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NEWSLINE

TECHNOLOGICAL DISRUPTIONS AND THEIR TRANSFORMATIONAL IMPACT

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inside

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Editorial

Gearing up for the Olympics of the global ICT industry

With the year 2017 slowly veering towards the final month on the calendar, NASSCOM has stepped up activities on the NILF 2018 front – gearing up for what is India's largest and most well attended conclave. All roads in fact lead to Rome, with NASSCOM offices across India working as one mind to put together the mega conference. Speakers are finalized, and content gathered and prepared using some of the finest industry analysts and Think Tanks. Brainstorming sessions are held among NASSCOM member companies to ensure that only the most cutting-edge and relevant subjects make it to the NILF discussion chamber.

Interestingly, in 2018, NILF is set to be even bigger and all encompassing. This is because NASSCOM has tied up with the World Congress on Information Technology (WCIT), the Telangana government as well as the World Information Technology and Services Alliance (WITSA), to roll out the very first WCIT conclave in India. Therefore, NILF 2018 delegates this year will have the benefit of attending two conferences instead of one! WCIT 2018, which will run alongside NILF 2018 in Hyderabad, will create a mega tech show, of a kind unseen by audiences until now. Both conferences will focus on the Digital theme – 'Amplify Digital: Disrupt the Core' – providing delegates with enough and more of insight, learning and experiential knowledge on the subject.

In keeping with the attention that will be paid to Digital at NASSCOM's flagship conclave in 2018, Newsline brings you an in-depth cover story on 'Technological disruptions and their transformational impact'.

Based on White Papers released jointly by NASSCOM and Deloitte, the article takes up two key trends – Artificial Intelligence and Internet of Things (IoT) – that are driving the Digital wave globally. It also discusses how these high impact technologies are disrupting the existing environment, businesses, governments, and the lives of citizens.

In this issue of Newsline, we also discuss the segment of gaming, which has showcased robust growth owing to the massive jump in smart devices and smartphones the world over. Newsline deliberates on the momentum achieved by the gaming industry, especially the Indian gaming sector, which now ranks fifth globally and has positioned the country strongly in this arena. NASSCOM, which recently rolled out its 9th Game Developer Conference (NGDC) in Hyderabad, proved conclusively that India is emerging not only as a significant developer of games but also their consumer. On the sidelines of the conference, NASSCOM also acknowledged the achievements of Indian games development companies, to encourage the creation of gaming IP in India.

In the Policy section of Newsline, we share with you a significant development on the 'Net Neutrality front, where the Indian government, led by TRAI, has issued guidelines to Internet access Service Providers (ISPs) in India regarding the treatment of content on the Internet. It has ordered telecom service providers to look at all Internet traffic equally, avoiding interference and discrimination in the treatment of content, including practices like blocking, degrading, slowing down or granting preferential speeds, etc.

NASSCOM has always believed that 'Net Neutrality is core to the future of India's Digital economy and has been calling for unrestrained and unimpeded access to all lawful content and services subject to national regulations.

Finally, in this issue of Newsline, we bring you a close encounter with Thomas Friedman, global visionary and thought leader, who was in India a few weeks ago. Friedman interacted with seven start-ups from diverse fields of MedTech, EdTech, Gaming and AR/VR, AgriTech, Environmental Sustainability and FinTech – companies that are working to make a difference to millions of lives in India by addressing their pressing concerns and challenges.

Friedman used the NASSCOM platform to air his views on a host of issues, including the rise of fake news, globalization and other major forces shaping the world such as technological disruption.

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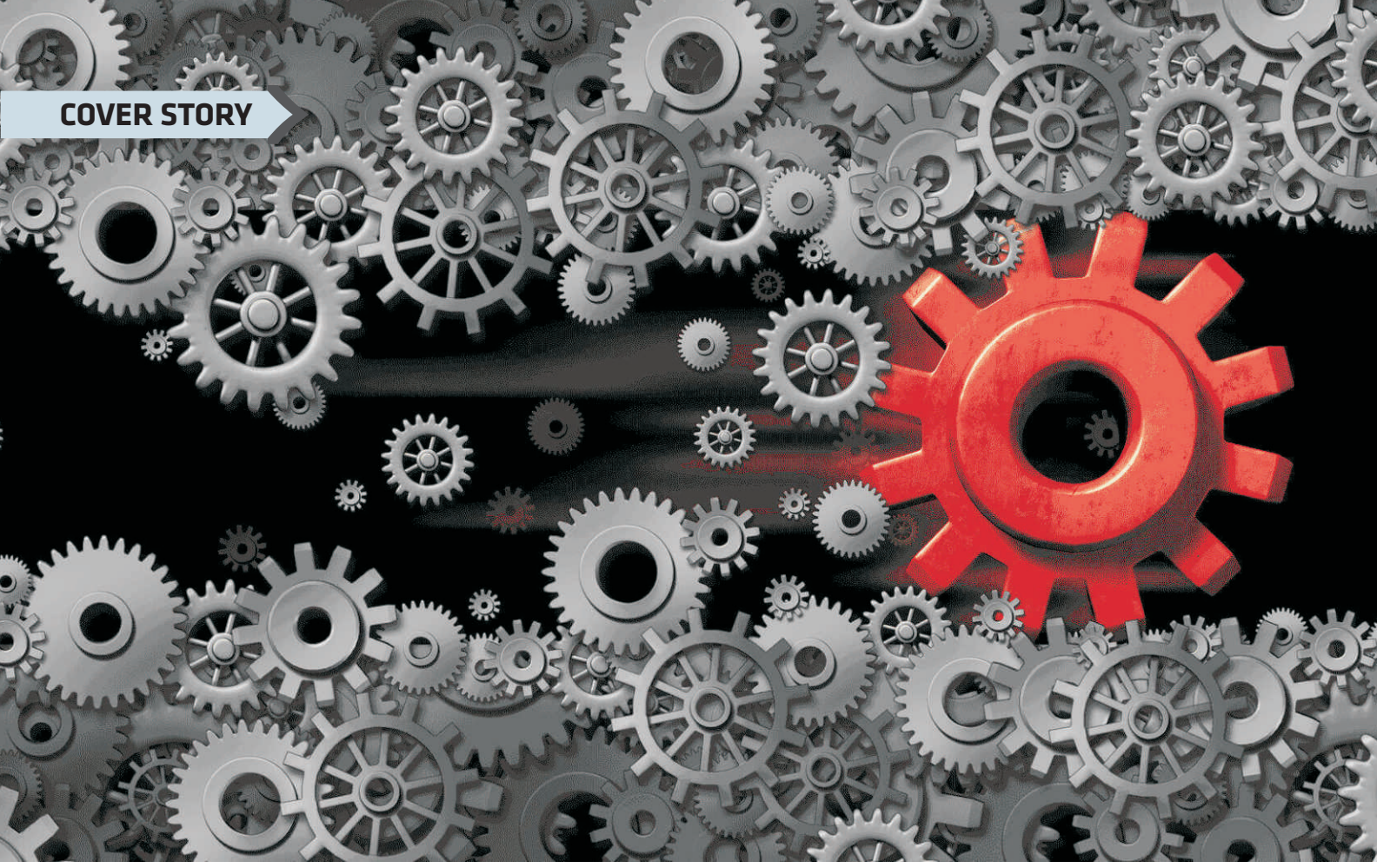


