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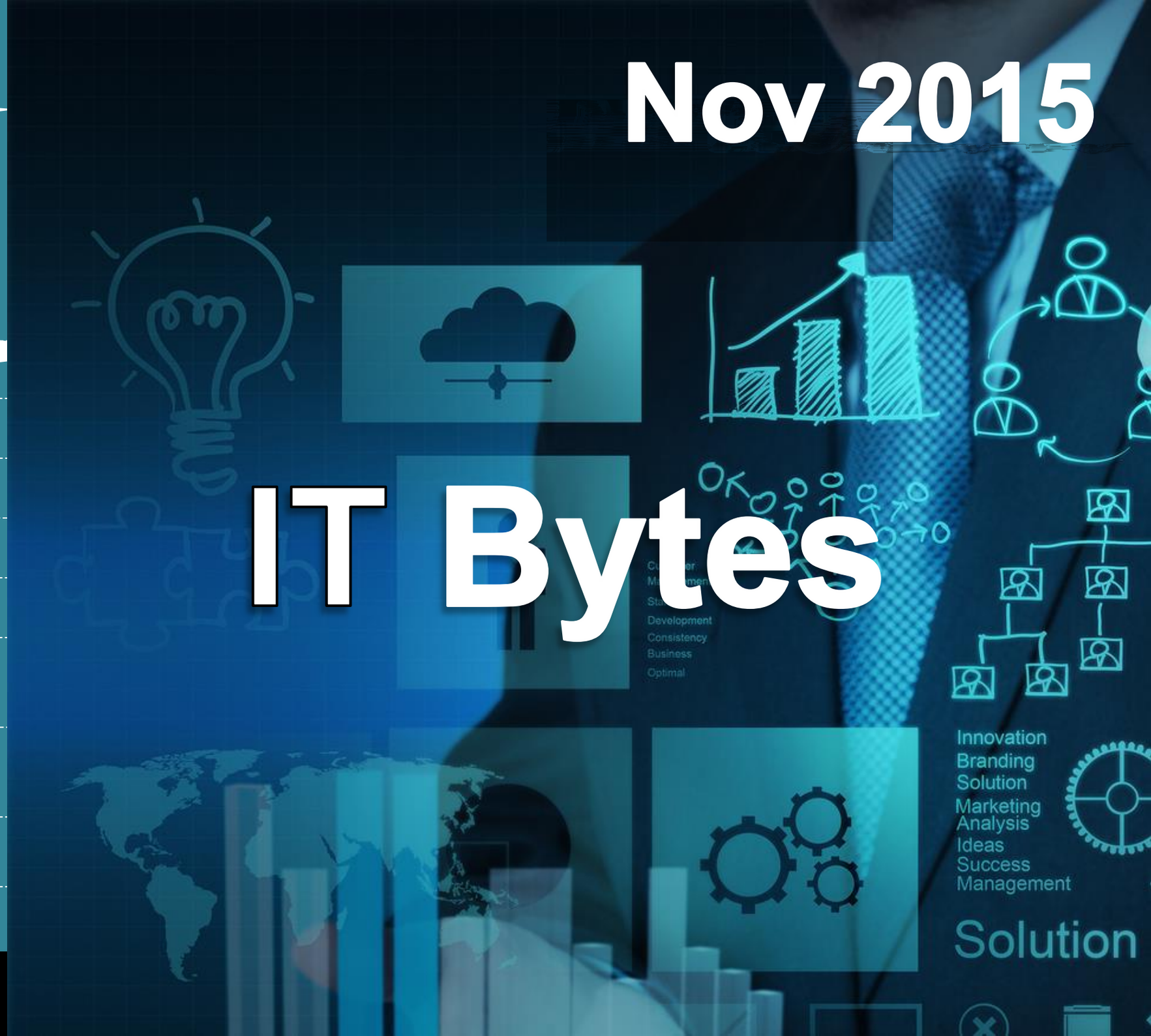

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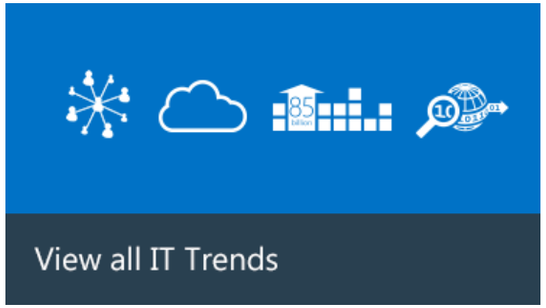

1. Computing Everywhere

With the continued advancement in smart-phone technology, Gartner assesses that an increased emphasis on serving the needs of the mobile user in diverse contexts and environments, as opposed to focusing on devices alone. Gartner posits that smart-phones and wearable devices are part of a broader computing offering to include connected screens in the workplace and in public spaces. User experience design will be of critical importance.

