DIGITAL INDIA
ACTION PLAN

Fifth Pan IIM World Management Conference

December 14-16, 2017 | IIM-Lucknow

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Overview of Digital India Program

A programme to transform India into a digitally empowered society and knowledge economy.

The 'Digital India' project was launched by Prime Minister Narendra Modi on July 1, 2015, to enable other Government schemes, such as BharatNet, Make in India, Startup India and Standup India, Industrial corridors, Bharatmala, Sagarmala, Dedicated Freight Corridors, and UDAN-RCS. 'Digital India' aimed at preparing India to become a digital economy by synchronized engagement of the government.

The vision of Digital India is to come up with best practices from around the world to work as catalysts for rapid economic growth and citizen empowerment across the globe. Hon'ble Prime Minister Narendra Modi envisions to come out with innovative ideas and practical solutions to make inclusive growth in areas of electronic services, products, manufacturing, job opportunities, etc[1].

The Vision Areas of Digital India[2]

Infrastructure as Utility to Every Citizen

- High speed internet as a core utility shall be made available in all Gram Panchayats.
- Cradle to grave digital identity - unique, lifelong, online and authenticable.
- Mobile phone and Bank account would enable participation in digital and financial space at individual level.
- Easy access to a Common Service Centre within their locality.
- Shareable private space on a public Cloud.
- Safe and secure Cyber-space in the country.

Governance and Services on Demand

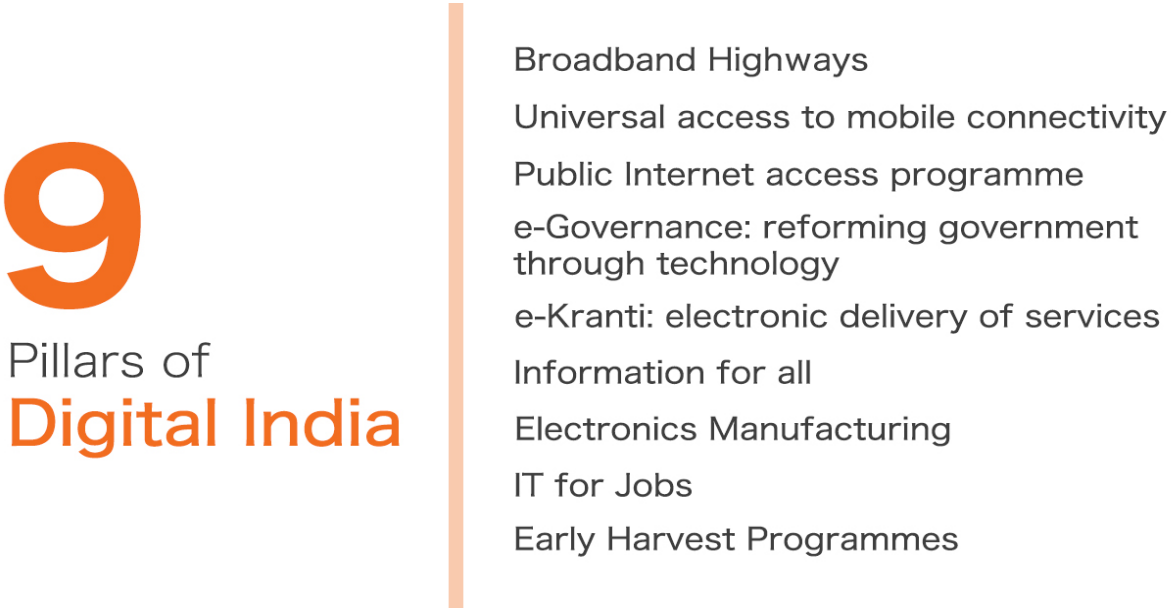
- Seamlessly integrated across departments or jurisdictions to provide easy and a single window access to all persons.
- Government services available in real time from online and mobile platforms.
- All citizen entitlements to be available on the Cloud to ensure easy access.
- Government services digitally transformed for improving Ease of Doing Business.
- Making financial transactions above a threshold, electronic and cashless.
- Leveraging GIS for decision support systems and development.

Digital Empowerment of Citizens

- Universal digital literacy.
- All digital resources universally accessible.
- All Government documents/ certificates to be available on the Cloud.
- Availability of digital resources / services in Indian languages.
- Collaborative digital platforms for participative governance.
- Portability of all entitlements for individuals through the Cloud.

[2]Vikaspedia, Ministry of Electronics and IT initiative

Nine pillars of Digital India[3]



1. **Broadband highways:** With an estimated capex of INR476.9 billion, this pillar seeks to address the objectives of broadband for all rural and urban areas in the country, and was also aimed at creating a National Information Infrastructure by March 2017. Rural broadband access includes coverage of 250,000-gram panchayats (GP) by December 2016 in a phased manner. For urban broadband access, it seeks to facilitate virtual network operators and mandate communication infrastructure in new urban development for smart buildings in cities.

2. **Universal access to mobile connectivity:** With an estimated capex of INR160 billion, this pillar seeks to increase network penetration and cover current gaps in mobile connectivity. It aims to cover remaining 42,300 villages by FY18.

3. **Public internet access program:** With an estimated capex of INR47.5 billion, this program seeks to cater to the objectives of National Rural Internet Mission and have common service centres in 250,000 villages by March 2017. It also aims to develop 150,000 post offices as multi-service centres in the country.

4. **E-governance — reforming government through technology:** With this initiative, the government seeks to undergo a business process re-engineering using IT to improve its transactions. It aims to simplify forms, create online repositories for school certificates and IDs, integrate services and platforms (such as Aadhaar and payment gateway) and automate government workflow and public grievance redressal processes.

5. **eKranti — electronic delivery of services:** This pillar aims to involve technology for delivery of services in multiple facets such as for e-education using broadband, free Wi-

Fi, online courses; e-health care through online consultation, records, medicine supply; for online banking, cash, loans and real-time price information for farmers; financial inclusion; e-courts, e-police, e-prosecution; cyber security and much more.

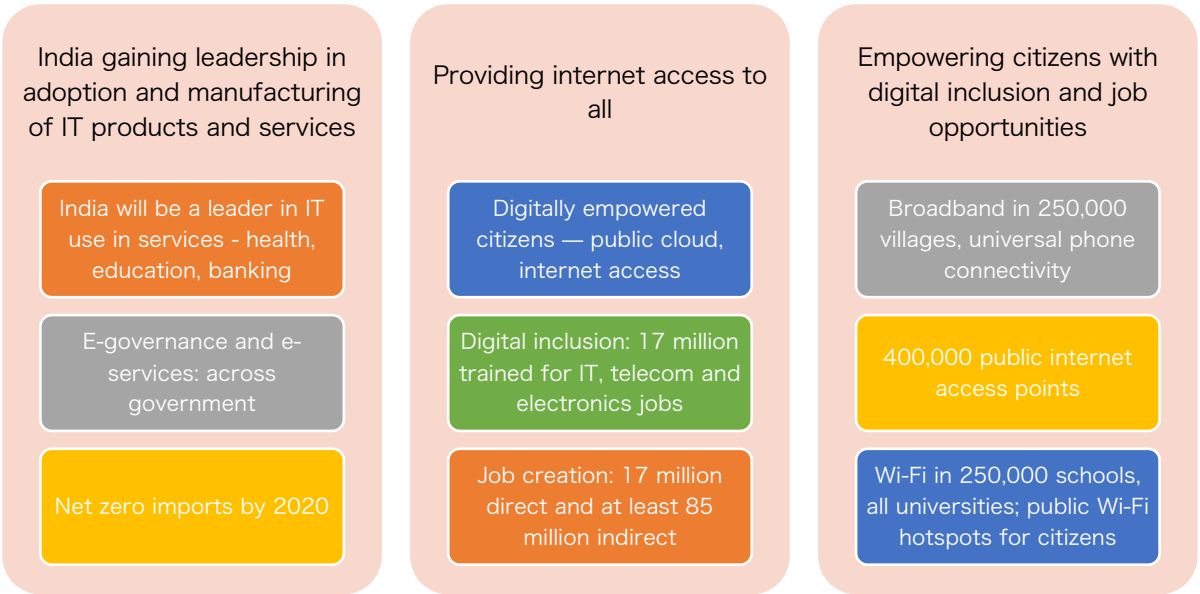
6. **Information for all:** This includes online hosting of information and documents, use of social media by the government to proactively engage with the citizens and online messaging on special occasions or programs.

7. **Electronics manufacturing — target net-zero imports by 2020:** This initiative seeks to fine-tune multiple ongoing programs to develop the electronics manufacturing ecosystem in the country. It has a specific focus on semiconductor fabrication plants, fab-less design, set-top boxes, VSATs, mobiles, consumer and medical electronics, smart energy meters, smart cards and micro-ATMs.

8. **IT for jobs:** With an estimated cost of INR2.0 billion, this initiative seeks to train 10 million people in towns and villages for IT sector jobs in five years. It also aims to train 0.3 million agents to run viable businesses delivering IT services. Additionally, the project involves training of 0.5 million rural IT workforce in five years and setting up of BPOs in each Northeastern state.

9. **Early harvest programmes:** The 'Digital India' program houses several early harvest programmes, which are under various phases of implementation. These include initiatives such as on the use of IT platform for mass messaging and e-greetings from the government, biometric attendance, standardized government e-mail designs, e-books for schools and national portal for lost and found children. It also includes programs to cover cities with more than 1 million population and tourist centres with public Wi-Fi hotspots - an INR7.9 billion project to provide Wi-Fi in all universities and an INR980 million project to have secured e-mail for use within government systems.

Impact of Digital India by 2019[3]



[3]Speeding ahead on the telecom and digital economy highway (E&Y,FICCI)

Fifth PANIIM World Management Conference

"The Making of Digital India: Management Perspectives"

India is currently embarking on a digitally-enabled innovation idea. With the Government's vision of a 'Digital India', the country has commenced a journey towards digital transformation in the lives of citizens across the country. Without a doubt, 'Digital India' will empower citizens, put learning over education, help in res-killing the people, create new sustainable employment opportunities, change and improve the overall healthcare situation, boost economic growth, and transform the businesses, to name a few outcomes.

Right from the beginning of our civilization, trade and businesses have been changing situations, improving infrastructure and have empowered the people. Typically any business today has a high dependence on a robust, web-enabled, and flexible information and communication infrastructure to nurture corporate agility and productivity. Digital platforms are providing tremendous opportunities to organizations to interact with all stakeholders, be it the government, institutions or businesses. As digital technologies offer new ways to establish relationships, connect, collaborate, conduct business and build bridges between people, it also touches the core of all business functions and even transforms the way in which organizations are managed.

While the benefits emerging from the use of digital technologies are highly significant, the challenges emanating from the same cannot be ignored. To stay relevant to the context, organizations need to have a right management approach to effectively digitize their activities.

It will not be wrong to say, 'Digital India' is still the elephant that a lot of blind women and men are trying to unravel within the boundaries of their expertise, exposure and ability to imagine. All the stakeholders of 'Digital India' will interpret and utilize it in their ways, bring their management perspective. However, managing these perspectives and using the management method of co-creation would be the ideal way to identify the challenges and evolve solutions, this would be the key to the success of 'Digital India' idea.

With these philosophies and background, the PAN-IIM conference was an endeavor to bring together all the stakeholders including the academicians, researchers, businesses, policymakers, politicians, scientists, entrepreneurs, students, civil society, rural change makers and any interested individual to one platform for sharing of their experiences, ideas, viewpoints and collective intelligence. The unique format of this event will not only request the stakeholders to submit papers documenting their research and findings on the various benefits and challenges of a true 'Digital India', but also use the co-creation workshop methodology to define all the possible challenges, brainstorm on solutions and develop an effective action plan for implementation of 'Digital India' idea.

Learnings from Fifth PANIIM World Management Conference

The conference featured a co-creation workshop on 'Digitalization and Management Towards a policy framework', which was envisaged by Mr. Mehmood Khan - Former Global Head (Innovation), Unilever and Founder President, IIM Alumni (Europe Chapter) and Mr. Mrutyunjay Mishra – Founding Member and Director, India Open Data Association (IODA). The workshop was executed by IODA and CMEE IIM-L (Noida Campus) on December 16 during the Fifth PAN IIM WMC 2017.

Before the workshop, 'Digital India' initiatives were carefully brainstormed and monitored before selecting seven sectors, where the application of ICT had maximum impact.

- Agriculture
- Citizen Services
- Education
- Electronics Manufacturing
- Financial Services
- Healthcare
- Information, Communication, and Entertainment (ICE)

The input of challenges was deliberated from the:

- Special Plenary Sessions conducted during Fifth PANIIM WMC
- An online survey - 'India Online' - conducted by IODA which received over 2500 responses in its first phase.
- Discussion during the co-creation Workshop

This workshop involved a comprehensive review of the flagship programmes launched and monitored under the 'Digital India' initiative, and implementation gaps and challenges faced. Additionally, some key areas to focus on closing the gap were analyzed and had been mentioned in the report. The delegates made recommendations to the Central Government for policy implications and suggested the guidelines to revamp and align initiatives with the principles of 'Digital India'.

PANIIM Conference Organizing Committee also hosted the Digital India Excellence Awards 2017 where they honored exemplary initiatives by 'Digital India' stakeholders who are playing a significant role in transforming India into a digitally empowered nation. The observations those initiatives are enclosed with this report.

AGRICULTURE

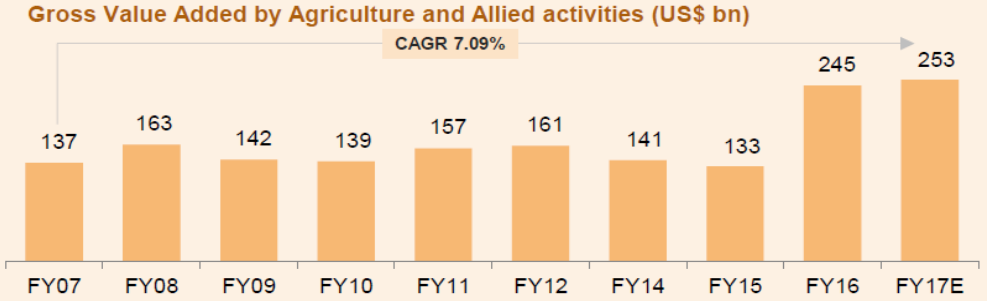
Agriculture in India

Agriculture in India has remained a sector of extreme importance for decades now. It contributed 51.9 percent to India's GDP in 1950 and still, contributes approx. 18% of GDP. However, a change from an agriculture economy to an industry-centric economy was inevitable in the age of industrial evolution. However, with industries growing at a faster pace than the rate at which trees are being planted, agriculture's productivity needs to be closely monitored for food security, nutritional security, and sustainable development and poverty alleviation[4].