TECHNOLOGICAL DISRUPTIONS

and their transformational impact

The global tech and non-tech sectors are being driven by several trends that reflect the rapid progress being made by the Digital wave across the world. These high impact technologies are disrupting the existing environment, and creating high impact on businesses, governments and citizens.

NASSCOM, in partnership with leading global research and consultancy firms, has been constantly tracking these global trends, and sharing with member companies the business opportunities they are throwing up for the Indian IT industry. NASSCOM has also been helping the country's IT-BPM industry, including emerging companies and start-ups, to leverage the potential of these trends.

In a recent series of White Papers released in collaboration with Deloitte, NASSCOM has explored areas such as Artificial Intelligence (AI) and the Internet of Things (IoT) among a host of other disruptors which are changing the world. In Newsline this month, we talk in particular about AI and IoT, highlighting the benefits of these technologies and their road ahead.

AI, the next 'bold play

The Deloitte-NASSCOM White Paper describes AI as the theory and development of computer systems that are able to perform tasks which normally require human intelligence. These include visual perception, speech recognition, decision-making, and translation between languages.

According to the study, AI growth is being spurred by developments in the domain of 'deep learning'. From the time when the world first saw Eliza (a Natural Language Processing system simulating a psychotherapist), to now, when there are virtual assistants such as Facebook's M and SKT's home assistant Nugu, IBM's Watson (an AI platform for business) and Google's AlphaGo – AI has come a long way.

Catalyzed by an information explosion, availability and ubiquity of information and inexpensive software tools, as well as an exponential increase in computing power owning to new chipsets, AI is offering companies a new means of creating business value. It is doing so alongside its other cognitive technologies such as Speech Recognition, Natural Language Processing, Computer Vision, and Machine Learning.

The three main apps of AI are product, process and insight – which basically can be used to enhance products or services, automate internal processes or discover patterns and make predictions.

AI surges ahead

According to a new update to the Worldwide Semiannual Cognition, Artificial Intelligence Systems Spending Guide launched by International Data Corporation (IDC), the worldwide revenues for cognitive and Artificial Intelligence (AI) systems will reach USD 12.5 billion in 2017, an increase of 59.3 percent over 2016. This trend is expected to continue, owing to an increase in corporate investment in AI, which will achieve a Compound Annual Growth Rate (CAGR) of 54.4 percent through 2020 when revenues reach a projected USD 46 billion.

Key cognitive technologies and methodologies such as Machine Learning, Speech Recognition, Natural Language Processing, Computer Vision and Robotics are already seeing widespread adoption and drawing significant investments for diverse business functions.

While deploying AI technologies requires due diligence by organizations and extensive cost-benefit evaluation, and analysis of its processes, data, talent models and markets, it is proven that AI offers myriad benefits to users. It can, for instance, decrease cycle times leading to faster execution, improve accuracy by eliminating human error, offer flexibility, scalability and 24x7 availability, monitor, and record detailed data capture tasks, reduce operational costs, release capacity/FTE and improve productivity.

AI's applications and cognitive technologies are expected to restructure work and make it more efficient, perhaps restraining the growth of jobs in certain areas, but creating jobs in newer areas.

AI's array of cognitive technologies and what they are about

Machine Learning is the ability of computer systems to improve their performance by exposure to data without the need to follow explicitly programmed instructions. It is the process of automatically discovering patterns in data. Once discovered, the patterns can be used to make predictions.

Natural Language Processing is the ability of computers to work with text the way humans do – extracting meaning from text or even generating text that is readable, stylistically natural, and grammatically correct.

Speech Recognition is the ability of machines to automatically and accurately transcribe human speech. The technology has to contend with some of the same challenges as Natural Language Processing, in addition to the difficulties of coping with diverse accents, background noise, distinguishing between homophones, and the need to work at the speed of natural speech.

Computer Vision is the ability of computers to identify objects, scenes, and activities in images. Machine Vision, a related discipline, usually refers to vision applications in industrial automation, where computers recognize objects such as manufactured parts in a highly constrained factory environment.

Robotics involves integrating cognitive technologies such as Computer Vision and automated planning with tiny, high performance sensors, actuators, and cleverly designed hardware, to create a new generation of robots that can work alongside people and flexibly perform many different tasks in unpredictable environments.

BEST USE CASES

Machine learning applications have the potential to improve performance in nearly any activity that generates large amounts of data which needs to be analyzed and used for predictive models. It can be used in areas such as financial services around Fraud, Risk and KYC and AML, and in apps around sales forecasting, inventory management, oil and gas exploration, and public health.

Natural Language Processing applications often address relatively narrow domains such as analyzing customer feedback about a particular product or service, automating discovery in civil litigation or government investigations (e-discovery), and automating writing of formulaic stories on topics such as corporate earnings or sports.

Computer Vision applications include analyzing medical images to improve diagnosis, and treatment of diseases; face recognition, used by Facebook to automatically identify people in photographs; in security and surveillance to spot suspects; and in shopping – consumers can now use smartphones to photograph products and be presented with options for purchasing them.

IoT, the revolution in the making

The concept of Internet of Things (IoT) has gained significant traction over the last decade, with awareness and adoption rising due to the efforts of industry players, associations (such as IPSO alliance, IIC, OIC) as well as academia.

The IoT trend has been further catalyzed by the increase in the number of devices getting connected to the Internet, availability of low cost sensors, declining cost of connectivity, use of Big Data Analytics and cloud computing and greater consumer interest in IoT technologies owing to increased reliance on mobile devices.