2. The Internet of Things (IoT)

The Internet of Things will continue to expand, propelled by the ubiquity of user-oriented computing. Gartner posits that this will be replicated both in industrial and in operational contexts, as it will be the focus of digital business products and processes. Embedding technology more deeply will create touch points for users everywhere. This will form the foundation of digital business.

3. 3D Printing

The cost of 3D printing will decrease in the next three years, leading to rapid growth of the market for these low-cost machines. Industrial use will also continue its rapid expansion. Gartner highlights that expansion will be especially great in industrial, biomedical and consumer applications, highlighting the extent to which this trend is real, proving that 3D printing is a viable and cost-effective way to reduce costs through improved designs, streamlined prototyping and short-run manufacturing.

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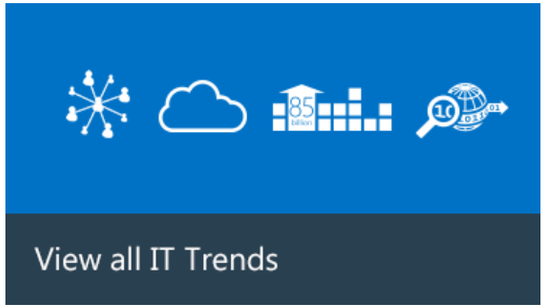

4. Advanced, Pervasive, Invisible Analytics

Analytics will continue to advance due to the Internet of things and the embedded devices that trend will continue to foster. Vast pools of structured and unstructured data inside and outside organizations will continue to be generated. Gartner points out that every app will need to be an analytic app. The analysis also concludes that big questions and big answers are more important than big data.

5. Context-Rich Systems

Embedded intelligence that is ubiquitous combined with pervasive analytics will foster the development of systems that are alert and responsive to surroundings. Gartner highlights that context-aware security is an early application of this trend, but that others will emerge.

6. Cloud/Client Architecture

Mobile computing and cloud computing continue to converge and lead to the growth of centrally coordinated applications that can be delivered to any device. Gartner notes that cloud computing is the foundation of elastically scalable, self-service computing for both internally and externally facing applications. Apps that use intelligence and storage of client device effectively will benefit from lowering bandwidth costs, coordination and management will be based on the cloud. The analysis goes on to note that over time applications will evolve to support simultaneous use of multiple devices. In the future, games and enterprise applications alike will use multiple screens and exploit wearables and other devices to deliver an enhanced experience.

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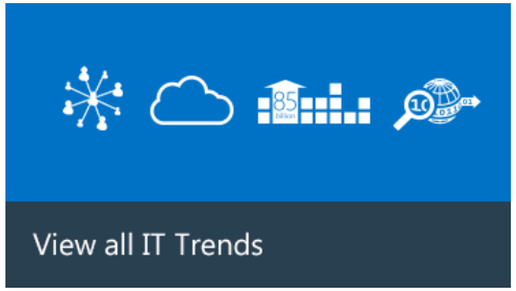

7. Smart Machines

Analytics combined with an understanding of context will usher in smart machines. Advanced algorithms will lead to systems that learn for themselves and act upon those learnings. Gartner notes that machine helpers will continue to evolve from the existing prototypes for autonomous vehicles, advanced robots, virtual personal assistants and smart advisors. The analysis goes on to speculate that the smart machine era will be the most disruptive in the history of IT.

8. Software-Defined Infrastructure and Applications

Agile development methods for programming of everything from infrastructure basics to applications is essential to enable organizations to deliver the flexibility required to make the digital business work. Software defined networking, storage, data centers and security are maturing. Application programming interface (API) calls render cloud services software configurable, and applications have rich APIs to access their function and content programmatically. Gartner notes that in order to deal with the rapidly changing demands of digital business with demand shifts both up and down require computing to move away from static to dynamic models.

9. Web-Scale IT

Gartner notes that more companies will think, act, and build applications and infrastructure in the same way that technology stalwarts like Amazon, Google and Facebook do. There will be an evolution toward web-scale IT as commercial hardware platforms embrace the new models and cloud-optimised and software-defined methods become mainstream. Gartner notes that the marriage of development and operations in a coordinated way (referred to as DevOps) is the first step towards the web-scale IT.

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Data

Information in raw or unorganized form such as alphabets, numbers, or symbols, that refer to, or represent, conditions, ideas, or objects. Data is limitless and present everywhere in the universe. See also information and knowledge.