Even though we continue worshipping cattle as gods and goddess and agriculture remains the principal occupation, and sole livelihood of more than half of India's workforce population, its share in the gross domestic product (GDP) has declined to less than one-fifth today. The decline in the GDP is usually linked with the urbanization, but we cannot ignore the fact that agriculture is not among the most profitable sectors. Alongside increasing infrastructure cost in India, maintenance cost and capital investment add to the farmers' misery. There are other factors which are causing low productivity in the agriculture sector such as small holdings of land with farmers, lack proper irrigational facilities. The small fragmented land leads to ineffective irrigation and indiscriminate usage of fertilizers for crops, thus resulting in lower yields. In India, more than two-thirds of the improper crop irrigation also lead to other problems affecting yield like soil erosion, salinity, etc[4].

Size

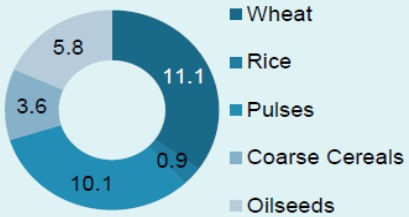
Gross Value Added by Agriculture and Allied activities (US$ bn)



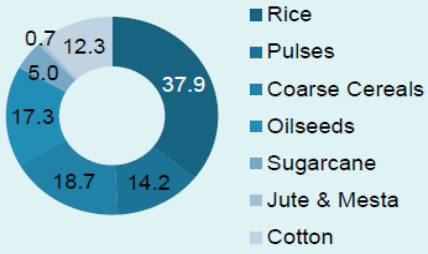
Note: E - Estimated

Sector Composition

Rabi area Sown in November 2017 (mn hectares)

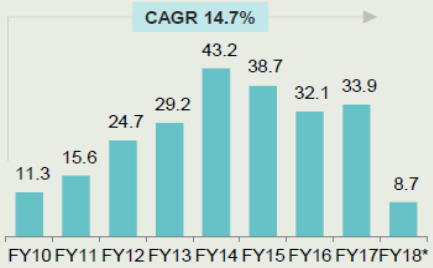


Kharif area Sown in September 2017 (mn hectares)



Key Trends

Agricultural exports from India (US$ bn)



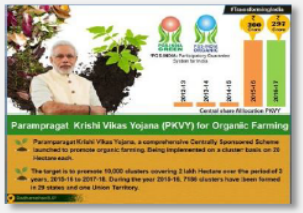
Note: FY18* - up to September

Agricultural and Allied Sector Exports from India in FY17 (US$ bn)

Government Initiatives

Long term irrigation fund by NABARD.

100% FDI under automatic route in storage, ware housing and development of seeds.



Niti Aayog, Contract Farming Law.

Source: India Brand Equity Foundation[5]

Inputs from Co-creation Workshop

Challenges in the sector

Productivity	Logistics	Capital	MSP versus Inflation	Sustainability

- **Productivity:** The production has seen a decreasing trend per acre in the recent past. Few of the prominent reasons could be fragmented land holdings, insufficient irrigation facility, over-dependence on traditional crops, lack of mechanization in farming, among others. Most of the problems can be attributed to lack of awareness and proper guidance to the farmer. The farmer needs to be educated about the new type of seed, crops and with better facilities of irrigation and tools.

- **Logistics:** The problem of productivity is a major issue, but is further complimented by the unavailability of warehouses. The country severely lacks the cold storage to improve the longevity of farm products. A more coordinated supply chain would not only help the farm but also help in a price reduction for the customer. The middlemen need to be removed so that the farmer could get the right price.

- **Capital:** The farmers do not have many avenues to avail a loan to improve their farming techniques or improve quality of seeds and fertilizers. The micro finance institute needs to be strengthened further along with the self-help groups.

- **MSP versus Inflation:** The governments have to play a balancing act to help farmers get the right price and keep the inflation in check. The government has been trying to control the inflation, but the effects are leading to reduce the rate for farmers.

- **Sustainability:** The sustainability is a major issue in agriculture. The major challenges in the area are effects on climate, economic sustainability of villages, social sustainability and resulting health and pollution-related problems. The major effect of crop burning has been evident on the climate and smog in the Delhi-NCR region. A more sustainable plan for villages is required.

Possible solutions to the challenges

ACTION AREAS	BY WHOM	BY WHEN#
Building a repository of information	Startup India Programs	On Priority
Developing village entrepreneurs	Incubators	Medium term focus
Sustainability of agriculture	College and universities	Medium term focus
Reforms in micro-finance	Banks & Government	Short term focus
IoT solutions	Incubators	Short term focus
Digital Tilling System	Village entrepreneurs	On Priority, continuous process
Setting up kiosks for training farmers	Central and State governments	On Priority
Financial inclusion - accounts tracking of the farmers	Gram Panchayat	On Priority
Re-use of wasted crops	Farmer communities and their families	Medium term focus, depending on the ground research
Reduce the wastage of water – rainwater harvesting, roof/backyard/organic farming	Financial institutions and governing bodies	On Priority

Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Building a repository of information:** The repository of knowledge is important as it can be used to provide information to the farmer easily. The repository could

be built like a call centre where area-specific or crop specific details are available that could be traced out to provide quick information to the farmer.

The emerging digital India plan could include such initiative. The PPP mode could be used to implement such knowledge hubs. Over the year, the process could be cheaper with multiple iterations of dissemination of knowledge.

- **Developing village entrepreneurs:** One of the major reasons why India lacks in crop innovation is due to people leaving villages for better opportunities. The government has to build village entrepreneurs to maintain the economic cycle of the village. The companies which are in food-product business could also take an inspiration form "e-chaupal" by ITC to develop a relation with producers. It will help them maintain a swift supply chain.

- **Sustainability of agriculture:** The government will have to incentivize the farmers to follow more sustainable practices. The corporations could pitch in with innovative sustainability measure and equipment. This is an emerging business opportunity for young entrepreneurs.

- **Reforms in micro-finance:** Finance is a major issue in the agriculture sector. Though the organizations like NABARD are focusing on swift financing, the profiteering attitude of few MF companies is hurting the overall system. The micro-financing has been hugely successful in countries like Bangladesh. The major banks can start centre for such finance. They can form self-help groups to encourage village entrepreneurship.

- **IoT solutions (Digital Tilling System):** Like knowledge repository, many solutions for the farmers could be made available on the internet. One such example is digital tilling service. It will help share the cost. Similarly, many other costly equipments could be made available on a rental basis. The equipment manufacturing companies could start a service providing branch that could help implement this idea.

- **Setting up kiosks for training farmers**: The farmers are not well-versed with the modernization in agriculture practices and optimum utilization of resources. The government of India with the help of NGOs can setup kiosks where farmers are educated on agriculture. Few MNCs like ITC, HUL, and Nestle who are already in food business follow such practices to increase the availability of raw material with existing suppliers and farmers.

- **Financial inclusion - accounts tracking of the farmers:** The farmers need to be included in financial institutions as this will help them avail many government schemes and subsidies. The accounts should be tracked to ensure that the money should reach them. The GoI could implement necessary regulations on banks for the monitoring of these accounts.

- **Re-use of wasted crops:** The idea could be supplemented with the sustainable agri-practices. The farmers need to be reformed about the idea of sustainability and harms due to the burning of wasted corps.

- **Reduce the wastage of water – rainwater harvesting, roof/backyard/organic farming:** The kiosks for the farmers could be used to inform farmers about latest technological innovation in farming. The young entrepreneurs could contribute to improving the existing practices of farming.

CITIZEN SERVICES

Citizen Services in India

After Independence, we are making considerable progress in achieving good governance. However, as we all know India is still performing in an unsatisfactory manner when compared to other developed nations. Moreover, we are still a way behind in achieving economic growth and social progress. After 70 years of independence, “India's richest 1% corner 73% of wealth generation” which shows the large disparity between the poor and non-poor in the country. With such disparity, it is the poor that suffer much more due to weak public service delivery than non-poor who can access these services from other resources[6].

The citizen services form the core of good governance which affect economic growth through its impact on human capital, poverty and inequality, and corruption. From the last decade, the government has been investing heavily in the technology and centralizing the disparate public service processes in the traditional citizen services model. Digitization can help in adding efficiencies and transparency to departments and offer services through multiple additional channels (call centres, websites and mobile apps), thus, improving the way to interact with citizens.

Our central and state governments have realized the importance of digitization and taken it upon themselves to fast-track India’s progress. E-governance initiatives in India have faced dual challenges regarding automation in government departments and providing online services to the citizens. In our country, it is not practical to replicate the western models of e-governance as we struggle with the digitally illiterate population. However, e-governance implementation cannot be ignored due to our limitation nor can we afford to neglect digitally illiterate. Hence, we require some innovative and progressive digital solutions that suit the needs of Indian society are the need of the hour.

Inputs from Co-creation Workshop

Challenges in the sector

- **Lack of Digital Literacy:** Lack of Digital literacy is one of main obstacles to full adoption of digital citizen services in India. Despite the introduction of various citizen services delivery platforms such as Mee Seva, Aaple Sarkar, Bhamashah, eDistrict, Digilocker, eMunicipality etc, a majority of the citizens are unable to avail these services themselves.

- **Cumulative Knowledge in Digital Format Not Available:** A whole lot of knowledge is buried in the physical documents in so many government departments. For instance, hospitals possess plenty of healthcare-related data such as patient records in physical format. Real life to the data can be added to the data if it is converted in digital form and analyzed through Big Data analytics tools.
- **Reach and Process Capacity:** The citizens have to travel to the different department offices located at district headquarter to avail public (citizen) services, which signifies that such services cannot be accessed (reached) by the citizens comfortably. Low process capacity would mean that service delivery processes are yet manual or semi-digitalized. Service delivery platforms such as Mee Seva of Andhra Pradesh / Telangana, Aaple sarkar of Maharashtra, and Bhamashah of Rajasthan have high reach and process capacity. It requires one integrated service delivery platform that aggregates all citizen services whether from the central government such as an application for PAN Card, Passport, and Voter's Card or from the state government such as an application for D/L, trade license, land records etc.

- **Slow Regulation:** The pace of regulation has been languid in India, and that goes true even for laws and policies related to digital governance. For instance, the legal status of Aadhaar (UID) is not yet clear. The legislators wait for a judicial pronouncement on the same. Instead, they should objectively debate it. Another important bill that is pending with the legislators is related to the Right of the citizens time-bound delivery of public services. Such a bill defines the SLA (Service Level Agreement) between Citizen and Government.

Possible solutions to the challenges

ACTION AREAS	BY WHOM	BY WHEN#
Simplifying the UI/UX of all the citizen services' platforms	Technology communities	Medium term focus
Introducing courses on Digital Literacy in the existing education system	Educational institutions with technology companies	Short term focus
Use of digital media to enhance digital literacy	Marketing, PR, and Advertising firms	On Priority
Use of vernacular languages across services	Regional institutions, along with the State and the Centre	Short term focus
Implementation of Right to Citizen Services Act	Government of India	Medium term focus
Digital services to be recognised as an essential commodity	Free and open-source software and hardware community	On Priority
Promotion open data and open-source	Government of India, and other administrative bodies	Short term focus

Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Introducing courses on Digital Literacy in the existing education system:** To enhance the digital literacy, it must be incorporated into the existing educational system. Digital literacy is no more a luxury; it is equivalent to hygiene. The students who are well-versed with the digital systems access a plethora of information and use the Internet for various constructive purposes, but when it comes to availing a public service online, most of them become apprehensive of dealing with a government department. A course on digital literacy can help overcome this barrier.

- **Use of digital media to enhance digital literacy:** For those who have moved out of the education system, digital media can be a useful tool. A large section of Indian population uses social media after the deep penetration of smartphones and data disruption by Reliance Jio. However, a majority of them find it difficult to make a simple digital transaction such as making a digital payment or availing a service digitally. Use of these digital platforms would help enhance digital literacy.

- **Simplifying UI of the e-Governance platforms to provide seamless UX:** One of the major reasons of why citizens find it difficult to use e-Governance platforms is the complexity of the user interface (UI). It leads to poor user experience (UX). The user interface for most of the digital governance platforms needs to be simplified to provide a seamless user experience.

- **Use of vernacular languages across services:** Use of vernacular language would increase the adoption of e-Governance platforms. All the states must set up Centers of Excellence (CoE) which work on to integrate their respective local languages into e-Governance applications.

- **Implementation of Right to Citizen Services Act:** Another important bill needs to be enacted at the union level which confers the citizens with the right to time-bound delivery of public services. Such bill would define the SLA (Service Level Agreement) between Citizen and Government and receiving a time-bound service her/his legal right.

- **Digital services to be recognized as an essential commodity:** The government needs to identify the digital services as an essential commodity. This cannot be a statutory position rather it can be an important guiding principle for the government policies.

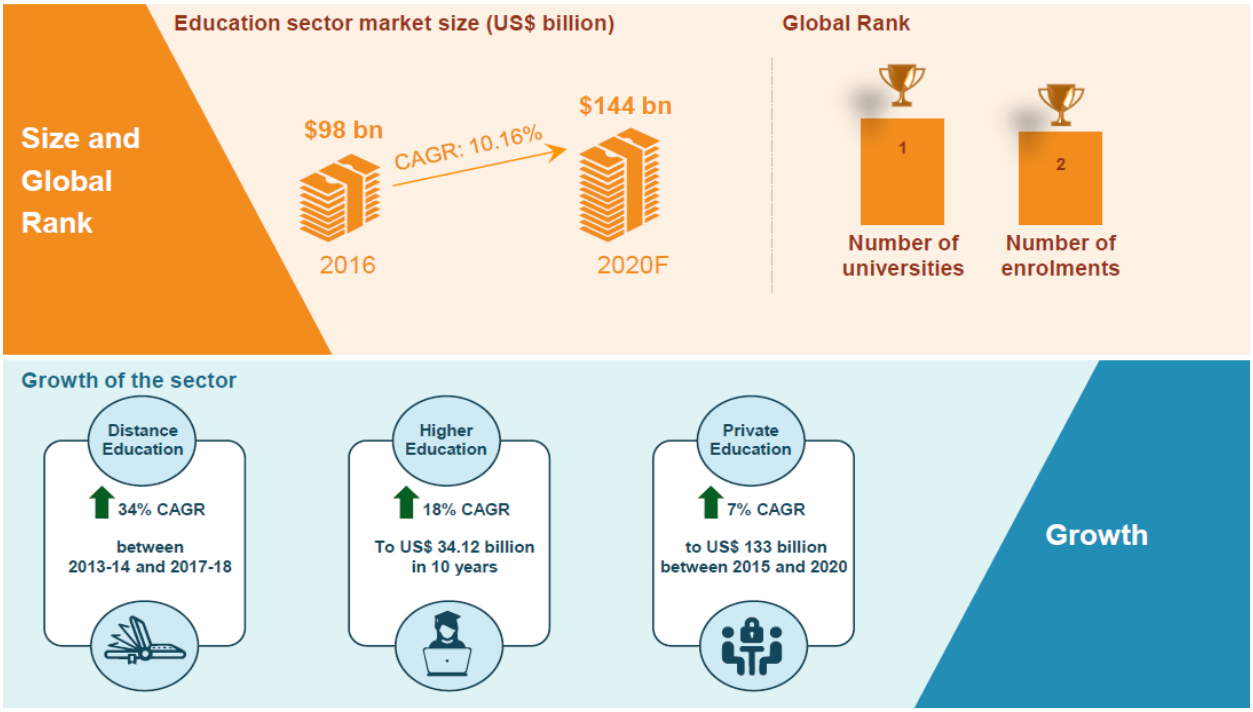
- **Promotion open data and open-source:** The open government data (OGD) platform, www.data.gov.in, is a step in the direction of open data. Though there are about 1.5 lac data sets available on the platform, yet a whole lot of data need to be made open systematically. More importantly, the data needs to be presented in an easy-to-comprehend format with relevant context.

