability: when differential calculus was the only approach we had for modeling, we had to keep models simple enough to “solve” mathematically and so, unfortunately, we were often limited to modeling quite simple problems. With computer simulation, the limitation of mathematical tractability is removed so we can start addressing problems that require models that are less simplified and include more characteristics of the real systems. Agent Based Models (ABMs) are less simplified in one specific and important way: they represent a system’s individual components and their behaviors. Instead of describing a system only with variables representing the state of the whole system, we model its individual agents.^[1]

ABMs are thus models where individuals or agents are described as unique and autonomous entities that usually interact with each other and their environment

locally. Agents may be organisms, humans, businesses, institutions, and any other entity that pursues a certain goal. Being unique implies that agents usually are different from each other in such characteristics as size, location, resource reserves, and history. Interacting locally means that agents usually do not interact with all other agents but only with their neighbors—in geographic space or in some other kind of “space” such as a network. Being autonomous implies that agents act independently of each other and pursue their own objectives. Organisms strive to survive and reproduce; traders in the stock market try to make money; businesses have goals such as meeting profit targets and staying in business; regulatory authorities want to enforce laws and provide public well-being. Agents therefore use adaptive behavior: they adjust their behavior to the current states of themselves, of other agents, and of their environment.^[2] Using ABMs lets us address problems that concern emergence: system dynamics that arise from how the system’s individual components interact with and respond to each other and their environment. Hence, with ABMs we can study questions of how a system’s behaviour arises from, and is linked to, the characteristics and behaviors of its individual components. ABMs are useful for problems of emergence because they are across-

level models. Traditionally, some scientists have studied only systems, modeling them using approaches such as differential equations that represent how the whole system changes. Other scientists have studied only what we call agents: how plants and animals, people, organizations, etc. change and adapt to external conditions.^[3] ABMs are also often different from traditional models in being “unsimplified” in other ways, such as representing how individuals, and the environmental variables that affect them, vary over space, time, or other dimensions. ABMs often include processes that we know to be important but are too complex to include in simpler models. Full-fledged ABMs assume that agents are different from each other; that they interact with only some, not all other agents; that they change over time; that they can have different “life cycles” or stages they progress through. However, as with any model assumption, assuming that these individual-level characteristics are important is experimental. It might turn out that for many questions we do not explicitly need all, or even any, of these characteristics. And, in fact, full-fledged ABMs are quite rare. In ecology, for example, many useful ABMs include only one individual-level characteristic, local interactions. Thus, although ABMs are defined by the assumption that agents are represented in some way, we still have to make many choices about what type of agents to represent and in what detail. Because most model assumptions are experimental, we need to test our model: we must implement the model and analyze its assumptions. For the complex systems we usually deal with in science, just thinking is not sufficient to rigorously deduce the consequences of our simplifying assumptions: we have to let the computer show us what happens. We thus have to iterate through the modeling cycle.

MAKE IN INDIA AND BUSINESS PROCESS MANAGEMENT

c) ***Make In India:*** The Make in India initiative was launched by Prime Minister of India, in September 2014 as part of a wider set of nation-building initiatives. Devised to transform India into a global design and manufacturing hub, Make in India was a timely response to a critical situation: by 2013, the much-hyped emerging markets bubble had burst, and India's growth rate had fallen to its lowest level in a decade. The promise of the BRICS Nations (Brazil, Russia, India, China and South Africa) had faded, and India was tagged as one of the so-called ‘Fragile Five’. Global investors debated whether the world's largest democracy was a risk or an opportunity. India's 1.2 billion citizens questioned whether India was too big to succeed or too big to fail. India was on the brink of severe economic failure. Make in India was launched by Prime Minister against the backdrop of this crisis, and quickly became a rallying cry for India's innumerable stakeholders and partners. It was a powerful, galvanising call to action to India's citizens and business leaders, and an invitation to potential partners and investors around the world. But, Make in India is much more than an inspiring slogan. It represents a comprehensive and unprecedented overhaul of out-dated processes and policies. Most importantly, it represents a complete change of the Government's mindset – a shift from issuing authority to business partner, in keeping with Prime Minister's tenet of 'Minimum Government, Maximum Governance'. Information Technology and Business Process Management is one of the key sectors, in Make in India with twenty-five sectors of the economy.^[4]

B. Business Process Management: Business process management (BPM) is a systematic approach to making an organization's workflow more effective, more efficient and more capable of adapting to an ever-changing environment. A business process is an activity or set of activities that will accomplish a specific organizational goal.^[7] The goal of BPM is to reduce human error and miscommunication and focus stakeholders on the requirements of their roles. BPM is a subset of infrastructure management, an administrative area concerned with maintaining and optimizing an organization's equipment and core operations. There are two different kinds of BPM frameworks available in the market today.

- Horizontal frameworks deal with design and development of business processes and are generally focused on technology and reuse.
- Vertical BPM frameworks focus on a specific set of coordinated tasks and have pre-built templates that can be readily configured and deployed.

- BPM is often a point of connection within a company between the line-of-business (LOB) and the IT department.

III. BUILDING THE SUPPLY CHAIN AGENT-BASED MODEL

One begins developing an ABS model by identifying the agent types and other objects (classes) along with their attributes.^[9]

- In the supply chain model, the supply chain agents consist of factory, distributor, wholesaler, retailer and customer agents.
- Everything in the simulation is either an agent or an object; other objects include the clock and the set of output reports.
- The distributor, wholesaler, and retailer agents are grouped together in a class called “middleAgents” because they all have the same structure in terms of their attributes and the methods.
- Each agent class is represented by a set of attributes and methods that operate on the agent class.

AUML class diagram is a convenient way of representing the agents of the supply chain model Fig. 1

- For example, the factory agent is represented by the following attributes: the agent's name; inventory level; desired inventory level; amount in pipeline; desired amount in pipeline; the amounts received, shipped, ordered, and demanded; various decision parameters; and the costs incurred of holding inventory or backorders.
- The values of these variables at any point in time constitute the agent state.
- It specifies the environment in which the agents live and interact. For the supply chain model, the environment consists of external (non-agent) factors that influence agent behavior.
- For example, an environment variable could be the labor rate and its dependence on geographic locale, which could also be included as an agent attribute.
- Specifies the methods by which agent attributes are updated during the simulation in response to either agent-to-agent interactions or agent interactions with the environment. For example, in the supply chain model, the inventory level is an attribute of each agent. Inventory is updated when orders and shipments are received and sent. For example, agent methods that embody processing of orders and shipments include: arriveOrder(), sendOrder(), arriveShipment(), and sendShipment(). These methods would be applied to the agents upon receipt of an order or shipment and affect the values of agent attributes.
- The factory class also has methods that more directly embody the agent's behavioral decision rules. These include a rule for determining how much to order and from whom at any point in time, embodied in the procedure orderRule(), and a rule for forecasting demand, embodied in the procedure forecastRule().

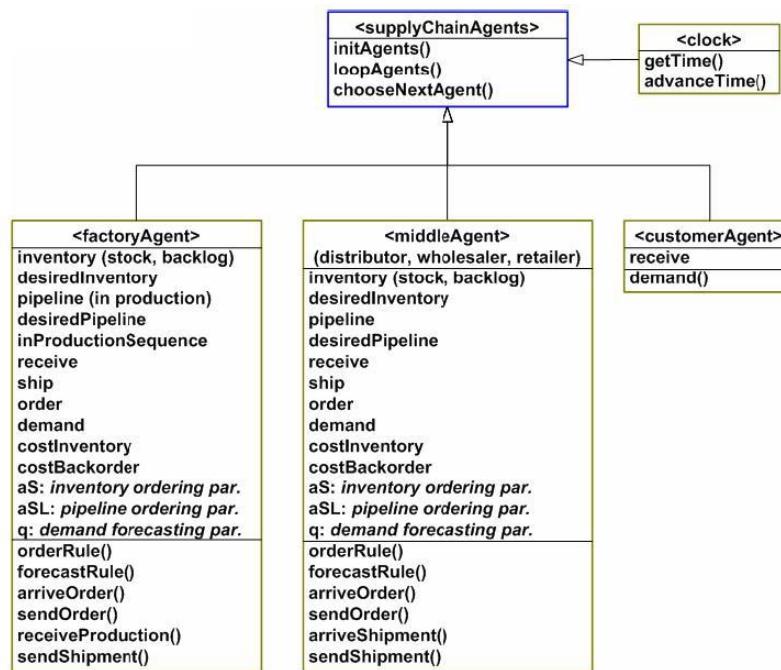


Fig 1. Supply Chain Agent UML Class Diagram

One then adds the methods that control which agents interact, when they interact, and how they interact. For example, one may develop a procedure for selecting which agents to interact with based on a bidding process in which, for example, the least costly factory agent is selected from among all factory agents by a distribution agent placing an order. The agent selection procedure could be invoked at every time period or when inventory levels reach specified thresholds. The agent interaction procedure would consist of placing an order with the selected agent at the determined time. In addition to agents, the supply chain model consists of agent relations. If agents are the nodes in the supply chain, agent relations are the links or edges in the network. As such, each agent relation involves two agents. For example, the factory-distributor relation includes the attributes of the number of items in-transit from factory to distributor and the order in-transit from distributor to factory. Agent relations also have methods that operate on them just as agents have. For example, `getShipments()`, `getOrders()`, `getUpstreamAgent()`, and `getDownstreamAgent()` are useful methods for agent relations. The complete set of object class definitions and methods, parameter values, and initial values for all the agent and other object states constitutes a complete specification of an agent model. Implementation of an agent model can be done by either writing an object-oriented program using, for example, the Java or C++ programming languages, or using a higher-level agent-based toolkit. The toolkit provides an extensive set of classes that encapsulate the basic functionality required by the agent models. For example, the functionality for the sequence of agent operations and interactions in the supply chain model and the control mechanisms that cause each of the agent methods to be invoked at the proper time or in the proper situation would be part of the functionality provided by the scheduler class of an agent-based toolkit.

IV. CONCLUSION: Situations for which agent-based modeling can offer distinct advantages to conventional simulation approaches. Agent based model designed for the supply chain management provides better business process management by providing better communication between the line-of-business (LOB) and the IT department. Supply Chain Agent UML Class Diagram list different agents in the supply chain business and their required communication in the form of attributes and methods

REFERENCES

- Javier Vera, *Attention disruption in agent-based modeling of vocabulary formation*, 2016 35th International Conference of the Chilean Computer Science Society (SCCC)
- Agent-based modeling and strategic group formation: A refugee case study Andrew J. Collins; Erika Frydenlund 2016 Winter Simulation Conference (WSC)
- Research on the logic of product evolution using agent-based model Seong-Jin Kim; Jeong-Dong Lee; Euy-Young Jung 2016 Portland International Conference on Management of Engineering and Technology (PICMET)
- Agent-based model of highway traffic: Reduction in driving efficiency with density Prafull Kasture; Hidekazu Nishimura 2016 IEEE 19th International Conference on Intelligent Transportation Systems (ITSC)
- An Agent-Based Model for Autonomous Planning Flora Amato; Francesco Moscato 2016 10th International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS)
- Sustainable supply chain management: Transferring from developed nations to developing countries Nina Aini Mahbubah; Abdul Muid 2016 6th International Annual Engineering Seminar (InAES)
- Integrated methodology for supplier selection in supply chain management Naveen Jain; A. R. Singh; A. K. Choudhary 2016 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)
- A MCDA approach to select a Kanban system for multi-echelon inventory management in a pharmaceutical supply chain Malak Mouaky; Abdelaziz Berrado; Loubna Benabbou 2016 11th International Conference on Intelligent Systems: Theories and Applications (SITA)
- Research on tobacco supply chain system Qun Wei; Xiaofan Tu 2016 IEEE International Conference on Big Data Analysis (ICBDA)

REVERSE MENTORING: MILLENNIALS THE NEW MENTOR

Nisha Dang

Assistant professor, Dept. of Commerce & Management, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: nisha.dang@vsit.edu.in, Mobile: 9819979423

Abstract

The saying "Mighty oaks from little acorns grow" may be true, but what do you do when your "acorn" days are far behind you? This is something that prompts enterprises today for a paradigm shift called 'reverse mentoring', where the old fogies in an organization realize that by the time you're in your forties and fifties, you're not in touch with the future the same way as the young twenty-something's and undergoes a mentorship process by the young employees. In order to succeed, organizations must innovate new ways of interaction & relationship building. With a new generation, come new beliefs, new skills, a new way of life & a need for reverse mentoring arises. Today, younger members of staff who are just entering the workplace often have new skills and expertise, and they can provide fresh perspectives and ways of working that can benefit their more established colleagues. Reverse mentoring is a new way to encourage learning, develop new skills and accelerate cross-generational relationships. It involves the pairing of a younger, junior employee acting as mentor to share expertise with an older, senior colleague as mentee. Today's Organization value "Millennovators" - Millennial innovators. This paper aims at understanding the concept & importance of reverse mentoring in an organization. This study also focuses on how reverse mentoring process can be beneficial for the organization. It also helps the organization to analyse the Key Pillars of Modern Mentoring & the role of Millennovators

Keyword: Reverse mentoring, Mentoring, Millennovators, Cross - generational Relationship, Learning.

INTRODUCTION: "Executives are beginning to realize that knowledge isn't a one-way street. It's in everyone's best interest to share expertise". (Greengard, 2002) A recent article by Leslie Kwoh on "More Firms Bow to Generation Y's Demands" it emphasized on some of the present viewpoints between two generations in the workplace i.e the BabyBoomers (born between 1946 and 1964) and Millennials (born in the 1980's and 1990's). According to his research that there are more companies who are adapting their culture to please the younger generation but those changes are not easily accepted by the baby boomer & will lead to generation conflicts Millenials bring fresh skills and are typically "tech-savvy, racially diverse, socially interconnected and collaborative." Boomers, on the other hand, typically bring experience, best practices, and a long history of work ethics to the table

A couple of examples of problems that occur bi-generationally in the workplace include:

Millenials are asking for flexible working hours, higher pay, and quick promotions. Baby Boomers feel they have climbed through the ranks and put in their due diligence and are confused and even angered by the fast track of the Millenials' success. Millenials don't understand and don't always appreciate the persistent hour's and dedication that the Boomers have devoted to the success of their careers and the business. These types of problems can create disconnect between generations. If not properly managed, hostility may ensue, ultimately affecting the company's bottom line. So, how should companies maximize and manage the generational diversity in the workplace? **Reverse Mentoring is one solution**

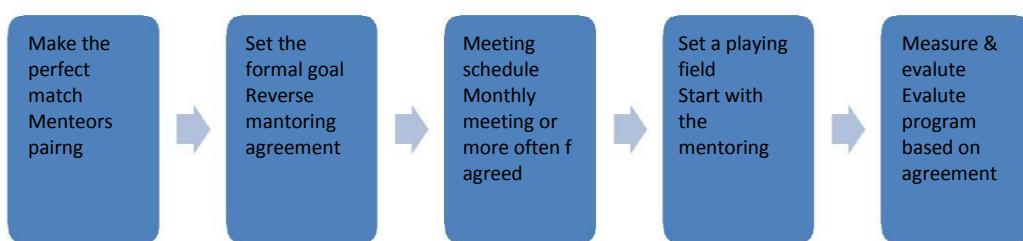
MENTORING: Mentoring is a relationship in which a more experience or knowledgeable person helps to guide a less experienced or knowledgeable person. Mentoring is undertaken to encourage people to maximize their potential & for their skill development it is a process whereby individuals work together to develop the career and abilities of a single individual. Traditional mentoring is predicated on the assumption that older employees who are advanced in their careers can educate younger employees and move them up the corporate ladder.

REVERSE MENTORING: "Reverse mentoring is a system in which the baby boomers (older executives) are paired with & mentored by Millennial (younger employees). It reverses the usual

mentorship roles: the younger, newer or less senior employee mentors the older, experienced or more senior employee. Reverse mentoring turns the paradigm of traditional mentoring around. Junior employees share skills and knowledge that senior staff needs in order to do their jobs well and stay engaged. Reverse mentoring is a new way to inspire learning and facilitate cross-generational relationships. Fast Company's Alan Webber once described reverse mentoring as "a situation where the old fogies in an organization realize that by the time you're in your 40s and 50s, you're not in touch with the future the same way the young 20-somethings are. They come with fresh eyes, open minds and instant links to the technology of our future."

HISTORY OF REVERSE MENTORING:- During late 90's the internet was quickly becoming indispensable in the business world & the CEO of General Electric, Jack Welch had a problem in using hi - tech smart phones & other new applications. Even his top executives would barely surf the net. So, he ordered 500 top executives to "reach out to people below them to learn how to use the Internet, & in return, the younger employees 'got visibility' with leadership", according to the Wall Street Journal. Jack Welch, former chief executive of the General Electric Company, turned that idea on its head. He started a professional development strategy called reverse mentoring: a formal program in which a young, junior employee with something to teach is partnered with an older, senior manager with something to learn. He initiated the practice at GE in 1999, pairing employees in their 20s and 30s who were knowledgeable about the Internet and interested in new technology with executives who were beginners in that domain.

PROCESS OF REVERSE MENTORING:-



REVERSE MENTORING & EMPLOYEE ENGAGEMENT: Reverse mentoring creates a culture of engagement where employees feel they are valued & encouraged. For entry level employees it builds trust & loyalty & on the other hand, for the senior employees it creates an opportunity for learning new skills, concepts & techniques. Thus it helps in employee engagement because it binds together people from diverse backgrounds.

BENEFITS OF REVERSE MENTORING

Benefits to the employees:-

8. **Develops Relationship:** Reverse mentoring helps to bring different generation employees closer. Baby boomer, generation X, generation Y & millennium work together. It is a tool for opening the channels of communication and knowledge sharing.

5. **A two way – exchange:** Reverse mentoring helps to close the knowledge gap for both parties. Both the younger & senior employees learn new competencies & skills from each other. For example, older employees learn social media from the younger person and the younger person learns business terminology and industry practices from the older employee.

b) **Role Reversal:** Reverse mentoring provides an opportunity for early-career employees to participate in a challenging professional development experience. In their role as mentors, junior employees gain exposure to senior-level executives.

d) **Senior mentees get a break from the routine:** Since reverse mentoring can be a relaxed affair, it gives the busy mentee a welcome break from the norm. It takes the executive out from

behind their desk, and gives them an injection of inspiration from someone with sparky energy and fresh ambition.

d) **Fresh way of thinking:** It helps the employees to have a fresh thinking pattern. Both the generation employees get new insights & start thinking in a new way & pattern

Benefits to the organization:

- **Increases productivity:** Reverse mentoring programme helps to increase the level of skill by providing assistance, guidance & informal skill for the mentees. Thus, the mentees will be able to perform their work quickly which in turn will increase the productivity of the organization
- **Save cost & time:** The organization need not provide his employees with the additional external training. Thus this will help the organization to save the cost & as well as time.
- **Reduce turnover & increase loyalty:** The employees feel that they are important for the organization & hence they do not quit the organization, thus, this will help to reduce the turn over.

REVERSE MENTORING BY AIRTEL: For Airtel, reverse mentoring as a concept was initiated in 2008 post the return of CEO Sanjay Kapoor from the Wharton Business School. As part of the reverse mentoring programme of Airtel, leaders across the country, including the Airtel Management Board (AMB), and the function heads were mentored mostly by our young managers, hired from the top B-schools of the country, and into their second or third year in the organization. The topics, the seniors were educated on; included brand activation opportunities, downloading apps, fashion trends, latest gadgets or what young people do in their free time. It also included hard business strategies that were discussed and sometimes these strategies were later adopted by the company for growth.

SUGGESSTION FOR SUCCESSFUL IMPLEMENTATION OF REVERSE MENTORING PROGRAMME:

Smart Small: It will be beneficial for the organization if they start with small pilot batch. Later on the organization can use these pilot participants as steering committee for implementing the programme on a wider scale.

Be open to the new ideas & experience: For reverse mentoring to work exactly as it should, the management should define expectations up front. The management should an end goal in mind, and commit the necessary time. Lastly, it's very important for the organizations to, dissolve the barriers of status, power, and position.

Encourage new young mentors to ask candid questions: The management should encourage the young employees to ask more honest & frank question to the senior management. These question should be related to how much senior employees are aware about the particular area & from where the young employees need to start

Break the ice:- The younger employees might feel uncomfortable to work with the more senior, experienced employees because the seniors might be resistance to learning process. Hence, the organization might take the responsibility to break the ice between the generation to motivate them

Don't shoot in the dark: The organization should be clear about the purpose of the program & should know exactly what challenges they wish to overcome through the reverse mentoring process. Clarity about the organizational goals will help participants to take the process seriously.

Review on timely basis: The management should review the mentoring process on timely basis. They should also provide them with timely feedback both to the mentors & mentees

Mentors & Mentees to meet regularly: Its very important for the mentors & mentees to meet on the regular basis to be updated & on track. They should prepare the schedule well in advance & meet atleast onces in week or fortnight.

Mentor your mentors: Mentoring is an art & hence the person might be very knowledgeable & should be updated with the new technology & techniques so that he can conduct the mentoring programme successfully. It is also important for the organization for Training the mentor to be patient and restricting his or her advice to relevant topics only.

CONCLUSION:-The fast moving developments in technology & trends have reversed the logic that the senior executives or more experienced workers can provide the input to the new joiners or junior employees. Now a days reverse mentoring appears to be a peer-to-peer relationship & it is done to gain technical expertise & to gain a younger perspective. Reverse mentoring give the opportunities to the employees for learning and open discussion, it also help the mentors and mentees to form a new relationship that can be inspiring and genuine. Today, both traditional and reverse mentoring, have a close relationship that creates a pathway for bi-directional learning by both the mentor and mentee.

REFERENCES

- Finkelstein L. M., Allen T. D., Rhoton L. A. (2003). *An examination of the role of age in mentoring relationships*. *Group & Organization Management*, 28, 249-281
- Greengard, S. (2002). *Moving forward with reverse mentoring*. *Workforce*, 81, 15.
- Harvey, M., McIntyre, N., Heames, J. T., & Moeller, M. (2009). *Mentoring global female managers in the global marketplace: Traditional, reverse, and reciprocal mentoring*. *International Journal of Human Resource Management*, 20, 1344-1361
- (2016, July 27). *Chauncey L. Alcorn. How Millennials in the Workplace Are Turning Peer Mentoring on Its Head*. Retrieved from <http://fortune.com/2016/07/26/reverse-mentoring-target-unitedhealth>

EQUITY INVESTMENT PROSPECTS IN EMERGING MARKETS OF INDIA

Santosh G. Gupta

Assistant professor, Dept. of Management, Vidyalankar School of Information Technology, Wadala, Mumbai-400037, Email:santosh.gupta@vsit.edu.in, Mobile:9892581571

Abstract

Evidence suggests that fund managers panicked and withdrew investments. Portfolio equity flows to emerging markets decreased by more than a third in 1995. The investor base shrank. The longterm case for investing in emerging markets is, however, very strong. Most of them are growing faster, some much faster, than developed countries, and are likely to yield higher returns on investment. By one estimate, emerging markets will increase their share of world stock market capitalization from 15 percent in 1995 to 45 percent in 2010. The article will review the trends in private capital flows and prospects for the future, focusing on opportunities in East Asia as an example. Here we discuss the investment strategies that help explain the panic of 1995 and proposes a more analytical approach to investment in developed markets and the information needed to facilitate its adoption. It's the inception of Equity Market if you see from 1995 the average return Market has given 17 to 18 percent which is comparatively much better than any other Investment Avenues. Investors profit in two basic ways from stock investing. If the stock price appreciates after investment, the shareholder can make money on the sale of the stock. Stocks allow the flexibility of selling in the short term to make a quick profit or holding on to investments for the long term. Also, many companies pay dividends to shareholders that they can then reinvest or pocket as income, according to ShareBuilder. Common motives for people to invest in stocks and to make money are retirement, education and recreation. Some investors view stocks as a long-term opportunity to build wealth for retirement. Others invest in stocks to save up for additional education themselves or to pay for their children's educations. For others, building wealth is about creating opportunities for greater leisure and recreation throughout life. The historical return on stocks is about 10 percent, according to The Motley Fool, which is much higher than returns on many other investments.

Keywords: *Equity investment, better returns, emerging market*

Fire proofs savings against inflation: Equity is one asset class that manages to outperform inflation over time. And, believe it or not, it does have a tax break. The tax on long-term capital gains is zero, which means you pay no tax on the return you earn from your investments if you hold it for at least a year. In the long run, this amounts to a huge savings. In fact, stocks and equity-backed investments (equity mutual funds and equity oriented balanced funds) are the only asset classes which are completely exempt from tax on long-term gains. So let's say you invested in Franklin India Prima Fund a decade ago. Your annualised return of 20% not only beats inflation hollow but you pay no tax on the return. So despite the volatile markets over the past decade, you would still be a winner.

INTRODUCTION: If we see the last few decades, the average person's interest in the equity market has grown exponentially. This demand doubled with advances in trading technology has opened up the markets so that nowadays nearly anybody can own equity. Despite their popularity, however, most people don't fully understand equity may be because of misconception prevailing in the mind of customers. Chances are you've already heard people say things like "Watch out with equity--you can lose your shirt in a matter of days!" It is pure gambling and here people make loss only while some People think that equity were the magic answer to instant wealth with no risk. Equity can (and do) create massive amounts of wealth, but they aren't without risks. The only solution to this is education. The key to protecting yourself in the equity market is to understand where you are putting your money. The Definition of Equity is Plain and simple, equity is a share in the ownership of a company. Equity represents a claim on the company's assets and earnings. As you acquire more equity, your ownership stake in the company becomes greater. Whether you say shares, equity, it all means the same thing. Being an Owner Holding a company's equity means that you are one of the many owners (shareholders) of a company and, as such, you have a claim(albeit usually very small)

to everything the company owns. Today it's in dematerialized form i.e. in electronic form shares have been kept safe. This is done to make the shares easier to trade. In the past, when a person wanted to sell his or her shares, that person physically took the certificates down to the brokerage. Now, trading with a click of the mouse or a phone call makes life easier for everybody. Debt vs. Equity. Issuing stock is advantageous for the company because it does not require the company to pay back the money or make interest payments along the way. All that the shareholders get in return for their money is the hope that the shares will someday be worth more than what they paid for them. The first sale of a stock, which is issued by the private company itself, is called the initial public offering (IPO). It is important that you understand the distinction between a company financing through debt and financing through equity. Taking on greater risk demands a greater return on your investment. This is the reason why stocks have historically outperformed other investments such as bonds or savings accounts. Over the long term, an investment in stocks has historically had an average return of around 10-12% Sensex has given 9x returns in last 20 years; it is time to be a buyer now. The S&P BSE Sensex has seen multi-fold returns over the past 20 years, as the 30-stock index managed to rally from 3,000 level back in 1995 to 27,000 in 2015. The rally is not over yet, and investors who missed this wealth-creation opportunity should invest now, say experts. Even though the world is in the troubled waters and we are not entirely immune to it, analysts still advise investors to hold on to their investments, because the long-term story for India still remains intact. Calendar 2015 has been a difficult year for investors as well as traders. The S&P BSE Sensex has wiped out the entire gains made in last one year and is now trading flat. It is down nearly 10 per cent from its lifetime high of 30,024.74 recorded in March. 1,700% returns in 10 years. Trick of the trade is to bet on future Sensex stocks forget largecaps or midcaps. The best way to make long-term money in the market seems to be to bet on potential future Sensex members. Equity benchmark Sensex, your heartbeat index, keeps changing not just in value but in composition too. The 30 Sensex component companies happen to be some of the largest and most-actively traded stocks, representing various industrial sectors of the economy. In 10 years, they not only made it to the Sensex universe, but also generated big returns for investors.