Big data analytics

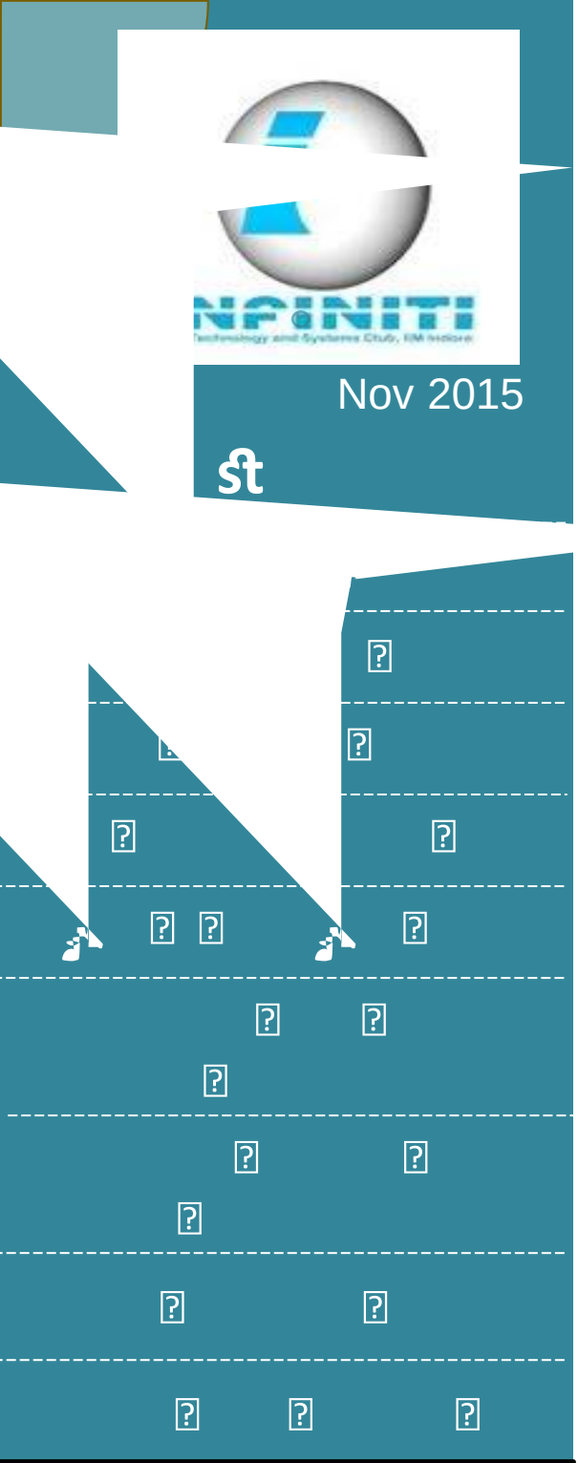
Big data analytics is the process of examining large data sets containing a variety of data types -- i.e., big data -- to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful business information. The analytical findings can lead to more effective marketing, new revenue opportunities, better customer service, improved operational efficiency, competitive advantages over rival organizations and other business benefits.

Data mining

Sifting through very large amounts of data for useful information; Data mining uses artificial intelligence techniques, neural networks, and advanced statistical tools (such as cluster analysis) to reveal trends, patterns, and relationships, which might otherwise have remained undetected. In contrast to an expert system (which draws inferences from the given data on the basis of a given set of rules) data mining attempts to discover hidden rules underlying the data. Also called data surfing.

Enterprise architecture

Design or 'blueprint' of a business that depicts the components of a firm employed in its operations, interrelationships of those components, information flows, and how each component supports the objectives or the strategy of the enterprise.



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Enterprise resource planning (ERP)

Accounting oriented, relational database based, multi-module but integrated, software system for identifying and planning the resource needs of an enterprise. ERP provides one user-interface for the entire organization to manage product planning, materials and parts purchasing, inventory control, distribution and logistics, production scheduling, capacity utilization, order tracking, as well as planning for finance and human resources. It is an extension of the manufacturing resource planning (MRP-II). Also called enterprise requirement planning.

Enterprise risk management (ERM)