According to Deloitte-NASSCOM research, IoT is poised for exponential growth globally, with the number of connected devices expected to increase by 5.5x – from 3.8 billion in 2014 to 20.8 billion. IoT revenue is expected to increase by more than 3x, growing from USD 0.9 trillion in 2014 to USD 3 trillion by 2020! Verticals such as Manufacturing, Automotive industries and Transportation and Logistics are projected to be the largest IoT revenue contributors.

IoT in India

Interestingly, India is expected to emerge as a hub for IoT solutions with revenues touching USD 9 billion in 2020, up from USD 1.3 billion in 2016, and a growth of 7x. The installed unit base of IoT devices meanwhile, is expected to rise to 1.9 billion (representing a growth of over 32x from current figures of 60 million) by 2020.

In India, it is the rise of the tech-savvy consumer, growing smartphone usage, and increased Internet penetration that are spurring the momentum of IoT adoption. In the area of consumer IoT however, cost of devices, and security and privacy concerns remain deterrents.

India's IoT eco-system is being shaped by over 120 players including Hardware Vendors, Application Vendors, Network Operators and System Integrators. Not

surprisingly, nearly 60- 65 percent of these players are start-ups!

Going forward, IoT adoption in India is projected to grow across industries. By 2020 for example, industries such as Utilities, Manufacturing, Automotive and Transportation & Logistics will see highest adoption levels in India. The Government of India has planned an investment worth USD 1 billion for 100 Smart Cities over the next five years, which will further enable IoT adoption across these verticals as well as others such as Retail, Healthcare and Agriculture.

Benefits of IoT

The stated benefits of IoT apps include:

Optimization of consumer products and business processes. IoT for instance, can help reduce costs by facilitating efficient product/asset usage across business processes.

Innovation in products/services is an outcome of IoT apps, which leads to differentiated products/services, improved operations and therefore better customer service.

Transformation around IoT revolves around the fact that it disrupts business models and takes value creation for industrial apps (especially manufacturing) to the next level.

The most critical element of Industry 4.0 (which alludes to the Digital transformation of processes and systems), IoT is expected to have high impact in the area of manufacturing. The vertical is expected to be transformed by connected technologies such as high-quality sensors, more reliable and powerful networks, high-performance computing, Robotics, Artificial Intelligence and cognitive technologies, and Augmented Reality.

Besides Manufacturing, IoT will have a significant impact on the global technology services industry – basically IT Services, Business Process Management (BPM) and Engineering, Research & Development (ER&D)

The IoT game plan the Indian market needs

In India, the industry and government need to take the following steps to help IoT market grow:

- Focus on developments across IoT technology, manpower skill-sets and business models, in order to build a scalable, conducive eco-system
- Deploy Government of India's proposed multi-dimensional approach (suggested in the draft IoT policy), to develop the IoT market in India by 2020
- Continue to build capabilities across technology areas of sensors (to adapt to rugged climate/ terrain in India) along with network infrastructure, standards and augmented intelligence and behavior
- Encourage various accelerators and incubators to support start-ups in building innovative IoT solutions
- Address current talent gaps in terms of cross-functional as well as specialized skill-sets
- Work collaboratively to ensure successful adoption of IoT in India.

BEST USE CASES

Manufacturing

- Stanley Black & Decker is using RFID tags with WiFi infrastructure to get more visibility to track real-time line productivity
- Airbus is using smart tools to perform manufacturing processes such as drilling, measuring, tightening, etc. leading to improvement in production efficiency, by regular monitoring of results

Automotive

- In BMW Connected cars are integrating vehicle-related services
- Michelin's Tires-as-a-service offering is allowing fleet managers to pay for tires on a kilometer-driven basis, thus saving costs

Agriculture

- Semios is using sensors to monitor insects and pests and schedule release of pesticides
- John Deere has installed sensors on farm equipment to assist farmers to manage fleet of tractors

Retail

- Disney is using RFID tags to provide access to a variety of services, and track them later
- Amazon WiFi has enabled Amazon Dash Button for consumables to flag low volumes

segments – which will witness increased opportunities around IoT solutions.

Challenges facing IoT

Despite the obvious benefits, the global march of IoT will face several challenges, that could impede the expansion of technology.

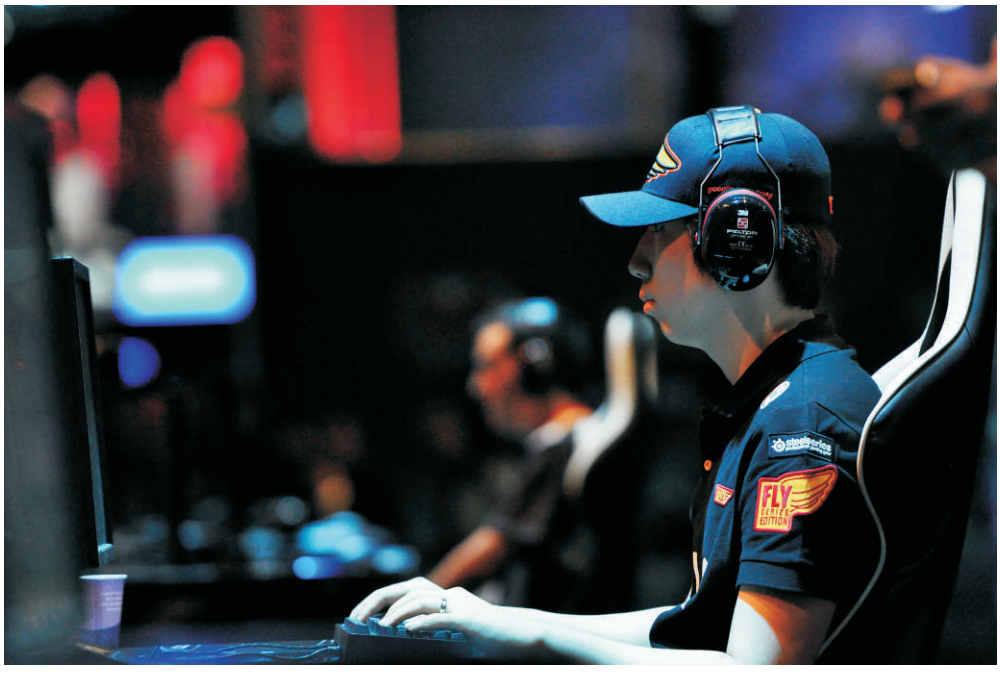
While on the technology side, the IoT revolution will face problems such as the lack of end-to-end encryption, high power consumption, lack of seamless interoperability and unreliable network connectivity, in the Consumer realm it will be about the privacy of consumer data, high price of IoT technology, lack of uniform security standards and absence of architecture and reference models.