Conclusion: I would like to conclude that looking after the more and more people are getting awareness of Equity Investment and clear picture of Equity Market and misconception are getting clear what strategy need to be followed and prospect growth of our Indian market. To all retail investors, my recommendation would be, if you have already lost an opportunity to make money in the last 20 years, when stocks and the stock market have multiplied many times, . Eventually, this long-term investment will help you create a lot of wealth. Even though the world is in the troubled waters and we are not entirely immune to it, analysts still advise investors to hold on to their investments, because the long-term story for India still remains intact. Calendar 2015 has been a difficult year for investors as well as traders. The S&P BSE Sensex has wiped out the entire gains made in last one year and is now trading flat. It is down nearly 10 per cent from its lifetime high of 30,024.74 recorded in March. I would say global concerns are there, except for the US, which is fairly firmly on the recovery path. But Japan, pockets of Europe and China are concerns and you saw IMF downgrading a lot of growth targets for the emerging economies. It is a mixed bag globally and from the Indian market's perspective, it is not too bad a deal because we will be the shining star in the world in terms of growth over the next three to five years. Even though the pool of money is going to get reduced, we will see a decent share of it coming to us from the emerging market pool. In 10 years, they not only made it to the Sensex universe, but also generated big returns for investors. Data shows four current Sensex stocks, which were not a part of the index 10 years back, grew 5-18 times during this period when the BSE Sensex rallied 2.8 times.

Recommended By Colombia

Company name	Price in 2006	LTP (In Rs)	Return in %	Return (In x)
Asian Paints	57.76	1,018.65	1,663.59	17.64
Lupin	96.28	1,672.05	1,636.65	17.37
Sun Pharma	75.69	783.75	935.47	10.35
Axis Bank	54.62	560.85	926.82	10.27
M&M	297.78	1,473.15	394.71	4.95
Source: Capitaline, ETMarkets.com				

References

www.rrfinance.com

By Kshitij Anand, ECONOMICTIMES.COM / Oct 19, 2015, 01.55 PM IST

http://economictimes.indiatimes.com/articleshow/49448753.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

By Amit Mudgill, ECONOMICTIMES.COM / Updated: Jul 14, 2016, 05.06 PM IST

IMPRESSION OF PASSENGERS TOWARDS SERVICE QUALITY OF AIR INDIA

Harish Premrao Noula

Assistant Professor, Dept. Of Commerce, Vidyalankar School Of Information Technology, Wadala (East), Mumbai. harish.noula@vsit.edu.in, Mobile No. +919022881391

Abstract

The primary motivation behind this review is to know the impression of individuals concerning the on-board and on ground administrations and offices rendered to the customers and traveller. This review is led at Chhatrapati Shivaji Maharaj International Airport, Mumbai with reference to the administrations and offices of Air India. For leading this examination the information is gathered from the travellers of Air India. The exploration procedure like mean and standard deviation is connected. The review wound up into the conclusion that a few travellers are content with the administrations and offices and some are most certainly not.

Keywords: Air India, Service Quality, On board services.

Introduction: In basic terms, discernment is the demonstration of seeing what is there to be seen. In any case, what is seen is affected by the individual, the question, and the circumstance. Observation incorporates each one of those procedures by which an individual gets data about nature seeing, hearing, feeling, tasting, and noticing. A sort of monetary movement that is elusive is not put away and does not bring about possession. An administration is devoured at the purpose of offer. Administrations are one of the key parts of financial matters, the other being products. Cases of administrations incorporate the exchange of products, for example, the postal administration conveying mail, and the utilization of mastery or experience, for example, a man going to a specialist.

Service Quality: Benefit quality is an examination of desires with execution (Lewis and Booms). A business with high administration quality will address client issues while remaining monetarily focused. Enhanced administration quality may increment monetary intensity. This point might be accomplished by understanding and enhancing operational procedures; recognizing issues rapidly and methodically; building up substantial and solid administration execution measures and measuring consumer loyalty and other execution results. An evaluation of how well a conveyed benefit complies with the customer's desires. Benefit business administrators regularly survey the administration quality gave to their clients with a specific end goal to enhance their administration, to rapidly distinguish issues, and to better evaluate customer fulfillment. By administration quality administration, we allude to the checking and support of end-to-end administrations for particular customers or classes of customers.

Passenger: A person who is traveling in a vehicle, rail, plane, or other movement, particularly one who is not the driver, pilot or crew.

The services offered to passengers in the airlines can be divided into two categories

1. Ground Services
2. In-Flight Services

Ground Services: these are the services which are offered by the particular airline to its passengers at the airport. The ground services include the services offered at

Reservation: ease of navigation, schedules, fares, booking, product and service information, seat reservation.

Check-in: waiting time, service efficiency, staff attitudes.

Arrival hall: staff assistance, bag delivery times, standard of transfer services.

On-Board/ in-flight Services: these are the services offered on-board. These services include

- Cabin staff services: friendliness of staff, staff interaction with passengers, staff attitudes, language skills, total service consistency.
- On-board product: seating comfort, cleanliness of cabin, cleanliness of toilet, airline magazine, newspaper service, on board catering, pillow blankets etc. total product consistency.

Review of Literature: A critical number of papers and different productions (books, reports) are looked into which gives an essential thought in regards to the Perception of travellers towards the administration nature of Air India. Traveller discernment in aircraft operation has turned out to be basically critical and Dennett, Ineson, Stone, and Colgate (2000) propose that as rivalry made by deregulation has turned out to be more exceptional, administration quality in the carrier business has likewise gotten more consideration. Aircraft organizations additionally endeavored to separate their administrations using automated reservation frameworks which were likewise intended to make client unwaveringness in the dispersion channels (Lee and Cunningham, 1996). In any case, regardless of the aircrafts' endeavours to separate their administrations, a broad study of continuous fliers led by Ott (1993) uncovered that customers did not see any distinction starting with one bearer then onto the next. Cronin and Taylor (1992) begin exact arrangement for the thoughts that apparent administration quality prompted to fulfillment and contended that administration quality was really a predecessor of customer fulfillment. Bitner and Hibbert (1994) confirmed that administration quality experience fulfillment was very unmistakable from general fulfillment and saw quality. Benefit quality will differ; the definitions are altogether detailed from the client viewpoint: that is, the thing that clients see is essential measurements of value. Gronroos (1982) and Parasuraman, Zeithaml and Berry (1998) were the pioneers in the conceptualization of the administration quality develop, these creators kept up that the general view of value was a disconfirmation of a client's desire and assessment of an administrations conveyed.

Objectives of the study

The present study is carried out at Air India, Chhatrapati Shivaji Maharaj International Airport, Mumbai with the following objectives:

- To decide the impression of travellers towards the administration quality about the administrations devoured.
- To break down the hole as far as client desire and administration conveyed by the chose aircraft.
- To make inference and propose the measures that will demonstrate valuable plan of action to the chose carrier.

Data Analysis and Interpretation: A preparatory examination of the information uncovers that the example is made out of around 40 travellers from Air India. In this specimen it was found that a large portion of the travellers are happy with the administration nature of the Air India. With a specific end goal to illuminate the view of travellers, the elucidating examination is connected i.e. Mean esteem and standard deviation which implies the change of the information and comprehends the fulfillment level of the travellers. The mean esteem and standard deviation itself clears the above proclamation, as the mean esteem and standard deviation for the administration nature of Air India on the board is 3.725, which is around equivalent to 4. Same is the situation with the administration quality at the ground as far as refreshments and convenience (if there should arise an occurrence of postponement), i.e. 3.775 and 3.975 individually

Sr. No.	Variables	Mean	Standard Deviation
1	Are you satisfied with Air India flights are on time.	3.45	1.153
2	Air India informs you in advance if there is a delay.	3.55	1.153
3	If the flight is delayed, regular announcements are made.	3.575	1.152
4	Are you satisfied with Air India in-flight services?	3.725	1.012
5	The waiting time for baggage arrival is smallest	3.425	1.034
6	The baggage lose is not a problem with Air India	3.225	1.049
7	Air India compensates for lost baggage if such a situation arises.	3.575	1.083
8	Air India compensates for lost baggage if such a situation arises.	3.55	1.299
9	Air India provides refreshment whenever there is a delay.	3.775	1.229
10	Air India provides accommodation if there is a very long delay/Cancellation of flights.	3.975	0.946
11	Air India provides online booking services.	3.45	0.875
12	Air India offers discounted fare schemes	3.075	0.797
13	Air India offers real benefits to frequent fliers.	3.725	0.986
14	Air India employees help passengers and provide promptness services.	3.625	1.054

Results: During the research, I came across many things, which can be only expressed through various Mathematical and statistical tools. So the further analysis will be covered with by graphs, tables followed by theoretical inferences.

Air India provides accommodation if there is a very long delay/Cancellation of flights: Out of 50 respondents, 35% strongly agree that the Air India provides accommodation in case of cancellation of flights. 40% agreed upon the fact, 20% were having no opinion. 4% disagree upon the fact and strongly disagree were only 1%, as shown

Option selected	Percentage
Strongly disagree	1
Disagree	4
Neutral	20
Agree	40
Strongly agree	35

Are you satisfied with Air India in-flight services?

While getting some information about the air India in-flight benefits, the travellers were having the accompanying feeling:

Option selected	Percentage
Strongly disagree	4
Disagree	10
Neutral	18
Agree	38
Strongly agree	30

Air India provides refreshment whenever there is a delay: While getting some information about the refreshments gave by the carrier if there should arise an occurrence of deferral, the travellers were having the accompanying feeling:

Option selected	Percentage
Strongly disagree	6
Disagree	8
Neutral	34
Agree	10
Strongly agree	42

Air India employees help passengers and provide promptness service: It is a representative, who manufactures a brand picture by giving proficient and magnificent administrations. With regards to the kindness, responsiveness and conduct of workers, travellers were having the accompanying feeling:

Option selected	Percentage
Strongly disagree	6
Disagree	10
Neutral	20
Agree	52
Strongly agree	12

Conclusion: A definitive point of each review is to think of a conclusion to show whether the current situation is up to the check or not. Through the point by point look into as for the "impression of travellers towards the administration nature of Air India aircrafts, a contextual analysis" the subtle elements gathered from the organization authorities and the visitor, I have arrived at the conclusion that the administrations gave by the carrier are of astounding nature and customers are happy with the same. However the carrier is deficient in a few ranges where its rivals are doing great. Hence, the carrier ought to move more in the territories where they are inadequate.

Suggestions: The reason for each business is to make and keep up fulfilled, beneficial customers. Customers/passengers are pulled in and held when their needs are met. Not exclusively do they come back to a similar aircraft, yet they additionally talk positively to others about their fulfillment. Amid the preparation, I have watched that administrators need in satisfying their obligations. Along these lines, so as to expand their administrative aptitudes, the administrators ought to screen operations to guarantee that staff individuals follow authoritative arrangements and methods, wellbeing rules, union contracts, ecological strategies, or government directions. Additionally, they ought to explore specifically to confirm and resolve client dissensions and ought to build up a comprehension of the grievance from the client's point of view. Consider how you would feel in the event that you were in the customer's circumstance.

References

- Bitner, M.J. and Hubert, A.R. (1994), "Encounter satisfaction vs. overall satisfaction and quality", Sage Publications.
- Dennet, C.E., Ineson, M., Stone, G.J., and Colgate, M. (2000), "Pre-Bookable Services in the Chartered Airline Industry: Increasing Satisfaction through Differentiation", *The Service Industries Journal*, Vol. 20 (2).
- Gronroos, C. (1982), *Strategic Management and Marketing in the Service Sector*, Helsinki, Finland: Swedish School of Economics and Business Administration.
- Lee, Moonkyu and Cunningham, L.F. (1996), "Customer Loyalty in the Airline Industry", *Transportation Quarterly*, Vol. 50.
- Ott, James. (1993), "Airline Customer Service Rated „Average“ in Survey", *Aviation Week and Space Technology*.
- Parasuraman, A., Zeithaml, V.A., and Berry, L. L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*

RECRUITMENT PROCESS OF TALENTS IN LIFE INSURANCE CORPORATION OF INDIA

ILA Pathak Jha

Research Scholar, Rani Durgavati Vishwa Vidyalaya, Jabalpur, Madhya Pradesh

Email: ila6666@gmail.com

Abstract

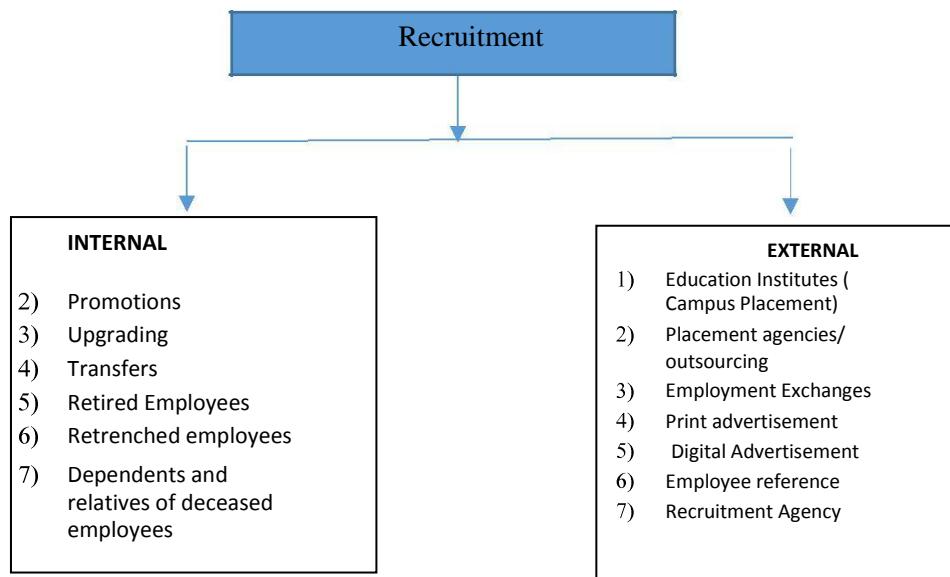
The process of Recruitment in search of right candidate and stimulating them to apply for jobs in Life Insurance Company is two different thing. . In the other words recruitment is the activity that links employers and job seekers. Every organization has the option of choosing the candidates for its recruitment processes from two kinds of sources: internal and external sources. The objective is to support the organization, ability to acquire, retain and develop the best talent and skills and to increase the effectiveness of various recruiting techniques. The study showed the grey areas that the company faces. The suggestion listed at the end can really help the recruitment process to be more fruitful.

Keywords: Recruitment, techniques, organizations

Introduction: With an annual growth rate of 15-20% and the largest number of life insurance policies, the potential of insurance industry is huge in India. Indian Insurance Industry is the fifth largest life insurance market with US\$ 41 billion. According to IRDA, the Insurers in the year 2009-2010 sold 10.55 million new policies with LIC selling 8.52 million and private companies 2.03 million policies. In March 2010, the Life Insurance Corporation of India registered an 83increase in new business income, while private player posted a 47% growth in new business premium. According to IRDA, the insurers in the year 2009-2010 sold 10.55 million new policies with LIC selling 8.52 million and private companies 2.03 million policies. In the year, March 2010, LIC held 65% market share in terms of new business income collection with the private sector contributing the remaining 35% share in 2009-2010. Since opening up of the insurance sector in 1999, foreign investments of Rs. 8.7 billion have poured into the Indian market and 21 private companies have been given licenses. The life insurance industry in India grew by an impressive 36%, with premium income from new business at Rs. 253.43 billion during the fiscal year 2004-2005. The 14 private insurers increased their market share from about 13% to about 22% in a year's time. The figures for the first two months of the fiscal year 2005-06 also speak of the growing share of the private insurers. The share of LIC for this period has further come down to 75 percent, while the private players have grabbed over 24%.

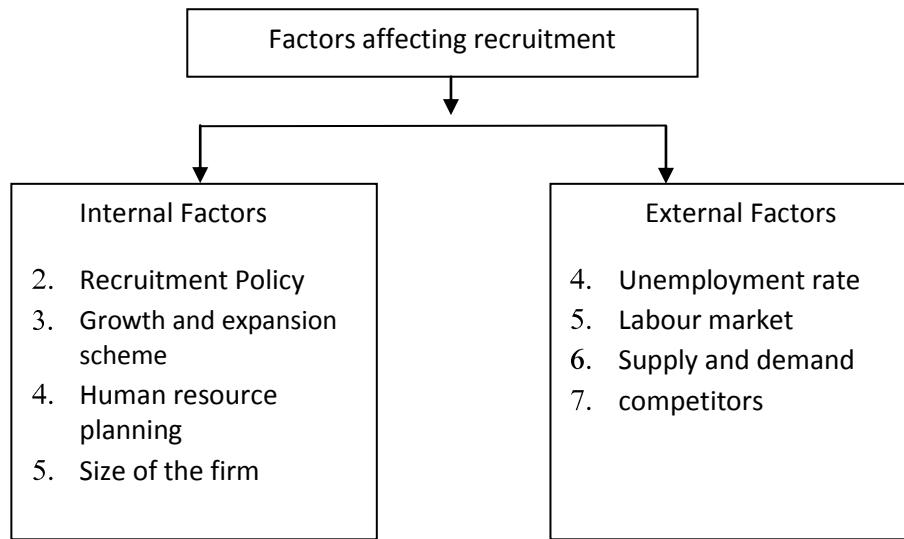
Life Insurance in India: sources of recruitment Every organization has the option of choosing the candidates for its recruitment processes from two kinds of sources: internal and external sources. The sources within the organization itself (like transfer of employees from one department to other, promotions) to fill a position are known as the internal sources of recruitment. Recruitment candidates from all the other sources (like outsourcing agencies etc.) are known as the external sources of recruitment

SOURCES OF RECRUITMENT



Internal Factors: The internal factors i.e. the factors which can be controlled by the organization are: Recruitment Policy, growth and expansion scheme, human resource planning, size of the firm. Factors affecting recruitment policy are Organizational objectives, Personnel policies of the organization and its competitors, Government policies on reservations, preferred sources of recruitment and need of the organization. Recruitment incur cost to the employee, therefore, organizations try to employ that source of recruitment which will bear a lower cost of recruitment to the organization for each candidate.

5. Growth and Expansion: Organization will employ or think of employing more personnel if it is expanding its operations.



External Factors: The external forces are organization. The major external forces unemployment rate etc. the forces which cannot be controlled by the are Supply and Demand, labour market

Objective of the Study: The objective of the recruitment process is to obtain the number and quality of employees that can be selected in order to help the organization to achieve its goals. Following are other objectives of recruitment process- 1. Support the organization ability to acquire, retain and develop the best talent and skills. 2. Increase the effectiveness of various recruiting techniques

Research Methodology: Descriptive type of research is used. It is one which includes surveys and fact finding, enquiries of different kinds. The major purpose of such research is description of the state of affairs, as it exists at present. Methodology or process involving in the research followed during the course of summer training is as follows –

Collection of data: This is an important aspect in formulating the objective of research process where the data is collected via two process: (i) Primary Sources and (ii) Secondary sources.

Primary sources- Where the data is collected primarily by interviewing and personal observation and is original in nature and accurate to the considerable extent. Secondary sources- Where the data is obtained from some published and printed sources such as newspaper, magazines, and websites and so on. To ensure complete representation the researcher identified target responded through a stratified random sampling process stratified the population into number of strata and sampling respondent is selected from each stratum. The selection of respondent from each stratum was based on simple random sampling. 110 employees have been approached and enquired.

6. Insurance employees: a) Unit Manager b) Team Leader c) Agents
7. Business men: a) retail shops b) wholesaler c) family business
8. Students: management students

Findings

1. Category of life insurance

Life Insurance	is treated as	58
Protection of human asset value against uncertainty		
Life Insurance is treated as Tax benefit device		42
Or both		18

From the survey it was concluded that life insurance is more a protection of human asset value against uncertainty (58 respondents) where it is a tax saving option (42 respondents). Life insurance is a service involving both these prerequisites as depicted by remaining 18 respondents.

2. Career in life insurance

Yes	62
No	44

When asked about whether they would like to know about a career in life insurance 62 respondents agreed while 44 respondents said No and will see later sometime in future.

3. Life insurance is noble service or not?

Yes	88
No	17

Life insurance is a noble business as it provides a needful financial support in the situation of fatal calamity. When surveyed about life insurance as noble service. 88 respondents agreed and believe that insurance is a bettering service but 17 respondents show disagreement

4. Is life Insurance industry treated as growth oriented

Yes	88
No	18

88 agreed that life insurance sector is growing concern and will grow at a rapid pace in future whereas 18 took as a mere stagnant industry. Financial services are growing at a tremendous pace as people are urging to make their investment in lucrative opportunities and therefore life insurance sector is playing a vital role in educating the people to make their investment which could secure their future, needs and living despite some fatal calamity that might or might not occur.

5. Essentiality of life insurance

Yes	90
No	20

It has been observed and applied as a Life insurance is an essential service and should be applicable to everyone, as favoured by considerable 90 respondents where it is not essential to an extent by 20 respondents from the summer training project survey by putting forth the set questionnaire.

Conclusion and Suggestions: The objective is to recruit the most qualified, committed individuals into the organizations. Life insurance is a noble service which is very important for every citizen to learn and realize its importance because this is the only source which can remain the status where one is with the family bread earner and ever when he is not. Life insurance has captured its mere 15 – 20% growth therefore a wide open untapped market is open to the company to develop, grow and measure its success. 2. Still the numbers of companies are few and company has every capability to grow and forward its performance areas to the widest. Based on the above study, following are suggestions made for the benefits and augmentation of the sound working of the company – 1. Need to train and develop life insurance agents with more comprehensive knowledge and skills to counter every queries of the customer. 2. It is suggested that company should not leave any stone unturned towards sound advertisement and promotional measures on every section. 3. The advisors should be made aware and educated so that they can extend their services not only in terms of collection of premium checks from the customer but also to educate them about the insurance and the latest non-traditional plans. 4. All the company should come out of a unit link product that should aid every selection of the society. 5. It is also suggested that skilled management graduates need to be placed on sales and marketing of financial services who can render their best ideas for the accomplishment of the company goals and objectives to the best extent. 6. Also, care need to be taken that every customer's grievance should be met with delight whether before purchase or after sales. 7. There should be an expansion measure for more offices and location of more centers for offices of the company be established so that company may grow its network. 8. Life insurance Products should be made flexible so as to suit every section of society.

References

<http://www.indianmirror.com/indian-industries/insurance.html> 2017

www.licindia.in

Shukla & Sharma, Challenges and need for dynamism in the current scenario- Life Insurance Corporation of India

Jain & Sarthi, 2003, Human resource Initiatives 2003

Jan-June, 2016, Review of Professional Management, a journal of New Delhi Institute of Management

2001-2013, Annual Report of the authority, IRDA

DIGITAL MARKETING

Gajanand Nandagiri

Vidyalankar Institute of Technology, MMS Student 2016-18,

Email ID—gajju21nandu@gmail.com, Contact: 9664232570

Abstract

As the Internet develops into a robust channel for commerce, it will be important to understand the characteristics of electronic markets. Businesses, consumers, government regulators, and academic researchers face a variety of questions when analyzing these nascent markets. Will electronic markets have less friction than comparable conventional markets? What factors lead to dispersion in Internet prices? What are the major electronic commerce developments to watch in the coming years? This paper addresses these questions by reviewing current academic research, discussing the implications of this research, and proposing areas for future study. We review evidence that Internet markets are more efficient than conventional markets with respect to price levels, menu costs, and price elasticity. However, several studies find substantial and persistent dispersion in prices on the Internet. This price dispersion may be explained, in part, by heterogeneity in retailer-specific factors such as trust and awareness. In addition, we note that Internet markets are still in an early stage of development and may change dramatically in the coming years with the development of cross-channel sales strategies, infomediaries and shopbots, improved supply chain management, and new information markets

INTRODUCTION: Modern consumers are Web-savvy, mobile-loving people who typically spend more time online than reading magazines and watching TV. These changes in behavior are fundamentally changing the face of marketing – and in ways that are bringing about the convergence of direct marketing and mass marketing. For example, if you are a direct marketing professional executing targeted email campaigns and mobile marketing strategies, you are likely bumping up against mass-marketing campaigns. Why? Because like you, mass marketers are investing more in online ads than ever before – at the expense of TV commercials and print ads. Why are both sides of the marketing ecosystem coming together in the digital world? Because consumer behaviors and expectations have radically changed in recent years – and in ways that blur the lines between direct and mass marketing. Regardless of what side of the “marketing house” you work for, if you want to reach today’s consumers, you must meet them where they like to play – on the Internet, through their mobile devices and on social media sites. At the same time, you need to find ways to personalize messages, tailor offers and engage customers in interactive dialogues that build trust and drive loyalty. This requires sophisticated marketing automation technologies that leverage customer intelligence, optimize interactions across channels, and monitor and respond to changes in customer behaviors.

LITERATURE REVIEW: The purpose of doing research in the area of digital marketing is because it seems huge, intimidating and foreign. Businesses are looking for clearer picture to start but do not know where and how to start doing digital marketing. In today's time, social media channels such as Facebook, Twitter, Google and other social media firms have successfully transformed the attitudes and perceptions of consumers and in the end helped revolutionized many businesses. This was done through measurable vast network of customers with trustworthy data with real-time feedback of customer experiences. It is much more convenient for businesses to conduct surveys online with a purpose to get relevant information from targeted groups and analyzing the results based on their responses. Potential customers can look for reviews and recommendations to make informed decisions about buying a product or using the service. On the other hand, businesses can use the exercise to take action on relevant feedback from customers in meeting their needs more accurately. Digital marketing is the use of technologies to help marketing activities in order to improve customer knowledge by matching their needs (Chaffey, 2013). Marketing has been around for a long time. Business owners felt the need to spread the word about their products or services through newspapers

and word of mouth. Digital marketing on the other end is becoming popular because it utilizes mass media devices like television, radio and the Internet. The most common digital marketing tool used today is Search Engine Optimization (SEO). Its role is to maximize the way search engines like Google find your website. Digital marketing concept originated from the Internet and search engines ranking of websites. The first search engine was started in 1991 with a network protocol called Gopher for query and search. After the launch of Yahoo in 1994 companies started to maximize their ranking on the website (Smyth 2007). When the Internet bubble burst in 2001, market was dominated by Google and Yahoo for search optimization. Internet search traffic grew in 2006; the rise of search engine optimization grew for major companies like Google (Smyth 2007). In 2007, the usage of mobile devices increased the Internet usage on the move drastically and people all over the world started connecting with each other more conveniently through social media. In the developed world, companies have realized the importance of digital marketing. In order for businesses to be successful they will have to merge online with traditional methods for meeting the needs of customers more precisely (Parsons, Zeisser, Waitman 1996).

METHODOLOGY: The research examining early digital markets not only provides an insight into what has occurred, but gives an indication of what the future might hold. There are a number of research issues that have been raised beyond the investigations of friction and price dispersion in electronic markets. While these issues often build on prior work, they address broader and more complex issues related to economics, business strategy, and public policy. This section explores four research issues likely to be among the most important developments to watch in the years ahead. **Research Instrument:** Secondly, these measures had acceptable reliability figures mostly stated in terms of Cronbach's alpha above 0.5. They have reported a reasonable internal consistency among the items; Cronbach alpha > 0.50 (Wilska, 2003). Finally these measures were processed in a systematic manner in the earlier stages of the research project. In addition to these steps, pre-testing of the questionnaire was also performed. The first wave of Internet retailers developed a new channel to communicate with their consumers, challenging the more traditional marketing channels of retail stores, catalog sales, and home shopping. This new Internet channel of business-to-consumer interaction was pioneered by pure-play Internet companies such as Amazon.com. The companies with an existing channel watched as the newcomers experimented with this new medium. Once it was known that consumers (and, more particularly, Wall Street) valued Internet retailers, the second wave of Internet retailers includes companies with an existing marketing channel complemented by an Internet channel. This list of retailers includes such industry heavyweights such as Barnes and Noble, Macy's and Compaq.