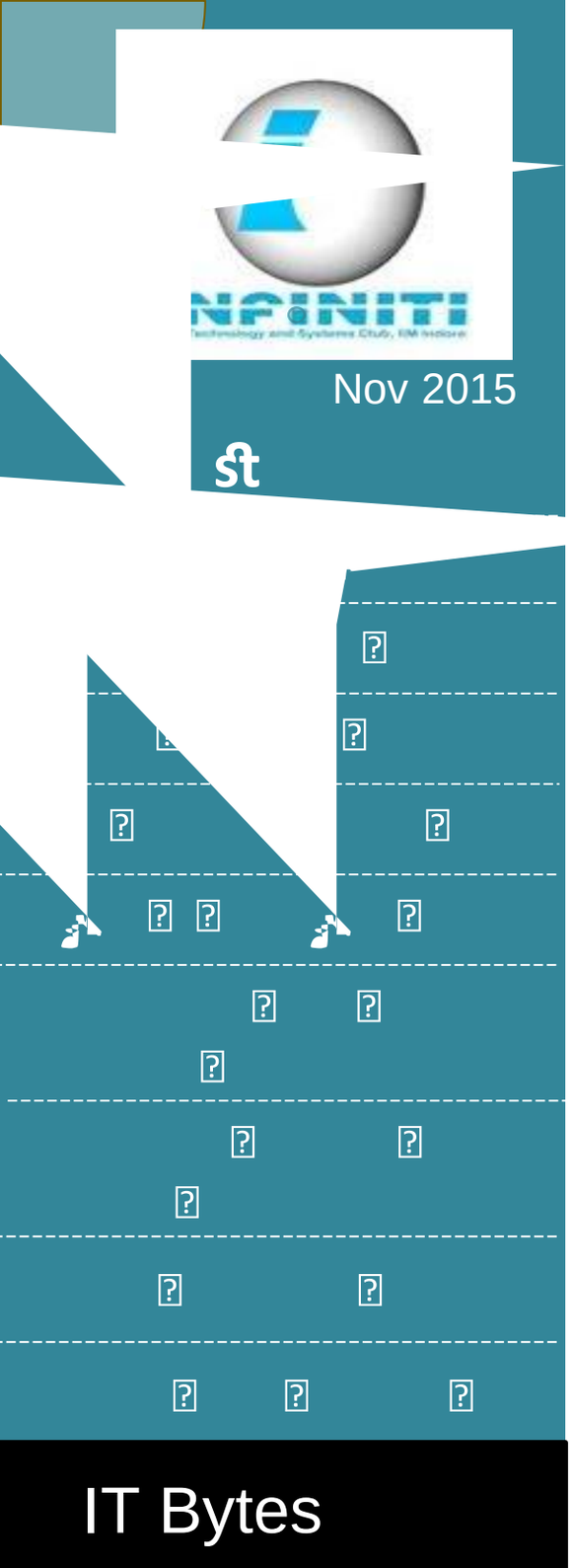
Defined by the US 'Committee Of Sponsoring Organizations Of Treadway Commission' (COSO) as, "a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risks to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives." COSO divides ERM process into eight components: (1) internal environment, (2) objective setting, (3) event identification, (4) risk assessment, (5) risk response, (6) control activities, (7) information and communication, and (8) monitoring.

Database management system (DBMS)

Computer program that catalogs, indexes, locates, retrieves, and stores data, maintains its integrity, and outputs it in the form desired by a user. A DBMS performs only minimal mathematical operations. Its overall purpose is to organize and manage data, and make it available on demand.

Weightless economy

A term to describe a post-industrial economy that relies on information technology and telecommunications to produce high value output of exchangeable information, knowledge and other intangible goods. Information-based output contributes an increasing percent of gross national product and offers both emerging and developed economies a high potential for growth.



Database marketing

Communicating, promoting, and selling activities based on a database management system (DBMS), which stores and refines data generated by a firm's routine marketing and selling efforts. The DBMS constructs customer profiles based on their personal, demographic, geographic, and psychographic characteristics, enabling the firm to direct its marketing efforts with greater accuracy.

Business architecture

Graphical representation of a business model, showing the networks through which authority, information, and work flows in a firm. It serves as the blueprint of a firm's business structure, and clarifies how the firm's activities and policies will affect its defined objectives.

Enterprise applications

Software designed to integrate all aspects of a firm's operations and processes such as accounting, finance, human resources, inventory control, manufacturing, marketing, sales, and distribution, and resource planning. Advanced enterprise applications provide linkages with customers, business partners, and suppliers.

Networking

A system containing any combination of computers, computer terminals, printers, audio or visual display devices, or telephones interconnected by telecommunication equipment or cables: used to transmit or receive information.

Information security

InfoSec is the practice of defending information from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (e.g. electronic, physical).

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Digital Genome

The first sequencing of the 3.2 billion base pairs of DNA that make up the human genome took many years and cost tens of millions of dollars; today guess what, your genome can be sequenced and digitized in minutes and that too at the cost of only a few hundred dollars. The results can be delivered to your laptop on a USB stick and easily shared via the internet. This ability to rapidly and cheaply determine our individual unique genetic make-up promises a revolution in more personalized and effective healthcare.

Many of our most intractable health challenges, from heart disease to cancer, have a genetic component. Indeed, cancer is best described as a disease of the genome. With digitization, doctors will be able to make decisions about a o sdms r cancer treatment informed by a tumor's genetic make-up. This new knowledge is also making **precision medicine** a reality by enabling the development of highly targeted therapies that offer the potential for improved treatment outcomes, especially for patients battling cancer.

Research of cancer is conducted typically by usage of biopsies (a sample of tissue taken from the body in order to examine it more closely) stored in known format of Formalin-Fixed Paraffin-Embedded (FFPE) that subsequently complicates genetic material analysis. Amplification-free robust chemistry allow research for measuring changes subtly in activity of genome in very small samples of FFPE with little degradation performance as compared to fresh tissue analysis. This is an important benefit made by Analysis System for researchers of cancer worldwide

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Analysis System has optimized biological research pathway based to enable researchers for analyzing interaction amongst genes numbered in gt mcqdcr which mediate pathways biologically. System is useful particularly for complex validation of genes networks which helps in predicting and characterizing states of disease for enabling medicines and diagnostics development specifically designed for treatment of patients with some profiles that are genomic. with

Advancement in research of genome is revolution driven in medicine personalized which accelerates patient b qdr innovation. Diagnostic tests genomic-based have demonstrations of ability for identifying genetic hallmark changes which drives numerous diseases like cancer and others. By precision leveraging, mobility and reproducibility of analysis system there is empowerment of local centers in achieving diagnostic level available only previously by means of central lab. New approaches transforms present paradigm by making personalized accessible to worldwide patients.