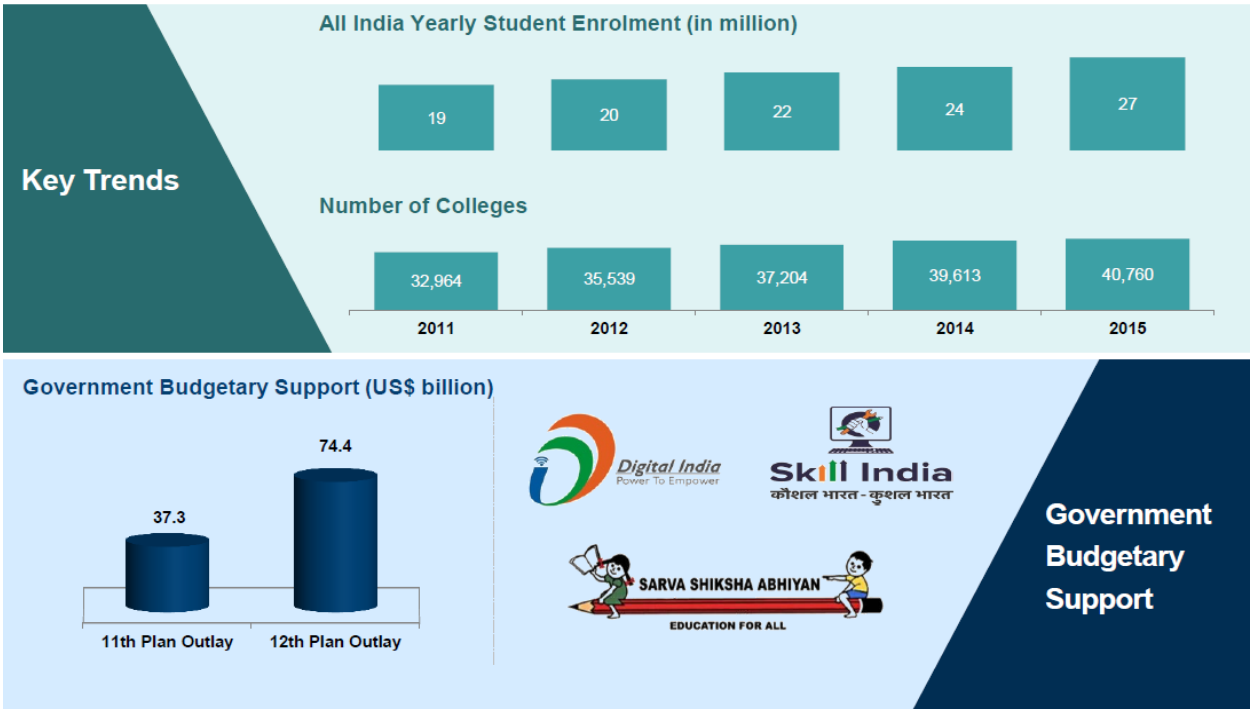
EDUCATION

Digital education in India

Education globally plays an important role in the overall development of an individual as well as the nation. It is one of the most significant sectors to witness innovation and revolution in recent times. This is perhaps because of flourishing digitization globally. Today, India is one of the global destinations for its excellence and high standards for education. Initially, classrooms in India only consisted of hour-long teachers' session. Now, interestingly technology has added innovative digital teaching solutions in these sessions and making it more practical, applicable and relatable to our life and surroundings in an interesting manner. It has long been asserted that more interactive methods of learning result in higher engagement and therefore, greater retention of educational content. Here, the role of technology comes into the picture. Each individual is equipped with a unique ability to learn. Therefore it must be considered that the inclusion of technology in the teacher-student dynamic, can serve as a method to bridge the gap between varying styles of learning.

India, being a traditional country, was not ready to initially adopt education technology but today it is heartening to see how the education sector is using technology such as cloud, virtual data centres, and virtualization as an enabler so far.

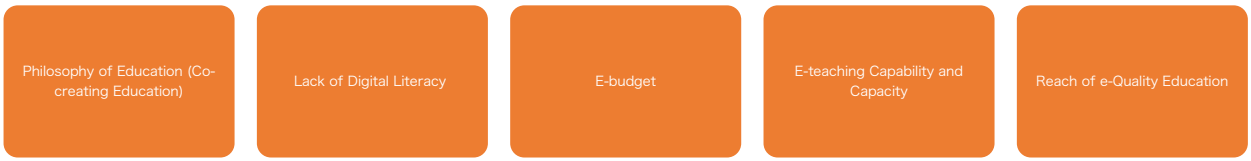




Source: India Brand Equity Foundation[7]

Inputs from Co-creation Workshop

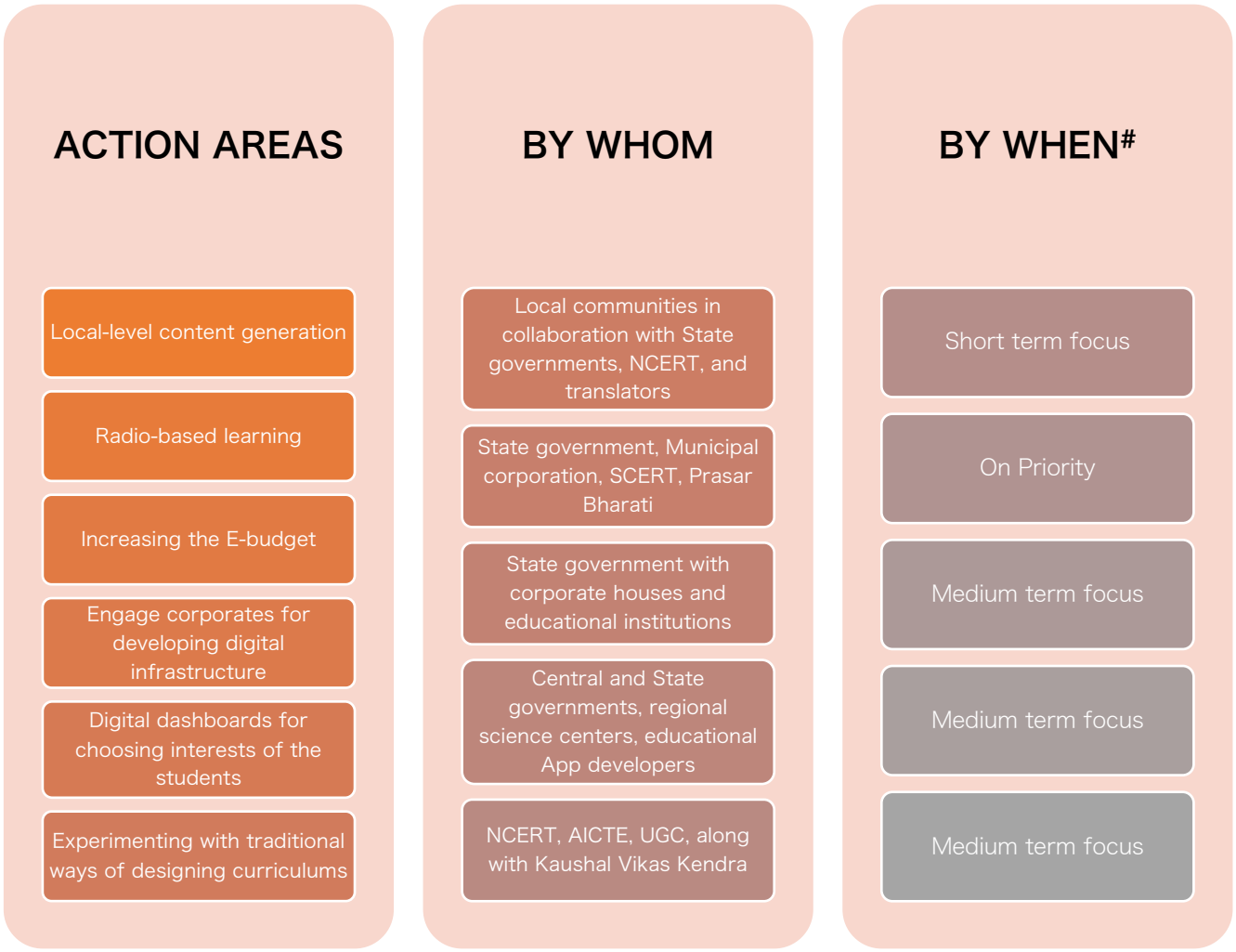
Challenges in the sector



- **Philosophy of Education (Co-creating Education):** Unfamiliarity of students towards technology is one of the biggest challenges of Digital Learning, which the teachers need to work with. People commonly resist change, even if the changes are superior to what they had previously. They might not trust that a technology-based learning program will be as effective as interacting with an instructor. It is a fact that implementation of e-learning can create enormous change within a country, even though implementers can expect to face some resistance.
- **Lack of Digital Literacy:** The Digital Learning implementation will be dependent upon the computer literacy of the students using it. The ability of the learner's to access and interact with the course material dictates the utility he will get out of the program.
- **E-budget:** Digital education involves effective and efficient usage of appropriate and latest hardware and software technology available in the market. In developing countries like India, digital technology implementation into education systems is a difficult task as it requires huge funds and infrastructure. Through the 'Digital India' programme, the government has promised the availability of funds for technology implementation, but lack or insufficiency of finances leads to redundant and obsolete infrastructure and equipment in rural schools.
- **E-teaching Capability and Capacity:** A major obstacle in the use of digital education in a rural area is the lack of knowledge and skills. There is a shortage of teachers, formally trained in digital technology. In some of the academic institutions in rural areas, school teachers, and college professors are not interested in using digital tools for conducting classes. They feel that much information is explained to the students at one go through the digital medium and they prefer traditional teaching methods of chalk and blackboard. In rural areas, primary teachers and senior teachers are reluctant to get trained and adopt digital technologies for digital education in school because they are in the view that these disruptive technologies are out to replace them permanently.
- **Reach of e-Quality Education:** The main challenges for digital education in India is poor internet connectivity in rural areas and some parts of urban areas. Majority of the population across India has still no access to the internet, and a large population in rural

areas is still illiterate in the field of digital technology. More Innovations required to make the digital education more interactive and robust.

Possible solutions to the challenges



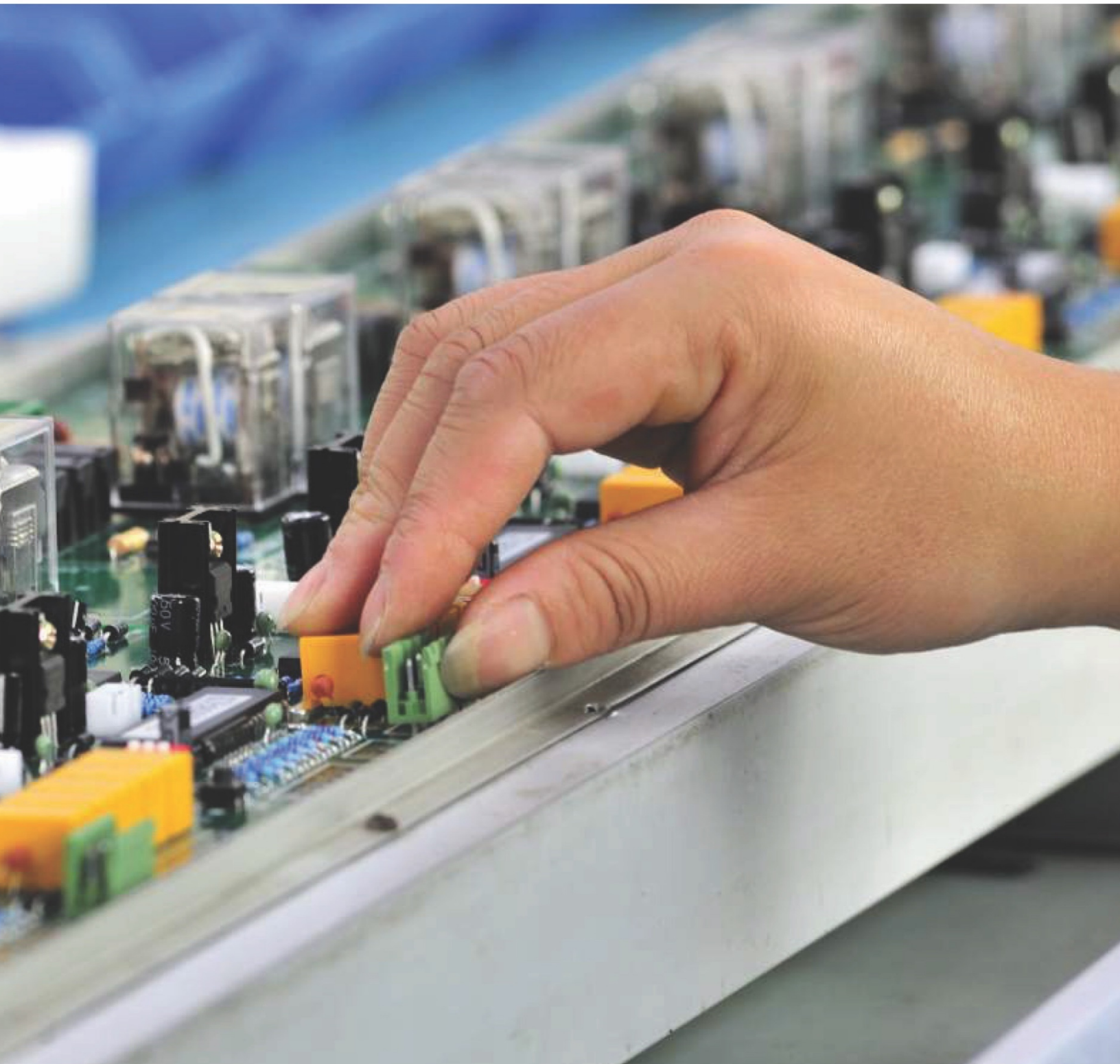
Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Local-level content generation**: Of the educated 74%, just 10% read English while the rest devour content in the native language. There are more than 70,000 daily papers printed in India, and around 90% are either imprinted in Hindi or other vernacular dialects. Understanding the significance of local content, content designers should additionally perceive the requirement for local languages and regional content.
- **Radio-based learning:** IRI consists of broadcasting lessons to classrooms on a daily basis. The radio lessons, on particular topics and aimed at specific levels, at particular levels, provide regular, structured assistance to teachers and serve to improve the quality of teaching and enhance learning. IRI also serves to expand access to education, by bringing ready-made lessons to remote schools and learning centers which have few resources

and teachers. Studies suggest that IRI projects have had a positive impact on both access to and quality of formal and non-formal education. It is also a cost-effective means of delivering educational content to a large number of people.