Lack of standards in apps, fewer use cases and viable business models, issues around scalability, and lack of smooth data sharing among companies, will additionally cause difficulties.

Gearing up the Indian eco-system for IoT

The Indian IT-BPM industry led by NASSCOM has been working to deal with some of the challenges facing IoT. NASSCOM has been nurturing the IoT industry, especially start-ups in this space. It has been focusing on fostering an innovation eco-system, besides liaising with global associations to drive greater standardization in this domain. At the same time, NASSCOM has been encouraging member companies to evolve business models to increase the usability of IoT based systems and apps, improve technology and devices, upgrade legacy systems and ensure the integrity of data.

Catalyzing the growth of the Indian gaming industry



The global gaming industry is moving forward at a robust rate, driven in large part by the proliferation of smartphones and devices and improving Internet infrastructure, especially in Asian and other developing markets.

According to the Global Games Market report released by Newzoo, a leading provider of market intelligence on global games, e-sports and the mobile sectors, based on strong momentum, "the gaming industry is expected to generate USD 108.9 billion in games revenues globally in 2017". The study shows that:

- The market will grow at 7.8 percent over 2016
- Digital game revenues will account for USD 94.4 billion or 87 percent of the global market
- Mobile will remain the most lucrative segment, with smartphone and tablet gaming growing at 19 percent year-on-year to USD 46.1 billion, (market share of 42 percent)
- In 2020, mobile gaming will represent just more than half of the total games market, with PC and console game markets generating USD 29.4 billion and USD 33.5 billion in 2017, respectively
- Asia-Pacific will be the largest region, with China expected to generate USD 27.5 billion, or one-quarter of all revenues in 2017
- The global market is expected to grow at a CAGR of 6.2 percent toward 2020 to reach USD 128.5 billion

India's gaming industry comes of age

Interestingly, it was in 2016 that the Indian gaming industry joined the ranks of the top global gaming sectors. In Q2, it ranked fifth globally in terms of game downloads, positioning India as a significant gaming market and promising a bright future for gaming companies, particularly in the mobile category.

India's overall gaming industry meanwhile, was valued at USD 543 million in 2016 (with mobile gaming expected to cross USD 400 million by 2022). The gaming industry was projected to grow to USD 801 million by 2022 (Source: the CII-TechSci Research report).

The study additionally indicated that the mobile gamers in India would grow substantially from 198 million in 2015 to 628 million by 2020, and further to 1.16 billion by 2030.

NASSCOM, too, in partnership with App Annie (a US-based app market data and insights company) and professional services firm Deloitte, came out with two White Papers in 2016 on the Mobile Gaming and Applied Games sectors. These reports revealed the following:

- The NASSCOM-App Annie report for instance, showed that in 2016, India's share in the global mobile gaming market (worth USD 37 billion) was USD 523 million. At 1.6 percent market share, India then clearly had large headroom to grow.
- NASSCOM's research with Deloitte on 'Applied Games in India' talked about how the Indian market for applied games was expected to grow at a compound annual growth rate of 14-16 percent, from USD 40 million in 2016, to USD 80 million in 2021. Currently, across India there are 40 developers of Applied Games (Independent studios, IT firms venturing into Applied Games and e-learning companies), that operated out of Bengaluru, Hyderabad, Mumbai and NCR. The report discussed the growth of applied games with a focus on traditional learning, business, marketing or social experiences, that were predominantly used for simulation-based training (in the fields of aviation and military).

Featuring talks, panels, super-pitches, tutorials and more, NGDC 2017 is shaping up to become our biggest and most important conference. With an incredible line-up of international and regional speakers across eight tracks, NGDC 2017 continues to be the region's go-to games conference for both regional developers and international visitors.

Rajesh Rao, Chairman, NASSCOM Gaming Forum

Exploring the potential of gaming and games developers

Recognizing the potential opportunities being opened up for gaming players both domestically and overseas owing to a healthy market movement, NASSCOM has been hosting its Game Developer Conference (NGDC), a conclave that brings together all the stakeholders of the gaming industry.

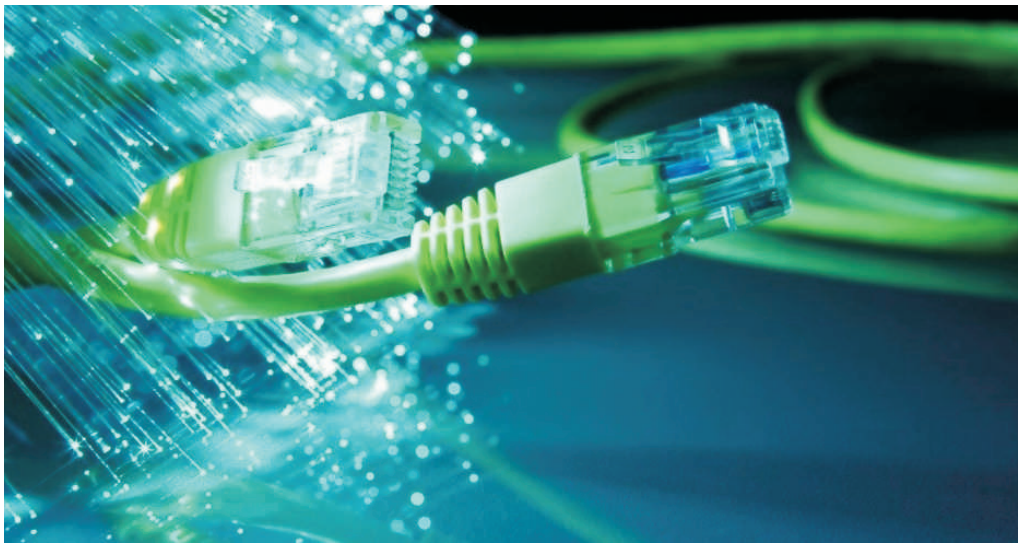
This time around, the 9th Conclave was held in Hyderabad on November 8-11, 2017 and brought together over 3,000 delegates as well as international and regional speakers. NGDC 2017 was dedicated to the advancement of interactive entertainment through talks, panels, super-pitches, tutorials and more. On the sidelines of the conference, NASSCOM also acknowledged the achievements of Indian games development companies, to encourage the creation of gaming IP in India.