However like all personal information, a odqrnmr a

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Information Technology in Banking Sector

The 21st century will bring about an all-embracing convergence of computing, communications, information and knowledge. This will radically change the way we live, work, and think. The growth of high speed networks, coupled with the falling cost of computing power, is making possible applications undreamed of in the past.

This explosion of technology is changing the banking industry from paper and branch banks to' digitized and networked banking services. It has already changed the internal accounting and management systems of banks. It is now fundamentally changing the delivery systems banks use to interact with their customers.

Bankers are convinced that investing in IT is critical. Its potential and consequences on the banking industry future is enormous.

Major applications:-

1.**Customers**:-

Self-inquiry facility: Facility for logging into specified self-inquiry terminals at the branch to inquire and view the transactions in the account.

Remote banking: Remote terminals at the customer site connected to the respective branch through a modem, enabling the customer to make inquiries regarding his accounts, on-line, without having to move from his office. As information is centralized and updates are available simultaneously at all places, single-window service becomes possible, leading to effective reduction in waiting time.

2. Bank:-

Availability of a wide range of inquiry facilities, assisting the bank in business development and follow-up.

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Immediate replies to customer queries without reference to ledger-keeper as terminals are provided to Managers and Chief Managers.
Automatic and prompt carrying out of standing instructions on due date and generation of reports.
Generation of various MIS reports and periodical returns on due dates.

3. Employees:-

Accurate computing of cumbersome and time-consuming jobs such as balancing and interest calculations on due dates.
Automatic printing of covering schedules, deposit receipts, pass book / pass sheet, freeing the staff from performing these time-consuming jobs, and enabling them to give more attention to the needs of the customer.
Signature retrieval facility, assisting in verification of transactions, sitting at their own terminal.
Avoidance of duplication of entries due to existence of single-point data entry.

Strategy for the future :-

In future Banks will have to first develop a comprehensive distribution system that will enable customers to touch them at multiple points. Banks must also create performance measurement systems to assure the mix products and services they offer are beneficial to both the customer and the bank. Information technology needs to be integrated in an organization. It also needs to support a clearly defined and well communicated business strategy.

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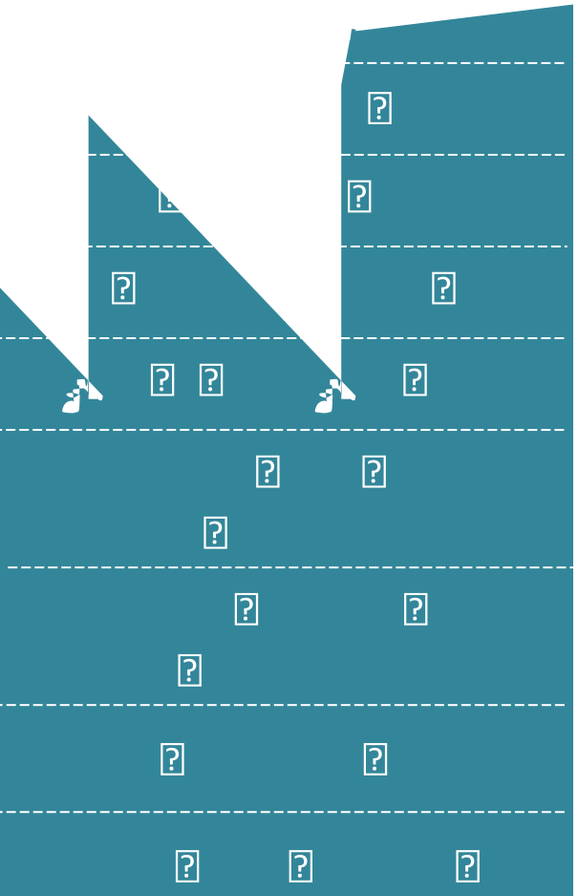

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Indian IT Spending to Reach $72.3 Billion in 2016: Gartner

India's IT spending is expected to rise by 7.2 percent in 2016 to reach $72.3 billion (roughly Rs. 4,73,886 crores), said leading market research player Gartner on Tuesday.

"India will continue to be the fastest growing IT market for the second year in succession and will continue growing to total $87.67 billion (roughly Rs. 5,74,696 crores) by the end of 2019," said Aman Munglani, research director, Gartner in a statement.

India, currently the third largest IT market in Asia Pacific, will become the second largest by 2019 following China, he said.

Mobile phones, personal computers and tablets falling under the category of devices are expected to account for almost 33 percent of the overall IT spend in India, growing at 9.4 percent in 2016, Gartner said.

Gartner India's research head Partha Iyengar said that in five years, one million new devices will come online every hour, and "these interconnections are creating billions of new relationships. These relationships are not driven solely by data, but algorithms".