Data Collection: The strategy of using advertising agencies and their clients' worked really well in terms of questionnaire administration and provided a suitable environment necessary for target participant's involvement, motivation and convenience. All questionnaires were properly filled and 100% response rate was achieved

ANALYSIS: The data was analyzed into ways a) descriptive statistics b) factors analysis. Descriptive Analysis The result from the study indicates that majority of the participants have a perception that digital marketing is a new mix for promotion but also have a negative perception that digital marketing can be misleading and is not useful for word of mouth (WOM) (See Table 1) Perceptions M SD Digital Marketing ... is a new avenue for promotion

Three Dimensions of Digital Market Efficiency

Price Levels: Are the prices charged on the Internet lower?

Price Elasticity: Are consumers more sensitive to small price changes on the Internet? Menu

Costs: Do retailers adjust their prices more finely or more frequently on the Internet?

Price Dispersion: Is there a smaller spread between the highest and lowest prices on the Internet ?

CONCLUSION: This survey examined the perception towards digital marketing of marketing professionals in India. Although, digital marketing tools and concepts are taking over traditional methods of marketing internationally, it is still a new field for professionals operating in India. According to this survey, professionals are skeptical about the usage and benefits of digital marketing and have been classified as Skeptical. They do consider it as an important tool for promotion but at the same time concerned about the issues of privacy and misleading of information of digital marketing. SMS and MMS are considered as the most important tool for conducting digital marketing which shows lack of understanding and in-depth usage of digital marketing tools by marketing professionals in India.

BIBLIOGRAPHY

- Adamic, Lada A.; Huberman, Bernardo A. 1999. "The Nature of Markets in the World Wide Web." *Alba, Joseph; Lynch, John; Weitz, Barton; Janiszewski, Chris; Lutz, Richard; Sawyer, Alan; American Economic Review, December,*
- Bailey, J. P. 1998b. "Electronic Commerce: Prices and Consumer Issues for Three Products: *Bailey, Joseph P. 1998a. Intermediation and Electronic Markets: Aggregation and Pricing in Bakos, J. Yannis. 1997. Reducing Buyer Search Costs: Implications for Electronic Marketplaces. Management Science, Volume 43, Issue 12 (December).*
- Bakos, J. Yannis. 1998. "The Emerging Role of Electronic Marketplaces on the Internet."
- Bakos, J. Yannis; Brynjolfsson, Erik. 1999. "Bundling and Competition on the Internet",
- Bakos, J. Yannis; Brynjolfsson, Erik. 1999. "Bundling Information Goods", *Management Books, Compact Discs, and Software," Organisation for Economic Co-Operation and Brynjolfsson, Erik; Smith, Michael. 1999. "Frictionless Commerce? A Comparison of Internet and Conventional Retailers." Working Paper.*
- Burdett, Kenneth; Judd, Kenneth. 1983. "Equilibrium Price Dispersion." *Econometrica, July,*
- Chiang, Raymond; Spatt, Chester S. 1982. "Imperfect Price Discrimination and Welfare."
- Chow, Gregory C. 1967. "Technological Change and the Demand for Computers." *The Clemons, Eric K.; Hann, Il-Horn; Hitt, Lorin M. 1998. "The Nature of Competition in Electronic Markets: An Empirical Investigation of Online Travel Agent Offerings." Working Paper, The Wharton School of the University of Pennsylvania, June. Communications of the ACM, Volume 41, Issue 8 (August). Development, OCDE/GD(98)4.*
- Incentives to Participate in Electronic Marketplaces," Journal of Marketing, Volume 61 (July).*
- Internet Commerce.Ph.D., Technology, Management and Policy, Massachusetts Institute of Review of Economic Studies.Volume 49, Issue 2 (April), .Science, Volume 45, Issue 11(November).Technology, Cambridge, MA. Web."Proceedings of Computing in Economics and Finance 1999, Meetings of the Society for Computational Economics.*
- Wood, Stacy. 1997. "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Working Paper, MIT Sloan School

MAKE IN INDIA – RECOGNISING AN ANCIENT MANUFACTURING HUB

Vinit Jain

MMS Student 2016-18, Vidyalankar Institute of Technology,
Email ID – jainvinit5654@gmail.com, Contact: 9819856506

Abstract

Make In India which is the recipe of PM Narendra Modi's aims to make India the manufacturing hub of the world. The idea of utilizing cheap labour to produce for the world is not new. It's been implemented rather successfully in East Asia and gave phenomenal results for three decades popularly called the East Asian growth miracle. The campaign has been concentrated to fulfil the purpose of Job Creation, Enforcement to Secondary and Tertiary sector, boosting national economy, converting the India to a self-reliant country and to give the Indian economy global recognition

I. Introduction: Make in India is the BJP-led NDA government's flagship campaign intended to boost the domestic manufacturing industry and attract foreign investors to invest into the Indian economy. Honourable Prime Minister **Mr. Narendra Damodardas Modi** first mentioned the key phrase in his maiden Independence Day address from the ramparts of the Red Fort and over a month later launched the **campaign in September 2014** with an intention of reviving manufacturing businesses and emphasizing key sectors in India amidst growing concerns that most entrepreneurs are moving out of the country due to its low rank in ease of doing business ratings.

II. Launch of Campaign: Prime Minister Mr. Narendra Modi launched the Make In India campaign on September 25, 2014. The date of the launch was chosen to be of maximum advantage. Coming right after the successful insertion of **Mangalyaan** - a wholly indigenously built low-cost probe into the Martian orbit - the event highlighted India's success in manufacturing, science and technology, and all this at inexpensive costs. It also came just a day ahead of the Prime Minister's maiden US visit. Calculated to enhance India's attractiveness as an investment destination, the launch ceremony was held at the **Vigyan Bhavan** in New Delhi. The hall thronged with attendees, several of whom did not even find seats. Leading entrepreneurs and the CEOs of about 3000 companies from across 30 countries were invited to attend the launch.

Law Minister Mr. Ravi Shankar Prasad and Commerce Minister Ms. Nirmala

Sitharaman were part of the occasion. Apart from them, several corporate head honchos with deep roots in the country also spoke at the occasion. These include - Mr. Cyrus Mistry (Chairman, Tata Sons), Mr. Kenichi Ayukawa (MD and CEO, Maruti Suzuki India), Mr. Mukesh Ambani (Chairman & Managing Director, Reliance Industries), Mr. Azim Premji (Chairman, Wipro Limited), Mr. KM Birla Chairman, Aditya Birla Group), Ms. Chanda Kochchar (MD & CEO, ICICI Bank), Mr. Phil Shaw (CEO, Lockheed Martin), and Mr. YC Deveshwar (Chairman, ITC).

III. Need of Hour - Recognising Ancient Hub: The Prime Minister called for all those associated with the campaign, especially the entrepreneurs and the corporates, to step and discharge their duties as Indian nationals by First Developing India and for investors to endow the country with foreign direct investments. Making optimum utilisation of available resource Setting up platform for Young Talent on domestic front with good **Seed Funding** Increase of Export ; Stabilizing Domestic Currency & Growth of Foreign Exchange Reserves.

IV. Sectors in Focus: For the Make in India campaign, the government of India has identified 25 priority sectors that shall be promoted adequately. These are the sectors where likelihood of FDI (foreign direct investment) is the highest and investment shall be promoted by the government of India. On the campaign launch, the Prime Minister Mr. Modi said that the development of these sectors would ensure that the world shall readily come to Asia, particularly to India where the

availability of both democratic conditions and manufacturing superiority made it the best destinations, especially when combined with the effective governance intended by his administration.

Automobiles	Food Processing	Renewable Energy
Automobile Components	IT and BPM	Roads and highways
Aviation	Leather	Space
Biotechnology	Media and Entertainment	Textiles and garments
Chemicals	Mining	Thermal Power
Construction	Oil and Gas	Tourism and Hospitality
Defence manufacturing	Pharmaceuticals	Wellness
Electrical Machinery	Ports	
Electronic Systems	Railways	

V. Benefits of setting up Manufacturing valley: India is a country rich in natural resources. Labour is a plenty and skilled labour is easily available given the high rates of unemployment among the educated class of the country. With Asia developing as the outsourcing hub of the world, India is soon becoming the preferred manufacturing destination of most investors across the globe. Make in India is the Indian government's effort to harness this demand and boost the Indian economy.

VI. Criticism & Concerns in Set up

Why Companies were not manufacturing in India?

Make in India campaign is at **loggerheads with the Make in China** ideal that has gained momentum over the past decade. China is a major rival to India when it comes to the outsourcing, manufacturing, and services business. India's ailing infrastructure scenario and defunct logistics facilities make it difficult for the country to achieve an elite status as a manufacturing hub. **The bureaucratic approach of former governments**, lack of robust transport networks, and widespread corruption makes it difficult for manufacturers to achieve timely and adequate production. The Modi government has vowed to remove these hurdles and make the nation an ideal destination for investors to set up industries. It has been felt that the government does not walk its talk - labour reforms and policy reforms which are fundamental for the success of the Make In India campaign have not yet been implemented.

A few layoffs in companies such as Nokia India cast long shadows over the campaign.

Several technologies based companies have not been enthused by the campaign launch and have professed to continue getting their components manufactured by China.

VII. The China Model: China has become the 'factory' for the world today. Even some of the basic things like safety pins are produced and exported from here. **Some estimates suggest that China is producing more than the consumers needed the world over.** Look at the environmental cost. What about the citizens' right to decent living? The voice of common citizens is curbed in China. They cannot protest nor express their concerns in public. The autocratic state decides what is good and bad for its citizens, without bothering to know their concerns. Any protest, genuine or not, is clamped down swiftly with an iron fist. China is the biggest polluter in the world today, with its manufacturing units consuming trillions of cubic meters of water. The communist country even sources water from Tibet, which it forcefully occupied in the 1950s. Huge dams and canals it built to carry water from the

Himalayan high lands pose huge environmental consequences for Tibet as well as neighboring countries, including India. Corporate companies and governments must pay for the loss in natural resources, and should not take it for granted. **One of the biggest lessons we can learn from the US is avoiding squandering our resources and avoiding purchasing what we do not really need.**

VIII. The Indian Model

Gandhiji's idea of 'Gram Swarajya' can give us a few answers. India must look to producing indigenously to cater to the domestic food and clothing needs. We must primarily aim at self-sufficiency, curbing industrialization of food production, packaged foods, contract farming, and mechanized farming in large agriculture fields. Cottage industries must be encouraged. "Production by the masses" should be our dictum. Enabling people to generate decent livelihoods off their small landholdings should be the way forward. 'Make-in-India' is a great initiative but will help us in the long run if it takes into consideration certain riders. The government should be cautious and make sure that India becomes another 'producer' for the global consumers, corroding our own people and environment. To Success fully implement Make in India model Government of India has allowed 100% FDI (Foreign Direct Investment) in all sectors except Spare (74%), Defence 49% and News Media 26%) and had launched four major policies under the 'Make in India' program.

- Policy for New Initiative
- Policy for Foreign Direct investment (FDI)
- Policy for Intellectual Policy Facts
- Policy for National Manufacture

IX. Conclusion & Reference

"**Make in India**" is a plan long overdue and it is high time to implement to increase our manufacturing potential. I feel a more plausible analysis should be on the grounds of what is required to make it work and why we need it to work. (Modi, N. 25th September 2014).<http://www.mapsofindia.com/government-of-india/make-in-india.html> An import substitution strategy or an incentive driven export led growth mechanism will not work for India (Rajan, R. Governor, RBI. Sep, 2014).<https://vgsomnews.wordpress.com/2015/02/02/make-in-india-boon-or-bane/> Major affecting sectors would be "Handicraft & Handloom" This is a sector that suffers in many ways, one of which is the raw material. They depend heavily on natural fibres which are seasonal. Thus their costs fluctuate too often to allow the weavers have a good share of profit consistently. Thus equal level of export promotion and giving due importance to domestic industry would be good growth for Indian Manufactures. "Make in India" cannot be a strategy for Import Substitution (Bhanumurthy, N.R. Professor

NIPFP).https://www.worldwidejournals.com/paripex/file.php?val=April_2016_1460965810_101.pdf Finally successful step taken by Government of India toward ease of doing business on 29th February 2015. By introducing amended GST bill (i.e. Standard Indirect Taxation) in parliament & bill ultimately passes on 3rd August 2016 in both the House of Parliament

TO STUDY THE PLANT SPECIES AS BIO-INDICATORS FOR POLLUTION CONTROL

Dr. Siddhesh Ramesh Patil

*Assistant Professor, Dept. Of Management, Vidyalankar School of Information Technology,
Email : siddhesh.patil@vsit.edu.in, Mobile : 9869441630*

Abstract

Plants are the live givers as well as life savers. They not only support the ecosystem with oxygen and water but also be the signalling species for stopping disasters. That is the reason they are consider as Bioindicators. Pollution is a major man-made disaster the is facing today. Disaster management (or emergency management) is the creation of plans through which communities reduce vulnerability to hazards and cope with disasters. Disaster management does not avert or eliminate the threats; instead, it focuses on creating plans to decrease the effect of disasters. 1 Disasters can be of different types depending on its impact on nature. This also includes the changing environmental conditions as a part of major natural disaster such as pollution. Disasters can be monitored by various methods and using high end technology. But the use of natural indicators such as plants will be more helpful in assessing the situation for natural disasters such as pollution. The present study represents some of the plant species as Bioindicators. As plants are the natural signalling agents to provide information of natural disasters used as Bioindicators.

Keywords: Plants, Bioindicators, Pollution

I. INTRODUCTION: Plants are the important components for ecological cycle. Plants are a part of the natural environment of people. The plants identification for used for various purposes includes the determination of different taxa, morphological characteristics and habitats of plants, biological development, chemical composition, and potential applications as food and medicine. In the past, people's lives and their survival were directly related to the environmental conditions, including the impact of climate and the natural phenomena associated with it. For many everyday activities such as food production, building homes, cloth production, prediction of weather-related changes ; plants play a key role. Plants observations were a source of knowledge about direct effects of weather changes on plant lifecycles. Thus, predicting weather changes by means of visual observation of Plants is a key to avoid disaster such as pollution. In India, Ethnobotanical studies (the scientific study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses) play a major role in conservation of nature and lifestyle of protective species. Though all types of sensitive species can be used in monitoring pollution, most useful and commonly used plants include sensitive species of lichens, mosses, plankton algae, aquatic ferns and angiosperms, other ferns, conifers oaks and many crop plants. Mosses, lichens, ferns algae and aquatic plants are generally more useful in pollution monitoring because their range of pollutant specificity is usually much higher than that of higher vascular plants. 2 Plant indicators are also used to determine optimum use of land resources for forest, pasture, and agricultural crops. The heredity and environment both are equally important in the expression of phenotypic characters. Heredity performs its action through environment. Species differ in their environmental requirements and establish themselves where conditions are favourable. It is found that certain species of plants, animals and micro-organisms have one or more specific requirements which very much limit their distribution. The occurrence, character and behaviour of a plant are thus indicator of the combined effect of all factors prevailing in a habitat. Since a plant species or plant community acts as a measure of environmental conditions, it is referred to as biological indicator or bio-indicator or phyto-indicator. In other words, plants which indicate some very specific conditions of environment are called plant indicators. The knowledge of plant indicators can be helpful to determine local soil, thus it can be decided which crops should be cultivated in a particular soil and which soil should be left for pasture or other purposes. Plant indicators are also used to determine optimum use of land resources for forest, pasture, and

agricultural crops. Many plants also indicate the presence of particular mineral or metal. So the presence of precious metal can be detected by the growth of the specific plant in an area. The aim of this study was to determine the diversity of plants as indicators for environmental change.

II. METHODOLOGY: The Descriptive method of study is used with reference to secondary data. The present study includes the comparative study of some of the plant species with reference to present need.

III. RESULTS: A plant is used to indicate environmental quality and locate sources of pollution known as air "Pollution Indicator Plant." Bio-indicator plants are very sensitive to a selected (toxic) chemical, they respond quickly with typical visible foliar symptoms to the presence of medium-to-low levels of the noxious agent; they are very cost-effective and represent a striking visual demonstration unit. Human activities are the major component responsible for pollution. The presence and absence of plant species act as an indicator of the amount of pollution. The plants species represent as Bio-indicator are discussed as follows : Plant indicators for Over-grazing: Many plants are over grazed which result in modification of grassland. It has been seen that grasses are removed by overgrazing while others are disturbed and forage production is considerably reduced. Some plants which are vigorous and undisturbed, remain viable and become distinct from rest of the plants. Some plants show characteristic indication of overgrazing which can be recognized. The predominance of annual weeds and short-lived perennials indicate severe grazing Examples of such plants are – Polygonum, Chenopodium, Lepidium and Verbena. Some plants are less pronounced and show poor or no overgrazing. Examples of these plants are – Opuntia, Grindelia, Vernonia etc. Sulphate content of leaf can directly be related to SO₂ concentration in air. Pine : high sulphur content in pine needles indicates high concentration of SO₂ in atmosphere. Sorghum vulgare : Fluoride content in Sorghum vulgare leaves indicates the distance up to which air pollution by a fluoride source can fall out and this distance may be upto 4 km.

Festuca rubra : Mercury concentration in Festuca rubra grass may be due to chloroalkali set-up and lead in leaves may increase due to automobile exhaust.

1. Air Pollution indicates Plants: The most common source of air pollution is the combustion of fossil fuels. This usually happens in vehicle engines and power stations. Sulphur dioxide is released if the fuel contains sulphur compounds. This gas contributes to acid rain. 5

Lichens: A lichen, or lichenized fungus, is actually two organisms functioning as a single, stable unit. Lichens comprise a fungus living in a symbiotic relationship with an alga or cyanobacterium (or both in some instances). There are about 17,000 species of lichen worldwide. Fungi are incapable of photosynthesis because they lack the green pigment chlorophyll. That is to say, fungi cannot harvest light energy from the sun and generate their own nourishment in the form of carbohydrates. Instead, they need to seek out outside sources of food. They absorb nutrition from organic substances, that is, carbon containing compounds such as carbohydrates, fats, or proteins. Lichens can be used as air pollution indicators, especially of the concentration of sulfur dioxide in the atmosphere. Lichens are plants that grow in exposed places such as rocks or tree bark. They need to be very good at absorbing water and nutrients to grow there. Rainwater contains just enough nutrients to keep them alive. Air pollutants dissolved in rainwater, especially sulphur dioxide, can damage lichens, and prevent them from growing. This makes lichens natural indicators of air pollution. In places where no lichens are growing, it is often a sign that the air is heavily polluted with sulfur dioxide. *Lichen (Lecanora conizaeoides)*: is the most tolerant of all lichens to SO₂, thus occurs in city also. Lichens can thus be used as reliable biological indicators of pollution. *Lichen (Parmelia)*: For nearly 25 years that lichen growth and health can assess many air pollutants and the value of these living organisms rather than man -made instruments for assessing sulphur dioxide levels is that they are inexpensive and give quick results. Lichens are especially useful in forestry to assess where conifers should be planted since conifers are affected by the same sulphur dioxide levels that cause lichen cover to

decline. The possibility of transplanting healthy lichens into areas suspected of being polluted, and monitoring physiological parameters such as respiration and photosynthesis, to give a rapid indication of pollution levels is obvious.

Algae: Aerial or sub-aerial algae would also be ideal as indicators of air pollution because of ease of handling, range of species specific sensitivity which is greater than in higher plants and much quicker physiological responses to air chemistry than occur in high plants. Many of the epiphytic algae, liverworts, fern gametophytes are ideally suited as air biological monitoring organisms. Using both pollution tolerant and pollution sensitive species would be best for air quality indication. Especially suitable as test organisms in the Air Biomonitor are the microalgae found in both aerial and subaerial habitats such as species of *Chlamydomonas*, *Chlorella*, *Chlorococcum*, *Chlorosarcina*, *Chlorosarcinopsis*, *Gloeocystis*, *Chlorhormidium*, *Pleurococcus*, *Stichococcus*, *Trebouxia*, *Chroococcus*, *Gloeocapsa*, *Nostoc*, *Oscillatoria*, *Schizothrix*, and *Scytonema* and the diatoms-*Navicula* and *Nitzschia*.

Moss (*Tillandsia*): *Tillandsia usneoides* (air plant), commonly known as Spanish moss, is an indicator species to air pollution, that its decline is directly related to raised levels of air pollution, and that the most acidic pollutants are the most harmful. Air pollutants are absorbed by Spanish moss. It is commonly called Spanish moss, is a relative of the pineapple (family *Bromeliaceae*). In fact, it is an epiphyte, a plant that gains all of its moisture and nutrients from the air. The thin trichomes (scales) that cover the whole plant, these trichomes play an important role in the absorption of moisture and nutrients from the air. The trichomes act as pumps, and draw moisture and dissolved minerals into the plants through the stomata. This indicates that whatever is present in the air—including pollutants—will be absorbed by the plants.

Herbs and grasses: Changes in sensitive species of herbs and grasses occur much earlier than in shrub and tree populations. Generally, the degree of 'Crown die-back' and death of trees is directly related to the level of SO₂, NO₂ and HCl pollution of air.

Tulsi: Tulsi is sensitive to pollution and a minor change in pollution level is also been detected by this plant. Certain visual observations on the plant supported our prediction that Tulsi can be used as effective bioindicator for auto exhaust pollution. Tulsi act as bio-indicator for determining the increased level of nitrogen and sulphur status in atmosphere.

Tobacco: Biomonitoring of ozone with tobacco is based on tobacco seedlings (*Nicotianatabacum* L.)

Lettuce plants (*Lactuca sativa*): Lettuce plants as bioaccumulations of trace elements.

2. Water pollution indicator plants : Oil spills cause a lot of harm to the environment, both at sea and on land. Water pollution is caused by the discharge of harmful substances into rivers, lakes and seas. Many aquatic invertebrate animals cannot survive in polluted water, so their presence or absence indicates the extent to which a body of water is polluted.

***Utricularia graminifolia*:** This is a small perennial carnivorous plant that belongs to the genus *Utricularia*. It is native to Asia, where it can be found in Burma, China, India, Sri Lanka, and Thailand. *U. graminifolia* grows as a terrestrial or affixed subaquatic plant in wet soils or in marshes, usually at lower altitudes but ascending to 1,500 m (4,921 ft) in Burma.

***Chara*:** This is a genus of green algae in the family Characeae. They are multicellular and superficially resemble land plants because of stem-like and leaf-like structures. They are found in fresh water particularly in limestone areas throughout the northern temperate zone, where they grow submerged, attached to the muddy bottom.

Duckweed (*Wolffia*) : This is a genus of 9 to 11 species which include the smallest flowering plants on Earth. Commonly called watermeal, these aquatic plants resemble specks of cornmeal floating on the water. *Wolffia* species are free-floating thalli, green or yellow-green, and without roots. 6

3. Soil Pollution indicator Plants
Psoralea: This is a genus in the legume family (Fabaceae). Although most species are poisonous, the starchy roots of *P. esculenta* (breadroot, tipsin, or prairie turnip) and *P. hypogaea* are edible. A few species form tumbleweeds. Common names include tumble-weed (*P. lanceolata*), and white tumbleweed.
***Andropogon* (common names: beard grass, bluestem grass, broom sedge)** This is a genus of grasses. *Andropogon gerardii*, big bluestem, is the official state grass of Illinois. There are about 100 species.

Shorea robusta: This is also known as sal or shala tree, is a species of tree belonging to the Dipterocarpaceae family. Sal tree is also known as Sakhua in northern India including MP, Orrisa and Jharkhand. Sal is moderate to slow growing, and can attain heights of 30 to 35 m and a trunk diameter of up to 2-2.5 m. The leaves are 10–25 cm long and 5–15 cm broad. In wetter areas, it is evergreen.

Senna obtusifolia: (Chinese Senna or sicklepod) This is a legume in the genus *Senna*, sometimes separated in the monotypic genus *Diallobus*. It grows wild in North, Central, and South America, Asia, Africa, and Oceania, and is considered a particularly serious weed in many places. It has a long-standing history of confusion with *Sennatoria* and that taxon in many sources actually refers to the present species.

Geranium: This is a genus of 422 species of flowering annual, biennial, and perennial plants that are commonly known as the cranesbills. They are found throughout the temperate regions of the world and the mountains of the tropics, but mostly in the eastern part of the Mediterranean region. The long, palmately cleft leaves are broadly circular in form. The flowers have five petals and are coloured white, pink, purple or blue, often with distinctive veining. Geraniums will grow in any soil as long as it is not waterlogged.

Impatiens: This is a genus of about 850 to 1,000 species of flowering plants, widely distributed throughout the Northern Hemisphere and the tropics. Together with *Hydrocera triflora*, impatiens makes up the family Balsaminaceae. Common names include impatiens, jewelweed, touch-me-not, snapweed, and, for *I. walleriana* in Great Britain, "busy lizzie", as well as, ambiguously, balsam.

Heavy metal pollution indicators Plants

Cladophora: This is a genus of reticulated filamentous Ulvophyceae (green algae). The genus *Cladophora* contains many species that are very hard to tell apart and classify, mainly because of the great variation in their appearances, which is affected by habitat, age and environmental conditions. The *Cladophora* species can be a major nuisance causing major alteration to benthic conditions linked particularly with increased phosphorus loading. ***Stigeoclonium***: is a genus of algae, in the family Chaetophoraceae

4. Oil pollution Indicates Plants
Dunaliella teritolecta: This is a genus of algae, specifically of interest the Dunaliellaceae. *Dunaliella* sp. are motile, unicellular, rod to ovoid shaped (9–11 µm) green algae (Chlorophyceae), which are common in marine waters. The organisms are relatively simple to cultivate and do not clump or form chains.

Haptophytes: The haptophytes, classified either as the Prymnesiophyta or Haptophyta, are a division of algae. The term "Haptophyceae" is sometimes used. This ending implies classification at a lower level. However, although the phylogenetics of this group has become much more understood in recent years, there remains some dispute over which taxon level is most appropriate.

Mortierella: These species are soil fungi belonging to the order Mortierellales within the subdivision Mucoromycotina (division: Zygomycota). The widespread genus contains about 85 species.

IV. CONCLUSION: Traditional plant-based weather and climate forecasts are still passed along from generation to generation. Although the plants have lost some of their importance in weather forecasting and predicting natural disasters in the modern world, their study helps to reveal the mechanisms of establishing folk botanical knowledge as part of a country's native knowledge. Moreover, the data can be used in some modern fields such as advanced research on strategies for

survival in natural conditions or extreme situations. Plant-based ethnobotanical knowledge is India's world's traditional cultural heritage. This kind of study at the present time has a high relevance with climatic change and its impact on humans and our environments. The rate of accumulation of air pollutants in the lichen, moss, tobacco, tulsi or algal plants can be determined by means such as biomass decrease or increase per unit time, pigment analysis, rate of respiration or photosynthesis and heavy metal accumulation.