NGDC 2017 also partnered with Unity Technologies to bring its developer conference 'Unite' to India for the first time. That meet also ran parallel to NGDC and hosted training workshops as part of its agenda. Unite India was a gathering of regional artists, developers, publishers, training providers and enthusiasts interested in Unity, a platform for creating video games, simulations and other interactive and VR/AR content.

In an endeavour to encourage upcoming gaming entrepreneurs in India, NGDC 2017 also teamed up with India's foremost crowd funding platform Catapooolt. The partnership resulted in 'NGDC Catapooolt Game Changers', a crowd funding powered hunt, that aimed to create a larger impact in the gaming eco-system and provide equal opportunities to game developers in India. The initiative provided a platform for fifteen contestants to exhibit their games on the show floor, as well as pitch them to an audience.

The NGDC incidentally featured a strong line-up of speakers who included Lawrence Valenti of King; Amit Hardi, CEO of India's Nukebox Studios; Yuli Zhao, VP, Corporate Development of Yoozoo Games, Brett Bibby, VP of Engineering at Unity Technologies, Mark Skaggs, Chirag Ramchandani of Moonfrog, Paul Collins of Sticksports, Ben Smedstad of Forerunner, and games designer Mario Rizzo, among others.7

TRAI issues guidelines supporting on 'Net Neutrality



NASSCOM has been consistently making recommendations to the Indian government regarding the issue of 'Net Neutrality' – which is essentially about ensuring that networks which access the Internet remain neutral to the content being accessed through them, and not restrict, block, speed up, guide, hinder or modify the choice of the customer. 'Net Neutrality is about making it imperative for networks to remain neutral about all content, not preferring one over the other and leaving the choice of accessing content over the 'Net to the customer who is paying for the data.

As a result of industry efforts and its own growing understanding of 'Net Neutrality, TRAI has recently issued guidelines to Internet Service Providers (ISPs) in the country, which state that:

1. Discriminatory treatment of content is prohibited and that telecom service providers need to treat all Internet traffic equally, without any regard to the type, origin or destination of the content or the means of its transmission. Internet access Service Providers, TRAI has added, should be governed by a principle that restricts any form of discrimination or interference in the treatment of content, including practices like blocking, degrading, slowing down or granting preferential speeds or treatment to any content.

2. Content Delivery Networks (CDN) will remain out of the regulation. CDNs enable telecom to deliver content within their networks without going through the public Internet in order to create a content eco-system to drive user traction. Telecom firms

> **A Committee to review and decide on network management violations is unnecessarily bureaucratic, and not in keeping with light touch regulation or the ease-of-doing business. The DoT is already well positioned to investigate any violation of license conditions and it already has all the necessary enforcement mechanisms in place, hence such a heavy handed approach is not necessary, as is now being proposed by TRAI.**
>
> Rajan Mathews, Director, COAI

> **The overarching thought that we had was that for a country like India, the Internet is an extremely important platform. Internet today is a great platform for innovation, start-ups, banking, and government applications such as health, telemedicine, education, and agriculture. It is going to become even more important in view of the Internet of Things and a huge number of applications. Therefore, it is important that this platform be kept open and free and not cannibalized.**
>
> R.S. Sharma, Chairman, TRAI

such as Airtel, Reliance Jio have such data networks in place.

3. Internet of Things (IoT), as a class of services, will not be excluded from the scope of the restriction on non-discriminatory treatment. However, critical IoT services, which may be identified by the Department of Telecom as specialized services which could include telemedicine, B2B services will be automatically excluded. Specialized services, other than Internet access services, that are optimized for specific content, protocols or user equipment, where optimization is necessary to meet specific quality of service requirements, will be excluded from the principle of discriminatory treatment.

4. A watchdog along the lines of BARC India be created for enforcing Net Neutrality and there be reasonable measures of traffic management, in line with its guidelines. TRAI has urged the government to establish a multi-stakeholder body, with a framework for a collaborative mechanism among the stakeholders, for monitoring and enforcing the 'Net Neutrality rules.

5. International treaties, court orders, government order on blocking certain sites are exempt from these guidelines.

This move by TRAI, being hailed as a victory for Internet users in India, which ensures that they can surf freely without fear of discrimination from Telecom Service Providers (TSPS) reflects the Indian government's belief in the power of an open, accessible and free Internet, which nobody owns and is everyone's property.

TRAI has also called for an amendment in licensing conditions, with the caveat that violations of the 'Net Neutrality principle will be punishable by penalties that apply to breach of licensing parameters.

TRAI's recommendations will now be vetted by the Department of Telecommunications (DoT) and after its approval, changes with effect to the license agreements of telecom firms will be made to accommodate 'Net Neutrality.