Highlighting the crucial nature of algorithms, Iyengar added, "Data is inherently dumb. It doesn't actually do anything unless you know how to use it; how to act with it. Algorithms are where the real value lies. Algorithms define action. Dynamic algorithms are the core of new customer interactions."

The next great leap in machine to machine evolution in the Internet of Things (IoT) will be powered by the algorithmic economy, said Gartner in the statement.

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Microsoft's Gates to start multi-billion-dollar clean tech initiative

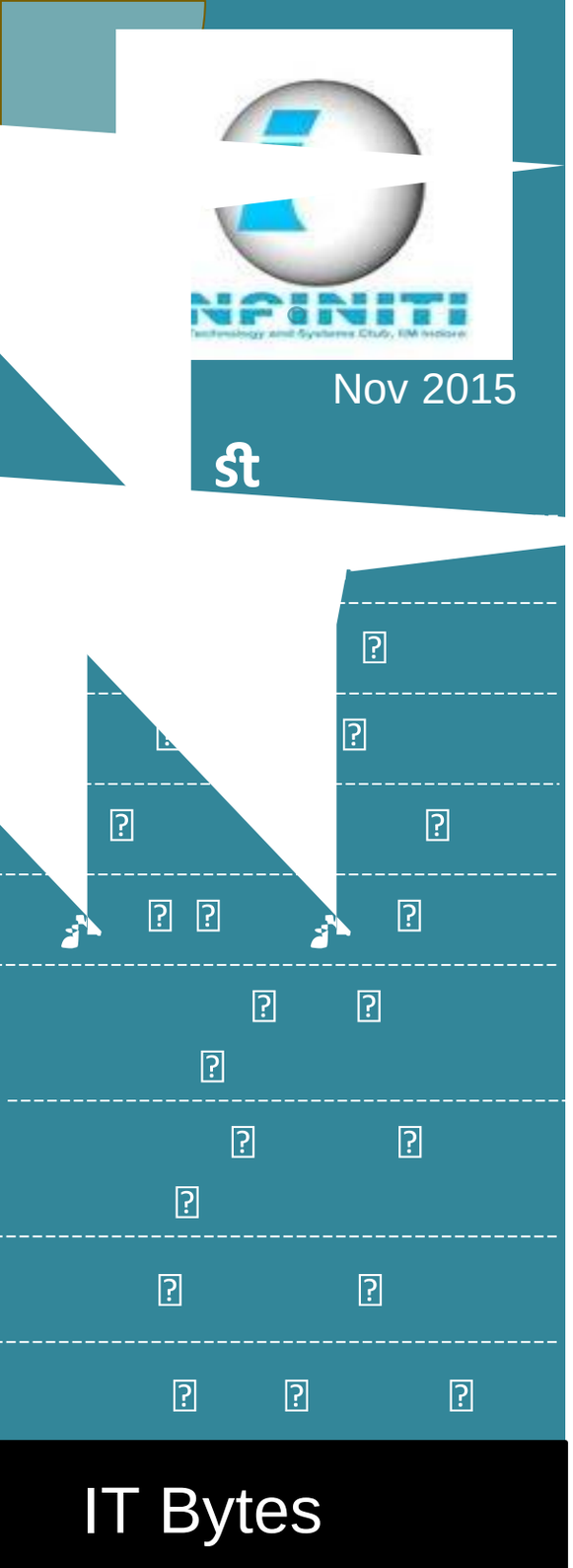
Microsoft co-founder Bill Gates will launch a multi-billion-dollar clean energy research and development initiative with heads of state on Monday, the opening day of the U.N. climate change summit in Paris, the French government said Friday.

Gates and a group of developing and developed countries will launch the Clean Tech Initiative, in which countries will commit to doubling their clean energy technology research and development budgets by 2020 and private investors will boost their own investments in the sector.

Access to clean energy technology will play a key role in a global agreement to combat climate change. More than 190 countries will negotiate a new pact in Paris from Nov. 30 to Dec. 11 at the 21st U.N. Conference of the Parties summit.

France, the United States, India, South Korea, Indonesia, Saudi Arabia, Australia, Canada and Norway have said they will join, a source close to the conference presidency told Reuters.

Gates' announcement should prompt other countries to follow suit," the source said.



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Gates will join Indian Prime Minister Narendra Modi, U.S. President Barack Obama and French President Francois Hollande to announce the initiative on the opening day of the two-week summit, according to an agenda released Friday.

For India, the world's third largest greenhouse gas emitter, access to clean energy technology is at the core of its national strategy to combat climate change.

India has argued that developed countries need to help poorer countries gain access to renewable energy or zero-emission technologies by helping reduce costs and removing barriers

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Chasing an unconventional path: From a school teacher to a CTO (contd…)

What was it like for you personally when you were first made CTO?

Exciting and frightening all at the same time. I had lots of ideas of what the company could be and do, but before that happened we needed to get the company on a stable foundation.