- **Increasing the E-budget:** Recently, 22 new initiatives have been launched to widen the scope of the Digital India Programme to include projects in the areas of digital infrastructure, digital empowerment, on-demand government services and promotion of industry with the aim of achieving universal digital literacy and universally accessible digital resources. More investment is required from the government in this project.
- **Engage corporates for developing digital infrastructure:** Private Companies are using multimedia platforms to replace and augment traditional classrooms. The Supplementary Education System (SES) consisting of private coaching is a major component of the growth in online education. The use of VSAT technology, as well as mobile applications, are allowing companies to reach remote areas of the country. Some companies are focusing on skill-based professional workforce training. However, we need more focus from the private organizations.
- **Digital dashboards for choosing interests of the students:** The Digital dashboards will be a convenient mode which allows students to study at home and offers a wide variety of courses.
- **Experimenting with traditional ways of designing curriculums:** We can experiment with traditional ways by using techniques like Gamification and Simulation to make content interesting. Gamification applies to game design techniques and mechanics to digital learning courses. Simulation can be defined as the imitation of the operation of a real-world process or system over time.

ELECTRONICS MANUFACTURING



Electronic Manufacturing

The demand for electronic products in India is expected to grow at a CAGR (compound annual growth rate) of 41 percent during 2017-2020 to reach USD 400 billion by 2020, the domestic production which is currently growing at a CAGR of 27 percent may touch USD 104 billion leaving a massive gap for import to the extent of USD 300 billion, according to the joint study brought out by ASSOCHAM and NEC[8].

India's electronics market is experiencing a high growth rate due to consistent local demand along with increasing manufacturing investment. The overall industry growth is due to several factors such as rising manufacturing costs in China, the significant export potential in neighbouring markets, initiatives like "Make in India" and 'Digital India' accelerating investment activity in the core and allied sectors.

The Indian government is also taking several steps to promote manufacturing and investment in this sector, which puts India high on the list of potential places to invest. The electronics manufacturing pillar focuses on electronics manufacturing in the country by providing desirable financial investment and providing preference to domestically manufactured electronic goods in all government procurement. These financial incentives are not only grated to newly set up unit whereas to those units also who are willing to shift their bases in India. Here when we speak about electronics manufacturing, it is not limited to electronic hardware products, office automation, and electronic components but also include solar, automotive, medical electronics and LED etc.

Increasing industry growth and domestic demand, upswings in disposable incomes, the endeavor to build a 'Digital India' through wider broadband connectivity and e-governance programs, rising manufacturing costs in other manufacturing economies and burgeoning consumption in the Middle East, Latin America and North Africa fuelling global demand - all have been contributing towards the growth of the Electronics Sector in India.

Inputs from Co-creation Workshop

Challenges in the sector

- **Lack of Ancillary/Supply Chain/Component Manufacturing Eco-system:** As the electronics industry is driven by manufacturing and design, physical infrastructural inadequacies, power shortages, shortages of basic utilities are significantly inhibiting the growth of the electronics industry. Also, these issues are creating hurdles for start-ups to establish, develop and to attract funding and investments. They are also facing glitches of insufficient or in some places underdeveloped supply-chain and logistics connectivity.

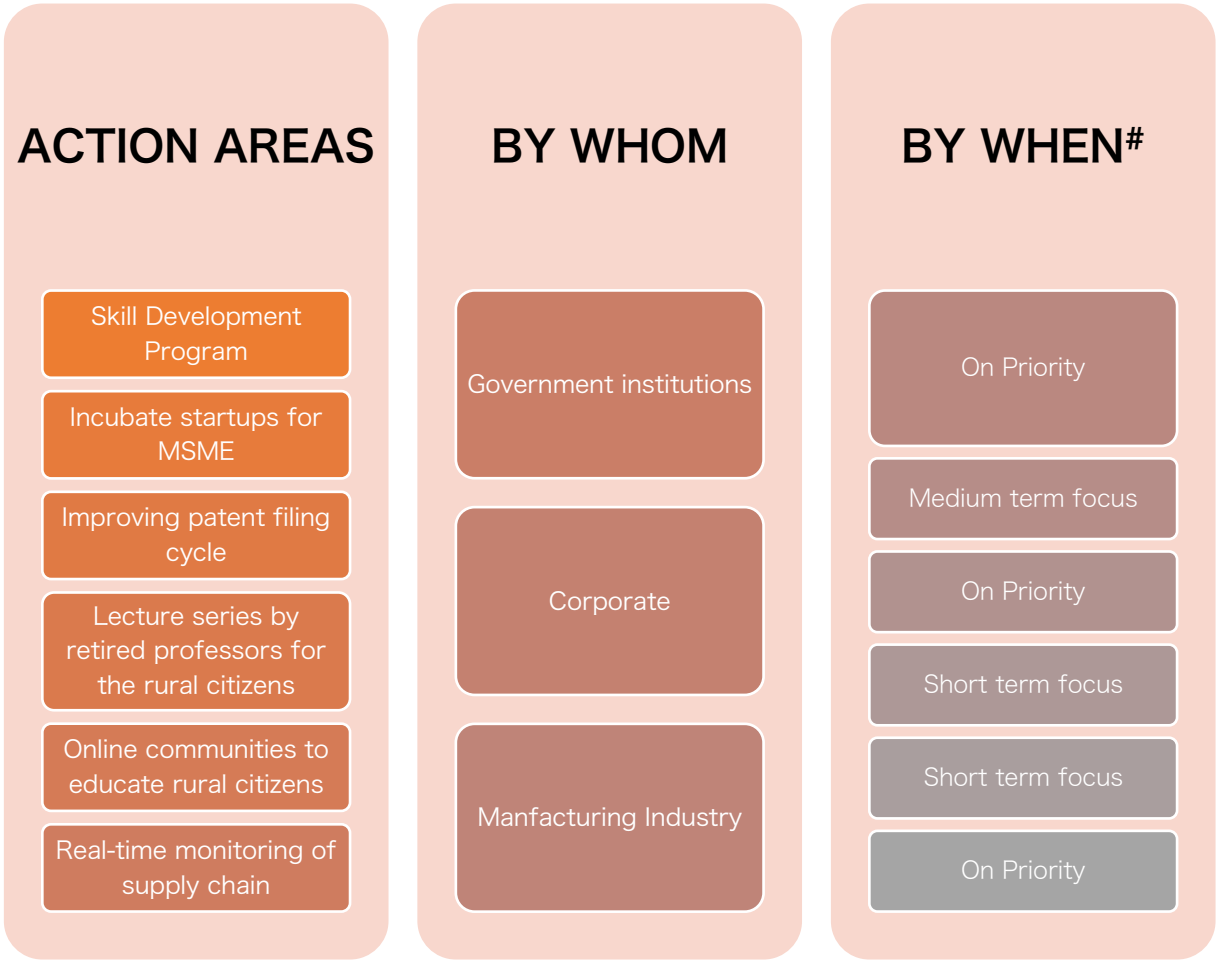
- **Lack of Patent or IPR (Intellectual Property Right) Environment:** There is a serious lack of dedicated research work at every level of education. Further, Ph.Ds, Post Graduate Programs, value added courses in electronics and its applications are not being encouraged enough. This is getting reflected through the lesser number of IP generations and patent holders.

- **Lack of Rural Solutions:** Rural consumers want products that carry the best of traditional wisdom and modern science, providing them convenience and individualism in one go. Recognizing this and coupling it with ideas that offer 'individualized convenience' is still lacking.

- **Lack of After Market Services:** While the importance of aftermarket services is now widely recognized in the industry, we have observed that equipment manufacturers continue to face significant ongoing challenges when transitioning to the aftermarket services space.

- **Cost Differentiation:** Global competition and new innovations are driving prices down. Companies must continually become more cost-efficient to remain profitable.

Possible solutions to the challenges



#Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Skill Development Program:** Every central and state university should establish a chair dedicated to improve industry-academia interface, training and development in the electronics industry to create skilled, and electronics industry-ready workforce.

- **Incubate startups for MSME:** Government should encourage small and medium scale enterprises engaged in electronics manufacturing sector and most importantly, assist them with necessary financial aids and subsidiaries to sustain and grow substantially.

- **Improving patent filing cycle:** IP creation, increased number of patent holders and ownership of entire product chain should be encouraged which will generate higher revenues and larger employment opportunities.

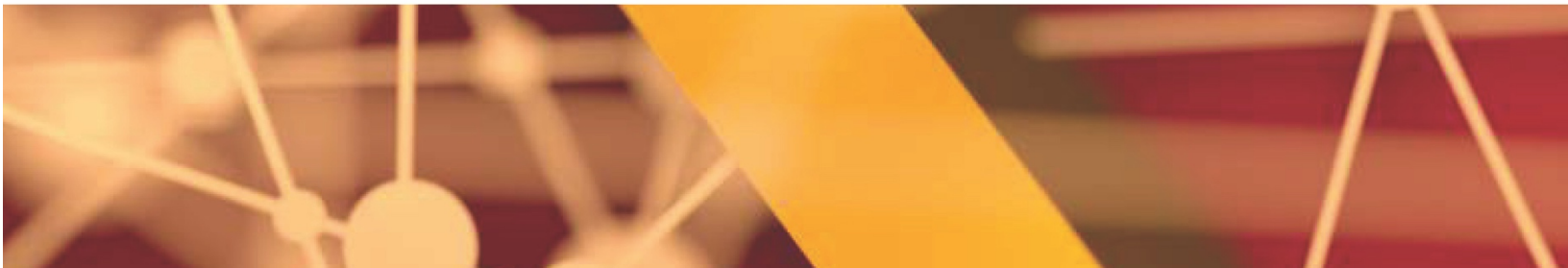
- **Lecture series by retired professors for the rural citizens:** Awareness should be increased by retired professors linked to the issues of promotion of the product in

rural areas. The promotion needs to be adapted to the village environment - the local language and means of communication used.

- **Online communities to educate rural citizens:** Online communities should educate on issues how the product or service could be made more acceptable to the rural consumers by incorporating attractive features. There is a huge growth potential for all the electronics companies as the per capita consumption of almost all products in the country is amongst the lowest in the world.

- **Real-time monitoring of supply chain**: The supply chain continues to become more complex by the day. Workforce development, cyber threats and uncontrollable factors all come into play. With proper training and planning, real-time monitoring of supply chain can be improved.

FINANCIAL SERVICES



Financial Services in India

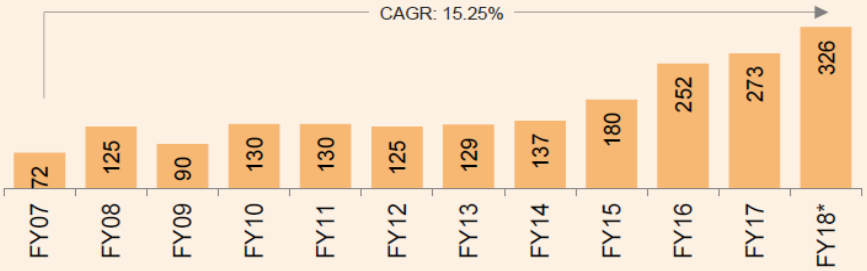
Innovation in financial services has been growing across the value chain – from product development, packaging, and delivery, to services. Technological advancement coupled with commoditization trends has led to the development of a new crop of nimble firms providing services in each segment of financial institutions offerings. Fintech startups are redrawing the traditional approach to banking services. However, the ability of these startups to match and – in many cases – surpass the offerings and trust the consumer has built with a bank will be a KPI in the long-term [9].

The increasing economic power coupled with the sheer number of end-users in the APAC region make an attractive case for Fintech. India, the fastest-growing economy in the world is also home to the second-largest number of Fintech startups in APAC with China leading the pack. The growth in Fintech solutions has seen huge uptick in the last couple of years. This is further expected to grow with the renewed interest from banks and regulatory bodies. Banks have started to actively participate in the Fintech boom by looking for partnerships and investments with startups while the government and regulators are drawing new frameworks and policies that incentivize innovation and entrepreneurship [9].

Overall, India offers a huge market for Fintech that is ripe for disruption. With rising financial awareness, any startup that comes to India would need to strike the right balance between their product and the market, invest in customer education, develop innovative business models and build Fintech in India [9].

Size

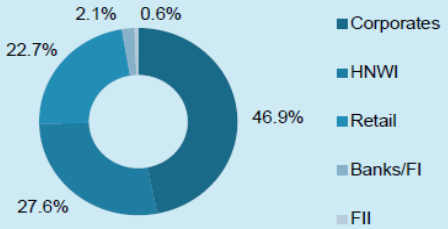
Mutual fund assets under management (AUM) (in US$ bn)



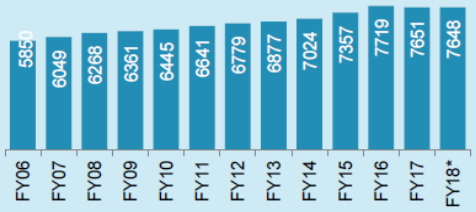
*Note: * - data from April-October 2017*

Sector Composition

Investor Breakup (as of June 2017)



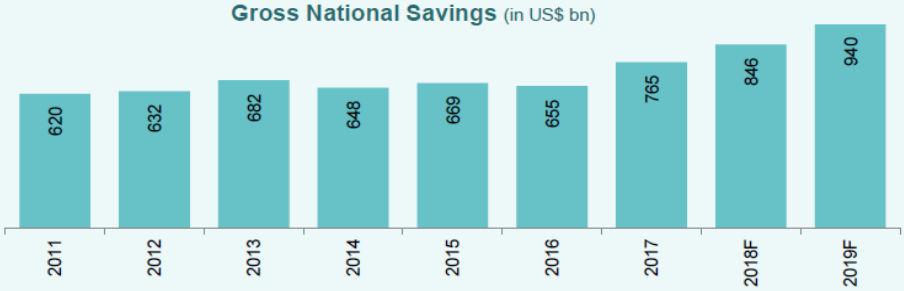
Companies listed on NSE and BSE



*Note: * - data from April-October 2017*

Key Trends

Gross National Savings (in US$ bn)



Government Initiatives

01	US$ 1.48 billion allocated for recapitalisation of Public Sector Banks under Union Budget 2017-18
02	The FDI composite cap in the insurance segment increased to 49 per cent from 26 per cent
03	Simplification of procedures and uniform registration and prescribing other norms for entry for foreign portfolio investors
04	Reduction in securities transaction tax from 0.125 per cent to 0.1 per cent on cash delivery transactions and from 0.017 per cent to 0.1 per cent on equity futures

Source: India Brand Equity Foundation[10]