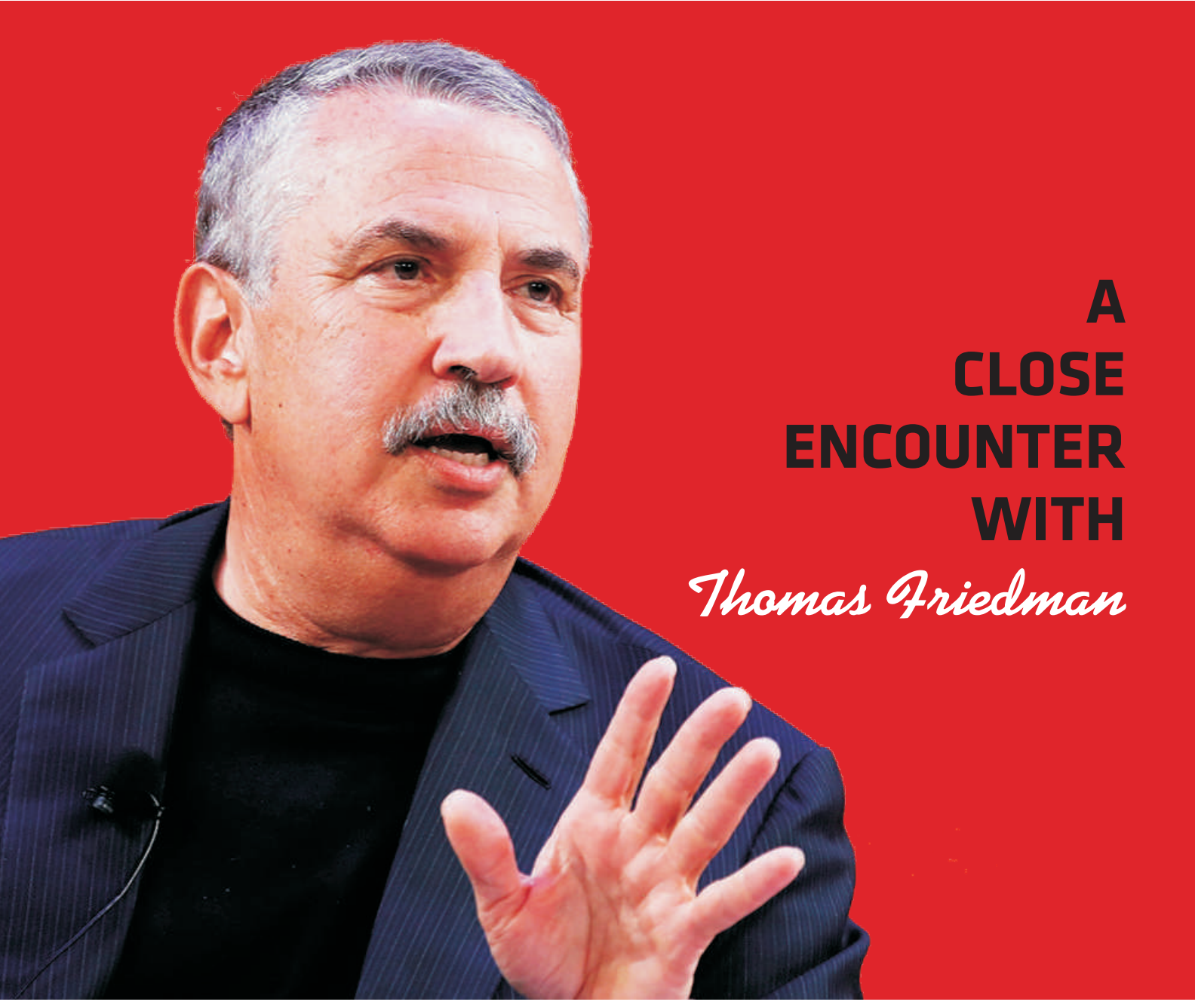
NASSCOM meanwhile, has welcomed TRAI's commitment to preserve the democracy of the Internet and user rights to the freedom of speech and expression.

According to NASSCOM, 'Net Neutrality is core to the future of India's Digital economy. The recommendations, NASSCOM has said, are completely consistent with the basic construct of its own recommendations calling for unrestrained and unimpeded access to all lawful content and services subject to national regulations related to security, privacy and prevailing service providers leveraging their exclusive control over access infrastructure to speed up, slow down or selectively enable or prevent access to certain content.

Despite the positives, there is some concern however, around TRAI's suggestions on the Internet of Things (IoT), a class of services, that have not been excluded from the scope of the restriction on non-discriminatory treatment. The telecom lobby – Cellular Operators Association of India (COAI) – has shared that this is a matter that will need a closer look.

Interestingly, the TRAI's recommendations upholding the principles of an open Internet have come at a time when the US is planning to repeal and rethink its existing rules on 'Net Neutrality! This will allow telecom firms in the US to restrict broadband speeds and favor their own services.

The US regulatory agency, the Federal Communications Commission, led by Republican Ajit Pai, will vote at a December 14, 2017 meeting on a plan to repeal rules on 'Net Neutrality. Existing rules in the US bar Internet providers from blocking or slowing down access to content or charging consumers more for a certain type of content.



A CLOSE ENCOUNTER WITH *Thomas Friedman*

> **Managing perception versus generating substance is a constant battle that has to be managed on social media. Until some time back, platform providers were reluctant to take responsibility for the content generated on their platforms and a free-for-all regime ensnared millions in an unregulated environment. The way things have panned out and taken a vicious turn, the need to manage content has become critical**
>
> – Thomas Friedman

Friedman interacts with seven tech start-ups and reflects on whether the world is still flat.

Thomas Friedman travels about 200 days a year of which a third of his time is spent outside of the US. After his whistle-stop visit to India, he was scheduled to go to Riyadh.

NASSCOM hosted this visionary and thought leader and got him to interact quite extensively with seven start-ups from diverse fields of MedTech, EdTech, Gaming & AR/VR, AgriTech, Environmental Sustainability and FinTech.

The start-ups represented what is arguably the second wave of tech entrepreneurship in India. In the first, it was common to see the founders of companies replicate successful American ideas and adapt them to Indian conditions. Today, companies are looking at the bigger picture. A whole new breed of start-ups is coming up that are wanting to solve India's problems through advanced technologies.

The seven start-ups that interacted extensively with the celebrated writer and New York Times (NYT) Columnist were part of this new genre. They exhibited a deep understanding of the problems that they had attempted to overcome as well as the challenges that lay ahead. The companies were confident of scaling up, something that had always been a pet peeve of many customers in the past.

Friedman said he was very pleased to be in India and interact with young people who were making a huge difference to millions of lives by addressing their most pressing needs.
Incidentally, he had held a similar interaction with NASSCOM start-ups four years ago. From that time, he felt that things had changed quite rapidly and the eco-system was approaching its own hockey stick moment. While Bengaluru still remained the most popular destination for start-ups, other regions (especially the NCR) were catching up. The sector, for one, was fast maturing as B2B solutions had started to gain prominence and make their presence felt. Moreover, diversification was evident now especially in the areas of FinTech, Healthcare and EdTech.

Losing balance and perspective in the new world

At the event, Thomas Friedman, in his inimitable style likened tech giants such as Google and Facebook to "Giant Arousal Platforms". These companies, he said only cared about keeping their users perpetually in a heightened state of arousal through the incessant flow of information. In such a world it was very easy to lose balance and perspective and only focus on issues that were "trending", he said.

In conversation with the illustrious guest was also the President of NASSCOM, R. Chandrashekhar who had something very interesting to share. All powerful and ubiquitous technology, he said, was unbiased about who it empowered –be it citizens or their governments. However, increasingly the onus was shifting to governments, leaving them to decide whether technology needed to be used to empower citizens or to make themselves more powerful. The role of vigilantes was common among many governments across the world, Chandrasekhar pointed out.