Where does "innovation" play in your role? Are you a catalyst?

Innovation is at the heart of what I do, so I certainly hope I am. In addition to drawing on the insights of our organization, we have implemented companywide what the Harvard Business Review calls an 'innovation mall.' It is a soapbox-like app that allows every employee to suggest new ideas and support the ideas of others, and we throw product questions and ideas up there to gather employee opinions.

Warren Barkley: Interesting Tidbits

Best book recently read: *Element* by Ken Robinson.

Favorite industry publication: I love *Wired* because of the pure randomness of its content.

Last time you actually coded or configured: Configured this week. Coded about a year ago, when I wanted to figure out how good or bad our APIs were.

If you weren't a tech company CTO, would you still be in the tech business? I would be running a bike business.

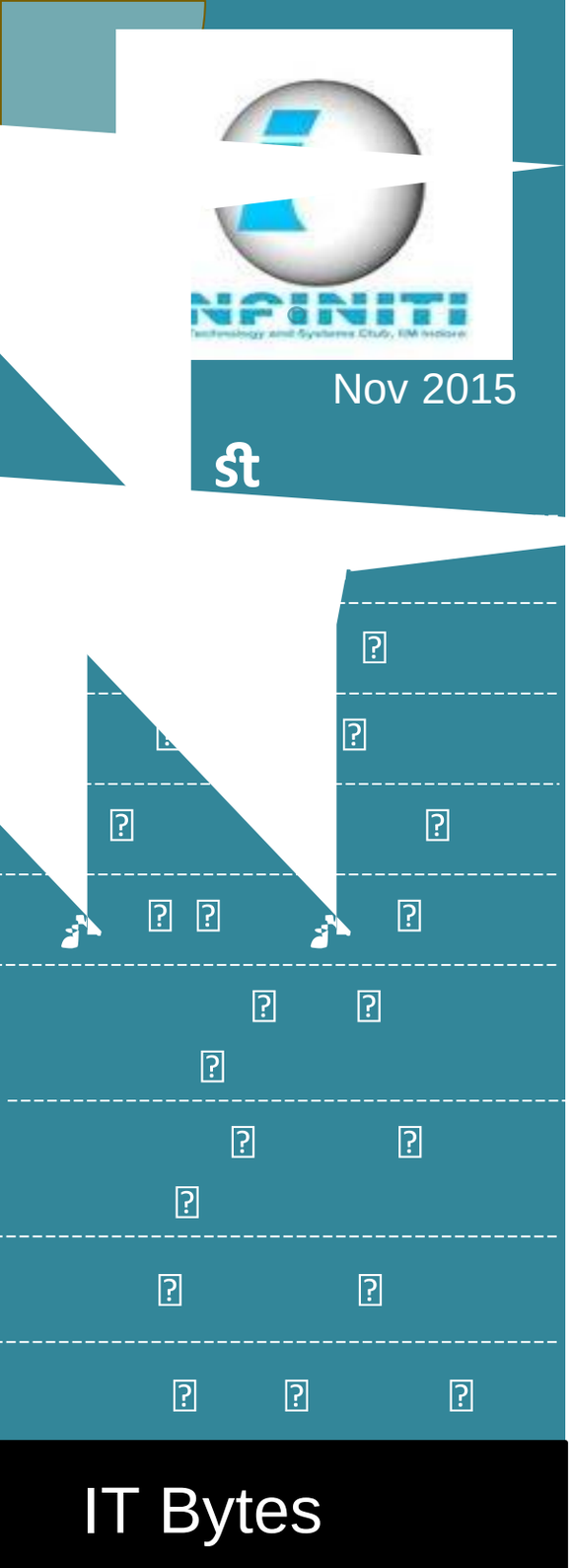
What mobile phone do you carry? Primary is an iPhone. I also have a Windows phone and Android I use on and off.

What other personal technology do you use? Everything you can think of, from complex fitness monitors to things that measure sleep and brain waves.

What is your college education? A music degree, an education degree, some post-graduate in psychology. I started computer science but did not finish.

What is it like being the CTO for a company headquartered in Canada—any differences from the US?

I grew up here, so I knew the culture, but I was still surprised by a few things. Certainly the talent market in high tech. is smaller and the appetite for risk is less.



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Chasing an unconventional path: From a school teacher to a CTO

What do you think is your nemesis?

Father Time. There is never enough

What are the major job challenges you face as CTO?

Focus. Making sure everyone is focusing on the right parts of the product or business to drive everything forward. Making the right bets; you can never be sure of the future.

What are the most valuable lessons you've learned in your career?

Try to listen more than talk. As you are more senior, people want to hear from you. That needs to be checked as much as possible because your people often have better answers. Second, you never regret firing someone too early. I know hsr harsh. If they qdms a fit, there is a better place for them, and sometimes they will thank you for it.

Is there lot of structure to your day?

There is a lot of travel, so there is not much rhythm. Normally every day starts and ends with email.