Inputs from Co-creation Workshop

Challenges in the sector

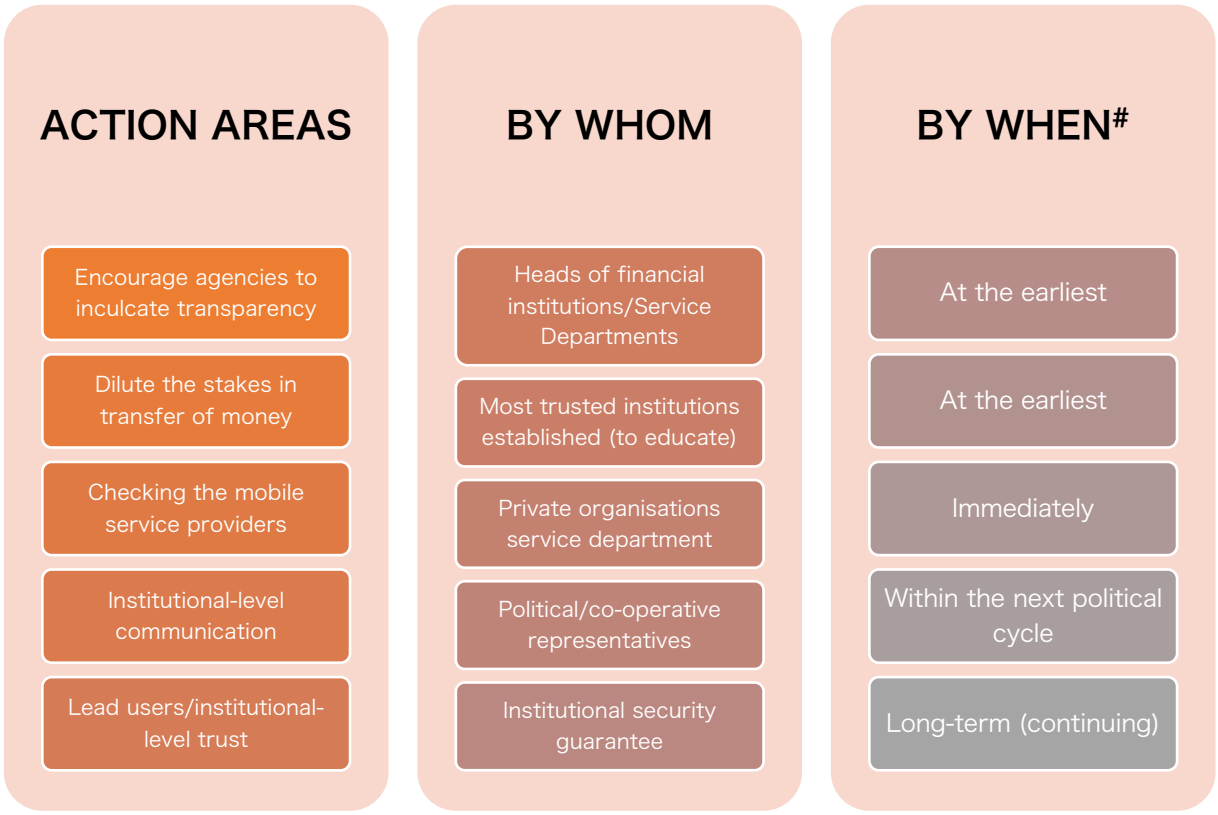
- **Mis-selling of Govt. Schemes - Multi-Channel Communication:** Government schemes in the financial sector are well-intentioned and targeted in their respective nature and scope. Their benefits can only be properly realized if information about them can reach the target population timely and properly. Using the digital communication media and using a multi-channel strategy, the schemes can be taken to the masses and benefits can be better distributed.

- **Security in Online Transactions - Defining Security Standards:** Apprehensions about the security of digital transactions coupled with a traditional and cultural bias hamper the adoption of online digital financial channels despite the growing penetration of internet and digital awareness. Defining and communicating standards at every stage of digital transactions can help overcome these barriers.

- **Behavioral Impediments in Adoption - E-learning through demo tool:** Innovation in digital finance rarely experience exponential growth at the grassroots since the population is biased towards historical and traditional modes of transactions such as cash and face-to-face banking. Demonstrations about these innovations can be used to make the masses aware about such innovation irrespective of their social and economic status. E-learning can be an effective tool for disseminating these demonstrations.

- **Training on FinTech - Train the Trainers:** Initial adoption of any technology or innovation becomes a driving factor for its percolation into the masses. This is because the initial adopters become the ones who take the benefits and techniques of operation of the technology or innovation to a larger number of people. This is true for financial technologies also. Therefore, there is an emerging need to train the trainers who can ensure a wider reach for the digital financial innovations and technologies.

Possible solutions to the challenges



Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Encourage agencies to inculcate transparency:** Transparency is important to build trust into the digital financial services and the platforms used to take these services to the end-users. It is the role of the custodian agencies to frame rules and regulations and therefore, ensure transparency in the growing gamut of financial services technologies and innovations.

- **Dilute the stakes in the transfer of money:** Both the giver and the receiver of money perceive a risk to their credibility and interests during any monetary transaction, especially when commerce or high-value transactions are involved. It is, therefore, necessary to provide embedded trustworthy mechanisms in digital financial services so that the perceived stakes involved in the usage come down to lower levels. These mechanisms can take the form of insurance or guarantees by the respective transaction platforms.

- **Checking the mobile service providers:** Mobile service providers have become a major part of digital financial platforms which provide connectivity allowing the transactions to proceed smoothly. It is difficult to build the required credibility for increased adoption of platforms if the mobile services providers have vested private or non-indigenous

interests. It is, therefore, necessary to place the mobile services providers in a tight and robust regulatory framework as far as the financial services are concerned.

- **Institutional-level communication:** Further to building trust in these systems, it is necessary for the political and institutional framework to keep in touch with and actively promote the usage of digital financial services platforms. Communications from institutional level stakeholders can help prevent mis-selling of the digital financial products also.

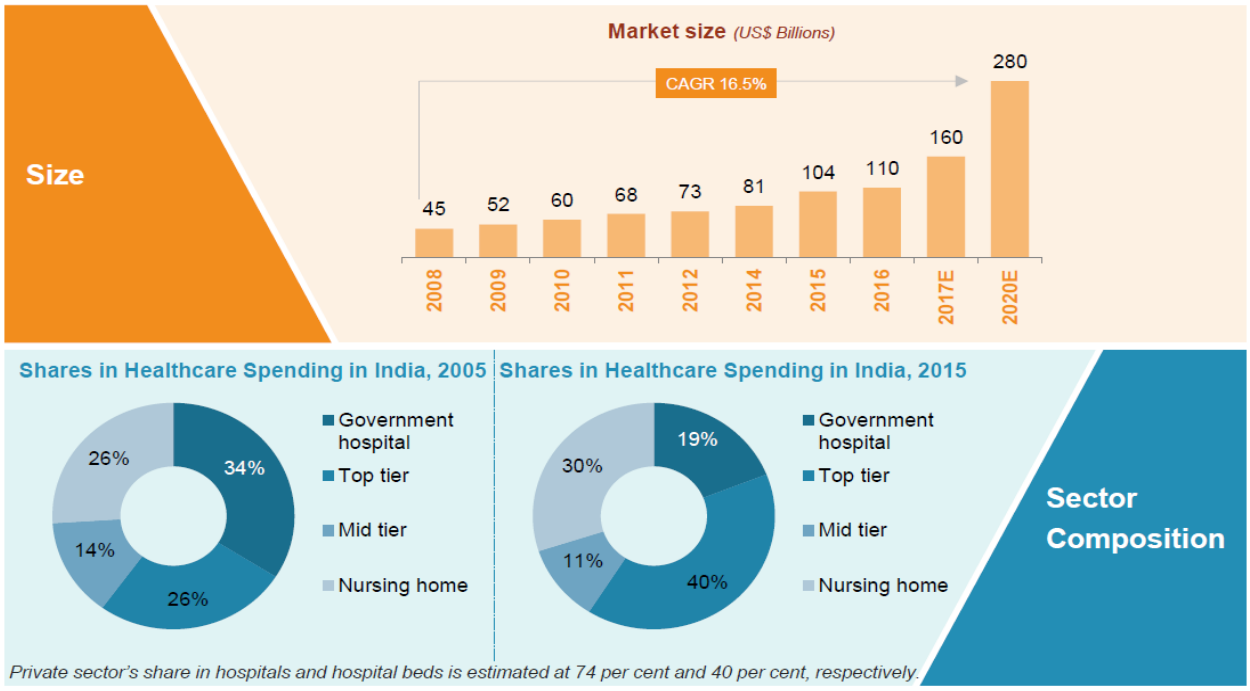
- **Lead users/institutional-level trust:** Lead-users help in building a continuous and loyal user base for any digital service or innovation. These lead-users can only serve their purpose in expanding the technology adoption if they are trusted among the potential users. Such lead-users can come from established institutions. Further, they can also use the institutional credibility at the grass-root levels to promote trustworthiness of the products or to provide guarantees.

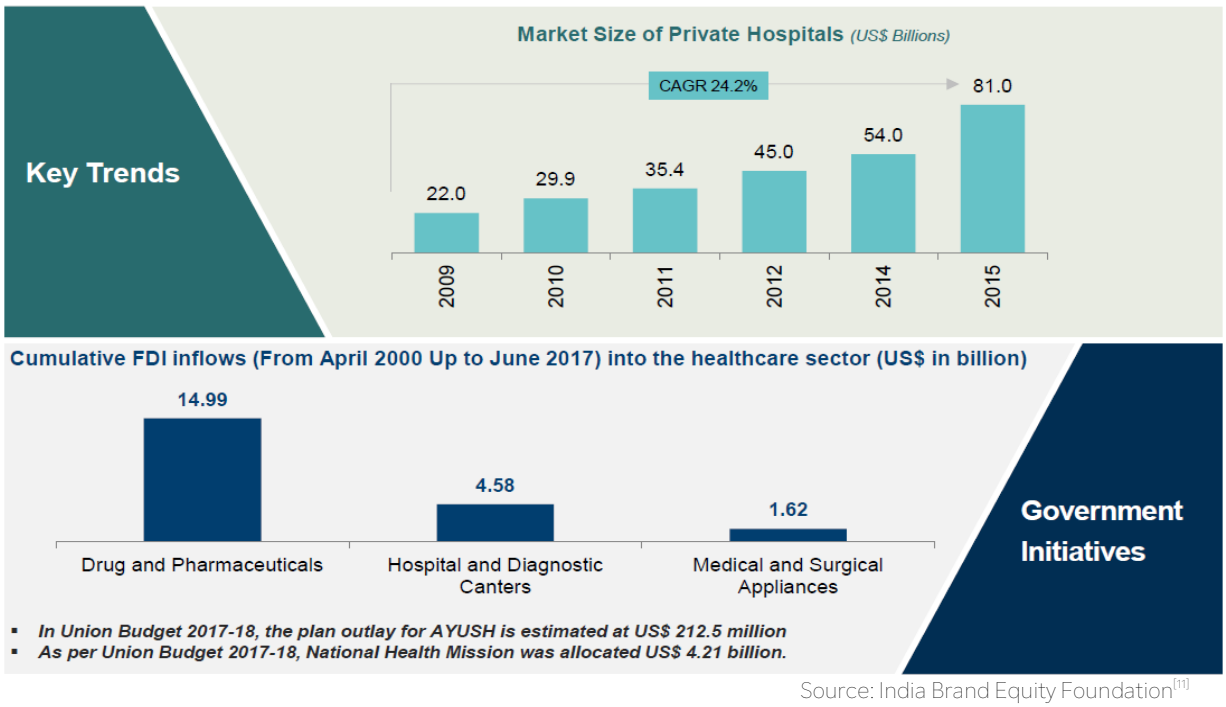
HEALTHCARE

Healthcare in India

Healthcare is one of the world's largest sectors in terms of employment generation and business growth. The sectors consist of five main components which are hospitals, diagnostics labs, pharmaceutical companies, medical equipment manufacturers and suppliers, and medical insurance companies. The new component added to this sector is healthcare technology which is still at a nascent stage compared to that in the developed countries.

India since its independence, has taken major steps to improve the conditions in its healthcare sector. This can be directly indicated by improved as life expectancy or infant mortality and eradicated diseases like small pox and polio. The growth is also surmounted by factors such as lifestyle diseases, an ageing population, rising income levels, increasing access to insurance and growing health awareness. The growth has been significant but the Indian healthcare system is still struggling with challenges like accessibility, quality and affordability.





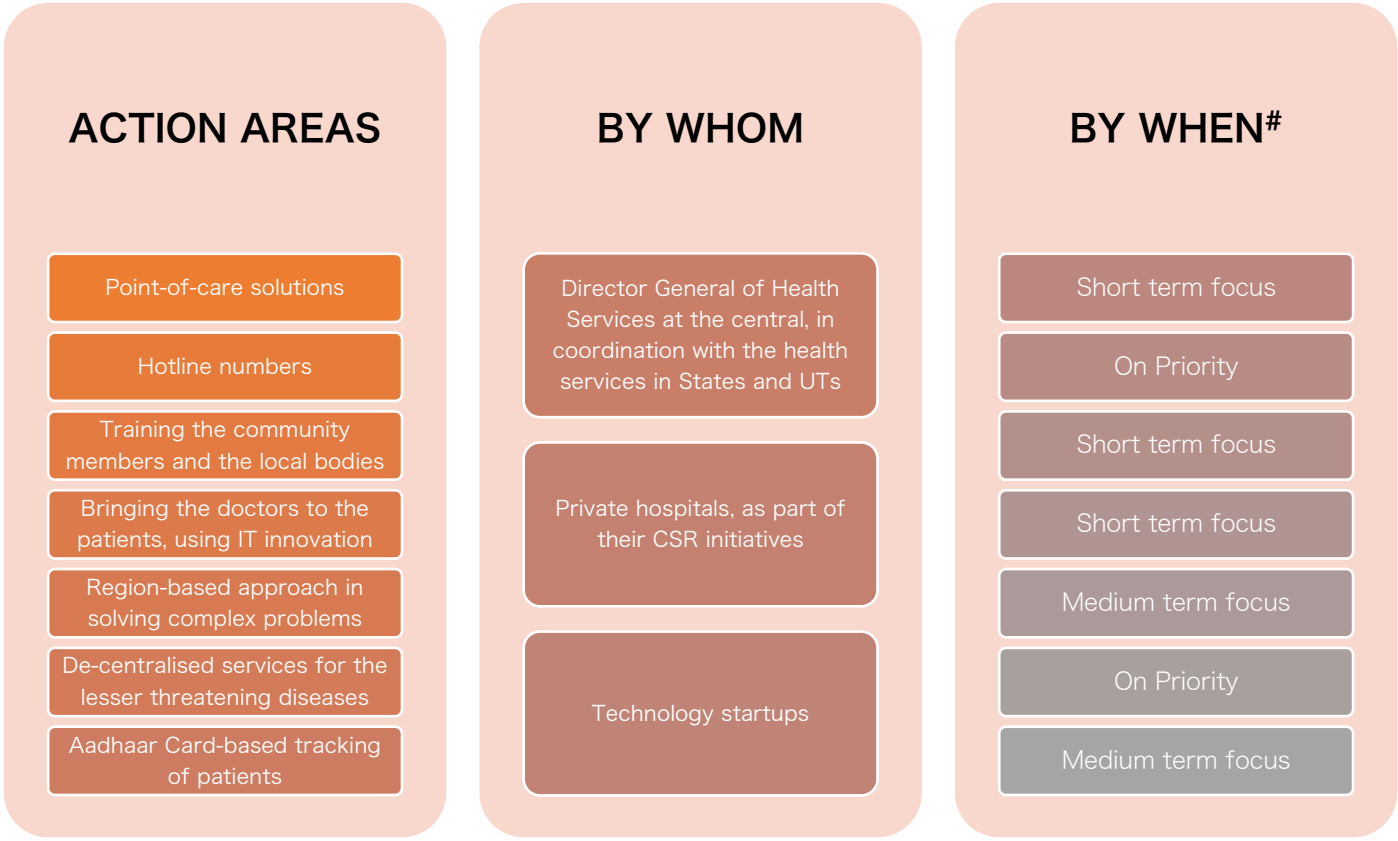
Source: India Brand Equity Foundation[11]