SUGGESTIONS

- Use of natural indicator as the tool to predict disaster at pollution level
- Identification of new potential plant species as Bio indicator.
- Reduce pollution level by using major pollution controlling plant species

REFERENCES

- https://en.wikipedia.org/wiki/Emergency_management
<https://www.quora.com/Which-plant-is-excellent-indicator-of-air-pollution>
<http://www.biologydiscussion.com/plants/plant-indicators-characteristics-type-and-physiological-changes/6970>
<http://www.downtoearth.org.in/news/natures-pollution-indicators-32526>
<http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/interdependence/environment alchangerev2.shtml>
http://www.nbrienvis.nic.in/WriteReadData/CMS/CBSE635339403222690889_pollution%20indicators%20plants.pdf

A STUDY ON THE PERCEPTION OF WELL INFORMED INVESTORS TOWARDS STOCK BROKERS IN MUMBAI CITY

N. Lakshmi Kavitha

Asst. Professor, VSIT, Wadala-37

Abstract

In the fast moving world, ever body wishes to earn more money within a short period. Investment in stock market is one of the avenues to make profits in different stages of period. If investors want to make profit within too short a period, they have the option of Intra-day trading, and if they want to make money in short period or long period, it is also possible in stock market investment. But which company the investor has to select to make investment, how to invest, when it has to be sold etc, lots of questions arise in the mind of investors. Here the stock brokers act as an intermediary between investors and stock market and help the investors to make investment in stock market. But Investors should get knowledge about the stock market investment and stock broker role on that. Many survey mentioned that financial literacy in this field is low. Hence this attempt made to understand the perceptive of well informed investors towards stock broker, so that this paper can give a small amount of guidance to the new and entry level investors. More over through this research, the researcher wants to increase the awareness level of investors about the stock broker.

Introduction: Stocks markets trade and investments are an important part of our personal finances and national economies. Today more and more number of stocks is available to invest in stock market directly or indirectly like mutual funds. In the bigger picture, stock markets offer individuals & institutions a means to build wealth or to reduce the risk of financial loss. The increasingly complex web of financial transactions that characterize today's economy often puts stock markets at the center of the economic booms and busts. More and more, everyone looks to "the market" for a signal on where the economy is headed. Stock market is full of shares, commodities and various other related things, wherein investors invest their money through brokers or directly by their D-MAT accounts through online portal of stock broker. As an investor, it is obligatory to secure the services of a share broker who will handle all transactions. Stock brokers guide their investors towards their investment decisions & also they inform their investors about market conditions. Investors need to choose the right stock broker whom they can trust and who gives them right advice/suggestion on their investment and mostly it is observed that investor's decisions on investment are often influenced by their brokers. In India Stock broking activity is regulated by securities and exchange board of India under the powers delegated to it under the securities contracts (regulated) act, 1956 and government of India stock-brokers and sub-brokers rules, 1992A stock broker or a share broker is a person who helps investors to trade in stock exchange. He/she also gives them proper guidance to make them understand the market. They provide various other services as well. A broker may be employed by a brokerage firm. Roles similar to that of a stock broker include investment adviser and financial adviser. Sub-broker is one who acts on behalf of stock broker as an agent or otherwise for assisting the investor on buying, selling or dealing in securities. All the stock brokers and sub brokers have to be registered with SEBI. An investor is a party that makes an investment into one or more categories of assets, equity, debt securities, real estate, currency, commodity, derivatives such as put and call options with the objective of making a profit. This definition makes no distinction between those in the primary and secondary markets. That is, someone who provides a business with capital and someone who buys a stock are both investors. Since those in the secondary market are considered investors, speculators are also investors. An investor, who is having good knowledge about the various investments, functioning of stock brokering and the stock market, is called as well informed investors. Well informed investors always take their own decision regarding investment.

REVIEW OF LITERATURE: Rajeshwari and Ramanmoorthy attempted to measure the awareness of retail investors about the concepts and functioning of investors in Bombay, Bangalore

and Hyderbad . The study was based on data collected through a survey from 92 potential investors.(67 men , 25 women) & 101 present investors (72 men & 29 women)From the selected three cities during MAY 2000.The study revealed that 56.7% of the men & 52% of women among the potential investors had poor, inadequate awareness about mutual funds . Among the present investors 33.3 % men & 65.5% women had poor inadequate awareness. Suyash Bhattmentioned that the investment in Stock is a long term decision and one needs to consider various aspects before investing in stocks. It was observed that stock investors were risk averse and would not mind paying a high price for an established company than to invest in a new company at a much lower price. However, a new class of investor is emerging who are ready to experiment with new companieswith some conditions like price protection. It is a dynamic market but one thing that is sure is that the demand for Indian stock market is growing internationally.

OBJECTIVES OF THE STUDY

The following are the objectives of the study

- To understand the duties of Stock brokers in details.
- To study the legal Causes of action against brokers and brokerage Firms
- To study the perception of well informed investors towards of stock broker

RESEARCH METHODOLOGY: The nature of the present research paper is a descriptive and case study. Primary data as well as secondary data were used for this study. Primary data has been collected from Mr. Rajesh Jain who is investing in stock market for more than 25 years. Data was collected through personal interview during December 2016.The secondary information has been collected through journal, magazine, websites and SEBI hand books of various years.

Duties of stock broker

Fair Dealing: Stock Broker should trade legally in stock and should carry out buying & selling of goods in a legal and open manner.

Duty of Loyalty: Brokers, members & Candidates of Brokerage Firms have a duty of loyalty to their Clients and must act with reasonable care & exercise prudent judgment. They must act for the benefit of their clients and should put their client's interest before their employers or their own interests.

Obligation of disclosure: A broker also has a duty to disclose all material information related to investment. In general, the broker has an obligation to disclose all information which may be reasonably relevant to an investor to take into consideration to make an informed investment decision. In particular, Broker should disclose all risks and level of risks involvedin an investment.

Authorization for trading: A broker may not execute trades in a customer's account without clients permission /approval, he requires Authorization of his clients to execute trade.

Requirement of suitable Recommendations: Perhaps the most important and least known obligations of a stock broker is the requirement for all investment recommendations to be consistent with the customers financial status,investment,objectives,level of understanding and risks tolerance. According to this,suitability rule and the requirement of the 'know your customer' rule, a broker must have reasonable grounds for believing that the recommendations is suitable & appropriate for that particular customer based upon his individual financial needs.

Special Situations: Certain forms of investment pose particular problems, and therefore brokers have additional duties in connection with such activity. For example, trading with money borrowed with brokerage firm, known as trading on margin, is carefully regulated activity. Brokers also have special responsibilities in connection with options in trading and private placement limited partnerships among other forms of investments.

Supervisory Responsibility: A brokerage firm has a responsibility to supervise the activities of its brokers. The firm must maintain a system to enforce compliance with rules & to prevent

violation of securities laws and regulations. The responsibility of the brokerage firm to supervise their agents is especially important because many clients maintain their account with a particular firm and follow the advice of the broker based upon the name of the firm standing behind the broker.

Duty of good Faith: A stockbroker & brokerage firm have responsibility to conduct themselves with good faith in interaction with their client. Customers place their trust & reliance in the brokers & brokerage firms to treat them in accordance with high standards imposed upon the securities profession. The fact that many customers place their total faith and reliance in the broker viewing him as trusted advisor & putting their financial affairs in his hands, certainly should heighten the broker's responsibilities and duty of good faith.

Common Complaints against Stock Brokers: Following points explains the different complaints registered against stock broker and stock broking firm in stock exchanges and SEBI.

Trading without permission: Sometimes a client may be surprised to discover certain trades made in his account which had not been previously discussed by the stock broker. This constitutes unauthorized trading, which is prohibited. Sometimes a broker may call the customer after the fact and say that he has just placed a particular trade in the account. The mere fact that the broker informed the customer of the trade afterwards does not make the manner of trading acceptable.

Guaranteed sure winner: Another common complaint is that the broker guaranteed that the stock would go up & the investment was a "guaranteed sure winner". Most experienced investors realized that there are no guarantees in the stock market and the brokers may be prone to certain degree of exaggeration or puffery in their salesmanship. Such statements may constitute unlawful misrepresentations.

Excessive trading: If a broker is constantly buying & selling in the account, this may be evidence of churning, which means engaging in excessive trading in order to generate commissions of the broker.

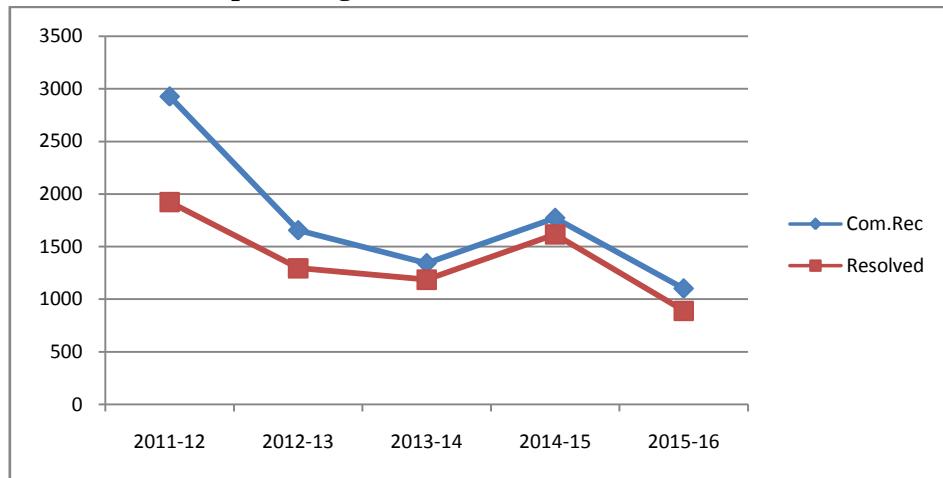
Insider information: Sometimes a broker may say that he has information from certain sources inside the company which is not available to the public. A broker may indicate that he is certain that the stock will be going up based upon such information & urge clients to invest on which he may describe as 'HOT TIP'. This may constitute in trading upon 'Insider information' which is prohibited by law.

Risky investments and misrepresentations: Sometimes, a client may complain that the broker said that something was a very safe investment but the client later discovered that in fact it was very risky. Clients rely upon the recommendations of stock brokers, and failure to properly disclose the risks is misrepresentation or material omission. Unfortunately, many investors do not discover the truth in such cases unless they have incurred substantial losses and then realize that the investment was not so safe in the first place. Such misrepresentations from the broker's side are prohibited by law. Following table and chart shows the number of complaints received against stock brokers and solved by BSE.

Table No 1: Number of complaints against Stock Broker

Sr.No.	Year	Complaints received	Resolved through the Exchange
1	2011-12	2927	1923
2	2012-13	1656	1295
3	2013-14	1343	1187
4	2014-15	1773	1617
5	2015-16	1103	891

(Source:BSE)

Chart No 1: Number of complaints against Stock Broker

The SEBI has received complaints about stock broker, sub-broker, authorized person and employees of the brokers. In 2011-12, the number of complaints received was 2,927 out of which 1,923 complaints were resolved through the exchange in the same financial year. But during 2015-16, the complaints came down to 1,103 out of which 891 were resolved through the exchange. It can be rightly said that the complaints came down because of timely action taken by the SEBI. The above chart and table shows that the number of complaints received by BSE is gradually decreasing. Following are the legal causes of action against stock brokers including sub-brokers, Federal Security Laws, State Blue-Sky laws, Consumer Protection Statutes, Fraud & Misrepresentation, Negligence & malpractice, Breach Of contract, Unsuitable Trading, Churning, Breach of Fiduciary duty and Failure to supervise

CASE STUDY OF MR. RAJESH JAIN: Mr. Rajesh Jain is 58 year old businessman who has his own Retail Jewellery designing business at Jhaveri Bazaar in Mumbai. He is investing in stock market for the past 25 years, and he has his account in one of the leading brokerage firm in Mumbai. In his initial investment, he was totally dependent upon his stock broker as he had no idea about the stock market, how to trade and other related information as a result he had suffered substantial losses, which amounted to around rupees nine lakhs. He almost lost interest in stock market, then one fine day his friend Vikram told him about a course related to trading in stock market called Shikshataught by Mr. Himanshu Shah. He attended that course, for that he paid fees of Rs. 61,000 & Mr. Himanshu Shah who taught them used to come from Chennai especially to teach them. He gained knowledge about the stock market, duty of the stock brokers, various laws related to Frauds done by stock brokers and he also came to know about various ACTs passed by our government against such Frauds. More over this course gave him basic knowledge related to intra-day trade, delivery etc. of stock market. He gained more knowledge through the course and the same has been applied in trading also. After that, by using his own analysis, he started to gain profit in the stock market. He recovered all his previous loss through stock trading. Now, he is one of the successful investors in stock market. He concluded with the following points, 1. Before investing in stock market, get the knowledge about market 2. Don't be totally dependent on stock broker for your transaction, get the information, services and facilities from him but take your own decision by using your own calculation. His wise decision and knowledge saved him from another loss, Now his main interest investments are SBIN, Nifty, Bank Nifty, Gold, Silver, Tata STEEL & RIL. He has gained a hefty profit from all these commodities. Mr. Rajesh has invested in SBIN, Nifty, Bank Nifty, Tata Steel, RIL, GLOD, and SILVER. Gold has been his most major interest commodity, In the year 2013-14 he invested Rs. 9,00,000 in total. In the year 2014-15 he invested Rs. 14,75,000 in total & he invested more amount 16,00,000 in the year 2015-16. The respondent was very happy with his

knowledge gained from this course and recommended it to many of his close ones and friends about this course and also helped them on how to deal with brokers and how to compete in stock market and how to avoid problems

OBSERVATIONS: It is observed through the above interpretation that well informed investors are getting services and facilities from the stock broker. They select the stocks to make investment and more over they are not dependent on stock broker to make decision regarding buy, sell or hold. It is the duty of the stock broker to disclose all material information related to investment. There is more chance to loss hard earned money, without the knowledge of stock market.

SUGGESTIONS

Be careful in choosing a Stock Broker or investment advisor.

Investors should enhance their knowledge of stock market by undergoing training, courses & seminars.

Review all account statements, trade confirmations, prospectuses and correspondences from the broker or brokerage firm

Listen carefully to what broker says and ask questions

File complaints immediately to the concerned authority if you are cheated by stock broker immediately.

LIMITATIONS AND SCOPE FOR FURTHER STUDY: This study made with secondary and primary data. The study expose the perceptive of well informed investors towards stock brokers, but due to time constrains primary data was collected from only one well informed investors who investing in stock market. This study area is limited in Mumbai. Hence there is scope to do same research in some other geographical area.

CONCLUSION: The role of stock brokers are important for the pool of savings of innumerable investors, for the purpose of making investment in various financial instrument, capital market and money market, with a view of providing a reasonable return. They provide the benefit of professional management, besides a diversified investment opportunity. A stock broker involves setting an investment goal, identification of securities portfolio designing and portfolio revision. But it is the duty of investors, before making investment that they have thorough knowledge about everything which is related to investment.

REFERENCES

- Wood, Ryan; Zaichkowsky, Judith Lynne (2008), "Attitudes and Trading Behaviour of Stock Market Investors: A Segmentation Approach", *Journal of Behavioural Finance*, 2004, Vol. 5 Issue 3, p170-179.
- Zvi Bodie and Dwight Crane (2000), "Personal investing: Advice, Theory and Evidence: Financial analysts Journal: Vol. 53, No. 6, pp: 13-23.
- The Stock Market*, Rik W. Hafer and Scott E. Hein
- <http://www.securitieslaw.com>
- www.bseindia.com
- www.investis.com.

BOOMING WOMEN LEADERS IN BANKING AND FINANCE SECTOR IN INDIA – FEW SUCCESS STORIES

Vijay Gawde & Alka Dhingra

Vidyalankar School of Information Technology, Mumbai, India, vijay.gawde@vsit.edu.in

Vidyalankar School of Information Technology, Mumbai, India

Abstract

In last two decades, there is a rise in Women leadership in the Banking and Finance Sector in India. It indicates importance given to the women in the top level management. Over the past few years, a handful of women leaders are moving towards success by showing that they have vision, skills, appetite and decision powers for enhancement of new ventures as well as overall growth of economy being dynamic leaders of new access. It has been possible due to the growing education level among women and their participation in workforce. The research is based on secondary data collected from different journals, after liberalization magazines, newspapers and books. This paper intense to explore the success stories of motivational women Leaders in banking sector and their contribution towards organizational development and women empowerment which in turn is essential for the developing economy.

Keywords: - Women leaders, Banking and finance sector.

INTRODUCTION: Enormous great leaders both men and women have been in India before and after independence. Their contribution towards the development of economy in different area like politics, education, industrial development etc. is memorable for generation to generation. In past scenario, there are many examples of known and unknown women leaders like Pandita Rama Bai, Aruna Asaf Ali, Indira Gandhi, Mother Teresa and recently Pratibha Tai Patil, who have created a transformable role among women in the area of politics and social welfare. But the participation of women in the workforce in different industries has increased significantly of the Indian economy, specifically in case of banking and finance sector. Over the past few years, women have created the impact of their leadership in various industries in India as competent leaders. Seema Modi, MD at Heinz, IndraNooyie, CEO, Pepsi (FMCG), Vanitha Narayanan, MD, IBM India, Aruna Jayanthi, CEO, Capgemini, India (I.T./I.T.E.S), Farah Khan, Deepa Mehta (film industry), Kiran Mazumdar Shaw, CEO, BIOCON (PHARMACEUTICAL), Shobhana Bhartia, Chairperson, HT MEDIA(MEDIA)etc. are the examples of such women leaders. But the contribution of women leaders in case of Banking and Financial Services sector is premier among all the other industries, which can be proved with the examples like Vijaylakshmi R.Iyer (Bank of India), ArchanaBhargav (United Bank of India) Shubhalakshmi Panse (Allahbad Bank) Chanda Kochhar (ICICI bank) Shikha Sharma (Axis Bank) Naina Lal Kidwai (HSBC) and Recently Arundhati Bhattacharya (chairperson, SBI) became the first woman to hold the top positions in the bank's 206 year history. After this appointment, economist Mr. Ajit Ranade said

“About half of India’s banking assets are under the control of women.”

OBJECTIVES OF THE STUDY:

- 1.) To study the current scenario of women workforce in industry specifically in banking and finance sector
- 2.) To highlight the role and contribution of women at the top level management.
- 3.) To analyze the challenges faced by the working women at top managerial level.
- 4.) To understand impact of women leadership on the economy.

RESEARCH METHODOLOGY: The researchers have used secondary data to support their convictions. The data include secondary readings and valuable information from different books, articles in journals, newspapers and Internet.

CURRENT SCENARIO OF WOMEN WORKFORCE AND WOMEN IN TOP LEVEL MANAGEMENT IN INDIA:

The table below shows the overall participation of Women workforce over the years

Year	Service (%)	Ind(%)
2005	14.5	14.4
2010	17	17.8
2012	19.5	20.7

Table No.1 Source: World Bank

The participation of overall women workforce in banking sector:-

Year	Officers	Clerks
1985	3.9	17.3
1990	4.9	18.97

Table no. 2 source: NIBM,Pune

Review of certain Banks and their overall women workforce:- During 2010, Banks like Axis bank and American Express in India had 21% and 43% women workforce respectively. During 2014, Banks like ICICI and Kotak Mahindra have 25% and 20% women workforce respectively.

Review of Top Level Management:- As per Grant Thorton international business report,2013 , in India, women holds 19% of senior management positions whereas globally it is 24% on an average. It is as good as same percentage as compare to developed countries like U.K. , U.S.which is 19% and 20% respectively. As per Analysis of data collected from a survey conducted by EMA partners international, During 2009, 11% of the companies studied (sample of 240 companies selected on the basis of revenues market cap.from both private and public sector) under survey had female CEOs. It may be a small figure but in the comparison fortune 500 list it is much better.

SECTOR	FEMALE CEO %
Banking and Finance	54
FMCG	08
Media and Life science	11
Manufacturing, IT/ITES	04
Others	13

Table No.3

During 2013 the growth rate was spectacular at 21% (out of sample size of 215 companies surveyed 45 companies are lead by women.

SECTOR	WOMEN LEADERSHIP DISTRIBUTION (%)
TRAVEL	2
RETAIL	4
PHARMA	9
MEDIA	9
MANUFACTURING	7
IT/ITES	18
FMCG/CONSUMER DURABLES	16
FINANCIAL SERVICES	33
CONSULTING	2

Table No.4

Factors influencing women leadership

- Support and encouragement at domestic front.
- Companies initiatives of empowering women at workplace (training programs, workshops).
- Companies flexible hours policies for women employees.
- Provision of various kinds of leaves for women employees.
- Women friendly working environment at workplace.
- Women security- primary concern for an organization (transport and medical facilities)
- No discrimination at work place.
- Companies policies of treating women employees as an asset for their organization.

Impact of increasing women leadership on economy

- It fosters entrepreneurship.
- Removes gender discrimination.
- Make women financially independent.
- Helps in creating awareness among women and upcoming generation.
- Create women reservation in various sectors.
- Promotes new ideas for women empowerment.
- It helps in overall growth of nation as well as economy.
- Formulation of new women friendly policies at workplace.

Impact of increasing women leadership on Banking and finance sector

- Establishment of new women Bank only for women i.e. Bhartiya Mahila Bank in 19th November 2013 (which is 94 th Birthday of Indira Gandhi, a former Prime minister of India.) with the objective of motivating women for their participation in economy through funding skills development by providing loan at concessional rate of interest. India is the 3rd Country in the world with Such Bank. The aim of this bank is to open 39 branches in first year.
- Increased women workforce participation in various managerial levels.
- Better employment policies for women.
- Helps in promoting self-help groups.
- It helps in creating financial inclusions

Few Success stories:-Women are playing a pivotal role in India's banking sector. In fact, the sector has had a large number of women at the helm of affairs with several women CEOs. India's largest bank (by assets) is also run by a woman! Here is a list of India's most powerful women bankers, who are calling the shots and shaping India's future!

Chanda Kochhar:-She is the Managing Director and Chief Executive Officer of ICICI Bank Limited, India's largest private sector bank. Throughout her time at ICICI, Kochhar has implemented numerous innovative changes to the Indian retail banking industry which have directly contributed to the company becoming a market leader. She identified the three things which cause basic problem with ICICI bank — poor composition of low cost deposits (CASA), credit quality, and capital conservation, the three Cs, which inturn became its new foundation. She is ranked 14 among Fortune's 50 most powerful women in business for the four consecutive years. She took an initiative which helps to create base for rural India. She has given biggest empowerment and made gender neutralization. She has provided self-help group loans with acceptable rate of interest for good duration of time. Through her business expertise, she is not only helping the overall economy but also contributing towards women empowerment and banking industry. She is making a transformation of ICICI bank with better asset quality by setting up branches in rural areas and by applying the operating techniques of SBI and BOI. She also has got the award for global leadership for US-INDIA commercial relationship. And in 2013, She Received the 'Mumbai Women Of The Decade' award by

ASSOCHAM. As well as she was awarded as the Best CEO - Private Sector category at the Forbes India Leadership Awards 2013. She is also widely acknowledged for her leadership and has been named a 'Woman of Power' by the Asian Business Leadership Forum and received the Padma Bhushan Award, the third highest civilian honour by the Government of India, for her services to the banking sector.

Naina Lal Kidwai: Country head and group general manager of HSBC INDIA, She was the first woman to graduate from Harvard business school. She is not only the chairman of HSBC Asset Management and HSBC Invest Direct for the Indian market but she is also a non-executive director of nestle; chairman city of advisory council for India, the local advisor Havard business school. Inspite of her international engagements, she is on the governing body of national council of applied economic research, audit advisory board, auditor general of India and on the national executive committee of the FICCI. She is not just an asset to HSBC, India but also she has contributed a lot in the banking and finance industry as she is the first women who channelized the functioning of foreign bank in India. To appraise her contribution she was awarded by PADAM SHREE by Government of India. She also received the ASSOCHAM ladies league's Delhi women of the decade Achiever's award. She was ranked 12th Top women in Fortune-50. Her main contribution is towards micro finance in banking and finance industry and she is contributing towards society by creating opportunities for rural women to earn their livelihood.

Arundhati Bhattacharya: She is the first woman Chairperson of the country's largest bank by assets. Arundhati joined State Bank of India in 1977 as a probationary officer (PO). She held several key positions during her 36-year career with the bank which include, chief executive of the bank's merchant banking arm – SBI Capital Markets; chief general manager in charge of new projects. She has also served at the bank's New York office. She has been actively involved in the launch of several new businesses such as SBI General Insurance, SBI Custodial Services and the SBI Macquarie Infrastructure Fund. Before being the Chairperson, she held the posts of managing director and chief financial officer at SBI.

Shikha Sharma: She is the Managing Director and CEO of Axis Bank since 2009. Shikha began her career with the ICICI group where she worked across various verticals like Project Finance, Retail Banking and Investment Banking. Her last assignment was as Managing Director & CEO of ICICI Prudential Life Insurance Company, a leading private sector life insurance company in the country. Shikha has received wide recognition for her achievements. She is a recipient of many business awards like 'Transformational Business Leader of the Year' at AIMA's Managing India Awards, 2012, and 'Woman Leader of the year' at Bloomberg – UTV Financial Leadership Awards, 2012, and *Businessworld's* Banker of the Year Award, 2012. She has also been listed in prominent publications, such as *Forbes* List of Asia's 50 Power Business Women, 2012, *Indian Express* Most Powerful Indians, 2012 and *India Today* Power List of 25 Most Influential Women in 2012

Renu Sud Karnad: Managing Director of HDFC, She is a graduate in law from the University of Mumbai and holds a Master's degree in economics from the University of Delhi. She is a Parvin Fellow – Woodrow Wilson School of International Affairs, Princeton University, USA. She has been employed with the Corporation since 1978 and was appointed as the Executive Director of the Corporation in 2000 and was re-designated as the Joint Managing Director of the Corporation in October 2007. She was appointed as the Managing Director of the Corporation for a period of five years with effect from January 1, 2010. She is responsible for the Operations, Human Resources and Communications functions of the Corporation. She has been ranked by *Wall Street Journal* as the Top Ten women to watch out from Asia.

Shubhalakshmi Panse: She assumed the office of CMD of the Allahabad Bank in January 2012. Prior to her present appointment Ms Panse was the Executive Director of Vijaya Bank since November 2009. She was managing all the portfolios and was responsible for the administration and

Business development of the bank. MsPanse started her banking career by joining Bank of Maharashtra as Probationary Officer in 1976. She had wide exposure and expertise in diverse disciplines like Credit Management, Recovery, Treasury and Information Technology at various levels at several locations in the country during her tenure at Bank of Maharashtra. She was also Circle Head of South circle covering Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Goa and Pondicherry. She was felicitated by Pune Municipal Corporation for her contribution in the field of banking in 2000. She has won various awards such as the Wisitex Foundation's (Mumbai) award of Banker of the year in 2005, Rajiv Gandhi Sadbhavna Award for contribution in the field of IT in Banking Industry by Rajiv Gandhi Foundation, Orissa, in May 2008, NariChetna Award for the contribution in the field of IT in banking by MES Society Pune in June 2008 and Suryadatta National Award for 2011 for Excellence in the field of Banking and Finance. She is a market oriented banker with strong administrative and leadership skills and able motivator of her team.