The rise of fake news and myopic views

In 2016, the Digital edition of NYT witnessed a spurt in circulation – up by as much as 300,000 – a reflection of how news was being consumed. In an environment where there was a surfeit of information, fake news remained a huge concern and could be most damaging to how opinions were formed, Friedman said.

In the US today, journalists were tempted to write about President Trump all the time because he was always trending on social media, Friedman added. Journalists giving into this temptation frequently, were ignoring the rest of the world. Friedman was very clear that he did not wish to fall into this trap, which is why he thought nothing of taking 18-hour flights to the farthest corners of the world where he could experience new ideas and learning. Friedman stated that if one wrote only for visibility and not substance, then readers would harbor myopic views about the world.

Managing perception versus generating substance was a constant battle that had to be managed on social media, Friedman commented. Until some time back, platform providers were reluctant to take responsibility for the content generated on their platforms and a free-for-all regime ensnared millions in an unregulated environment, he pointed out. The way things had panned out and taken a vicious turn, the need to manage content had become critical. Friedman shared that it was his personal choice to stay away from some of the popular social media platforms. He was aghast that even public figures were indulging in spats on social media and making situations messy. The phone he said, was like an MRI machine which could get into the heads of people to know what was going on inside. Flip it, and the phone could become a global megaphone. He quoted the instance of the 30-second video clip of a white policeman beating up a black kid that had gone viral. There was danger in this kind of selective reporting, Friedman said. In such situations, viewers did not get complete information about the incident, and formed myopic opinions based on limited footage. This he said, led to dangerous consequences.

In Friedman's view, owing to the fact that giant-sized arousal platforms were

ubiquitous, it was imperative to disconnect periodically, to gather a more balanced perspective on issues. One had to reflect on human actions that needed to be incentivized and those that had to be dis-incentivized, strictly.

From globalization to the major forces now shaping the world

Back in 2004, Friedman had written the bestseller, "The World is Flat", which became instantly popular and gained a huge readership worldwide. In that book he had said that globalization, a powerful idea, was making the world flat.

In 2017 however, with a wave of protectionism doing the rounds, the sheen of globalization seemed to be fading, though it was far from dead, Friedman added. As a case in point, he mentioned Brexit and its outcome.

In his latest book, "Thank You for Being Late", Friedman has talked about three major forces that are reshaping the world: Market, Mother Nature and Moore's Law. "The computing power of microchips is doubling every two years and that has been the trend for the last 52 years. This isn't likely to go away anytime soon. It's an incredibly fast-paced world and those who get derailed will not be able to get back on their feet so easily. The sheer speed of it all can be overwhelming. Emotions run high, accentuated by Reach Algorithms (selective) which manifest in synthetic opinions being formed. There are huge economic consequences to this", Friedman has said in his book.

In his opinion, in comparison, print media is static. The adverse impact of fake news is increasingly being felt now, even though modern day legends like Zuckerberg missed its ill effects in the beginning. Only when 128 million Americans were impacted did he truly fathom the malaise. Is this making the world less flat, Friedman asked.

The power of disruption

Disruption reared its head in 2007, according to Friedman. In 2007 Steve Jobs launched iPhone, Facebook opened its doors to the world at large, Twitter became an independent platform, Hadoop was born, VMWare went public, Kindle, IBM Watson, Airbnb all came to the forefront, the cost of genome sequencing collapsed, and Flipkart started operations, to name a few. However, the world seemed to have missed it, despite so much happening, possibly because there was a meltdown and dislocation in 2008 and everything froze.

Today, the "Cloud" has brought on a different kind of dislocation, Friedman said. He didn't favor the term Cloud so much, referring to it instead as "Supernova", which had driven change of cataclysmic proportions. In his view, in this new age:

- One individual had the power to break the world and collectively, everyone now had the power to prevent such a thing from happening. People were a step closer to being God-like!
- Machines were capable of acquiring all five human senses
- The power of information flow was increasing exponentially
- Politics and geo-politics, the workplace, ethics and the community had been re-shaped beyond recognition

While in the past, humans had created great civilizations by the side of rivers, today, Amazon.com was the world's most powerful marketplace. "Objects seen in the side-view mirror in cars were closer than they appeared. Something similar could be said of the future today – it's closer than we think", Friedman said.

All powerful and ubiquitous technology is unbiased about who it empowers – citizens or their governments. However, increasingly the onus is shifting to governments, leaving them to decide whether technology needed to be used to empower citizens or to make themselves more powerful.

R. Chandrashekhar,
President, NASSCOM

WCIT 2018 - NILF 2018 to roll out as one mega ICT event

WCIT2018 to make its debut in India alongside NILF 2018 in Hyderabad

Providing the Indian IT-BPM industry an exposure to global events, including exhibitions and conclaves, has remained an important part of NASSCOM's agenda. Not only is the chamber of commerce constantly rolling out conferences targeted at different segments of the IT-BPM sector, it is also looking for opportunities to partner with international bodies, to jointly hold and host strategic events.

It is with this intent that NASSCOM has decided to tie up with the World Congress on Information Technology (WCIT), the Telangana government as well as the World Information Technology and Services Alliance (WITSA), to roll out the very first WCIT conclave in India. To be held in the City of Pearls, Hyderabad, the global conference will run parallel to NASSCOM's India Leadership Forum (NILF) in February, 2018. Together the two conclaves will make for a mega tech show, providing unparalleled experiences to attendees.

The Telangana government, which is co-hosting both the conferences, will initially pledge USD 1million for the preparation of the WCIT meet and the creation of the infrastructure. WCIT 2018 and NILF 2018 incidentally, will coincide with the completion of India's largest incubation facility – T-Hub –in Hyderabad as well as the launch of 4G technology in the state of Telangana.

> **2018 marks not only the debut of WCIT in India, but for the first time we are holding an event of NILF's global scale in Hyderabad. After hosting the Global Entrepreneurship Summit, we are excited to encourage Hyderabad's forward-looking policies and its position as an emerging Silicon Valley of India by bringing NILF-WCIT to the city.**
>
> C.P. Gurnani, CEO and
> Managing Director, CEO & Managing Director, Tech Mahindra

> **When it was held in Kuala Lumpur in 2008, WCIT had led to an investment of more than USD 2 billion and creation of 20,000 jobs.**
>
> R. Chandrasekhar, President NASSCOM

The theme of both conferences – 'Amplify Digital: Disrupt the Core' – will see discussions around the latest trends, technologies, and use cases linked with building a Digital future.