Inputs from Co-creation Workshop

Challenges in the sector

- **Healthcare Reach:** The Effective reach of healthcare services is one of the major problems in India, especially, when the rural population that comprises more than 65% of the total population is considered. Doctors unwilling to serve at backward regions and limited public healthcare services with poor infrastructures are among the issues that leave most of the modern healthcare advancements inaccessible to the rural masses. In addressing this problem, Aravind Eye Care system has gone a long way to reach out to more and more people especially the non-customers – people who are not able to visit the hospitals.
- **Quality of Healthcare:** Shortage of medical personnel such as doctors and nurses in addition to the limited infrastructural capacity to match the country's population poses a huge challenge to the quality delivery of healthcare services. Although institutions such as AIIMS and Aravind Eye Care provide exemplary services, there is a huge gap for most of the country's healthcare organizations to cover.
- **Affordability/Capability of Healthcare:** High out-of-pocket expenditure towards healthcare costs resulting from the very low percentage of medically insured persons in the country threatens affordability even in urban areas.
- **The range of New Diseases and its Complexity:** Environmental degradation accompanied by unhealthy lifestyles is contributing to an ever-widening range of complex diseases. A shift from the blind adoption of western models to Indian roots of culture and traditional remedies are actively considered especially in the primary healthcare sector.
- **The complexity of Solutions (Prioritization)**: Complex problems demand comprehensive dealing, and therefore, prioritizing focus on the right solutions require advanced analytical abilities such as the Big Data solutions.
- **Counterfeit of drugs:** Counterfeiting of drugs is another grave concern that threats Indian healthcare system. Blockchain-based inventory management can help in improved visibility to deter such problems.

Possible solution to the challenges



Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

In addition to the measures discussed above, the following action areas can be looked into to provide efficient and effective healthcare solutions.

- **Point-of-care solutions:** POC technology catering especially to primary care services. Mobile POC solutions in rural areas can prove extremely effective.
- **Hotline numbers:** Working hotline numbers particularly concerning public healthcare services is a must in today's fast-paced world.
- **Training the community members and the local bodies:** Local people can be equipped with primary healthcare training facilitated by government and private agencies.

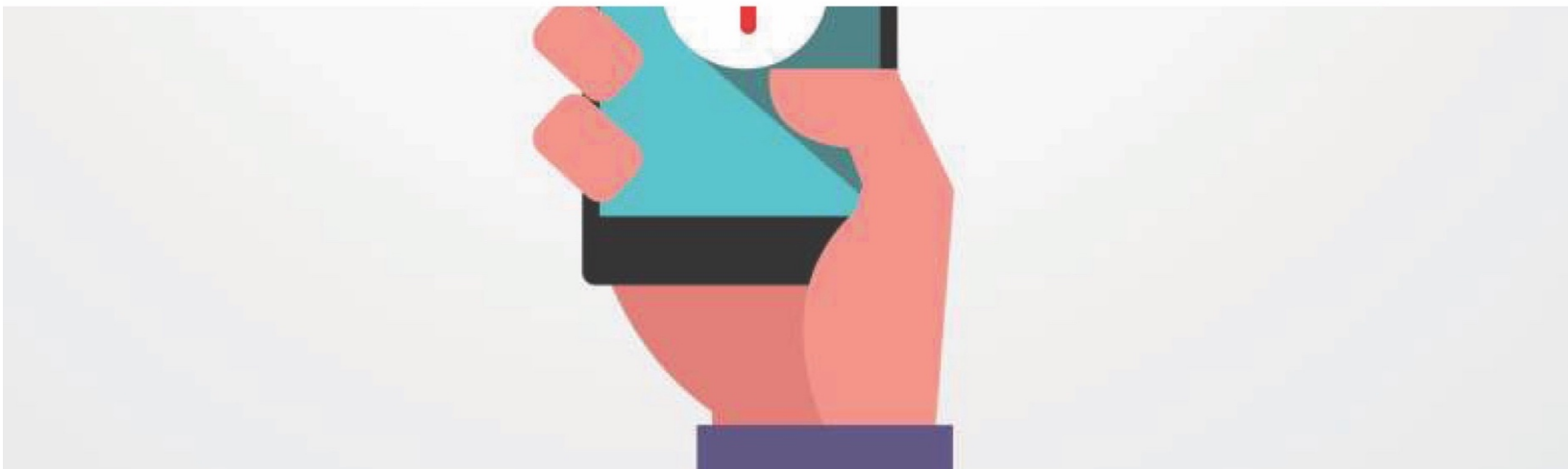
- **Bringing the doctors to the patients, using IT innovation:** Technology can go a long way in bridging the distance between patients and doctors especially in the context of rural areas. Initiatives by Aravind Eye Care are examples in this area.

- **Region-based approach to solve complex problems:** The option of leveraging the knowledge of local community for effective diagnosis can be explored before going for costly allopathic treatments.

- **De-centralised services for the lesser threatening diseases:** Equipping the public healthcare centres in remote areas with robust primary care support can help people who have to travel to nearby towns and cities even for minor health problems.

- **Aadhaar Card-based tracking of patients:** Aadhaar cards can prove to be an effective tool to track patients' data provided data security be ensured. Quick access to patients' health history can greatly support the diagnosis process.

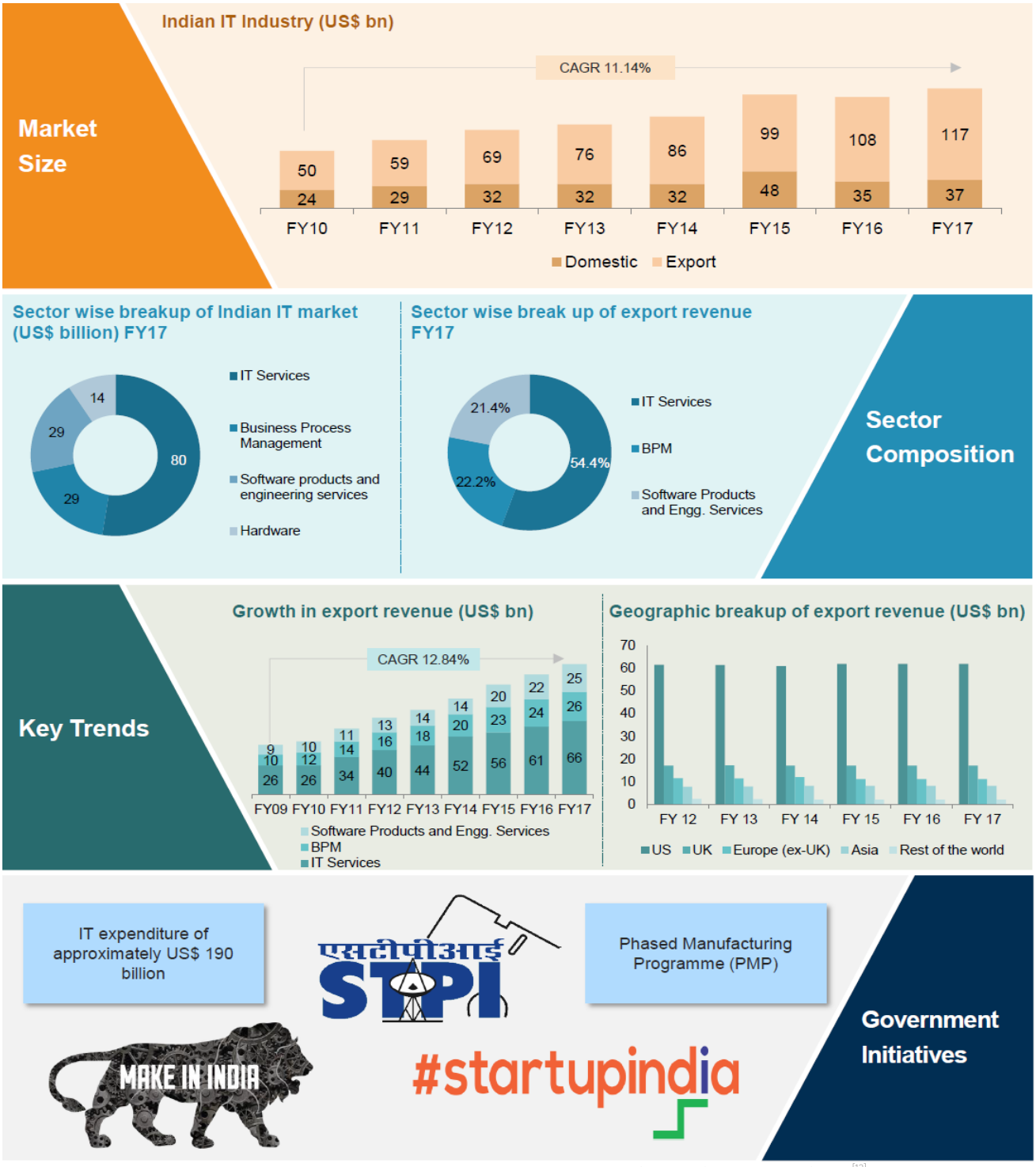
ICE SERVICES



ICE services in India

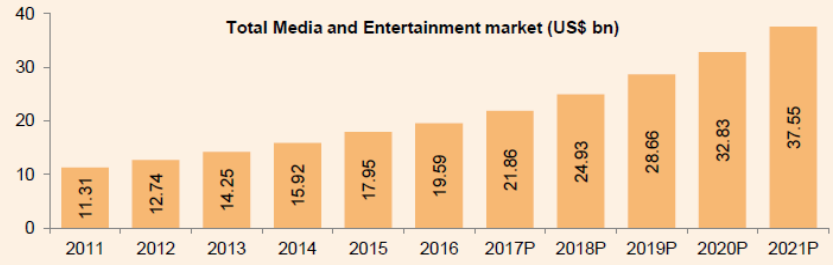
The revolution in the ICE sector is making the world united. With the invention of new technologies, there is the enormous scope of development in almost all the sectors, provided there is proper utilization of technologies with the appropriate human resource. With the advent of new technologies and up-gradation of technology and revolution in the information and communication sector the world has now become a mere small village. Again with the concept of globalization the cross-country transfer of technology concerning equipment and even manpower has now days become much easier.

Technological change is always accompanied with the realignment of markets. With the advent of Information and Communication Technology (ICT) revolution, such alignment has undergone exceptional changes. ICT enhances productivity and finds a way for developing the economic structure of a country. Thus it can be said that technological up gradation has an obvious impact on the economic development of the country. Hence the government of India has made significant investments in this sector. It is also assumed that ICT increases the amount of timeliness of information available to the economic agents and improves the production process to organize, store and retrieve information and thus have major implication for the developing countries like India.



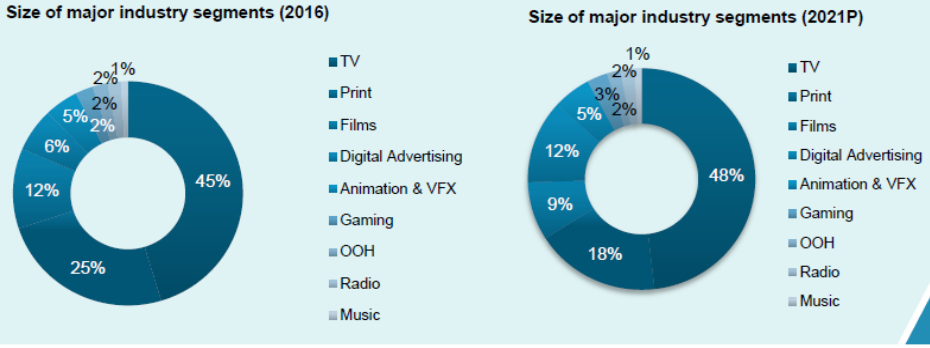
Source: India Brand Equity Foundation[12]

Market Size

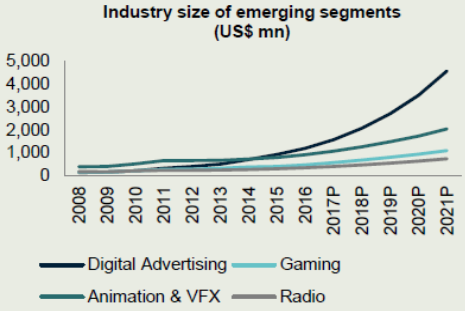


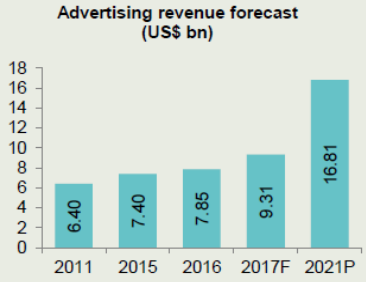
Indian media and entertainment industry grew at a CAGR of 11.61 per cent from 2011-2016; and is expected to grow at a CAGR of 13.9 per cent from 2016-2021.

Sector Composition



Key Trends





Government Initiatives

- FDI limit in radio, including private FM channels have been increased from 26 per cent to 49 per cent
- FDI limit for DTH satellite and digital cable network was raised from 74 per cent to 100 per cent by the government
- FDI limit for films is allowed up to 100 per cent through the automatic route by government

Source: India Brand Equity Foundation[13]

Inputs from Co-creation Workshop

Challenges in the sector

- **ICE Infrastructure Reach and Speed:** Just like other basic needs such as food, water, shelter etc., even bandwidth should be made an essential service. Corruption is a key factor that hinders ICE infrastructure reach and should be checked. Eliminating complexity in government regulations might help. Also, reaching the rural and sub-urban areas through a program: 'Train the Trainers', can prove handy. Diverting CSR funds from corporates towards technological advancement.