Challenges faced by Women leaders:-

- The stereotypes and preconceptions towards women that they are fragile and lacking in the qualities
- Women secure positions that have titles with little real power or supervisory authority.
- Women have to deal with the complexities of the dual role as working women and mother.
- Inability to stay late at work and a disinclination for jobs involving travel as well as transfers.
- Women have their own inner battles, which need to be fought and overcome. - (no self motivation)

CONCLUSION: Women leadership has come a long way in this modern scenario. They have left their traditional garb of a typical stereotypes ruling the kitchen to come out in the open as the leaders. There has been a time the corporate world never recognized the role of women in its growth but now things have changed. The research had been a fruitful run in this prospect of bringing in the true identity and color of Indian women leadership who has been a major booster in helping in bringing a substantial growth of the Indian economy.

“ A women who understands the problem of running a home will be nearer to understanding the problem of a country.

Margaret Thatcher : Prime Minister ,U.K.(1975-90)

References

- PD Chaturvedi and MukeshChaturvedi: Business Communication, Pearson Education, 2009*
Aruna Koneru: Professional Communication, Tata McGraw Hill Education Pvt. Ltd, 2010
Grant Taylor: English Conversation Practice, Tata McGraw Hill Education Pvt. Ltd, 2010
Wren and Martin: English Grammar and Composition, Chand Publication
Biswajit Singh and Ipseeta Satpathy: Business Communication and Personality Development, Excel Books Publication, 2007
Clifford Morgan, Richard King,John Weisz, John Schopler: Introduction to Psychology,Tata McGraw Hill Education Pvt. Ltd, 2002
Raymond V. Lesikar and Marie E.Flatley:Basic Business communication, Tata McGraw Hill Education Pvt. Ltd, 2004
Herita A.Murphy, Herbert W. Hilderbrandt and Jane P.Thomas:Effective Business Communications, McGraw Hill Education Pvt. Ltd, 1997

STUDY AN IMPACT OF GOODS AND SERVICE TAX (GST): PUSH FOR GROWTH OR INFLATION

Sandip S. Khandekar & Shravani S. Khandekar

Assistant Professor, Vidyalankar School of Information Technology

Assistant Professor, Oriental College of Commerce & Management

Abstract

GST also known as the Goods and Services Tax is defined as the giant indirect tax structure designed to support and enhances the economic growth of a country. More than 150 countries have implemented GST so far. However, the idea of GST in India was mooted by Vajpayee government in 2000 and the constitutional amendment for the same was passed by the Loksabha on 6th May 2015 but is yet to be ratified by the Rajyasabha. However, there is a huge hue and cry against its implementation. It would be interesting to understand why this proposed GST regime may hamper the growth and development of the country. The research paper will study that whether GST will increase the GDP or it will push up consumer prices inflation.

Introduction: Goods and Services Tax (GST) is a type of unified value-added tax on goods and services which is levied at country level. GST is nothing but a hybrid of the Value Added Tax (VAT), modified to suit the complexities of a federal system. The central taxed do not cover value addition in goods beyond the manufacturing stage, and in service only listed service are covered. On the other hand, in the case of state taxes, only sale of goods is covered. GST rectifies this defect by covering all goods and services. It is essentially a tax only on value addition at each stage, permitting a supplier at each stage to set-off, through a tax credit mechanism. The final consumer will bear only the GST charged by the last dealer in the supply chain, with set-off benefits at all the previous stage. GST is the latest in the category of indirect tax reform. India is working towards the introduction of comprehensive both the centre and the states. It combines about 16 types of taxes such as central excise and service tax, States VAT entertainment and luxury tax, and various surcharges into a single tax. The unified GST was announced in the budget speech of 2006-07 the effect that GST would be introduced with effect from April 1, 2010. It has been further extended to April 1, 2012. Now the government is eyeing GST roll out from April 2016. Still there is no certainty that it will be implemented from this date.

The proposed GST will act as a fulcrum to reduce unemployment in the country. Both Central and State Governments levying tax on goods and services at different rates have created inefficiency in the tax system. GST is expected to bring back efficiency in the tax system and it will restrict the leakages. Fiscal motives to implement the proposed GST shall be:

- (i) To expand the fiscal space and improve economic viability of the government by way of increasing public expenditure under the targeted revenue constraints.
- (ii) To eliminate the definitional separation between goods and services.
- (iii) To achieve efficiency in tax system and envisage the powers and responsibilities of taxation authority.

Objective of the study

1. To study the Goods and Service Tax and its impact on the economy.
2. To examine the benefits and opportunities of Goods and Service tax.
3. To know whether GST leads to inflation in the economy.

Review of literature:

- 1) Empowered Committee of Finance Ministers (2009) introduced their First Discussion Paper on Goods and Services Tax in India which analysed the structure and loopholes if any in GST.

- 2) Vasanthagopal (2011) in the article GST in India: A Big Leap in the Indirect Taxation System discussed the impact of GST on various sectors of the economy. The article further stated that GST is a big leap and a new impetus to India's economic change.
- 3) Survey by Business Today and BMR Advisors (2016) in the article GST: in India Inc. Ready? This survey by *Business Today* and BMR Advisors seeks to assess industry's prepared-ness as well as perception towards GST by capturing responses of top business and tax leaders through a web-based questionnaire.
- 4) Indirect Taxes Committee of Institute of Chartered Accountants of India (ICAI) (2015) submitted a PPT naming Goods and Service Tax (GST) which stated in brief details of the GST and its positive impact on economy and various stakeholders.
- 5) The Institute of Companies Secretaries of India (ICSI) (2015) published a Reference on Goods and Service Tax to provide the information on the concept of GST in details.

Research methodology: The paper uses an exploratory research technique based on past literature from respective journals, reports, newspapers and magazines covering wide collection of academic literature on Goods and Service Tax. According to the objectives of the study, the research design is of descriptive in nature. Available secondary data was extensively used for the study.

GST – International Perspective: Charlet and Owens (2010) gave insights about VAT in their study. Wilhelm Von Siemens, a German businessman, had put forward the innovative idea of VAT regime in the 1920s. Maurice Laure, who was the former Joint Director of the French Tax Administration, is considered the 'Father of Value-Added Tax' regime. In 1954, France implemented the VAT system. In the mid-1960s, Senegal and Cote introduced VAT at manufacturing level. In 1965, Brazil introduced a traditional VAT regime as a fiscal reform which applied at each and every stage of production. As of now, 140 countries have implemented different models of VAT/GST depending upon the country specific requirements. Developed countries that have implemented VAT categorically are divided into two groups based on threats of VAT. Many of the EU countries are under the first category and follow differential rates. The second group consists of developed nations like Singapore, Australia and Canada. They are following VAT with broad base and maintaining unified tax rates. Generally, developing countries prefer single rate system. GST is the variant form of VAT. India is also planning to implement the broad base GST with unified rates.

History of GST in India: In 2000, A B Vajpayee, the Prime Minister, initiated preliminary discussion on GST by constituting an empowered committee headed by Asim Das Gupta, the Finance Minister of West Bengal. It was assigned the responsibility of formulating a viable GST model and the blueprint of IT back-end requirements for its implementation. This initiative is considered as the beginning of tax law reforms on excise duty and sales at national level. At the time of introduction of FRBM Act, 2003, Kelkar suggested GST as an advanced version of VAT. P Chidambaram had mentioned in his budget speech for the financial year 2006-07 about the need and relevance of GST law. The responsibility of preparing a draft report for the introduction of GST was given to the Empowered Committee of state finance ministers. In 2008, the Empowered Committee submitted its preliminary report "A Model and Roadmap for Goods and Services Tax (GST) in India" which included recommendations about the structure and conceptual framework of GST law. The Department of Revenue made some suggestions that the committee should collect inputs from Government of India (GOI) and states and incorporate changes, if required, in this report. On November 10, 2009, the Empowered Committee published its first discussion paper on GST with specific purpose to create open debate on this law by collecting inputs from various stakeholders. Nandan Nilekani and his team of technocrats started to develop the required IT infrastructure for GST administration. The UPA government aimed to introduce GST on April 1, 2010. Opposition parties did not allow them to pass the bill. The Lok Sabha officially passed the Goods and Service Tax Bill, 2014, on May 6, 2015 and the Rajya Sabha passed it in August 2016.

GST Models: Singhal (2015) discussed the various GST models in his study. Generally, GST consists of three models: Central GST (CGST), States GST (SGST) and Dual GST—Non-concurrent dual GST and Concurrent dual GST.

CGST: In this model, both national and sub-national governments would combine their taxes levied at uniform rate at country level and there would exist mutually agreeable portion of revenue sharing mechanism between them. In CGST, the Union Government will have the responsibility to levy and collect major portions of the country's tax revenue. State governments have little scope to impose tax on various goods and services.

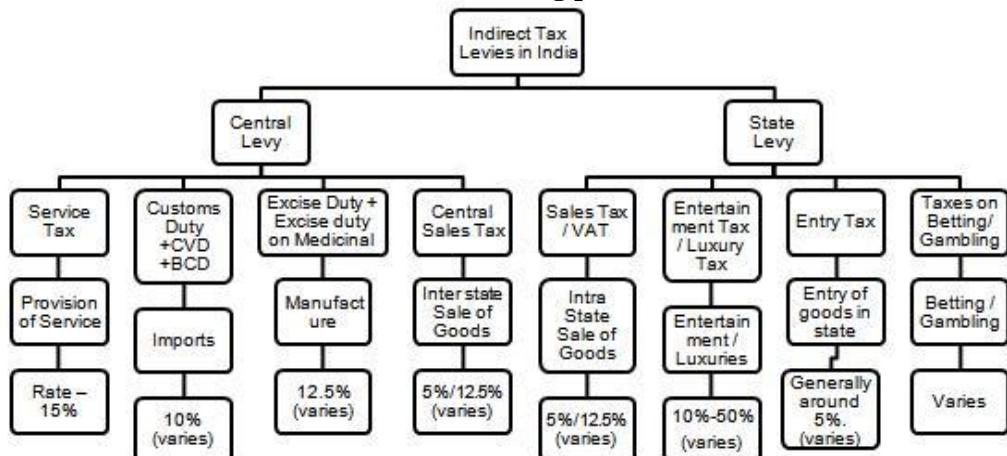
SGST: In this model, both national and sub-national governments would combine their taxes levied at uniform rate at country level and there would exist mutually agreeable portion of revenue sharing mechanism between them. In CGST, the Union Government will have the responsibility to levy and collect major portions of the country's tax revenue. State governments have little scope to impose tax on various goods and services.

Non-Concurrent Dual GST: Under SGST model, the state governments alone have the responsibility to levy and collect GST and the central government withdraws its authority from imposing GST or VAT completely. Central government will cover its revenue loss due to the relinquishment of SGST taxable area by way of adjusting its fiscal transfers to state governments. State governments can use SGST to improve their revenue capacity as well as fiscal management.

Concurrent Dual GST – Indian Model of GST: Concurrent dual GST comprises both CGST and SGST and is levied on common tax base. Indian GST is an example of concurrent dual GST. In this model, GST will be imposed and collected by both the governments simultaneously. SGST shall be regulated by the state governments and CGST by the Central Government. All kinds of goods and services without any distinction will be included in this proposed GST regime, except for a few exceptions.

Current Indirect Tax Regime in India: Taxes in India are levied by the Central Government and the State Governments. Some minor taxes are also levied by the local authorities such as the Municipality. The authority to levy a tax is derived from the Constitution of India which allocates the power to levy various taxes between the Central and the State. An important restriction on this power is Article 265 of the Constitution which states that "No tax shall be levied or collected except by the authority of law". Therefore, each tax levied or collected has to be backed by an accompanying law, passed either by the Parliament or the State Legislature. In 2015-2016, the gross tax collection of the Centre amounted to □ 14.60 trillion (\$220 billion)

Present Indirect structure is marked with following problems



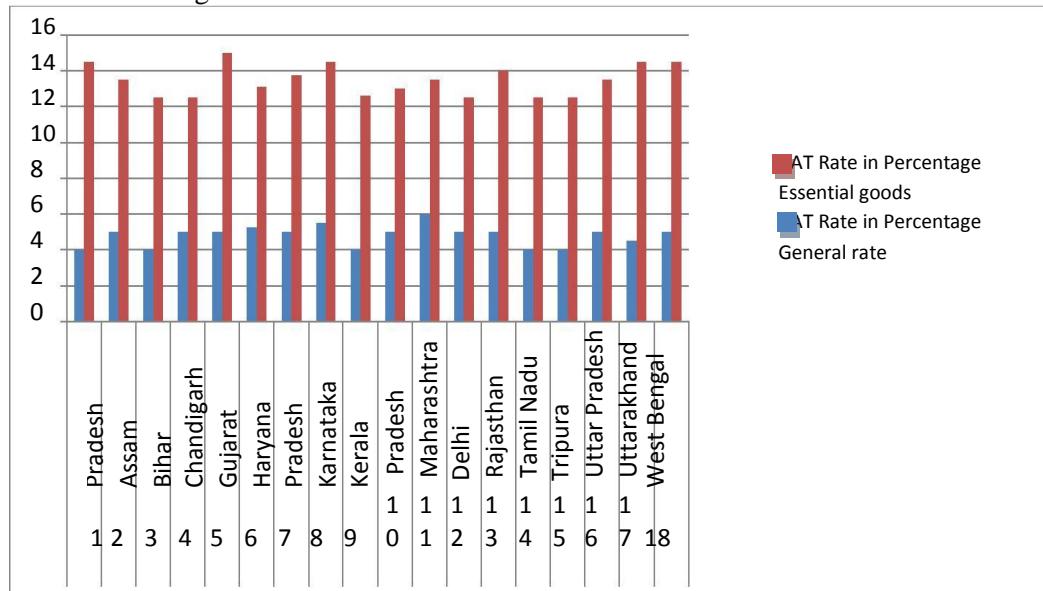
Problems in the Present Structure

Multiplicity of Taxes: Presently, the Constitution empowers the Central Government to levy excise duty on manufacturing and service tax on the supply of services. Further, it empowers the State Governments to levy sales tax or value added tax (VAT) on the sale of goods. This exclusive division of fiscal powers has led to a multiplicity of indirect taxes in the country. In addition, central sales tax (CST) is levied on inter-State sale of goods by the Central Government, but collected and retained by the exporting States. Further, many States levy an entry tax on the entry of goods in local areas. Taxes by Union Government, State Governments and the local governments have resulted in difficulties and harassment to the tax payer. He has to contact several authorities and maintain separate records for each of them.

Complex: The taxes are levied by central government as well as state government. So, a person has to maintain accounts which will comply with all the applicable laws. This multiplicity of taxes at the State and Central levels has resulted in a complex indirect tax structure in the country that is ridden with hidden costs for the trade and industry.

Cascading effects of taxes: In current indirect tax structure in India, there is cascading of taxes due to 'tax on tax'. No credit of excise duty and service tax paid at the stage of manufacture is available to the traders while paying the State level sales tax or VAT, and vice versa. Further, no credit of State taxes paid in one State can be availed in other States. Hence, the prices of goods and services get artificially inflated to the extent of this 'tax on tax'.

Tax Arbitrage: The problem of tax arbitrage for a single nation poses an invisible barrier for free trade. In many cases, a small difference in rate of tax can result in manifold implications and thus, can induce the business to move into a lower tax territory. As an example, the different rate of VAT as levied on sale of goods in different states is as under

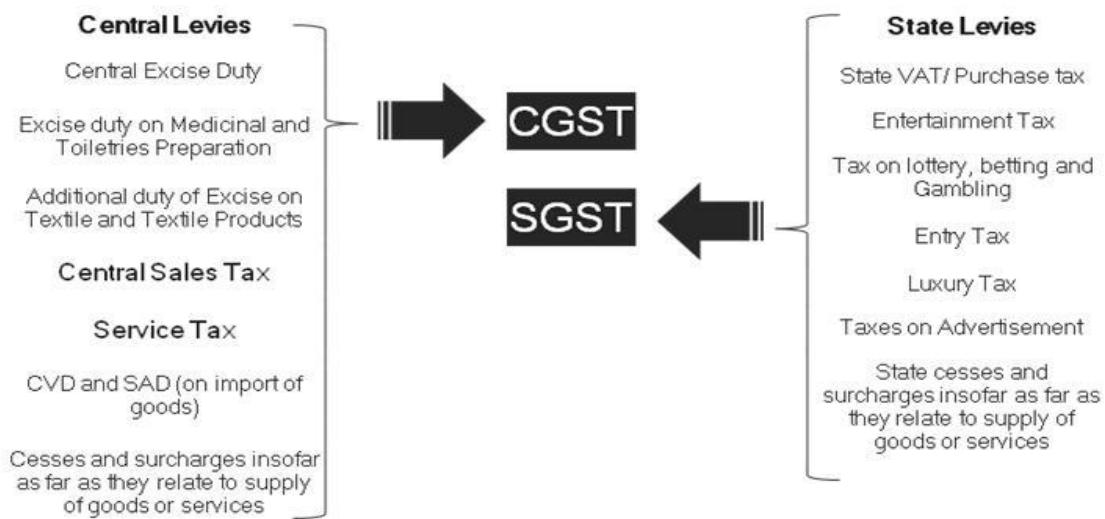


Similarly, Entry tax also acts as barrier for free trade.

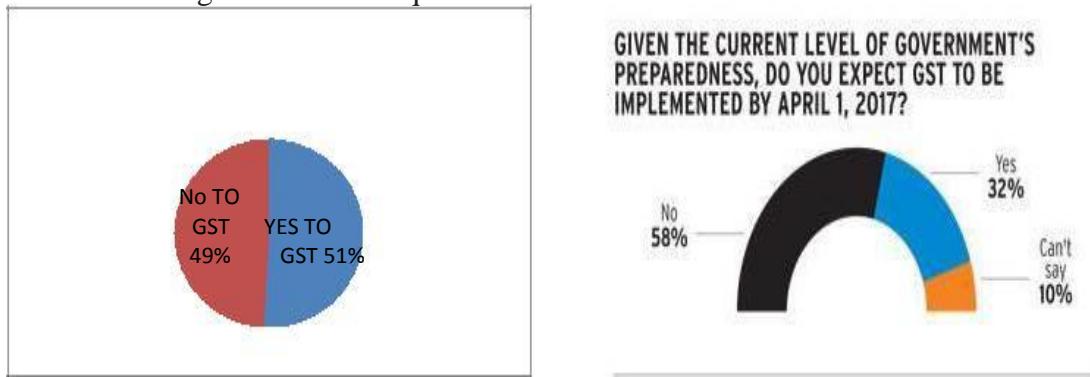
Multiple Compliance:

A business person might have to comply with multiple compliance in terms of indirect taxes in India. Certain major compliance in different states with different set of laws is as under:

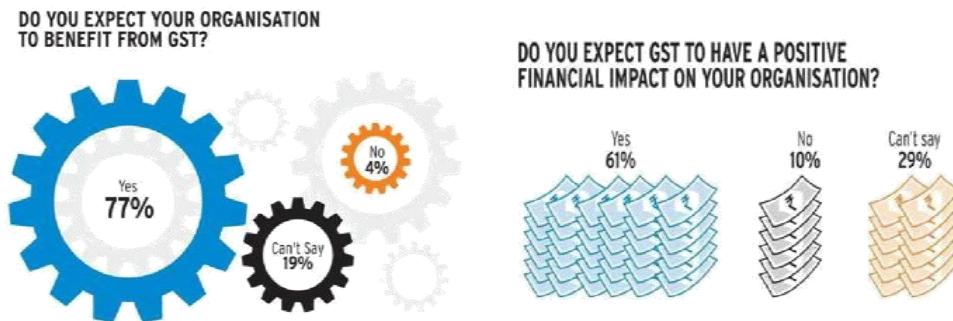
Applicability	Law	Return filing frequency	Due date of filing return	Due date of payment of Tax
For each factory	Excise Duty	Monthly/Quarterly	12 th of succeeding month	12 th of succeeding month
For each premises	Service Tax	Half yearly	25 th of succeeding month after Half year	5 th / 6 th of succeeding month
Karnataka	VAT	Monthly	20 days	20 days
Assam	VAT	Monthly	21 days	21 days
Tamil Nadu	VAT	Monthly	20 days	20 days
UP	VAT	Monthly	20 days	20 days
AP	VAT	Monthly	20 days	15 days
Kerala	VAT	Monthly	15 days	15 days
Gujarat	VAT	Monthly	30 days	22 days
Maharashtra	VAT	Monthly	30 days from half year	30 days
Delhi	VAT	Monthly	25 days	25 days
MP	VAT	Quarterly	30 th month following quarter	10 th of following month
Rajasthan	VAT	Quarterly	30 th month following quarter	14 th of following month



Data Analysis: This survey by *Business Today* and BMR Advisors seeks to assess industry's preparedness as well as perception towards GST by capturing responses of top business and tax leaders through a web-based questionnaire.



Source: A survey by Business Today and BMR Advisors. BUSINESS TODAY September 11 2016



Source: A survey by Business Today and BMR Advisors. BUSINESS TODAY September 11 2016

Findings & Recommendation

- 1) A uniform rate of tax throughout the country is a welcome step from point of view of "Doing business" in India. No doubt it removes the cascading effect of tax burden except those items like petrol exempted from the GST.
- 2) The goods into the GST rule, without any other changes in the economy, would imply that GST has to be levied at higher rates for revenues to be protected. Introducing GST at higher rates would make the reform more difficult to implement.
- 3) It ensures uniformity of tax system across the states. It will integrate the tax base and allow seamless flow of Input Tax Credit (ITC) resulting in reduced cost of goods and services.
- 4) National Council of Applied Economic Research (NCAER) estimated in 2009 that India's growth would be increased by 0.9 to 1.7 percentage point based on an outdated 2003-04 input-output table. The situation has changed a lot now as it has excluded many items like petroleum, alcohol, electricity and real estate.
- 5) The introduction of additional one per cent inter-state tax is against the spirit of moving to a harmonized GST. All these will ultimately lead to increase in prices.
- 6) According to Goldman Sacs report, the GST would lead to a percentage point increase in consumer price inflation if it is fixed at 20 per cent. The possibility is that it would be above 20 per cent. If so, it would be the impact on retail inflation.
- 7) The determination of right tax rate and the second is the threshold limit. Finding out a right GST rate is the major hurdle as there have been a number of attempts at estimating the size of the tax base and the corresponding revenue neutral rate. The estimated revenue neutral rate (RNR) is within

the realm of reasonable and feasible, especially when compared to the present rates of tax which are considered as the benchmark. "Very high rates" of tax will not encourage compliance.

8) The Kelkar Committee Report had proposed a figure of 20 per cent, and this has become one benchmark for what constitutes limits of an acceptable rate.

9) The report of the Task Force on GST of the Thirteenth Finance Commission recommended 12 per cent (7 % SGST and 5 % CGST) in 2010. This is unrealistic because the average tax rate of various states is 13 to 14 per cent and hence it will lead to revenue losses to the states.

The latest in the series is the recommendation made by a panel of state government representatives which suggested RNR of 27 per cent (12.77 % CGST and 13.91 SGST). Most of these exercises throw up incredibly low or high revenue neutral rates causing apprehension about the validity of these estimates and consequent revenue risk.

Conclusion: It can be concluded from the above discussion that GST will provide relief to producers and consumers by providing wide and comprehensive coverage of input tax credit set-off, service tax set off and subsuming the several taxes. Efficient formulation of GST will lead to resource and revenue gain for both Centre and States majorly through widening of tax base and improvement in tax compliance. Given the multiple objectives of reducing cascading, keeping a check on prices and protecting revenues, how far GST will be effective and successful? There is no consensus regarding this aspect. When we analyse the positive correlation between growth and GST, there is no cross country evidence to substantiate this. Moreover, there is every chance that the inflation will be mounted up as in the case Nigeria and Malaysia where the introduction of GST witnessed price rises. In India, services sector account for nearly 60 per cent of GDP and it is expected that GST will be above the existing 14 per cent tax in the service sector leading to steeper increase in prices of services so that consumer spending will be affected adversely. Asian countries which implemented GST all had witnessed retail inflation in the year of implementation. No doubt, GST will simplify existing indirect tax system and will help to remove inefficiencies created by the existing current heterogeneous taxation system. The increase in the rate of tax leads to increase in the prices of different goods and service which cause inflation.

REFERENCES

- Indirect Taxes Committee, Institute of Chartered Accountants of India (ICAI) (2015).*Goods and Service Tax (GST)*. Retrieved from: <http://idtc.icai.org/download/Final-PPT-on-GST-ICAI.pdf>
- AkankshaKhurana, Aastha Sharma,(2016) *Goods And Services Tax In India - A Positive Reform For Indirect Tax System*, International Journal of Advanced Research (2016), Volume 4, Issue 3, 500-505.
- T BenixKanjiravila A Study on GST and Its Probable Impact on the Sales Tax Revenue of Kerala The IUP Journal of Accounting Research & Audit Practices, Vol. XV, No. 4, 2016
- The Institute of Cost Accountants of India (2015), "Insight of GST in India", 2nd Concept Paper by the Institute (as on date), October 2015.
- SinghalMohit CA (2015), "Indian Model of Goods & Service Tax (GST)", Tax Guru, Article ID 69096, July 30

IFRS IMPLEMENTATION IN INDIA – PRACTICAL ISSUES AND CHALLENGES

Mrs. Neelima B. Nimborkar

*Principal, AdarshaVidya Kendra College, # 8/9, 27th Cross, Opp. Monotype, Banashankari II Stage, Bangalore -560070. Email ID: avk.nsvk@gmail.com, neelunb91@gmail.com
Mobile: +919632428433*

Abstract

Globalization has laid down a way for all the countries to adopt a single set of accounting standards. Recent years have seen major changes in financial reporting worldwide under which the most obvious is the continuing adoption of IFRS (International Financial Reporting Standards). More than 100 countries have converged or recognized the policies of convergence with the IFRS. IFRS are the globally accepted accounting standards and interpretations adopted by the IASB (International Accounting Standards Board). An upcoming economy on world economic map, India has decided to converge to International Financial Reporting Standards (IFRS). In India, ICAI (Institute of Chartered Accountants of India) has decided to adopt the IFRS by April 2011. This paper tries to analyze the information available on IFRS adoption process in India. It also discusses the IFRS adoption procedure in India and the utility for India in adopting IFRS. The paper has a major focus on the problems faced by the stakeholders (Regulators, Accountants, and Firms etc.) in the process of adoption of IFRS in India.

Key words: - IFRS, IASB, ICAI

I. INTRODUCTION & MEANING: Globalization has changed the close economy and unto open economy. Today Indian economy is integrating international market through Foreign Direct Investment (FDI), Foreign Institutional Investment (FII), Mergers & Acquisitions, And Business Out-Sourcing and So on. For this purpose it was necessary to adopt common set of accounting standards as accounting is the language of business. Therefore in the year 1973 International Professionals established International Accounting Standards Committee to issue IAS. In the year 2001, the committee was renamed as IASB. Now the board issues IFRS for some benefits in global market. Adopting IFRS in India is going to be very challenging by Indian Corporate but at the same time they started gaining significant benefits from adopting IFRS. India in the year 2007, announced that it would fully adopt IFRS by the year 2011 which is to be done in phases. First phase will include the companies which are a part of NIFTY Index and SENSEX 30. The Second phase will cover the forms with a net worth in excess of 5 billion but less than 10 billion. The use of common set of accounting standard throughout the world provides an easy way of comparability and transparency of financial information. It helps to reduce the cost and consistent use of it provides the higher quality information which enables investors to make a better decision and proper allocation of funds in the market more efficiently.

“A single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in financial statements and other financial reporting to help participants in the world's capital markets and other users make economic decisions”

II. REVIEW OF LITERATURE:

- Review of literature will have a focus on the several issues in IFRS implementation in India. It will have a primary focus on:
- Does IFRS can become replacement for GAAP?
- Is there any relationship between IFRS and GAAP?
- Is IFRS playing a vital role in Globalization?