WCIT 2018 and NILF 2018 are expected to draw over 5,000 delegates, bring investments into the state of Telangana, create more jobs, and boost brand Hyderabad. The attendees will include CEOs of Fortune 500 organizations, CXOs and ministerial-level participants.

NASSCOM in fact, hosted a meeting of the WCIT Core Committee in Hyderabad in November, 2017, as a precursor to the mega WCIT 2018 and NILF 2018 conclaves in February, 2018.

A similar event – a precursor to WCIT 2018 – was also held in Colombo, Sri Lanka by NASSCOM, in partnership with the Sri Lanka Association of Software and Service Companies (SLASSCOM). As part of this event, NASSCOM hosted a 20-member Roundtable in Colombo, which was attended by IT industry leaders from India and Sri Lanka.

WCIT's Core Committee members, the NASSCOM and SLASSCOM teams and IT sector representatives discussed the agenda and priorities of the upcoming events. Present at both the Hyderabad and Colombo meetings were C.P. Gurnani, CEO and Managing Director, CEO & Managing Director, Tech Mahindra and WCIT Chair and B.V.R. Mohan Reddy, Founder and Executive Chairman, Cyient.

The meetings were a part of NASSCOM's Amplify Digital Series of events, which are being organized with select CXOs to discuss the Digital revolution and how it is reshaping the world, particularly governments, businesses and society. NASSCOM's Amplify Digital initiative aims to encourage a Digital core in India Inc. – an enterprise-wide transformation that rethinks the core across people, processes, and technology.

The Olympics of the global ICT industry

- First held in 1978 by WITSA (World Information Technology & Services Alliances), the World Congress on Information Technology (WCIT) has become a premier international ICT forum
- Bringing together visionaries, captains of industry, government leaders and academics, the 22nd edition of WCIT will be staged in India for the first time. It will move from Brazil to Taiwan to India
- The 26th India Leadership Forum, NASSCOM's flagship platform, will be a Limited Edition event – a melting pot for ideas, innovation, strategy, business and alongside WCIT 2018 will create an unparalleled experience for attendees
- It will feature three days of talks, showcases, networking, and connects and create an immersive experience for delegate that combines Business + Technology + Leadership

And quietly rolls out Q2

CLSA has come out with its IT services sector outlook research for Q2 of FY 18.

> **Hiring remained weak primarily due to automation. While TCS saw the strongest hiring during the quarter, headcount dropped at Infosys and TechMahindra's IT arm as more work was automated. Hiring grounded to a halt at Cognizant.**

CLSA, an institutional brokerage and investment group, which offers global institutional investors and leading corporations insights, superior execution and access to capital, has come out with its Analyst report on IT performance of India's leading IT-BPM players in Q2 of FY18. For the purpose of the study, CLSA has examined the revenues of Infosys, Wipro, HCL Technologies, TechMahindra, Accenture, and TCS, among others.

According to this IT services sector outlook research, the quarter saw a continued slide in organic growth rates across these leading Indian IT firms. Their common problem areas were the US market, and the Banking and Retail verticals, with in-sourcing a likely common reason for the decline.

The CLSA report has indicated that there was a USD 322 million revenue addition in the September quarter, while Infrastructure Management Services (IMS) growth was in line with the rest of the business.

Interestingly, growth in Europe outpaced the US in the September 2017 quarter. The US growth slowed down to five percent YoY across the sector.

Deal wins too saw a marked improvement at TCS (Insurance), Infosys (new deals) and HCL (applications). **Growth was led by Energy, Healthcare, Insurance and Europe and was softer in Banking, Retail, India and the US.**

Slowdown in hiring in Q2

Hiring, meanwhile, further weakened across the board, decreasing to four percent YoY. Hiring remained weak primarily due to automation. While TCS saw the strongest hiring during the quarter, headcount dropped at Infosys and TechMahindra's IT arm as more work was automated. Hiring grounded to a halt at Cognizant.

YoY, however, the headcount rose by 3.5 percent, led by TCS and HCL Technologies. The hiring slowdown was most visible in Infosys, with Wipro and TechM also witnessing a slowdown in hiring.

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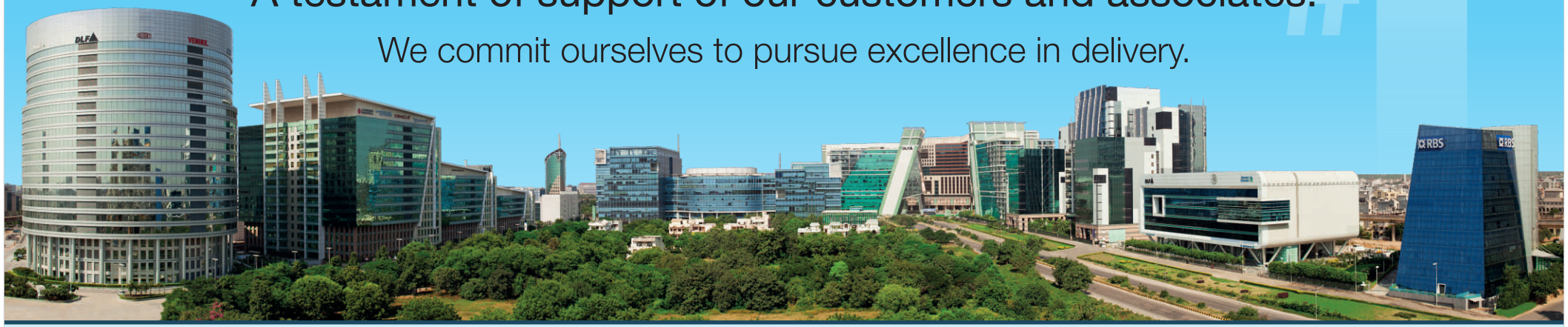

Other Awards & Certifications

Smartest Building of India
DLF Epitome (Bldg#5), Gurgaon
The Times of India & Honeywell
2015-16

LEED GOLD Certification
14 DLF Office Buildings in Gurgaon
US Green Building Council
2014-15

Sword of Honour & 5 Star Rating
DLF Offices, Gurgaon
British Safety Council
2014-15

Best Commercial Project in NCR
DLF iQ (Bldg #14), Gurgaon
CNBC Awaaz Real Estate Awards
2013-14

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