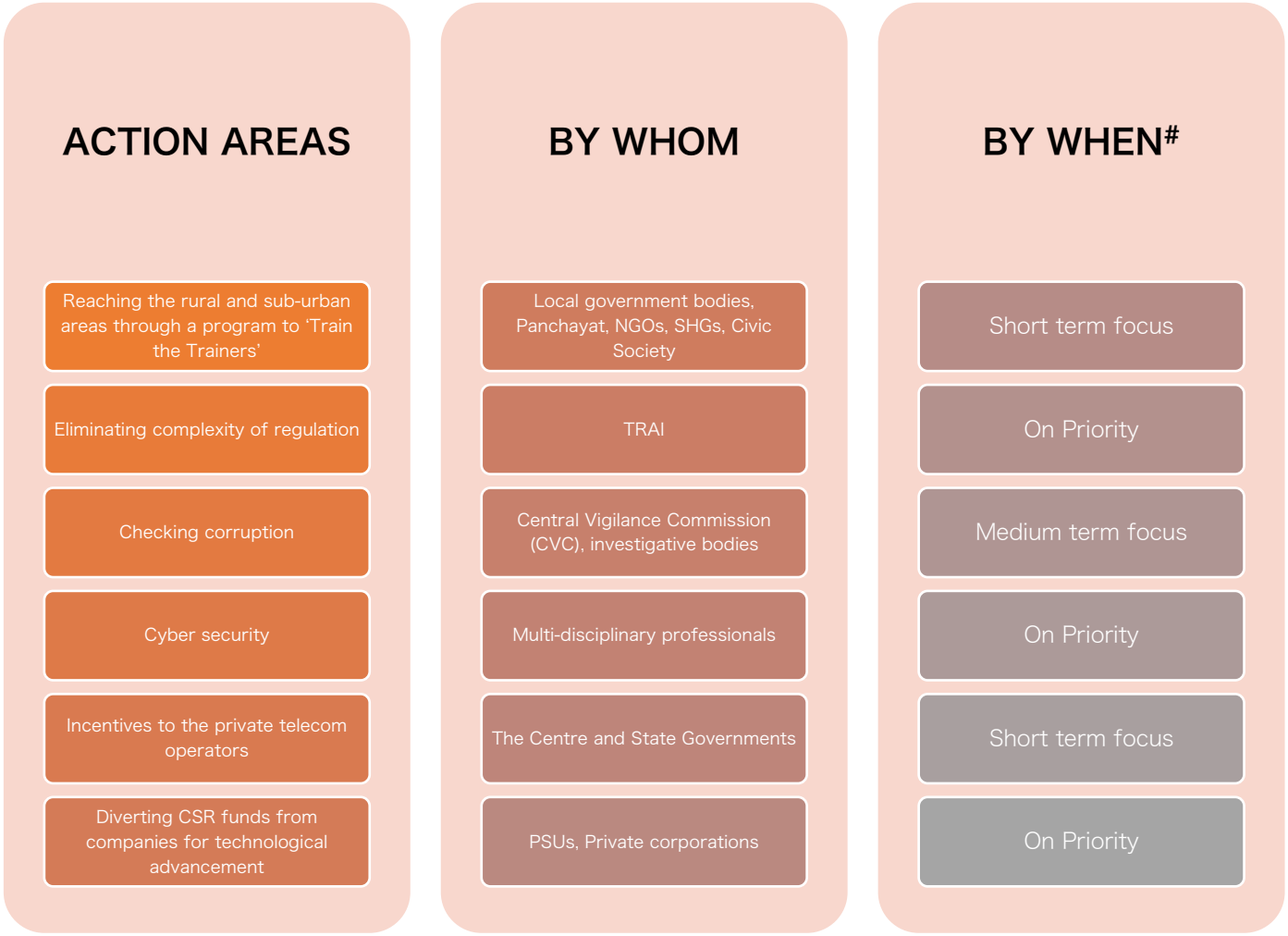
- **The complexity of Regulation:** Most of the delays in implementation of ICE infrastructure are because of "Right of Way" issues. Collaboration among the parties involved in RoW issues is a must. Eliminating complexity in government regulations might help. Awareness about the usefulness of ICT should reach the root level, only then its reach can be enhanced. Flexibility in the prices of "Cost of Spectrum" by the government can attract more players in auctions resulting in better reach. Better incentives should be provided by the government to attract more private telecom operators.

- **Cyber Security:** Digital India is very vulnerable to cyber threats as the system security is not up to international standards. This is a key issue and requires much awareness from a user's perspective. More campaigns regarding awareness of cyber threats should be conducted by the government. Experts in ethical hacking should be hired purely based on their knowledge rather than based on their qualification.

- **Privacy:** Just as in European countries "Right to Privacy" should be made a fundamental right. Confidentiality of Aadhaar data is the duty of government, and strict regulations should be put in practice to protect it.

- **VUCA (Volatile, Uncertain, Complex and Ambiguity) world:** Most management gurus define the present era of technological disruption as VUCA world. To gain competitive advantage, companies should design their strategies in such a way to survive in this volatile world. "Speed to Response" to various technological changes decides the fate of an organization. "Innovation" is the key. Co-creation with customers is the need of the hour. Technology is now at the heart of the business. Business and technology connect deeply. Role of technology is changing from "Enabler" to "Business Ideator and Driver". Technology has to be a core competence irrespective of industry.

Possible solutions to the challenges



#Less than or equal to 1 year: On Priority, Less than or equal to 2 year: Short term focus, More than 2 year: Medium term focus

- **Reaching the rural and sub-urban areas through a program to 'Train the Trainers':** Multinational companies should motivate youth by taking the seminars and provide them employment opportunities. Vision and plan are needed to be designed. We can encourage and enhance learning and their skills in rural people if we ensure communication in local languages so that that rural people can understand easily

- **Eliminating complexity of regulation:** It is necessary to research the strengths and weaknesses of the current regulatory environments to understand where regulations may be in contradiction to each other, or where regulations may create barriers to digital transformation and extending this important form of the social use of the Internet. It is also necessary to gain clarity on matters that may require concurrent jurisdiction and the

electronic communications sector regulator, to create an enabling environment for consumer welfare.

- **Checking corruption:** We need to design applications which can be used to fight corruption, it is critical that four key anti-corruption strategies – prevention; enforcement; access to information and empowerment; and capacity building are integrated into the design and implementation process.

- **Cyber security**: Enterprises in India did not traditionally invest in IT security. Opportunities in the IT security space mainly lie in specific domains such as banking and financial services, telecom, oil and gas, and utilities. With the advent of the Internet of Things (IoT), there is an ever-increasing concern for security due to large chunks of data being stored, transferred, and analyzed.

- **Incentives to the private telecom operators:** The private telecom operators should be incentivized for setting up facilities in rural areas, sparsely populated districts and villages.

- **Diverting CSR funds from companies for technological advancement:** Of the ten possibilities, from eradicating hunger to promoting education, the penultimate item in that list is funding technology incubators attached to academic institutions. In the first year of implementation, few companies put CSR money into these incubators. However, CSR funding is limited to approved academic incubators.

The 'India Online' Study

December 2017

The 'India Online' Study received over 2,500 responses from internet users across India on what they perceived were the benefits of 'Digital India' and the challenges it faces. The qualitative online study, an initiative by IIM Lucknow and India Open Data Association (IODA), was executed by Juxt-Smart Mandate Analytical Solutions Private Limited.

Qualitative data, in the form of images and videos, was collected through a 1,000+ km. road trip where a team of observers recorded responses on the benefits of the Internet, how it could be utilized to learn and teach someone too.

Objective

Despite its surging population of both internet and smartphone users, India certainly has its work cut out when it comes to ensuring achieving a truly 'Digital India'. Besides setting up the required infrastructure, it is extremely important to ensure the citizens understand the benefits internet brings and how it can transform their lives. The study intended to receive qualitative inputs from a diverse population of citizens.

Methodology

The online study form was circulated in amongst diverse internet users through various activation partners such as Way2Online.com, India Medical Times, etc. The qualitative data collected from the study was filtered and analysed to determine what the citizens perceived as 'benefits and challenges' of 'Digital India'.

The steps followed to filter, and clean 'Benefits and Challenges' related text were, as mentioned below:

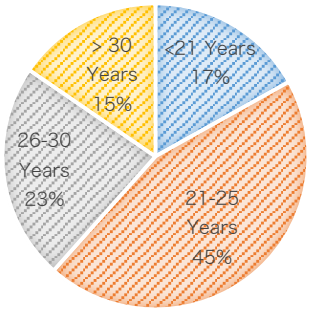
- Removal of stop words, punctuation, special characters, and social media symbols.
- Normalising the text (Stemming and Lemmatization).
- Tokenising the corpus (TF-IDF).
- Splitting the responses into sentences.

A Latent Semantic Analysis (LSA) model was applied for analysing the data. It is usually carried out to find the distributional semantics – analysing relationships between a set of documents and the terms they contained by producing a set of concepts related to the documents and terms.

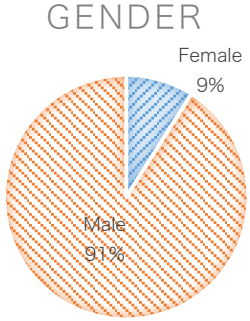
The steps undertaken were, as follows:

- Applied Singular Value Decomposition (SVD) through Latent Semantic Analysis (LSA) and created 20 topics each for "Benefits" and "Challenges" (considering each sentence as a document).
- For each sentence, identified the appropriate topic based on the scores of the document-topics relation. *(Note: Each respondent may belong to multiple topics.)*
- Topics were profiled based on the terms of the topic.

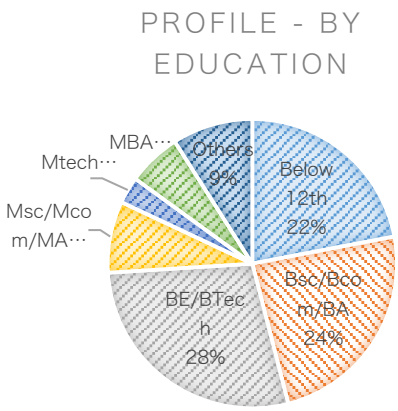
Sample Profile



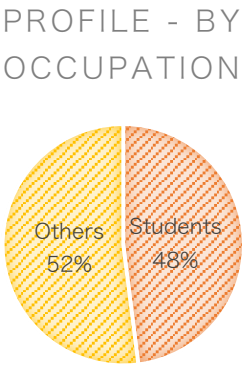
Over 50% of the sample is below 25 years of age. This is in line with the urban internet population in India.



Over 90% of the sample is male and nearly 10% is female.



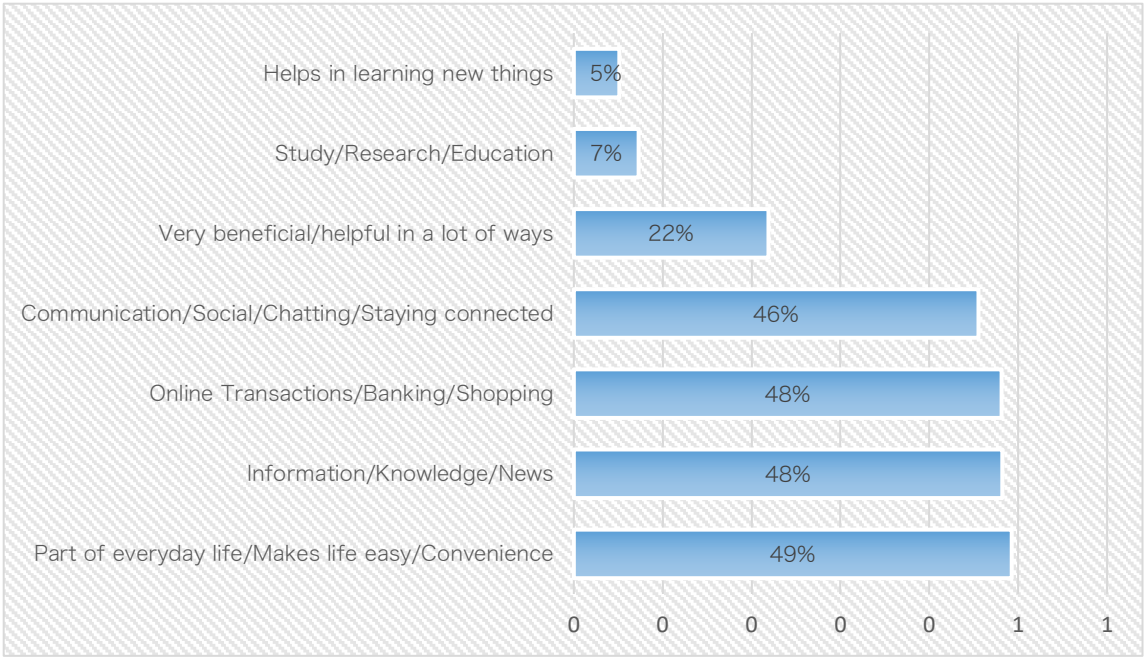
Over 50% were graduates (general graduates – 24% and B.Tech/BE – 28%).



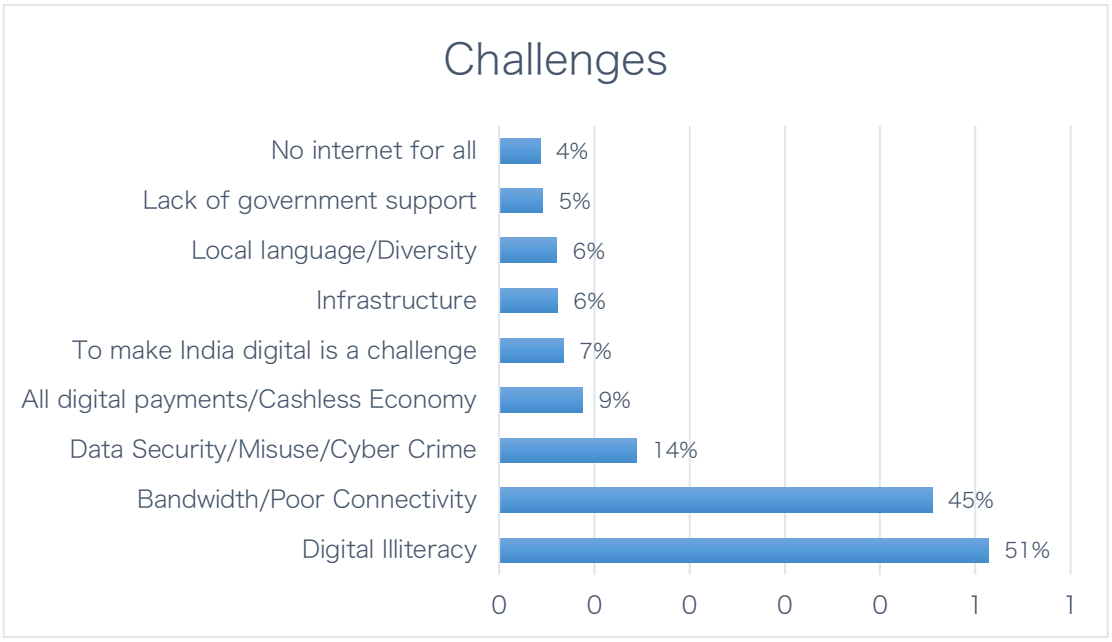
Nearly 50% of the respondents were students, which are among the most ardent users of internet in the country.

Major findings - Benefits and Challenges

Speaking of the 'benefits', respondents observed internet to be a "part of everyday life" (49%), highlighted how it could help in gaining knowledge (48%), and how beneficial it has been when it comes conducting financial transactions (48%).