III.OBJECTIVES:

1. **TO UNDERSTAND THE NEED FOR IFRS IN INDIA:** Adopting IFRS is going to be very challenging by Indian corporate even though they are gaining significant benefits through its adoption. It is becoming a serious issue of discussion as IFRS is one of the best financial reporting systems which do not include any country with variation of accounting policies. Single set of financial reporting in financial statements to present across the world with cost reduction, transparency and reliabilities available in IFRS. These benefits are attracting each country to set IFRS in their country. India has also mandate it from April 2011 but till now have not succeeded to resolve its issues relating to convergence with IFRS like taxation. Hence India needs to develop its confidence regarding IFRS convergence along with some training programs for IFRS policies. For the purpose of successful convergence of IFRS with Indian corporate, India needs to have efficient professionals to operate in this field. The forces of globalization prompt more and more countries to open their doors to foreign investment and business expansion across the borders, the need arises to recognize the benefits of having commonly accepted and understood financial reporting standards. In India ICAI, Government Authorities aims to comply with the IFRS with an objective to formulate sound financial reporting standards. Again IFRS requires Fair Market Value application in its reporting which helps to create significant differences in financial information. Hence it is necessary for Indian companies to create awareness among its customers, investors and stake holders to bring understanding, transparency and reliability.
2. **TO STUDY THE IFRS ADOPTION PROCEDURE:**
 - To harmonize accounting practice throughout the country an Indian government established Institute of Chartered Accountants of India by passing ICAI Act in the year 1949. It was with a view to bring uniformity in accounting policies and practice in India. The objectives behind this were:
 - Conceive of and suggest new areas in which accounting standards are needed.
 - Formulation of accounting standards.
 - To examine how far Indian accounting standards and IFRS can be adopted while formulating the accounting standards.
 - To review and revise accounting standards regularly as and when necessary.

Step- 1 – IFRS Impact Assessment: This is the first step. In this step the firm will assess the impact of IFRS adoption on Accounting and Reporting issues, on procedures and systems, and on core business of the entities. Then the firm will find the key conversion dates according to IFRS training plan has laid down. As and when the training plan is in place, the firm will have to identify the important Financial Reporting Standards which will apply to the firm and also the variations among the present financial reporting standards being followed by the firm and IFRS both.

Step- 2 – Preparations for IFRS Implementation: This is the second step of the process, which will carry out such activities required for IFRS implementation process. Then the firm will reform the internal reporting systems and processes. IFRS first deals with the adoption and implementation of first time adoption process

Step- 3 – Implementation: This is the final step of the process which deals with the actual implementation of IFRS. The initial phase of this step is to prepare an opening Balance Sheet at the date of transition to IFRS. To understand the actual impact of the transition from the Indian Accounting Standards to IFRS is to be developed. This will follow the full application of IFRS as and when it is required. At the initial stage of implementation of IFRS requires lot of training and various technical difficulties may be experienced. The smooth implementation of the transition from Indian Accounting Standards to IFRS, regular training to **personnel's and identifies** the problems while carrying out the implementation.

6) TO ANALYZE IFRS UTILITY FOR INDIA.

Today the entire world is getting benefited by adopting IFRS for financial reporting purposes

- **Better quality of financial reporting:** IFRS follows fair value concept which helps Indian firms to reflect the true worth of assets held in the financial statements. Adoption of IFRS is expected to result in better quality of financial reporting due to consistent application of Accounting Principles and improvement in reliability of financial statements.
- **Better access to global capital markets:** Today Indian firms are expanding due to globalization for which they need funds at a cheaper rate, which is available in global capital markets only. For this purpose it is mandatory to meet regulatory requirements through IFRS only. Hence adoption of IFRS is helping Indian firms in accessing global capital markets.
- **Elimination of multiple reporting :**Firms registers in India are preparing accounts as per IND AS where as other countries are preparing as per the reporting standards of the respective countries. Hence it has become mandatory to adopt IFRS to eliminate multiple financial reporting standards.
- **Easy cross border listing:** Today Indian firms are acquiring funds from outside which are listed in European and American capital markets. European markets are maintaining accounts as per IFRS requirements. Hence adoption of IFRS helps Indian companies to draw the funds from outside capital markets.
- **Easier global comparability:** IFRS helps investors, bankers and lenders to compare the two financial statements which are following same reporting procedures. Adoption of IFRS is expected to result in better quality of financial reporting due to consistent application of Accounting Principles and improvement in reliability of financial statements. Among various latest trends-based concepts, IFRS follows a concept of fair value which can help Indian firms to reflect their true worth of Assets held in the financial statements. Since a single body (IASB, London) is preparing IFRS, these are very consistent, reliable and easy to adopt ensuring better quality of financial reporting.
- **The corporate world:** The corporate entities back in India would be benefited because of several reasons. **1.** The higher level of consistency will be maintained between external and internal reporting. **2.** Because of better access to global financial markets. **3.** It will improve the risk rating and makes the corporate world more and more competitive globally as their comparability with the global competitors will increase.
- **The Economy:**Convergence with IFRS would help industry grow and it will report improvement in the risk rating among the foreign investors. Moreover, the international comparability is also benefiting the industrial and capital markets in the country which lead to better economy across the country.

TO UNDERSTAND PRACTICAL ISSUES AND CHALLENGES IN IFRS

IMPLEMENTATION: India has several constraints and practical issues in adoption and compliance with IFRS. So there is need to change certain laws and regulations governing financial accounting and reporting in India. In spite of these some legal requirements which determine the manner in which financial information presented. E.g., Companies Act provides a specific format for the preparation of financial statements which is different from IFRS.

Few issues rising during the IFRS implementation as below:

- **Awareness of international financial reporting practices:** Convergence with IFRS means a set of conversed reporting standards have to bring in the awareness of these reporting standards is still not there among the stake holders like banks, stock exchanges, commodity exchanges etc. but to bring a complete awareness of these standards among the stake holders is a difficult task.

- **Difference in GAAP and IFRS:** Under GAAP excess of assets over liabilities will be taken into consideration at Net Book Value as Goodwill whereas under IFRS accounting is done for all assets including intangibles at fair value only. Another issue GAAP should have been formulated on the basis of IFRS principles whereas some principles need to be amended, implemented and removed through GAAP e.g. use of pooling interest method in accounting is not available under the IFRS principles. Hence it would be a challenge to bring about awareness of IFRS and its impact.
- **Issue of GAAP Reconciliation:** IFRS requires first time adoption of reconciliation along with ongoing unaudited reconciliation of financial statements. GAAP is more costly approach for both the investors and companies.
- **Training and Education:** Today professional accountants are looking upon successful implementation of IFRS, along with them Government officials, CEO's and CIO's are also responsible for its adoption. India lack training facilities to train such people and even it does not have enough number of fully trained professionals to carry out the task of IFRS adoption.
- **Amendments to the existing laws:** In India, accounting practices are governed by companies act and GAAP. Existing laws such as SEBI regulations, foreign exchange management act and Indian Banking Laws and Regulations also provides guidelines on preparation of financial statements in India. IFRS does not recognize the presence of these laws hence accountants will have to follow the IND AS. Indian law makers have to make necessary amendments to ensure smooth transition to IFRS.
- **Taxation:** With IFRS convergence most of the items in the financial statements and tax liabilities would also undergo a change. Indian tax laws do not recognize the accounting standards. It is necessary to bring enough changes in tax laws to ensure that tax authorities recognize IND AS compliant financial statements otherwise it will duplicate the administrative work.
- **Delay in implementation:** Most of the countries have initiated the introduction of IFRS into its financial system at a different point of time. Each country attempted to raise its financial reporting requirements to internationally recognized benchmark. None of them is currently in a position to assert that financial statements prepared by companies listed in its jurisdiction are in full compliance with IFRS issued by an IASB (International Accounting Standard Board).
- **Institutional issues:** Corporate financial reporting is governed and affected by variety of laws enacted through the legislative process and various related rules and regulations in each country. E.g. South Africa's 1973 Companies Act requires that financial statements of companies must comply.
- **Enforcement issues:** The total benefits of a global set of financial reporting standards like IFRS will be realized only when these standards are properly enforced. Enforcement often protects both domestic and international investors. When it is not properly enforced it imposes fines and penalties on the preparers and their auditors.
- **Technical issues:** Practical implementation of IFRS requires adequate technical capacity among professional bodies, auditors, users and regulatory authorities. Countries that implement IFRS face a variety of capacity related issues, depending on the approach they take.

CONCLUSION: Convergence with IFRS is strongly recommended because the measures taken by ICAI and the other regulatory bodies to facilitate the smooth functioning of IFRS is creditable and it gives the positive idea of country's readiness for convergence. Keeping in mind the fact that IFRS is more of a principle based approach with limited implementation and application hence corporate need to gear them for constant updating. This would lead to subsequent revisions from time to time arising

from its global implementation and would help in formulation of future international accounting standards. A continuous research is in fact needed to harmonize and converge with the international standards and this in fact can be achieved only through mutual international understanding. IFRS requires changes in accounting practices but Indian Corporate World which has been preparing its Financial Statements on Historical Cost Basis will have a tough time while shifting to Fair Value Accounting. Merely adopting International Financial Reporting Standards is not enough. Each interested party, namely Top Management and Directors of the Firms, Independent Auditors and Accountants and Regulators and Law Makers will have to come together and work as a team for a smooth IFRS adoption procedure. Top Management should ensure that the Financial Statements are prepared in compliance with the IFRS. Auditors and Accountants should prepare and audit Financial Statements in compliance with IFRS. Regulators and Law Makers must implement efficient monitoring system of regulatory compliance of IFRS. Along with this the Regulators should also ensure that proper changes are to be made in existing laws for IFRS adoption process

SUGGESTIONS:

- The lawmakers in India will have to make necessary changes in the existing Companies Act 1956, Tax Laws, Foreign Exchange Management Act, Insurance Act etc. These changes are required to bring Indian Accounting Practices in line with IFRS.
- In order to ensure timely adoption of IFRS in India, trained Accountants and Auditors in IFRS are required in large numbers. The Institute of Chartered Accountants of India (ICAI) has started IFRS Training programs for its members and other interested parties.
- To ensure that all the Firms are complying with adoption procedure, Indian lawmakers and Accounting Body (ICAI) should have a Financial Reporting Compliance Monitoring Board.
- Awareness and proper Training should contribute to that process. Only enforcement mechanism will not help the procedure but an Advisor is also required. With all these systems in place, the IFRS adoption in India will become very smooth and accurate.

REFERENCES

- SunitaAjaykumarRai, *IFRS- Problems and Challenges in First Time Adoption*, International Indexed & Referred Research Journal, Vol. I /Issue-1/April/2012/ISSN-2250-2556
http://articles.economictimes.indiatimes.com/2011-07-27/news/29820849_1_implementation-indiancompanies-accounting-advisory-services
<http://economictimes.indiatimes.com/opinion/view-point/ifrs-the-impact-on-indian-corporates/articleshow/3204158.cms>
<http://www.indianexpress.com/news/indian-companies-likely-to-shift-to-ifrs-from-april-2015/1184894>
- Poria, Saxena, Vandana, 2009, *IFRS Implementation and Challenges in India*, MEDC Monthly Economic Digest. Retrieved on Dec 12,2013
- Aubert, François, Grudnitski, Gary, 2011, 'The Impact and Importance of Mandatory Adoption of International Financial Reporting Standards in Europe', *Journal of International Financial Management & Accounting*, 22, (1) pg 1
- Barth, E, Mary, Landsman, R, Wayne, Lang, H, Mark, 2008, 'International Accounting Standards and Accounting Quality', *Journal of Accounting Research*, 46 (3) pg 467
- Mahender. K. Sharma, *IFRS and India-its problems and challenge*, International multi disciplinary journal of applied research vol-1/issue:4/July 2013/ISSN 2320-7620.
- Bhattacharjee, suman, Islam, Zahirul, Muhammad, 2009 problems of adoption of IFRS in Bangladesh.
- The effect of IFRS adoption on global market integration*, International Business and Economics research journal, 9(10) pp 25-34

ROLE OF FORENSIC ACCOUNTING IN INVESTIGATION OF BANK FRAUDS

Agnus Anthony Meledath

Assistant Professor, Dept. of Commerce AndManagement, Vidyalankar School of InformationTechnology, Wadala, Mumbai.

Abstract

Forensic accounting conducts an examination of a company's financial statements by employing accounting, auditing and investigative skills. Thus, forensic accounting provides an accounting analysis suitable for providing evidence in court. Forensic accountants are trained to look beyond the numbers and deal with the business reality of a situation. They are frequently used in fraud cases. While testifying in court, a forensic accountant is asked to prepare visual aids to support the trial evidence. For business investigations, forensic accounting entails the use of tracing funds, asset identification, and asset recovery and due diligence reviews. Forensic accountants may seek out additional training in alternative dispute resolution (ADR) due to their high involvement in legal issues and familiarity with the judicial system. Forensic accounting also encompasses the determination of whether criminal matters occurred. Such crimes may include employee theft, securities fraud, and falsification of financial statement information, identify theft or insurance fraud. Forensic accountants may assist in searching for hidden assets and provide their services for other civil matters like breach of contracts, disagreements relating to company acquisitions, breaches of warranty and business valuation disputes. Parties who have disputes use forensic accounting in litigation when quantification of Damages is needed. Over the years there has been a considerable increase in white collar crime. One of the issues of Investment is to crack down the frauds

Keywords: *Forensic, Investigative, employee, falsification fraud.*

INTRODUCTION: Forensic accounting is used to analyse, interpret and review complex financial and business matters. They may be employed by insurance companies, banks, police forces, government agencies or public accounting firms. Forensic accountants gather financial evidence, develop computer applications to summarize the information collected and communicate their findings in the procedure of reports or presentations. Forensic accounting differs from Auditing. Statutory Auditors help in the examination of books of Accounts with the objective of showing whether the financial statement represent true and fair view picture of the financial position of the business ,are free of errors and frauds and the financial statements are reported in the formats as per law. If an auditor suspects that the statement of records is not as per law then they may call for an in-depth investigation to be carried out by qualified forensic accountants. As per a survey conducted in the year 2010 fraud in the corporate has increased by 10%. This has bought a setback in investors as the amount of frauds have a negative impact on the investing habits of investors. Specific knowledge and precise skills are used in investigative accounting under forensic accounting in order to find evidences to prove whether the transactions are authentic or not. Thus one can say that forensic accounting is the use of auditing, investigation, skills and accountancy to assist in legal cases.

Objectives of the study

- To understand the different avenues of forensic accounting.
- To examine the characteristic features of people who commit or are likely to commit fraud on businesses.
- To analyse bank frauds and to ascertain the components that come together while committing white-collar crime.

Forensic Accounting Basic Literature Review: In 1930 the world saw the great depression period in the USA after which the GSA or the Glass Steagall Act was established in order to overcome the risks of financial system and to reduce the conflicts of interest in the Banking system. But GSA proved to be ineffective so it was removed in 1999. After globalization Heinz Kohler (2002) in a speech at a conference on Global Economy emphasized that there is a need to induce transparency in all the

financial sectors. One of the major sections in the Banking sector is the credit card market. The credit card usage in India is restricted to transactions only therefore the effects of fraudulent practices are not so prominent. Rajan(2014) stressed on good governance in Public Sector Banks. According to him regulatory framework should be such that they should facilitate their working and not hinder their smooth working. Subbarao (2009) believed that there is a need to be trustworthy and have honesty in dealings in the financial sector. He stated that there was a moral threat in the Banking system.

BANK FRAUDS: As this study of Forensic accounting revolves around detection of bank frauds it is important to analyse the dimensions of Bank Frauds. As per RBI frauds can be classified into 3 categories:

- Deposit Related Frauds (DRF)
- Advances Related Frauds (ARF)
- Services Related Frauds (SRF)

Deposit Related Frauds (DRF): These are most in terms of numbers. Because of latest system of payment introduced by commercial banks of cheque transactions system and the extensive use of E-transfer of funds .About 67% of the total amount of frauds in Banks are from Deposit Related Frauds over last 4 years statistics. The very stability of Banks is threatened because of this. Due to the extensive use of technology there is an emergency risk of cyber frauds by using technology supported innovative techniques by fraudsters.

Types of Fraud committed by Bank Employees.

- Misappropriation of the money during its collection but before it is recorded in accounts
- Stealing the cheques of the bank .
- Tampering the bank records and taking monetary advantage.
- Acquisition of benefit through forgery of documents.
- Making payments which should not be made or previously made.
- Creating fictitious debts and having payments done in favor of oneself .
- Creating ghost customers and having payments made in their favor.
- Office supplies and fixed asset theft
- Creating fictitious expenses and obtaining disbursements.
- Accepting bribes from the customers of the bank with various reasons.
- Manipulating the overtime periods and obtaining extra payment

Fraud Detection in Banks:

- First the Fraud is reported to the Top management of the Bank .The Top management of the Bank comprises of Chief General Manager, executive direction, Chairman and Managing Director.
- If there is a separate vigilance department of Bank is then the fraud is reported to that department.
- If the vigilance department of Bank conducts its investigation of the fraud and then reports to top management and central vigilance department on a monthly basis.
- The Central vigilance department can investigate by reporting fraud to CBI or appoint external agencies to do forensic accounting to trace the parties. An FIR is also filed once the culprits are traced with the local police or CBI.
- Within the RBI an independent committee of the RBCI also monitors the fraudulent cases identified or reported by the commercial Banks and it reports about the same to Central Board of RBI .The Central Board of RBI can at its discretion report the matter to central vigilance Committee of the Ministry of Finance.
- Sometimes the Auditors appointed by the Banks during the course of their audit may come across instances where transactions in the books of accounts or the documents presented as audit evidence point out to the possibility of fraud in the transaction in the books of accounts.

- The Auditors report the same to the Top management for further investigation.
- Some employees are secretly appointed by top management as whistle Blowers to do the reporting of fraudulent activities or there may be a specially organised Fraud Monitoring Group (FMG), the confidentiality of the employee is maintained so that he is not victimised by the suspects reported by them.

Need for Forensic Accounting: Banks are facing more and more difficult situation with increased fraud incidents and low recoveries combined by an increase of compliance regulations in India and abroad, thus directly affecting augmented cost of compliance . With increased regulatory scrutiny, banks are under greater pressure to implement best practices. Compliance is therefore not an option but the need of the hour. Fraud risk management in the wake of increasing incidents of frauds in the financial service sector, the Reserve Bank of India (RBI) introduced guidelines vide circulars for a extensive Fraud Risk Management (FRM) system for banks relating to fraud prevention and the management's function in the organisation to prevent fraud. Stated plainly within these guidelines is the need for controls related to the prevention, detection and dissuasion of fraud and the roles and responsibilities of the senior management in fraud prevention and management function. The challenge for banks is to develop comprehensive fraud risk management controls that will not only prevent frauds, but also detect them as soon as they occur and respond to them. For understanding Forensic accounting a renowned Forensic Accountant called Deloitte's can be studied. As per Deloitte's fraud survey more than half the respondents had indicated that they have implemented a formal fraud risk management framework in spite of that the number of frauds is on the rise, which brings into question the effectiveness of the fraud risk management framework in place

Deloitte's had the experience and tools to assist banks to design, implement, and assess antifraud programs and controls. Specifically, they can work with Banks on:

- Fraud awareness trainings
- Anti-Fraud Programs and Controls
- Fraud Risk Assessments (FRA)
- Current state assessments
- Fraud response management
- Anti-money laundering (AML)

Technology and Forensic Accounting: Technology has created new avenues for banks to prevent or detect fraud as many of the indicators of fraud are hidden within the bank's operational data. A crafty data analytics tool can mine through this data and detect hidden relationships and red flags. This will enable banks to proactively identify potential fraudulent transactions before they manifest themselves months or years down the line. Analytics help banks to refine the way they execute the monitoring of frauds that which will allow them to detect and identify potential fraud prior to the launch of a prescribed investigation by regulators. Banks should leverage the results of risk assessments to target their analytics efforts and adjust their monitoring systems for continuous enhancement. They should then reshape their fraud detection efforts using advanced analytics and related tools, software and applications to obtain more efficient oversight. These steps can not only help to enhance fraud deterrence, but also show regulators an enterprise-wide commitment to enforcing an effective anti-fraud strategy.

However, some areas that we commonly addressed by Deloitte are:

- Review the Bank's fraud risk assessment results from an analytics perspective and identify targeted tests that can be implemented to address high-risk areas.
- Assess the accuracy and efficiency of Banks monitoring systems and perform periodic reviews.

- Benchmark the analytics procedures used in Banks current monitoring system against the latest advanced analytics techniques and technology available on the market

The Techniques used by Forensic accountants:

- **Investigation:** Investigations are conducted to identify the quantum of loss to several financial institutions as a result of diversion of export credit disbursements by a borrower. Their analysis of the transactions helps in the identification of multiple circular transactions, fraudulent and irregular transactions leading to the diversion of funds. They also identify several irregularities in sanctioning and monitoring of facilities and quantified the loss to the financial institutions
- **Fraud risk management:** Appointed by a leading multinational bank for conducting an in-depth review of the bank's wealth management front end process. They identified process weakness which could potentially lead to miss-selling, fraud and regulatory violations and suggested changes to the process to enhance the control environment.
- **Anti-money laundering:** Engaged by a leading multinational bank to assess their off-shore transaction monitoring process. Following an initial review, they presented a detailed report of their findings. Acting upon their recommendations, the client engaged them to assist them in strengthening their alert clearing procedures; including training their employees and developing an independent Quality Assurance (QA) function.
- **Business intelligence:** Appointed by a group of lender banks to carry out financial statement analysis, asset tracking and identifying the movement of funds for identified borrower companies. They conducted field investigation, source enquiries and desktop searches to ascertain existence, nature of business and relationships of the borrowers with selected entities and helped identify immovable assets. The results from the field investigations also indicated that the borrowers had diverted the funds to invest in real estate projects.
- **Computer Forensics:** Appointed by a law enforcement agency to provide computer forensic support for their investigation of a financial fraud. We acquired forensic images of computers of a number of suspects and conducted digital forensic recovery procedures. This helped in identifying documents and images related to the execution of fraudulent activity and unauthorized transactions. The team assisted in uncovering suitable evidence that helped fill the missing links, eventually allowing the law enforcement agency to file the charge sheet within the stipulated time and also brought out several shortcomings in server configuration settings that could help future fraudsters.

Challenges faced by Forensic accounting while collecting Evidence.

- Bankers take the various financial projects at Face Value at the time of inspection.
 - Banks keep outstanding amounts as Current Assets
 - Shareholders are not aware for a long time.
 - Bad debts are not considered after a long time.
 - Third Party Intervention: Big Advances Frauds are not so easy to commit so the Bank officials collude with borrowers .Sometimes even with third parties such as advocates and chartered Accountants.
 - Frauds are mostly detected by Auditors Traditionally but now their findings are also looked at with possible loopholes that exist in the current Banking System which makes it easy for the culprits to escape easily.
 - The loopholes have to be overcome by the Forensic Accountants depending on which category of Auditors is appointed by the Banks
3. **FORENSIC ACCOUNTING IN INDIA:** In India forensic accounting has been growing in importance due to the increase in white collared frauds. The loopholes in the work done by Auditors and the rate at which the white collared frauds are increasing have provoked the

enhancement of Forensic accounting in India. Forensic accounting has opened new avenues for Chartered accountants in India. The Indian Chartered Accountants with their education and existing practical experience can make forensic accounting as their key area. Mr, CA Mayor Joshi established India Forensic Centre of studies in the year 2005.

SUGGESTIONS

For developing the necessary skills of forensic accounting the following steps could be taken:

- Conferences, seminars and training programmes need to be organized to enhance the skills and ability of professional accountants in forensic issues.
- Research work should be undertaken in the area of forensic accounting.
- Forensic accounting may be integrated into the academic curriculum of tertiary institutions as a means of increasing awareness of the subject matter.
- A regulatory body of forensic accounting needs to be set up to govern the role, duties, responsibilities and power of forensic accountant.
- There is also a need to make a new Law for the prosecution of fraudsters, regardless of their domicile and the Law should always be framed keeping in mind the uses of information technology in fraudulent practices

CONCLUSION: Safeguard is the first step of fraud in the fraud control process. Continuous risk reviews and adapting to changes in Business Environment will help in mitigating the fraud risks. A lot of initiative has been taken by regulatory bodies show as progressive sign in detection of scams. After studying about this topic my conclusion is that Banks must shield themselves from dishonest activities by strengthening the fraud detection, mitigation and control mechanism through prompt identification, investigation and exchange of information. They must be a support to forensic accounting agents as seen in the above cases. This is necessary not just for the safety of banks but for ensuring the stability and flexibility of the overall financial system and sustaining the confidence that various stakeholders have in Banks strength and integrity.

References

- <http://www.investopedia.com/terms/f/forensicaccounting.asp#ixzz4No5OL6kp>
Inaugural address by Dr. K. C. Chakrabarty, Deputy Governor, Reserve Bank of India on July 26, 2013
"Frauds in the banking sector: Causes, Cures and Concerns",
Deloitte (2014), "India Fraud Survey, Edition 1".
Financial Frauds – Prevention: A Question of Knowing Somebody (Speech delivered by Shri R. Gandhi, Deputy Governor at "2nd National Conference on Financial Frauds Risks & Preventions" organized by ASSOCHAM on June 26, 2015 at New Delhi)
International Journal of Innovative Research & Development

OVERVIEW OF IMPLICATIONS OF PROPOSED GST ON RENEWABLE ENERGY SECTOR IN INDIA

Prathma Nemane & Rachana K. Chawda

Dept. of Commerce, Vidyalankar School of Information Technology, Wadala, Mumbai.

Email:prathma7@gmail.co:m Mobile 9769330234

Dept. of Management Studies, D.G. Ruparel College Mahim, Mumbai 400016

Email:rachanakgc@mail.com, Mobile: 9969302279

Abstract

Energy is a core sector in any economy. India is the fourth largest importer of oil and the 15th largest importer of petroleum products and Liquefied Natural Gas (LNG) globally. The increased use of indigenous renewable resources is expected to reduce India's dependence on expensive imported fossil fuels. India has the fifth largest power generation portfolio in the world and its current renewable energy contribution. The proposed GST bill indicates that power generation companies may see a rise in costs since all inputs are included in GST but electricity is not. Power generation companies can procure goods at a concessional rate of 2 percent. The rate might go up to 12 percent or 18 percent and the cost might be passed on to the consumer if GST is implemented. Owing to the higher set up costs of renewable energy projects, tariff rates for clean energy are generally not competitive vis-à-vis conventional energy. The viability of the energy sector, under the current GST regime, would depend upon the exemptions and concessionary tax which may be put in place to counter the impact of different tax regimes on the input and output side. Exemptions in renewable will need to become self sufficient in the power sector

Keywords- Renewable energy, GST ,Input concessions, Delivered cost

INTRODUCTION TO GST: Goods and Service Tax (GST) system was first introduced in France in 1954. At present there are 140 countries following GST system of Indirect Tax. In India in 2000, the discussion started on GST by forming a committee headed by AsimDasgupta. Since then the Bill passed through various phases. On 03 Aug, 2016- The constitution (122nd Amendment) bill passed by Rajyasabha. GST Bill became a Law as President signed GST Bill in Sep,2016.GST is expected to improve the ease of doing business, make India more competitive, attract foreign direct investment and increase the GDP of the country by between 1.5 to 2 percentage points and reduce tax avoidance. GST is a tax on goods as well as on services under which every person is liable to pay tax on his output and is entitled to get Input Tax Credit (ITC) on the tax paid on its input (a tax on value addition only) and ultimately the final consumer shall bear the tax. The objectives behind introducing GST are 1. Ensuring availability of input credit across supply chain. 2. Minimizing cascading effect of Taxation. 3. Simplification of Tax Administration and compliance. 4. Harmonization of tax base, Laws, and Administration procedure across the country. 5. Minimising tax rate slabs to avoid classification issues. 6. Prevention of unhealthy competition among states. Reducing scope of Tax evasion

The following indirect taxes from state and central level is expected to be integrated with GST

Taxes be subsumed	Taxes kept outside of GST
<p>Central levies</p> <ul style="list-style-type: none"> - ACD (additional customs duty) , - SAD (special additional customs duty), Central Excise, Service Tax, CST, Central Surcharges and Cesses related to supply of goods and services <p>State levies</p> <ul style="list-style-type: none"> - State VAT, Luxury tax, Octroi, Entry tax, Purchase Tax Entertainment tax, State Surcharges and Cesses related to supply of goods and services, Medicinal and Toilet Preparations (Excise Duties) Act, 1955 	<p>BCD (basic customs duty)</p> <p>Stamp duty ,Taxes and duties on electricity , Taxes and duties on alcohol for human consumption</p>

GST is a 4-tier tax structure. The rates are 5, 12, 18 and 28 per cent, with lower rates for essential items and the highest for luxury and de-merits goods that would also attract an additional cess, was decided by GST Council in November 2016.