What is your advice to aspiring IT professionals who wish to move up the ladder to the C-suite?

Get creative. Despite urban myth, this can be learned. Your job is about creating value and solving problems. To do that in new and novel ways, you need to be able to think and act creatively. Second, be the customer. Pay very close attention to what their experiences are going to be. Are you living those experiences yourself and understanding them? People often say they are, but when was the last time you personally experienced the rack, stack, and operation of your product? For me, it was last Friday.

Nov 2015

How the Digital Economy Is Changing

At last week's **Techonomy conference 2015** on how technology is impacting the economy, and in particular improving productivity, U.S. Secretary of Commerce **Penny Pritzker** said her department had four main items on its digital agenda.

First, she said, is to support a free and open Internet globally, something she said is a huge issue in many other countries. The **second** is to promote online trust, especially when it comes to privacy and security. This includes issues such as the EU Safe Harbor, as well as privacy concerns in the post-Snowden era. The **third** is to promote access to the Internet, and she noted that 20% of U.S. households don't have access to high speed Internet. Finally, Describing Commerce as "America's Data Agency," she noted that no other group has the breadth, depth, and reach of data that commerce has ranging from personal income data to population growth data, reporting GDP, running the atomic clock, and running the national weather service, which provides 20 to 40 TB of data a day.

James Manyika, Senior Partner at McKinsey & Company, said the digital economy is no longer about haves and have-nots, but rather about "haves" and "have-mores . He noted that, strictly measured, information technology accounts for 5% of GDP, but said that 98% of the economy is touched by technology in some way.

Although most companies today have digitized, he said, there is a widening gap between the *most* digitized and the rest, with companies and sectors of the economy that are more digitized showing faster growth in revenue and productivity, and two to three times more profit margin growth.

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How the Digital Economy Is Changing contd…

He talked about the "disruptive dozen" technologies that he thought would continue to grow productivity in the future, and said that digitization will contribute up to $2 trillion to national GDP by 2025.

Much of his talk was about the impact of automation on jobs, which has been a big topic lately. Manyika said that up to 45% of the tasks that workers do could be automated, but only 5% of all jobs were actually a candidate for elimination because of technology. This has serious implications for individuals, businesses, and governments, he said. He suggested that companies need to know where the digital frontier is, and have to get the "must-have" digital capabilities; that government needs to embrace and enable digital.

Cisco's John Chambers, said that it will create a 17% growth in real per capita income. But he said there will be challenges, and noted that 80% of the American enterprises that exist today won't exist in 10 years, and further that we'll see some extreme business models such as a company that will outsource nearly everything and will have just a CEO and a CIO, yet be worth $1 billion.

Philips's Jeroen Tas joined by talking about how health care was ripe for disruption, and mentioned how we spend 80% of money on chronic disease, while systems are organized around acute care. He talked about giving people new tools, driven by algorithms, and said early experiences show that this can reduce re-hospitalization by 45% and reduce emergency care by 60%, resulting in a 27% overall net savings. He said there is an "opportunity to craft a new world" based on data, and said it could do things such as combining MRI data with detail about cells.

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Google’s Loon Balloons

Google is succeeding in keeping high-altitude balloons aloft in the stratosphere for more than three months at a time -- a key goal in its ambitious Project Loon program to deliver Internet from the sky.

Project Loon envisages bringing Internet to underserved regions of the world by beaming 4G LTE cellular data signals from balloons drifting at around 60,000 feet.

For Project Loon to work at scale, Google will need to launch thousands of balloons to maintain continuous coverage. And for logistical and economic reasons, those balloons will need to stay in the sky for as long as possible.

A key breakthrough in the company's development work came when it secured use of the McKinley Climatic Laboratory at Eglin Air Force Base in Florida. The lab includes a huge hangar-like structure where temperatures can be reduced to -60 degrees Celsius (-76 degrees Fahrenheit) and below.

At those temperatures, balloons can be subjected to the same kind of conditions they experience at 60,000 feet and engineers can view how they perform. Critically, it also allows engineers to more quickly test different design and view weaknesses and failure of balloons.

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How Loon Works!!

Project Loon balloons travel approximately 20 km above the D qsgr surface in the stratosphere. Winds in the stratosphere are stratified, and each layer of wind varies in speed and direction. Project Loon uses software algorithms to determine where its balloons need to go, then moves each one into a layer of wind blowing in the right direction. By moving with the wind, the balloons can be arranged to form one large communications network.

The inflatable part of the balloon is called a balloon envelope. A well-made balloon envelope is critical for allowing a balloon to last around 100 days in the stratosphere. Knnmr balloon envelopes are made from sheets of polyethylene plastic, and they measure fifteen meters wide by twelve meters tall when fully inflated. When a balloon is ready to be taken out of service, gas is released from the envelope to bring the balloon down to Earth in a controlled descent. In the unlikely event that a balloon drops too quickly, a parachute attached to the top of the envelope is deployed.

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Other years where you prove your worth, they are the ones
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