When asked about the 'challenges', around 40% respondents cited multiple and almost all of the commonly accepted challenges. Effectively, the biggest concerns were 'Digital Illiteracy' (51%) and 'Bandwidth/Internet speed/Poor connectivity' (45%) followed by 'Data Security/Cyber Crime' (14%).



It was imperative to also look at specific benefits and challenges respondents of different age groups observed. The tables below depict how different age groups reported various benefits and challenges.

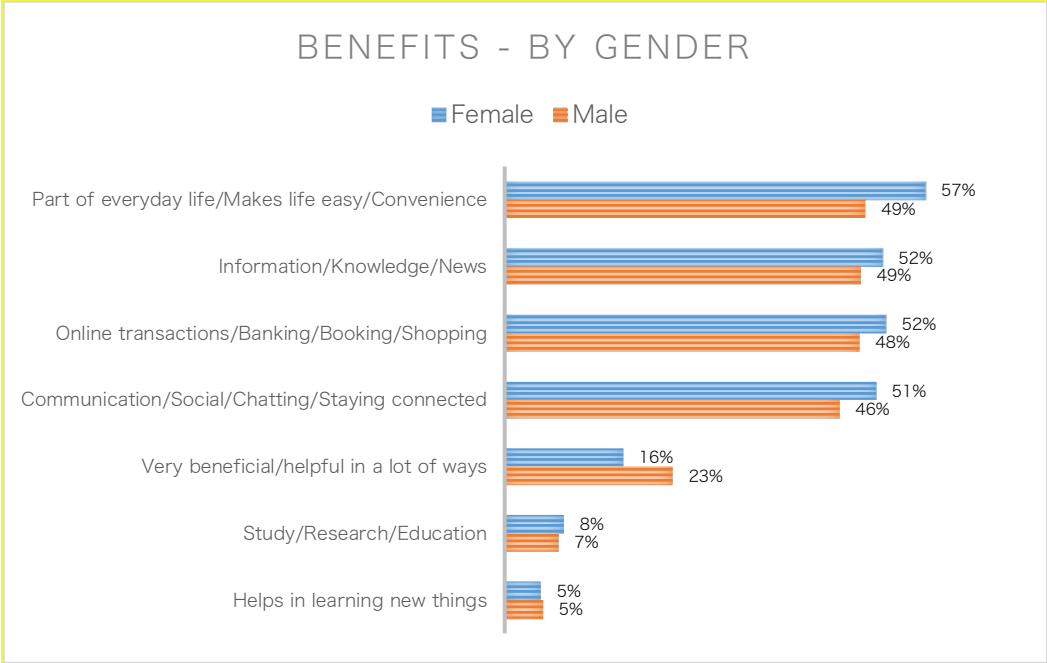
BENEFITS – BY AGE GROUPS

	<21 Years	21-25 Years	26-30 Years	> 30 Years
Part of everyday life/Makes life easy/Convenience	50%	51%	49%	44%
Information/Knowledge/News	48%	50%	48%	43%
Online transactions/Banking/ Booking/Shopping	48%	50%	48%	43%
Communication/Social/Chatting/Stay Connected	46%	47%	46%	41%
Very beneficial/helpful in a lot of ways	18%	20%	26%	24%
Study/Research/Education	10%	8%	5%	7%
Helps in learning new things	7%	5%	5%	3%

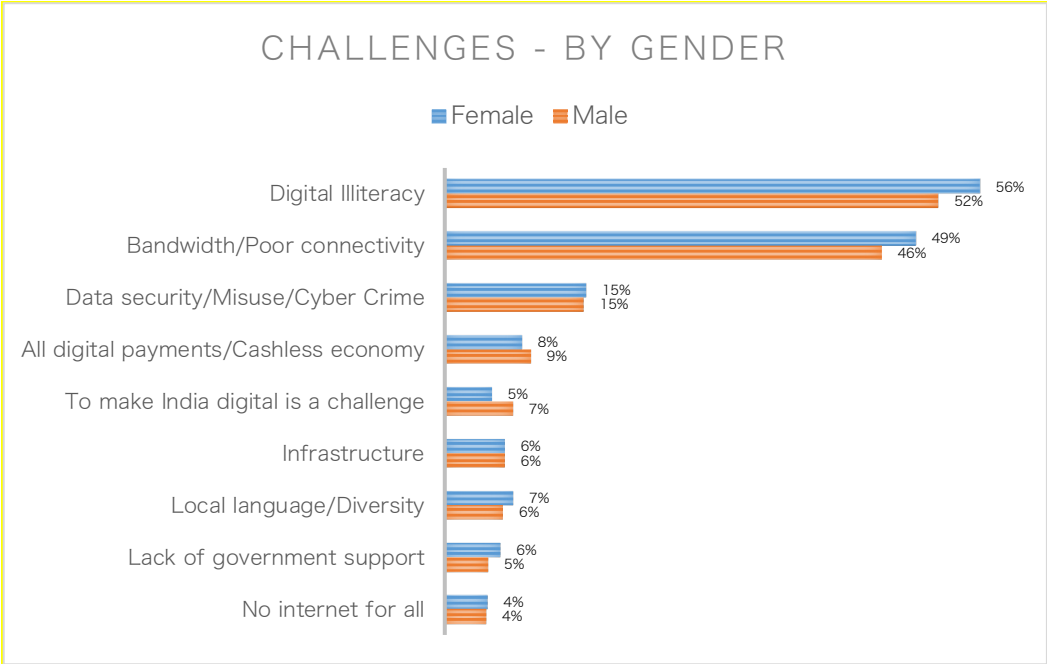
CHALLENGES – BY AGE GROUPS

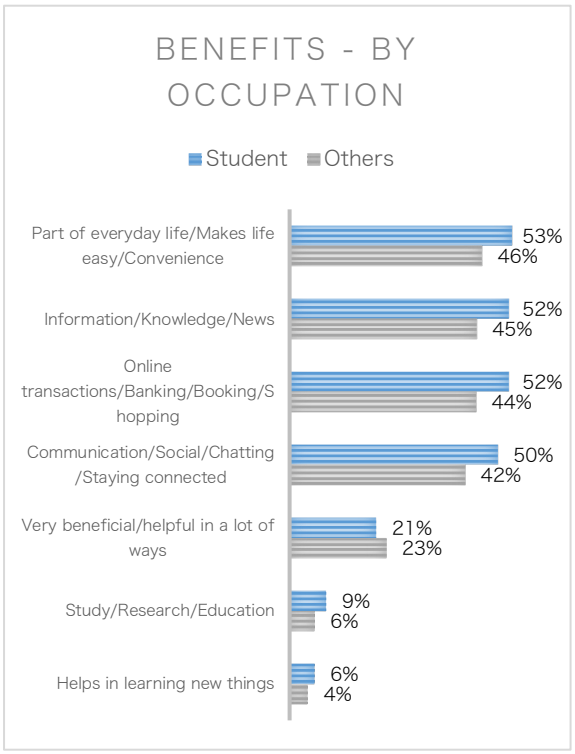
	<21 Years	21-25 Years	26-30 Years	> 30 Years
Digital Illiteracy	49%	52%	51%	53%
Bandwidth/Poor connectivity	45%	46%	45%	46%
Data Security/Misuse/ Cyber Crime	15%	13%	15%	17%
All digital payments/ Cashless economy	8%	10%	8%	7%
To make India digital is a challenge	7%	7%	8%	5%
Infrastructure	6%	6%	6%	7%
Local language/ Diversity	7%	6%	7%	5%
Lack of government support	5%	4%	5%	6%
No internet for all	4%	3%	6%	5%

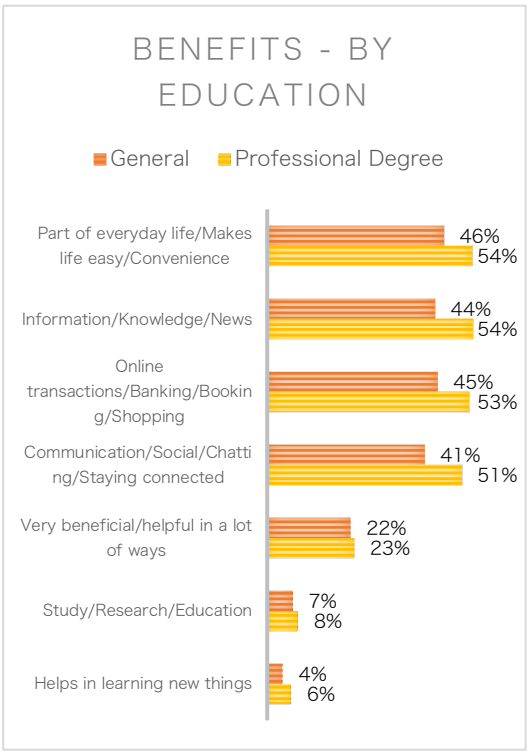
The difference between the responses of the male and female respondents indicated towards the difference in the way both the gender perceived benefits and challenges of internet. For example, 57% of the female respondents opined that convenience was the biggest benefit they received.

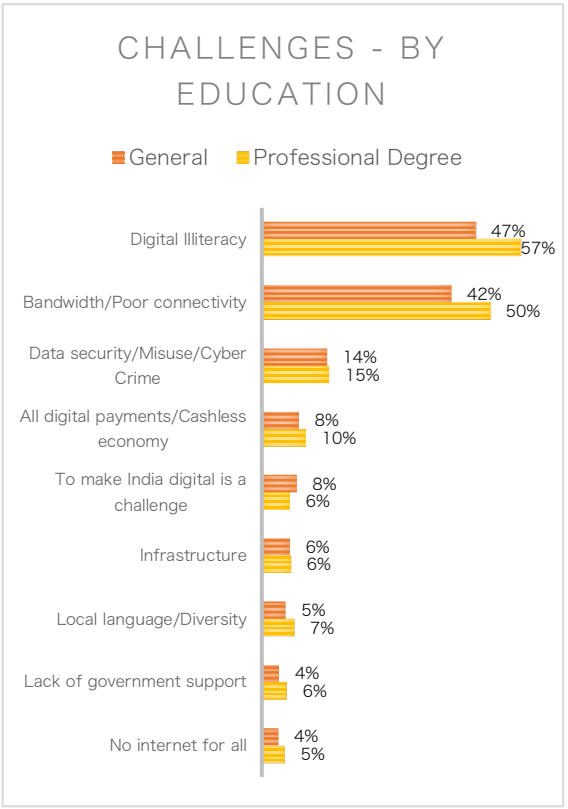


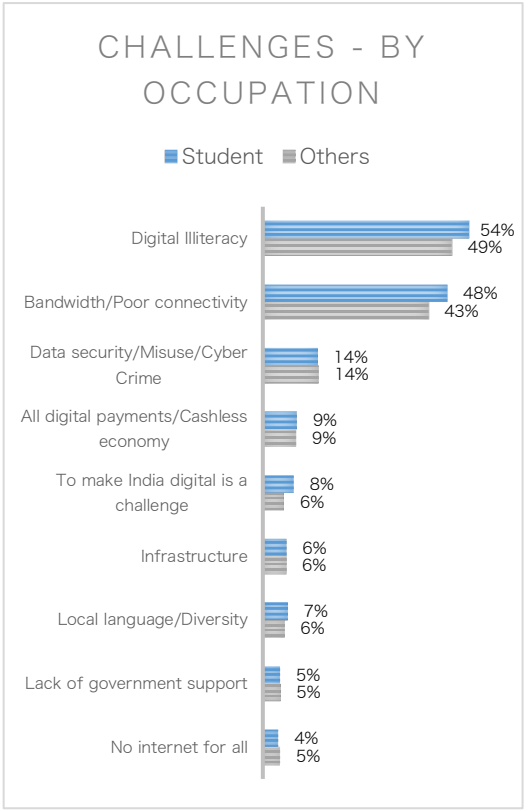
With respect to challenges, 56% of female respondents found 'digital illiteracy' to be the biggest challenge while both males and females agreed on 'data security' as a challenge.




BENEFITS - BY OCCUPATION
Student
Others
Part of everyday life/Makes life easy/Convenience
53%
46%
Information/Knowledge/News
52%
45%
Online transactions/Banking/Booking/Shopping
52%
44%
Communication/Social/Chatting/Staying connected
50%
42%
Very beneficial/helpful in a lot of ways
21%
23%
Study/Research/Education
9%
6%
Helps in learning new things
6%
4%


BENEFITS - BY EDUCATION
General
Professional Degree
Part of everyday life/Makes life easy/Convenience
46%
54%
Information/Knowledge/News
44%
54%
Online transactions/Banking/Booking/Shopping
45%
53%
Communication/Social/Chatting/Staying connected
41%
51%
Very beneficial/helpful in a lot of ways
22%
23%
Study/Research/Education
7%
8%
Helps in learning new things
4%
6%


CHALLENGES - BY EDUCATION
General
Professional Degree
Digital Illiteracy
47%
57%
Bandwidth/Poor connectivity
42%
50%
Data security/Misuse/Cyber Crime
14%
15%
All digital payments/Cashless economy
8%
10%
To make India digital is a challenge
8%
6%
Infrastructure
6%
6%
Local language/Diversity
5%
7%
Lack of government support
4%
6%
No internet for all
4%
5%


CHALLENGES - BY OCCUPATION
Student
Others
Digital Illiteracy
54%
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Data security/Misuse/Cyber Crime
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14%
All digital payments/Cashless economy
9%
9%
To make India digital is a challenge
8%
6%
Infrastructure
6%
6%
Local language/Diversity
7%
6%
Lack of government support
5%
5%
No internet for all
4%
5%

An evident observation from the above graphs would be how students and respondents with a professional degree seem to share opinions on most benefits and challenges. For example, 'Digital Illiteracy' and 'Bandwidth' is are perceived as a deterrent amongst both the groups.

Lastly, the data also presented an opportunity to observe the co-relations that existed between the 'benefits' and 'challenges' reported by respective respondents. Below is a table that denotes how, for example, respondents who state that internet could be used for 'information/knowledge/news' also observed how 'digital illiteracy' stood in the way of it.

CO-RELATION – BENEFITS AND CHALLENGES

	Information/ Knowledge/ News	Part of everyday life/Makes life easy/Convenience	Online transactions/ Banking/ Booking/ Shopping	Communication/ Social/ Chatting/Staying connected	Study/ Research/ Education	Very beneficial/helpful in a lot of ways	Helps in learning new things
Digital Illiteracy	70%	69%	69%	71%	70%	57%	72%
Bandwidth/Poor connectivity	63%	63%	62%	64%	62%	50%	65%
Data security/ Misuse/Cyber Crime	19%	19%	19%	19%	23%	16%	23%
All digital payments/ Cashless economy	12%	12%	12%	11%	13%	9%	11%
To make India digital is a challenge	9%	8%	9%	9%	8%	6%	8%
Infrastructure	8%	8%	8%	8%	17%	7%	15%
Local language/ Diversity	10%	9%	9%	10%	12%	7%	7%
Lack of government support	7%	7%	7%	7%	11%	5%	6%
No internet for all	5%	6%	6%	5%	3%	5%	8%

In the coming future, the study can bring out more key insights which would help in achieving the objectives of the 'Digital India' initiative.

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