MORE OR LESS: GST VS CURRENT TAXES			
	Current Tax Slabs	New GST Rates	Products & Services
1	Up to 9%	5%	Edible oil, spices, tea, coffee
2	9% - >15%	12%	Computers, processed food
3	15% - >21%	18%	Soaps, oil, shaving sticks
4	21%	28%	Most white goods such as LED TV sets

Combined central and state taxes
Source: Govt, PwC

(Source: Economic Times November 2016)

Items used by the middle class such as toothpastes, soaps and refrigerators, which currently have a high tax incidence of more than 27%, will be brought down into the lower slab of 18%

Zero tax rate will apply to 50% of the items present in the consumer price index basket, including food grains, to be zero-rated, enabling them to be part of GST chain but without burdening consumers

Cars may be in 28% bracket. While small cars may get a rebate, cess expected on luxury vehicles

Product details to be worked out by officers

Cess to face annual review, to be phased out in 5 years

No decision yet on service tax rates and GST on gold

IMPACT OF PROPOSED GST ON VARIOUS SECTOR OF ECONOMY.

POSITIVE IMPACT	NEGATIVE IMPACT
CONSUMER STAPLES: The current tax rate 22% after GST it's 18%.	BANKS : The Current service tax 15% know after GST 18%
MEDIA: The current Tax 15% service tax and 7% entertainment Tax by State's After GST it will be 18%	CONSUMER DISCRETIONARY: The current 15% after GST 18%
AUTO INDUSTRIES : The current Tax 27% after GST it will be 18%	TELECOM : The current Tax 15% After GST 18% may see marginal dip in consumption as tax rise from 15% to 18%
CEMENT: The current Tax 27% altogether after GST it will be 18%	PHARMA: The current Tax 15% after GST it will be 18% .

OVERVIEW OF INDIA'S RENEWABLE ENERGY SECTOR (RE): In any nation Power is one of the most important components of infrastructure indispensable for the economic growth and welfare of nations. India is the fourth largest importer of oil and the 15th largest importer of petroleum products and LNG. The increased consumption of indigenous renewable resources is expected to reduce India's reliance on expansive imported fossil fuels. The government of India has set up Ministry of New and Renewable Energy (MNRE) is playing a pivotal role in promoting the adoption of renewable energy resources by offering various incentives such as generation-based incentives (GBIs), capital and interest subsidies, viability gap funding (VGF), concessional finance, fiscal incentives etc. India has the fifth largest power generation portfolio in the world and its current renewable energy contribution stands at 44.812 GW which includes 27.441 GW of Wind power and 8.062 GW of Solar power installed capacity in the country. (As on 31.07.2016) The growth of the clean energy sector in India has been remarkable. RE contributes 14.7% of the total installed capacity in the country. India permits FDI up to 100 % in the sector under the automatic route in Renewable Energy Generation and Distribution projects that are subject to the provisions of the Electricity Act of 2003. Economic growth, increasing prosperity, a growing rate of urbanization and rising per capita energy consumption has led to increased demand for energy in the country. The country has huge potential and renewable resource availability.

Grid connected installed capacity from all sources as of April 30, 2016	Installed grid interactive renewable power capacity in India as of December 31, 2016 (RES MNRE)																																													
<table border="1"> <thead> <tr> <th>Source</th><th>Installed Capacity (MW)</th><th>Share</th><th>Source</th><th>Installed Capacity (MW)</th><th>Share</th></tr> </thead> <tbody> <tr> <td>Coal</td><td>187,252.88</td><td>61.12%</td><td>Gas</td><td>25,057.13</td><td>8.18%</td></tr> <tr> <td>RES MNRE</td><td>44,236.92</td><td>14.44%</td><td>Nuclear</td><td>5,780.00</td><td>1.89%</td></tr> <tr> <td>Large Hydro</td><td>43,112.43</td><td>14.07%</td><td>Total</td><td>302,833.20</td><td>100.00%</td></tr> </tbody> </table> <p>(Source: <i>Executive Summary Power Sector September 2016</i>)</p>	Source	Installed Capacity (MW)	Share	Source	Installed Capacity (MW)	Share	Coal	187,252.88	61.12%	Gas	25,057.13	8.18%	RES MNRE	44,236.92	14.44%	Nuclear	5,780.00	1.89%	Large Hydro	43,112.43	14.07%	Total	302,833.20	100.00%	<table border="1"> <thead> <tr> <th>Source</th><th>Total Installed Capacity (MW)</th><th>2022 target (MW)</th></tr> </thead> <tbody> <tr> <td>Wind Power</td><td>28700.44</td><td>60,000.00</td></tr> <tr> <td>Solar Power</td><td>9012.66</td><td>100,000.00</td></tr> <tr> <td>Biomass Power (Biomass & Gasification and Bagasse Cogeneration)</td><td>7856.94</td><td>*10,000.00</td></tr> <tr> <td>Waste-to-Power</td><td>114.08</td><td></td></tr> <tr> <td>Small Hydro Power</td><td>4333.85</td><td>5,000.00</td></tr> <tr> <td>Total</td><td>50017.97</td><td>175,000.00</td></tr> </tbody> </table>	Source	Total Installed Capacity (MW)	2022 target (MW)	Wind Power	28700.44	60,000.00	Solar Power	9012.66	100,000.00	Biomass Power (Biomass & Gasification and Bagasse Cogeneration)	7856.94	*10,000.00	Waste-to-Power	114.08		Small Hydro Power	4333.85	5,000.00	Total	50017.97	175,000.00
Source	Installed Capacity (MW)	Share	Source	Installed Capacity (MW)	Share																																									
Coal	187,252.88	61.12%	Gas	25,057.13	8.18%																																									
RES MNRE	44,236.92	14.44%	Nuclear	5,780.00	1.89%																																									
Large Hydro	43,112.43	14.07%	Total	302,833.20	100.00%																																									
Source	Total Installed Capacity (MW)	2022 target (MW)																																												
Wind Power	28700.44	60,000.00																																												
Solar Power	9012.66	100,000.00																																												
Biomass Power (Biomass & Gasification and Bagasse Cogeneration)	7856.94	*10,000.00																																												
Waste-to-Power	114.08																																													
Small Hydro Power	4333.85	5,000.00																																												
Total	50017.97	175,000.00																																												

IMPLICATIONS OF PROPOSED GST ON RENEWABLE ENERGY SECTOR IN INDIA

RE companies worried about GST impact on Delivery cost. Taxes on generation and sale of electricity have been kept outside the purview of the GST regime, capital goods and services used for setting up renewable energy projects have been included. The taxes on generation and sale of electricity have been kept outside the purview of the GST regime, capital goods and services used for setting up renewable energy projects have been included. Due to following reasons the cost of Delivery cost of RE will rise (i) Removal of exemptions which causes increase in tax costs (ii) additional tax burden due to increase in tax rates from the current applicable tax rates (iii) expected increase in cost as a result of purchase at concessional rates against statutory forms will be done away. At present, the RE sector enjoys numerous tax concessions and exemptions. Eg. around 95% of the solar equipment used in the country, is imported. While imports generally attract BCD of 7-10%, renewable energy-related components pay a concessional 5%. There is also a SAD of 4%, which for renewable energy equipment is later refunded. Similarly in case of wind turbine generators most are manufactured locally. Domestically, manufactured goods pay a peak excise duty of 12.5% but, "goods used for the manufacture of rotor blades and intermediates, parts and sub-parts of rotor blades for wind operated electricity generators" have to pay nothing at all. These and other concessions on value-added tax, CST and state entry tax are all likely to disappear once the GST regime will get implemented. With manufacturing costs rising, renewable energy tariffs are also likely to rise.

SOLAR ENERGY: India has high solar insolation, an ideal combination for using solar power in India. The country's solar grid had a cumulative capacity of 9,012.66 (MW). 30 per cent subsidy is provided by The MNRE to most solar powered items such as solar lamps and solar heating systems. India is ranked number one in solar electricity production per watt installed, with an insolation of 1700 to 1900 (kWh/KWp). In the solar industry, around 85% to 90% of equipment used is imported with basics customs duty of 6% to 10%; RE related components have to pay a concessional 5%, special additional duty of customs of 4%, which gets refunded later.

Following table gives details of inputs required for solar panels its present and proposed tax structure

Cost category (% of cost)	Current regime	GST	Comments
Solar Panel (29.96%)	80% imported - No customs duty is applicable as full exemption is available from BCD, ACD as well as SAD 20% procured within the State- Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided	Import - BCD exemption would continue. However, there would be additional IGST of 18% Intra-State procurements – CGST and SGST would be applicable at 18%	Removal of exemptions and increase in tax rate would increase costs GST will increase Delivery Cost
Battery (35.96%)	30% imported – Customs duty is applicable at 5.15% (BCD of 5% and cess) - ACD and SAD are exempt 70% procured within the State -Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by State (as highlighted above)	Import - BCD would continue to be levied at concessional rate of 5%. Further, there would be additional IGST of 180% Intra-State procurements – CGST and SGST would be applicable at 20%	Removal of exemptions/ concessions and increase in tax rate would increase costs

(Source: Report by MNRE 2016)

The impact on RE sector includes an increase by 15-20% in solar off-grid costs, 10-16% increase in cost of solar PV grid connected plants.

WIND ENERGY: The development of wind power in India began in the 1986. The MNRE set the target for Wind Power generation capacity by the year 2022 at 60,000 MW. Wind energy accounts for nearly 61% (27.441 GW) of renewable installed capacity, thereby making India the world's fourth largest wind energy producer. Maharashtra is one of the prominent states that installed wind power projects second to Tamil Nadu in India major manufacturers of wind turbines including Suzlon, Vestas, Gamesa, Regen, Leitner, Shriram have presence in Maharashtra. In the wind power industry, most of the manufacturers are based out of India, so when the cost of manufacturing is bound to rise, the cost of generation and hence sale is poised to increase in cost of setting up of wind energy projects is estimated at 10-15%.

Cost category	Current regime	GST	Comments
Wind operated electricity generator, its components and parts thereof including rotor and wind turbine controller (69.14%)	30% parts are imported - Customs duty is applicable at 5.15% (BCD of 5% and 3% cess) - ACD and SAD are exempt 35% are procured within the State and 35% are procured on inter-State basis - Intra-State procurements – Excise duty is exempt. VAT is applicable at concessional rate provided by Inter-State procurements – Excise duty is exempt. CST is applicable at 2% against Form C	Import - BCD exemption could continue. However, there would be additional IGST of 18% Intra-State procurements – CGST and SGST would be applicable at 18% Inter-State procurements – IGST would be applicable at 20% along with additional tax of 1%	Removal of exemptions and increase in tax rate would increase costs
Transformer (2.06%)	Procured within the State -Excise duty is applicable at 12.5% VAT is applicable at concessional rate provided by State	Intra-State procurements – CGST and SGST would be applicable at 18%	Increase in tax rate would increase costs
Transportation (5.15%)	50% procured within the State and 50% procured on inter-State basis - Service tax applicable at 4.35% (30% of 14.5%)	Inter-State – IGST applicable at 6% (30% of 20%) Intra-State - CGST and SGST would be applicable at 3% each i.e. total	Increase in tax rate would increase costs – Further, impact would be there if abatement is removed/ changed

(Source: Report by MNRE 2016)

BIO-MASS GRID: About 32% of the total primary energy use in the country is derived from biomass and more than 70% of the country's population depends upon it for their energy needs. India has over 5,940 MW biomass based power plants comprising 4,946 MW grid connected and 994 MW off-grid power plants. Bio Energy projects could possibly experience an increased cost of about 10-15%, while small hydro could become costlier by another 10%.

The following breakup for levelised tariff for a Bio-mass GRID project has been considered:

category	Current regime	GST	Comments
Land and site Development (2.42%)	50% procured within the State and 50% on inter-State basis -Service tax is applicable at 14.5%	Inter-State – IGST would be applicable at 20% Intra-State – CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Civil works (Share of cement) (3.58%)	Procured within the State -Excise duty is applicable at 12.5% VAT is applicable typically at higher rate of each State	CGST and SGST would be applicable at 20%	Tax implication to be analyzed based on rate of VAT on cement in each State
Civil works (Share of steel structural) (2.69%)	Procured within the State -Excise duty is applicable at 12.5% VAT is applicable typically at lower rate of each State	CGST and SGST would be applicable at 18%	Increase in tax rate would increase costs
Civil works (Share of other goods (2.69%)	Procured within the State -Excise duty is applicable at 12.5% VAT is assumed typically at higher rate of each State	CGST and SGST would be applicable at 18%	Tax implication to be analyzed based on rate of VAT in each State
Civil works (share of services) (5.97%)	Procured within the State -Service tax is applicable at 14.5%	CGST and SGST applicable at 18%	Increase in tax rate would increase costs
Plant and machinery (68.01%)	30% parts are imported - Customs duty is applicable at 9.36% (BCD of 5% , cess of 3% and SAD of 4%) –ACD is exempt	Import - BCD exemption could continue. However, there would be additional IGST of 18%	Removal of exemptions and statutory forms and increase in tax rate would increase costs

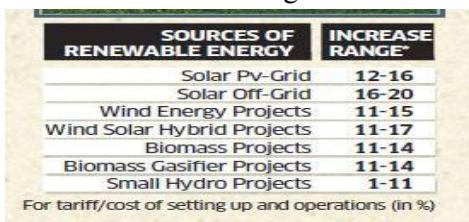
(Source: Report by MNRE 2016)

SMALL HYDRO GRID PROJECTS: India is the world's 7th largest producer of hydroelectric power and is also ranked 3rd worldwide by its total number of dams. As of 31 March 2016, India's installed utility-scale hydroelectric capacity was 42,783 MW, or 14.35% of its total utility power generation capacity. The following break-up for levelised tariff for a Small Hydro GRID project has been considered:

Cost category	Current regime (Procured within the State)	GST	Comments
Civil works (Share of cement) (11.76%)	Excise duty is applicable at 12.5% VAT is applicable typically at higher rate of each State	CGST and SGST would be applicable at 18%	Tax implication to be analyzed based on rate of VAT on cement in each State
Civil works (Share of steel structural) (8.82%)	Excise duty is applicable at 12.5% VAT is applicable typically at lower rate of each State	CGST and SGST would be applicable at 20%	Increase in tax rate would increase costs
Civil works (Share of other goods (8.82%)	Excise duty is applicable at 12.5% VAT is assumed typically at higher rate of each State	CGST and SGST would be applicable at 18%	Tax implication to be analyzed based on rate of VAT in each State

(Source: Report by MNRE 2016)

Conclusion and Suggestions: Introducing GST is welcoming move by various sectors of economy. But for RE sector it doesn't give much benefit unless following points are considered.



- Exemptions used to be provided to inputs/ Goods used in renewable energy sector should not be discontinued

- whilelevying GST, vendor to avail credit of GST on their inputs and input services by imposing Zero rate
- Wherever, exemption is not granted, a concessional rate of GST should be applicable on both goods and services used for setting up of and operating the renewable power project
- The renewable energy developer/ operator should be eligible to take refund of taxes paid considering that electricity would be outside GST
- Uniform SGST rate in States on capital goods, inputs and inputs services meant for RE projects

LIMITATION OF THE STUDY

- Most information is collected from secondary source.
- Information covers only solar, wind, bio mass and small hydro project
- Comments are based upon the assumptions stated in the report, CERC orders, discussions with MNRE officials and industry players, existing drafts available in the public domain and various discussions
- The paper discuss probable effect of proposed GST

References

Report by MNRE "Implications of GST on delivered cost of renewable energy"

Ministry of New and Renewable Energy, Annual Report 2015-2016.

<http://energy.economictimes.com/news/policy/how-will-gst-impact-indias-energy-sector/53526262>

<http://www.livemint.com/Industry/U2wPBxYNCX8nWDlq9ZIxVO/GST-to-push-costs-up-by-1015-for-renewable-power-companies.html>

<http://www.simpletaxindia.net/2016/10/gst-impact-on-power-sector.html#axzz4X3GDCixq>

<http://www.pv-tech.org/news/indias-mnre-consults-industry-on-impact-of-impending-gst-tax-bill-on-renewable-energy>

<http://www.ey.com/in/en/services/ey-goods-and-services-tax-gst>

IMPACT OF IMPLEMENTATION OF IFRS IN BANKING SECTOR

Pooja Jugu & Kavitha Mohan

Assistant professor, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: Pooja.jugu@vsit.edu.in, Mobile: 9022569456

Assistant Professor, Vidyalankar School of Information Technology, Wadala, Mumbai. Email: kavitha.mohan@vsit.edu.in, Mobile: 7715962293

Abstract

Accounting in current globalised era is the most important challenge faced by the banking sector in India. To overcome the challenge, banks adopted IFRS. The successful adoption of IFRS is based on flexibility and acceptability of IFRS by RBI. A remarkable and important element of smooth transition into IFRS is the convergence of RBI guidelines with the principles laid down in IFRS. This paper is based on secondary data. The purpose of this paper is to analyse the impact of IFRS on the Indian banking industry after the implementation on and after 01st April, 2011 and to make a bird's eye view about the preparedness of banks to such change. It shows the areas in which Indian banking industry is required to focus before and after the implementation of IFRS and their consequences on the financial statements of the Bank. This paper Focuses on the adoption of International Financial Reporting Standards (IFRS) and understanding the remarkable changes in accounting standards and their impact on valuation of assets specially loan loss provisions and Need to create the enabling environment in individual banks. It is based upon the critical analysis of financial statements of the Indian banking industry, such as business per employee, Capital and reserve, Investments and advances, Net NPA Ratios, and the impact thereon of relevant provisions of IFRS.

Keywords: IFRS (International Financial Reporting Standards), NPA (Non-performing Assets).

I. INTRODUCTION: Due to globalization, the close economy has changed into open economy. Today national economy is integrating with other countries by spreading their trade and business outside their own country. Some of the examples of international business are Foreign Direct Investments, Foreign Institutional Investors, Business Outsourcing, Merger and Acquisition, Franchising. For the integration of various country's business together, adoption of a common set of accounting standard was necessary for the business to, since accounting is very important for business. It becomes easier to use the common set of accounting standards throughout the world for comparing the financial information and it also ensures transparency in reporting. It reduces the cost of preparing financial statements. International Financial Reporting Standards is a set of accounting standards developed by an independent, not-for-profit concern called the International Accounting Standards Board (IASB). Its goal is to provide a global framework for public companies like how to prepare and disclose their financial statements. IFRS provides general guidance for the preparation of financial statements. The convergence of Indian Accounting Standards with the International Financial Reporting Standards (IFRS) with respect to banking companies required all scheduled commercial banks to convert their opening balance sheets as of April 1, 2011. It was emphasized by RBI that banks need to gear up to adopt the new standards. It transformed the method of evaluating the company's performance including earnings management information & control system, reporting practices, valuation policies. The convergence is not the only responsibility of the finance and accounts department but also required integrated efforts of all departments of the organization.

II. STATUS OF INDIAN BANKING INDUSTRY: The adoption of IFRS has resulted in to remarkable consequences on advances, regulatory compliances, Investments, information technology systems, financial instruments, tax calculations and other areas. In India, there are only seven applicable accounting standards compliant with IFRS. The Indian accounting standards which were issued earlier did not emphasize on consolidation of financial statements whereas IFRS made it

mandatory. As a result all the banks in India are required to do consolidation of the financial statements of their subsidiaries. The International Financial Reporting Standards emphasizes on the ratios and it indicates the financial performance of the organization. It requires the disclosure of those ratios which are key indicators of the business performance and earnings. It also requires the disclosure of the managerial remuneration including any other benefits given to management personnel including bonus, commission etc. IFRS – 9 is one of the important IFRS that has majorly impacted the Indian Banking Sector is. IFRS – 9 is applicable on all types of financial assets. From a bank's perspective, investments in government & other securities and loan assets are the key items that are affected. Initially, all financial assets are measured at fair value. The subsequent measurement is based upon the classification of such assets. IFRS – 9 allows little flexibility over the classification of the assets. To be classified at an amortized cost, an instrument must be qualifying in the business model and financial characteristics tests. It is unlikely that an entity can easily change its business model for a particular portfolio to attain a specific classification on initial application of the standard. The banking industry has started the measurement of credit risk management to avoid any loss in loan assets due to measurement of fair value at the time of implementation of IFRS. It has started the credit risk management internally as well as externally. Although, the bank's internal department measure and assign the risk for all the borrowers before sanctioning and loans and advances. It has also started the practices of getting measurement of risk by external agencies such as CRISIL, CARE and other related for all those entities who enjoys the borrowing facility of 10 Crore or more as group borrower or individual borrower. This practice shall reduce the impairment loss in the advances and shall enhance the net worth as well as income of the banking industry because of no loss in fair valuation. The statutory regulations prescribed by the Reserve Bank of India, Companies Act, 1956, Income Tax Act, 1961, and other laws of lands, now been discussed for amendments. The Institute of Chartered Accountants of India has already submitted the suitable amendments in the Companies Act, 1956 in the month of May, 2009 before the convergence of IFRS. The Institute of Chartered Accountants of India has suggested amendments in Section 78, Section 80, Section 100, Section 205, Section 208, Section 211, Section 394, Section 391 and Schedule VI of the Companies Act, 1956. The convergence of IFRS is likely to create significant impact on the banking industry. It shall affect the reporting practices of net worth, capital adequacy, position of advances, valuation of derivatives, financial instruments and so on. It shall also affect the measurement of financial performance of the Indian banking industry.

III. IMPACT ON BANKING INDUSTRY

Compliances Burden: Banks and institutions of capital markets have many local, national and international regulatory requirements that can stumble even the most complicated enterprise. All the policies regarding valuation of advances and loans, net worth, capital adequacy, etc. are measured as per the rules specified by the Reserve Bank of India. In addition to the compliances of the rules and regulations specified by the Reserve bank of India, the Indian Banking industry was also affected by the compliances of other laws. For example, the International Financial Reporting Standards (IFRS) specifies that the assets should be depreciated over the useful life of the assets. However the minimum rates of depreciation for the assets under different class of assets is prescribed by the Indian Companies Act, 1956. Even though the companies have the choice to charge the higher rate of depreciation but no companies opt as such. At present, all companies are charging specified rates of depreciation on only assets. Due to the compliances burden the non-operating costs of the banks are enhanced. For example, the various categories of compliances such as compliances of IFRS, guidelines issued by the Reserve Bank of India, banking regulations, provisions under Income tax etc. are require to be certified by the auditor or the consultants.

Tax Reporting Practices: The tax considerations associated with a conversion to IFRS, like the other aspects of a conversion, are complex. For banks, tax accounting differences are of great importance.

Though, the effects of a conversion go beyond these complex tax matters and it also include matters such as pre-tax accounting changes on tax methods, tax information systems, and global planning strategies. If a conversion to IFRS is accessed properly and well in advance of conversion, it has the ability to increase the strength of an entity's tax function by providing a chance for a detailed review of tax matters and processes.

Information Technology: IFRS is having a wide-range of effects at different levels of the IT systems architecture. The rearrangement of the banking's information systems has posed a real challenge for their IT department along with the rest of the organization. Virtually all applications and interfaces in the system architecture can be affected, from the upstream or source of data to the farthest end of the reporting tools. The information technology department of the bank will need to take into account external factors such as local and international regulations, financial consolidation of subsidiaries, stock markets, and external auditors. This business transformation cannot be considered as a one-step project. The upgradation of the information technology and information systems shall require an investment of bulky amount. The Indian banks have not made any such provisions for meeting out these investments. These investments shall have major impact over liquidity of the banks.

Financial Instruments: The Institute of Chartered Accountants of India has issued AS – 30, AS – 31 and AS – 32 respectively in parallel to International Accounting Standards – 39 (IAS – 39) on Financial Instruments. Financial Instruments: Recognition and Measurement is one of the typical standards for those organizations which use financial instruments in their financial statements especially banking industry. It shall have an impact over the income of the industry.

Human Resources: IFRS involves much more than reorganizing the chart of accounts. It represents a change that cascades well beyond the finance department. Consequently, human resources issues may be a major concern. A conversion project will place increase in demands of the trained and professional personnel, which may come at a time when they are able to handle it. It shall enhance the wages cost as percentage of the total expenses for the bank. This cost shall further increase after the appointment of the trained and professional staff for the implementation of the IFRS in the bank.

Impairment in Advances: IFRS recognize the impairment model for the assets of the organization. However, the banking industry, at present recognizes the provisioning and writes off method for the valuation of its advances as per the prudential norms of Reserve bank of India. This is the only guidelines that the Indian banking industry is required to comply. The auditor is required to provide comment on the compliances of these guidelines. The bank is required to examine each and every investment including advances on specific basis and shall require to value them as per the method of present value after adopting the effective rate of interest for discounting. It is a tough work for the banking industry. However the IFRS specify the suitability of method for measurement of present value for group borrower and individual borrower. It specified the collective method and individual method for measurement of impairment of the assets of the organization. Under IFRS 9, loans and receivable portfolio are accounted on amortised cost basis, provided these loans do not contain any exotic embedded derivatives. Basic embedded derivatives, such as caps and floor or normal prepayment or extension terms, do not taint amortisation accounting. However, amortisation accounting is not possible if a loan has a contractual interest rate that is based on a term that exceeds the instrument's remaining life. Similarly, a loan with a convertible option is not eligible for amortisation accounting and will have to be accounted for on a fair value basis with changes taken to the income statement. Loan portfolio is accounted for on a fair value basis in cases where banks transfer/securities their loan portfolio.

Investments: As per the existing Indian Accounting Standard – 13 (AS – 13) on Accounting for Investments, the Investments of the organization shall be valued on lower of cost or fairvalue. The calculation of fair value is simple or in other words the value, after deduction of expenditure for sale of such investments, at which it may sold in the open market. However under the IFRS, the

measurement of fair value shall be different from the existing method. In India, the banks are required to maintain the Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR). The banks maintain these ratios by investing in the Government securities. Hence, these securities cover a major part of the investments of the banks in India. The details of the investments held by the respective groups of banks are given in Table – B. The investments of the Indian banks are approximately 50 percent of the total advances. Hence it shall also require a detailed evaluation during the convergence. Under RBI norms, investment in equity instruments (other than subsidiaries and joint ventures), are marked to market. Net losses are recognised but net gains are ignored. Under IFRS 9, investments in equity instruments are fair valued. The gains or losses are either recognised in the income statement or in a reserve account. That choice is required to be made at the inception on an instrument by instrument basis, and is irrevocable. With regards to impairment of loans (not covered by IFRS 9), the IASB in a proposed standard is looking at a model that is based on expected losses rather than incurred losses. In other words, the proposed standard requires estimated credit losses to be included in the determination of the effective interest rate for the purposes of amortisation accounting.

Consolidation of financial statements: As per the Accounting Standard – 23 (AS – 23) on consolidation of Financial Statement of entities, the consolidation of financial statements are purely based upon the ownership and control over the another organization. As per the existing Accounting Standards, consolidation is not mandatory for all organization. However, as per IFRS, the consolidation is mandatory for all the organization. The measurement and test of ownership shall also be change in the IFRS. It has covered the potential voting rights other than the actual stakeholders. The potential voting rights includes all those whose debts or shares are required to be converted into equity capital of the company. Indian industries are not practicing any such type of inclusions for examining the applicability of standards on consolidation of financial statements. The convergence of IFRS shall have impact on all the above things. It is difficult to measure the level of difficulty faced by the Indian banking industry for hedging the risk over investments and advances. At present, many representations have been received by the Institute of Chartered Accountants of India as well by the Ministry of Corporate Affairs from the Indian banking industry for deferment of convergence by some more periods. Further the convergence shall be required for prudential norms of Reserve Bank of India, because it would be difficult for Indian banks to make the two compliances at a single time for different classes of assets.

IV. IMPACT ANALYSIS AND MINIMIZATION OF LOSS: The Indian banking sector has started the assessment of the loans and advances of the organization as per the IFRS standards but not full compliances thereof. At present, they measure the quantum of impairment in the loans and advances after applying the proper discounting rates in the calculation of present value. These present value shall be measured after adopting the group borrowing facility basis, in case where the borrowing are enjoyed on class or group basis, and collective basis where the borrower enjoys for shorter period. The example of short period for collective basis is credit cards. The banking industry has started the measurement of credit risk management. It has started the credit risk management internally as well as externally. Every bank has fixed and assigned certain points for the measurement of risk of the particular loans. These points are based upon the age of the borrower, amount of exposure involves, nature of business or professions, experience in the business, coverage of income to the loans and so on. Although, the bank's internal department measures and assign the risk for all the borrowers before sanctioning the loans and advances. It has also started the practices of getting measurement of risk by external agencies such as CRISIL, CARE and other related for all those entities that enjoy the borrowing facility of 10 Crore or more as group borrower or individual borrower. In every case, the banks examine the default status of the borrower through the CIBIL before sanction of loan. This process is done by the bank internally and the data is kept in confidence. This practice shall reduce the impairment loss in the advances and shall enhance the net worth as well.

as income of the banking industry. The banking industry has started the practices for the adequate provisions of the loss for the derivatives and financial instruments. It shall bring the Indian GAAPs at par to IFRS. This practice shall keep the Indian banking industry in good health. Most of the banks recruited trained and professional staff for the bank. These staff performs the credit risk management, fair valuation of loans and advances forecasting of loss, if any, proper budgeting of income and expenditures. It shall enhance the quality of financial reporting of the banking sector as well as proper valuation of the investments, loans and advances. Security Exchange Board of India (SEBI) responsible for handling the Indian stock exchange is also in the process of finalization of amendments in the various guidelines issued earlier by them. Any change proposed by the

V. CONCLUSION: The above all discussion shows that the implementation of IFRS shall have the major impact over the advances, financial instruments, investments and but not limited to heavy investment on updation of information technology system. However, still the industry requires a detailed analysis and valuation of existing advances and all other instruments in compliances with the IFRS. The tax authorities has not yet clarified the allow ability of the loss arises due to revaluation in such advances and instruments. Reserve Bank of India has also not clarified the compliances of the SLR and maintenance of the other reserve through the investments in the Governments securities and their valuation in contradiction or compliances with IFRS.

REFERENCES

- <http://www.ey.com/in/en/industries/financial-services/banking---capital-markets/ifrs---perspectives-from-the-indian-banking-sector>
https://www.researchgate.net/publication/50315306_IFRS_-_Impact_on_Indian_Banking_Industry
International Financial Reporting standards by Taxman Publications as issued on 1st January 2013

GOODS AND SERVICE TAX- A CHALLENGING ROAD AHEAD

Mr. Shreyas Bondre

Assistant Professor, Vidyalankar School of Information Technology, Wadala, Mumbai.

Abstract

Goods and Services Tax is a historic opportunity for India to implement a game-changing tax reform. Domestically, it will help to improve governance, strengthen tax institutions, facilitate “Make in India by Making One India”. It will also set the Global Standard for a Value-added tax in large federal systems in the years to come. “Goods and Services Tax” – One Country, One Tax is a comprehensive indirect tax levy on manufacture, sale, and consumption of goods as well as services at the national level. Consolidation of various taxes into a GST system would make it possible to give full credit for input taxes collected.

1. INTRODUCTION

Need for GST -Presently, the tax structure of India is very Complex. Looking to the tax structure of developed countries and overall global development, GST is the need of the hour. Separate taxation of Goods and Services often requires splitting of transaction values into a value of Goods and Services for taxation which leads to greater complexities, mismanagement in administration, and more compliance cost. Uniformity in Indirect Tax Structure will result in Business Transformation and will help in development of common national market. GST being the destination-based consumption tax based on VAT Principle (i.e the tax would accrue to the taxing authority which has jurisdiction over the place of consumption which is also termed as place of supply) would also greatly help in, overcoming the limitations of existing indirect tax structure and removing economic distortions. **Objectives:**

- To know Goods and Service tax and its relation with different aspects in economy.
- To overview the challenges in GST regime in India.

Registration under GST –As per the draft model law every supplier shall be liable to be registered under this Act in the State from where he makes the taxable supply of goods and/or services if his aggregate turnover in a financial year exceeds 20 lakh Rupees: PROVIDED that where such person makes taxable supplies of goods and /or services from any of the states specified in sub-clause (g) of clause (4) of Article 279A of the Constitution, he shall be liable to be registered if his aggregate turnover in a financial year exceeds 10 lakh Rupees

Present and New Indirect Tax Structure :

Type of supply	Name under new tax structure	Explanation	Levy	Applicability
Intra state taxable supply	CGST- Central Goods and Service Tax	Excise and Service Tax will be known as CGST	Central	CGST will be applicable on supply of goods and services within the state
	SGST – State Goods and Service tax	Local VAT and other taxes will be known as SGST	State	SGST will be applicable in addition to CGST on supply of goods and services within the state.
Inter- state Taxable service	IGST – Integrated Goods and Service Tax	CST will be replaced by IGST. CGST + SGST	Central	IGST will be levied on inter-state supply of goods and services.
Import from outside India	IGST and Custom duty.	Custom duty in place of CVD and SAD.	Central	IGST will be charged.

Purchase Tax, Luxury Tax, taxes on Advertisement, Entertainment & Amusement Tax etc. (except taxes levied by local bodies in State Government) shall be subsumed into SGST.

Demonetisation and GST –As per the Report of Standards and Poor's Global - Demonetisation and GST will **benefit India in Long run**. Both processes are moves in the right direction to a better economy. **There are going to be short term costs which go along with those long term benefits.** Further S & P in its report says that, the disruption from the demonetisation should be short-lived with the demand revival in the next one to two quarters, limiting the impact on Indian banks and Corporates. The Goods and Service Tax will sustain the good work of cleaning up the Indian economy which started with demonetisation – said SatyaPoddar, (Tax Partner Policy Advisory Group – Ernst & Young LLP). While the Demonetisation made black money worthless GST prevents illegal transactions using the new currency. Under the new GST, there is a **lowpossibility of unreported transactions**. From recording Transactions to checking their validity, the new GST provides for an automated process that is full - proof.

Inflation and GST –Indirect Taxation Policy in India is based upon two basic principles viz. Neutrality and Uniformity. The fragmented decision making with respect to VAT laws and rates have been simply motivated to increase tax collections. Amidst the intent to increase tax collections, the basic principles of VAT have lost their purpose. The impending implementation of Goods and Service Tax in India aspires to streamline and simplify the application, management and governance of indirect taxes going forward. **The need of the current Government is to manage inflation and to create buoyancy in the economy.** A Uniform taxation system such as GST can be one of the most important steps towards achieving these Objectives. In the GST regime, the Government proposes a free flow of credits across transactions which decrease the tax cost for businesses. Given that both Centre and State taxes would be levied simultaneously on all supplies, the issue relating to dual taxation on certain products would also come to rest. The decrease in tax costs would also play a significant role in boosting the exports in the country. The reduction of costs in India would make our products more competitive in the international market thereby not only increasing the GDP of the country but also inflow of foreign currency.

Why GST for India – Challenges for Success in India -

Definitional issues under Current Tax Structure – In the Present Tax Structure, there are various definitional issues related to manufacturing, sale, service, valuation, supply etc. arises. Several transactions take the character of sale as well as services, so there is a complexity in determining the nature of transaction. These problems need to be rationalised, some of them are already rationalised as per the Draft Model Law of GST.

Approval of Rate of Tax Schedule –The issue of approval of Rate of Tax Schedule is not yet taken up by the GST Council. This may be taken up by the council after all legislative approvals, issue of compensation and cross empowerment are decided. The proposed structure of tax rates will have minimal inflationary consequences. But careful monitoring and review will be necessary to ensure that implementing the GST does not create the conditions for anti-competitive behaviour.

Revenue Neutral rate (RNR) is one of the prominent and challenging factor for success of GST. Under the GST regime the government revenue would not be the same as compared to the current system. Hence, Through RNR Government is to ensure that its revenue remains the same despite of giving tax credits. After the meeting of GST Council held on 23.12.2016 West Bengal Finance Minister and Chairman of the Empowered Committee of state finance ministers stated that in the current financial year the states would face the huge revenue shortfall and that the estimates of revenue loss to state could be around 70,000 to 80,000 crores. It appears that the states would want a relook on the quantum of compensation in the wake of the demonetisation. Identifying the exact RNR depends on a number of assumptions and imponderables. For the same reason, the Committee has decided to recommend not one but a few conditional rate structures that depend on policy choices

made on exemptions, and the taxation of certain commodities such as precious metals. The summary of recommended options is provided in Table given below:

Summary of Recommended Rate Options (in per cent)

	Revenue Neutral rate (RNR)	Rate on Precious Metals	“Low” Rate Goods	“Standard” Rate (Goods and Services)	“High / Demerit” rate or Non-GST excise (goods)
Preferred	15	6	12	16.9	40
		4		17.3	
		2		17.7	
Alternative	15.5	6	12	18.0	40
		4		18.4	
		2		18.9	

Source : Committee's Calculation

Note : All rates are the sum of rates at Centre and States.

Working of Goods and Service Tax Network - Government has already incorporated Goods and Service Tax Network (GSTN), which is a section 8, non-government, private limited company. The company has been set up primarily to provide IT infrastructure and services to the Central & State Governments, tax payers & other stakeholders for implementation of GST. Currently the Central & State Indirect Tax Administrations work under different laws, regulations, procedures and formats and consequently the IT Systems work as independent sites. Integrating them for GST implementation would be complex since it would involve integrating the entire indirect tax ecosystem so as to bring all the tax administrations (Centre, State and Union Territories) to the same level of IT maturity with uniform formats and interfaces for taxpayers and other external stakeholders. Besides, GST being a destination based tax, the inter-state supply of goods and services (IGST) would need a robust settlement mechanism amongst the states and centre. This is possible only when there is a strong IT infrastructure and service backbone which enables capture, processing and exchange of information amongst the stakeholders (including tax payers, states and central government, accounting offices, banks and RBI)

Extensive training to Tax Administration Staff is required under GST in terms of Concept, legislation and procedure – The IT systems of Central Board of Excise & Customs (CBEC) and State Tax Departments will function as back-ends that would handle tax administration functions such as registration approval, assessment, audit, adjudication etc. Nine States and CBEC are developing their backend systems themselves. GSTN is doing the backend for 20 States and 5 Union Territories. GSTN has been interacting with CBEC and States for ensuring mutual interaction between the front-end that would be operated by GSTN and the back-ends of the tax administrations. Till September 2016, ten workshops have been conducted with the States/CBEC. As declared by the GSTN; it will undertake training of Tax Officials in Goods and Service Tax IT System from December 2016 onwards.

Challenges in Availing Input Tax Credit Under GST – According to Section 36 of Model GST Law, No registered taxable person shall be entitled to the credit of any Input Tax in respect of any supply of goods and /or services to him unless the tax charged in respect of such supply has been actually paid to the account of the appropriate Government, either in cash or through utilization of input tax credit admissible. This is the most challenging and harsh provision for receiver of the goods, as he will be punished for fault of supplier of goods/services if that person fails to deposit tax or file a return.

Progressive Steps taken by the Government and GST Council on draft legislation as well as successive meetings for finalization of draft legislation are as follows –

As per the discussions of the Council there is some contentious issue of dual control and cross empowerment. Basically, the issue is how to split the Assessee Base between the Central Administration and the State Administration. While there is a consensus that all assesses in supply of Goods with annual turnover below Rupees 1.5 Crores would be assessed by the State Administration, the bone of contention is control over Service Tax Assessee. While the States want control of all assesses (engaged in supply of Goods and or services) with Annual Turnover below Rupees 1.5 Crores, the Central Government wants control over all service tax assessee. After the meeting of GST Council on 23/12/2016 Shri Arun Jaitley (Honourable Finance Minister of India) stated that the Primary draft of CGST and SGST Law and the five schedules were cleared except provisions in the draft law relating to dual control and cross empowerment for which the GST Council is meeting again on 3rd and 4th January 2017.

GST, April 1 – 2017 – Rollout Improbable -Honourable Finance Minister of India Arun Jaitley stated that, the Government stands by the scheduled date of implementation of April 1, 2017, but it is apparent that it is almost impossible to meet this deadline. With the winter session of the Parliament concluding on 16th December, 2016 the immediate probable timeline for approval of the Central Legislations can be only in January 2017 when the Budget Session of the Parliament would commence. Considering that the States have also to pass the SGST legislation, it appears that 1st September 2017 is the probable date for rollout of GST. The constitutionally mandated deadline is 16th September, 2017. In our view, delay is not a matter concern as it provides sufficient time to trade and industry to understand the nuances of GST and prepare effectively. Let us hope that the GST Council decides all contentious issues early.

Evaluation of GST –Any evaluation of the GST— and any consequential decisions—should not be undertaken over short horizons (say months) but over longer periods say 1–2 years. For example, if six months into implementation, revenues are seen to be falling a little short, there should not be a hasty decision to raise rates until such time as it becomes clear that the shortfall is not due to implementation issues. Facilitating easy implementation and taxpayer compliance at an early stage—via low rates and without adding to inflationary pressures—will be critical. In the early stages, if that requires consideration of slightly higher deficit, that would be worth considering as an investment which would deliver substantial long-run benefits. Moreover, the counterpart of revenues falling short will be gains to consumers, especially poorer ones.

CONCLUSION: The GST as a new levy could be a very effective tool and break-through in Indirect Tax Reforms provided it is made simple and assessee – friendly – not like the present tax system. The nation is on the cusp of executing one of the most ambitious and remarkable tax reforms in its independent history. Implementing a new tax, encompassing both goods and services, in a large and complex federal system, via a constitutional amendment requiring broad political consensus, affecting potentially 2-2.5 million tax entities, and marshalling the latest technology to use and improve tax implementation capability, is perhaps unprecedented in modern global tax history. The time is ripe to collectively seize this historic opportunity.

REFERENCES

Model GST Law

Goods and service tax Network (GSTN) website

Report on Demonetisation and GST of Standards & Poor, CRISIL

www.gstindiaonline.com/

GST Konnect Application

IFRS IN INDIA: NEED & CONVERGENCE

Vishwanath Acharya

Assistant professor, Dept. of Commerce, Chandrabhan Sharma College of Arts, Commerce & Science, Powai, Mumbai. Email: tush292@gmail.com Mobile: 7208708728 / 8652548470

Abstract

Having a good Financial Reporting system in place is very essential for any Business organisation. Financial reporting is the process of producing financial statements that disclose an organization's financial status, its position & formal record of all its financial activities. Various Stakeholders such as Shareholders/owners, Govt., Investors etc. are interested in knowing the financial position & various results which are derived from Financial Statements. The accuracy of the Financial Statements & Results thereof highly depends on Accounting Standards, Accounting Policies & Accounting Principles followed by the organisation. Accounting Standards guide Accountants as to how a particular Financial Transaction & other events should be reported in Financial Statements. International Financial Reporting Standards (IFRS) are a set of international accounting standards used by many countries across the world. In the era of globalisation, India cannot ignore the developments taking place worldwide. Hence Accounting Standards Board (ASB) of Institute of Chartered Accountants of India (ICAI) formulates Accounting Standards (AS) which are based on IFRS. The ICAI is on its way towards Convergence of its Accounting Standards (AS) with IFRS. India being Fastest Growing Economy of 21st century, it is indeed need of the hour that Indian economic set up should embrace IFRS in coming years.

Keywords: IFRS, IndAS, ICAI, Financial Reporting, Convergence

INTRODUCTION

Introduction to IFRS: The Integration of global economy demands a set of Accounting Standards which are generally accepted all over the world for facilitating the countries doing trade in a more simplified way of accounting. International Financial Reporting Standards (IFRSs) are such set of Accounting Standards that have been prepared to cope up with the increasing demands of accounting at global level. More and more countries are moving to IFRSs due to their capability to facilitate economic growth in global market. India has also planned to converge with the IFRS in phased manner. Indian trade is growing at a tremendous rate and making its way ahead in global market. Hence, it is worth benefitting for Indian trade to converge with IFRS.

OBJECTIVE OF THE STUDY

The specific objectives of the study are listed below:

- To study the International Financial Reporting Standards (IFRSs) & their evolution.
- To study the importance of IFRS as a single set of universally accepted Accounting Standards.
- To study the need for IFRSs in Indian context.
- To study the Convergence of IFRS in India.

RESEARCH METHODOLOGY: The Present study is based on above mentioned objectives as to answer the questions like what are IFRSs, Who formulates them? What is the need for IFRSs? Why should India implement IFRSs in our Country? What are various steps taken by India for convergence of IFRS into Indian Accounting System? Etc. To answer above mentioned questions & objectives as quoted above, the necessary data has been gathered exclusively from Secondary sources like Journals, books, Published Research papers, various websites etc.

EVOLUTION OF IFRS: The International Financial Reporting Standards (IFRS) are often confused with International Accounting Standards (IAS) which are replaced by the former i.e. IFRS were introduced to replace existing IAS. IAS were issued between 1973 and 2001 by the Board of the International Accounting Standards Committee (IASC). On 1 April 2001, the new International Accounting Standards Board (IASB) took over from the IASC the responsibility for setting International Accounting Standards. European Union (EU) was the first to adopt IFRS. European Union made it mandatory for publicly traded companies to present consolidated financial statements

in conformity with International Financial Reporting Standards (IFRS) starting from January 01, 2005. Many countries across the world are following the lead.

NEED FOR IFRS AS UNIVERSAL ACCOUNTING STANDARDS: In recent times, capital markets have become global and continue to expand. Moreover, there has been significant globalization of production and trade. Investors can trade shares and securities worldwide. Businesses are in a position to access the funds globally. For this, investors from all over the world rely upon financial statements before taking decisions. They need to be convinced that the financial statements are true and fair and what they understand from the statements is what the person preparing them intends to convey. However, different countries adopt different accounting treatments and disclosure patterns with respect to the same economic event. These differences are bound to arise due to differences in political, legal & economic environment of each country across the globe. But this may create confusion among the users while interpreting the financial statements. Therefore, financial statements that are based on a single, universally accepted and used Generally Accepted Accounting Principles (GAAP) will enable the world to exchange financial information in a meaningful and trustworthy manner. It will enhance comparability of Financial Statements. This will accelerate the globalisation of finance & integration of economies.

CONVERGENCE OF INDIAN ACCOUNTING STANDARDS WITH IFRS

A) EXISTING ACCOUNTING FRAMEWORK IN INDIA: In 1949, Indian government to streamline accounting practices in the country established Institute of Chartered Accountants of India by passing ICAI Act, 1949. Accounting Standard Board (ASB) was constituted by ICAI in 1977 with a view to harmonize the diverse accounting policies and practices in India. It formulates Accounting Standards in India. It also examines how far IAS and IFRS can be adapted while formulating Accounting Standards in India. It reviews the existing Accounting Standards & revised them as and when necessary. So far ICAI has issued 32 Accounting standards (Indian GAAP)

B) NEED FOR IFRS IN INDIAN CONTEXT: In the era of globalization, Indian companies are getting themselves listed on overseas stock exchanges. Indian businessmen are looking forward to foreign capital markets to tap funds for their businesses. Also, the recent acquisition of foreign companies by Indian companies makes a stronger case for adoption of IFRS. Internationally acceptable accounting standards are becoming the language of communication for Indian companies. The decision taken by India to adopt IFRS would bring drastic changes in Indian corporate context & will benefit economy as a whole. Following are some of the probable benefits which would be enjoyed by India & Indian companies upon implementation of IFRS in India:

- *Access to the Global Capital Markets:* Adoption of IFRS will increase access to global capital markets resulting in the growth of Indian economy.
- *Transparency in Financial Reporting:* IFRS create more transparency in reporting on a global view as the most of emerging countries are following these standards.
- *Inflow of FDI:* It can strongly increase foreign capital inflows into the country by providing the investors fair, reliable and comparable financial statements upon which they can rely & make sound decisions regarding investments into prospective investment opportunities in our economy.
- *Increasing Confidence of Foreign Investors:* The adoption of IFRS facilitates creating confidence in foreign investors about the entities and economy which in turn results in enhancing their brand value and ability to raise capital from market at comparatively lower rates
- *Elimination of Multiple Reporting & Reduction in Costs*

It can reduce the cost of capital of entities by reducing different accounting requirements prevailing in various countries by providing a single set of global accounting standards.

- *Elimination of Limitations of Indian GAAP:* Indian GAAP (Generally Accepted Accounting Principles) has major limitations when compared with IFRSs. These limitations can smoothly be removed by converging with IFRS.
- *Generation of Employment Opportunities:* IFRS will open up many opportunities in the service sector. With Accountants trained in IFRS, India can act as the Accountant for global community. It will provide jobs to Accountants, Valuers and Actuaries. It will also help BPO (Business Process Outsourcing) concerns in India. The above benefits are perceived benefits of adoption of IFRS. Researches are yet to be carried out to understand actual benefits of adoption of IFRS, as India is yet to step in the era of IFRS. This calls for a future scope of study on impact of adoption of IFRS by Indian Companies on Indian Economy and Firms.

C) CONVERGENCE PROCESS IN INDIA: Convergence with IFRS would require several changes in Indian laws & decision processes. In India the Institute of Chartered Accountants of India (ICAI) is on the way towards convergence of its Accounting Standards (AS) with global Reporting Standards i.e. IFRS. To bring Indian Standards at par with the IFRS, some of earlier Accounting Standards & Guidance Notes have been revised or under the process of revision. However at present the Accounting Standard Board in consultation with Core groups constituted by Ministry of Corporate Affairs (MCA) for Convergence of Indian Accounting Standards with IFRS has decided that there will be two separate sets of Accounting Standards. They are:

1. Indian Accounting Standards converged with IFRS (Known as Ind AS). The MCA has notified 42 converged Indian Accounting standards (Ind AS) as on 16th February, 2016 which would be made applicable in a Phased manner. These are standards which are being converged by eliminating the differences of the Indian Accounting Standards vis-à-vis IFRS. These Ind AS are applicable in a phased manner(Phase I to III) as per the roadmap issued by MCA in 2010.

2. Existing Accounting Standards: Companies not following within the threshold limit prescribed for IFRS compliance in the respective phases shall continue to use these Standards in the preparation & presentation of financial statements

3. Roadmap for implementation of Ind-AS: Roadmap Issued by Ministry of Corporate Affairs for Implementation of converged Ind AS by companies as follow:



Exhibit 1: Highlights of the MCA press release dated 02 January, 2015.

IFRS & MAKE IN INDIA INITIATIVE: Make in India is an initiative launched by the Government of India to encourage multi-national, as well as national companies to manufacture their products in India. It was launched by Prime Minister Narendra Modi on 25 September 2014. India is one of the fastest growing economy of the world & most sought after destination for investments by foreign investors. To boost further economic growth & especially the industrial sector, we are inviting foreign companies or Multi-National Companies to come to India and set up their businesses. Successful implementation of IFRS in India would make it easier for foreign companies to operate in India. It will bring uniformity, transparency & comparability w.r.t. financial information & Presentation thereof. The hurdles faced by foreign companies while dealing in different GAAP would be eliminated & it will facilitate smooth functioning of their businesses in Indian economic environment. Such Globalized corporate environment would attract more MNC's to start their businesses in India & this will boost India's Economic Growth & Development

CONCLUSION: With changing global scenario, India has decided to converge its existing Accounting Standards with IFRS. With regard to this, the Ministry of Corporate Affairs has committed to converge the Indian Accounting Standards with the IFRS effective 1st April 2011 by letting a roadmap in a phased manner. Adoption of IFRS into Indian legal & economic framework will definitely have challenges ahead such as lack of awareness, lack of training, technical difficulties & complexities w.r.t. application of converged Ind-AS and so on. But ICAI has committed its complete support in convergence process. The successful implementation of IFRS in India would require concentrated efforts by government of India, ICAI, SEBI & other regulatory authorities governing legal framework of companies etc. Also Universities & colleges should create awareness & conduct Training programme on IFRS along with including converged Ind-AS into their Curriculum.

The adoption of IFRS is expected to have a significant impact on all stakeholders, such as regulators, professionals, analysts, users of financial information and so on. It will also boost our Make In India Initiative providing foreign companies more friendly corporate environment to operate within.

REFERENCES

- Anubha Srivastava and Prerna Bhutani - "IFRS in India: Challenges and Opportunities"
- Keshav Kumar & Virender Atwal, Department of Commerce, Govt. College for Women, Ratia. - "IFRS in India " Volume 5 Issue 2 [Year 2014] online ISSN 2277 – 9809
- "Globalisation of Financial Reporting System through Implementing IFRS in India" by Dr. Kedar V. Marulkar , Assistant Professor Department of Commerce and Management Shivaji University , Kolhapur - India Available online at: www.ijarcsm.com
- [4] "IFRS Implementation in India: Opportunities and Challenges" by Pawan Jain Assistant Professor, Institute of Management Technology, Nagpur, INDIA.
- World Journal of Social Sciences Vol. 1. No. 1. March 2011. Pp. 125 – 136 available online.
- "Introduction to IFRS & Ind-AS "- Financial Accounting (TYBAF paper VII) by CA Dr. Varsha Ainaapure & CA Mukund Ainaapure , Manan Publication , pg.no. 261-282
- "global accounting: harmonization & standardization (Indian GAAP , IFRS and US GAAP)" - Taxmann Students' guide to Accounting Standards pg.no. 572-579
- http://www.pwc.in/services/ifrs/ifrs-in-india_roadmap.html
- https://en.wikipedia.org/wiki/International_Financial_Reportin g_Standards
- <http://www.ey.com/in/en/issues/ifrs/mca-roadmap-for-ifrs-conversion-in-india---phase-approach>