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INDIA'S TECH START-UP ECO-SYSTEM: RISING AND SHINING

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Editorial

Focusing on the IT-BPM industry's start-up eco-system

Over the past few weeks, NASSCOM has maintained its focus on tech start-ups, a growing community within the IT-BPM industry, that is gradually stepping up its revenue contribution to the sector. The innovation brigade of India – the tech start-ups – led primarily by software product developers, has enabled the nation to rank among other top start-up countries in the world such as USA, UK, China and Israel.

In this issue of Newsline, we share with you the factors that have enabled the rampant growth of the Indian tech start-up eco-system, including the availability of funding, the rise of Incubators/Accelerators as well as the emergence of B2B companies targeted at specific verticals, which have been mopping up a significant share of the investments apart from Fin-tech and Health-tech companies.

We also have for you a report on the Emerge 50 awards, which NASSCOM has instituted to recognize the most innovative 50 players among start-ups and emerging (SME) companies and the special work they are doing to differentiate themselves. NASSCOM recently celebrated the performances of the 50 Emerge winners on the sidelines of its Product Conclave and we offer you a quick look at the players that made it to the League of 10.

In yet another article Newsline brings you an analysis by McKinsey Global Institute (MGI) on how Automation will impact at least 30 percent of the work in all occupations as well as its myriad benefits. The article also talks about whether Automation will kill jobs, even as it changes the world of work. There is of course an action plan offered to Business Leaders, Policy Makers and Workers on how they can ready themselves for Automation.

Do share with us your feedback on Newsline and let us know the specific areas that you would like us to focus on.

Sangeeta Gupta
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INDIA'S TECH START-UP ECO-SYSTEM

Rising and Shining

*I*n the last decade or so, India has built up a vibrant and extremely active start-up ecosystem, with innovative organizations getting born every day.

Within the tech sector too, the growth of start-ups has been steady, and today, the number of organizations in this space is set to cross 5,000. In 2017 alone, there were more than 800 companies that entered the fray, placing India among three other leading start-up nations – the UK, Israel and China – who are vying to take the top spot after the USA.

The statistics for the last ten years further underline the progress that has been made by India's tech start-ups and the success achieved by many.

Take for instance companies such as Byju, Freshdesk, Mobikwik, and Swiggy, which have emerged as leaders within the segments where they play. India incidentally has also given birth to more than 10 Unicorns, with over USD1 billion in valuation. These include companies such as Flipkart, Zomato, Paytm and Ola that have virtually become household names, though predominantly in the country's Tier 1 and 2 cities.

The funding factor

Among the key reasons for this exciting and sustained growth of the tech start-up ecosystem is the issue of funding, which to begin with, was a significant challenge for companies. In the absence of Venture

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Today, there are over 190 active Incubators/Accelerators within the ecosystem, that have been growing at over 35 percent since 2016.
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Capitalists and other investors and promoters, start-ups with great ideas were unable to get off the ground. The lack of success stories on the flip side also deterred the big funding organizations from jumping in.

In 2017, however, as the Indian start-up landscape looks robust and credible, the investors have become more confident and are lining up. The statistics below support this view.

- Investors pumped in more than USD 9.8 billion in India in H1 of 2017, putting in their money behind early/growth and expansion stage start-ups instead of just seed stage companies
- While a sizeable portion of the funding was garnered by the Unicorns (USD 4.6 billion led by Flipkart and Paytm), investors also backed more seasoned start-ups. Almost one-third of the funding, for instance, went to maturing start-ups, incepted before 2012
- Start-ups set up in the last five years accounted for the remaining USD 1.8 billion in funding values
- Foreign Investors remained an important part of the funding line-up, which was headed by VCs. Among the Foreign Investors, it was non-US firms that accounted for over 50 percent of the Foreign funding (in H1 of 2017)

The rise of the Incubator/Accelerator ecosystem has additionally played a part in driving the momentum of the tech start-up revolution. Today, there are over 190 active

Incubators/Accelerators within the ecosystem, that have been growing at over 35 percent since 2016.

Academic incubators interestingly, account for more than 45 percent of the Incubators/Accelerators ecosystem, pushing more students to take the entrepreneurship path.

Corporate Incubators are present as well and include Netapp which launched its first accelerator in Bengaluru in 2017 and Apple which also announced its first App Accelerator in India's Silicon City.

B2B start-ups build up muscle

While the start-up revolution began with B2C e-commerce companies, almost 45 percent of new start-ups that have come up in 2017 have been focused on the B2B space. This year, these companies have also witnessed a 15 percent hike in the funding share for 2017.

Vertical focus

It is quite clear from recent trends that the Hi-tech sector leads when it comes to start-ups. The segment has the maximum number of B2B start-ups (85 percent B2B as compared to 31 percent B2C) and is followed by the Fin-tech vertical that has around 49 percent of B2B start-ups.

Venture capitalists too, it would appear, are gravitating towards the Fin-tech, Hi-tech and Health-tech verticals. While the start-up base and funding has expanded in the Fin-

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Incidentally, the percentage of women entrepreneurs has increased since 2015. Currently there are more than 550 female entrepreneurs (more than 11 percent of the total) in the eco-system.
”

tech and its other specialized sub-verticals, funding values have grown by a significant 38 percent in Hi-Tech in H1 of 2017. Health-tech too has seen funding value rise by 2.2x, owing to start-ups in the e-Diagnostic, Anomaly Detection and aggregators/E-commerce domains.

Incidentally, the 'Social' realm has been a draw for some start-ups that are leveraging hi-tech to deliver innovative and inclusive solutions in the areas of waste management, pollution management, sanitation, education and healthcare in villages, micro-banking, agri-lending, crime prevention, women's safety, etc. At least 350 companies are active in this arena, with almost one-third of them operational in the Tier 2/3 towns and cities, where they are dealing with real-world problems at the grassroots levels.

Going Digital

Digital is the other domain where a large number of new Advanced Technology start-ups are now focused and have set their sights. The statistics tell the story.

- There are more than 700 start-ups today that are focused on Analytics, ML/AI, IoT, AR/VR, Robotics, 3D Printing and Blockchain
- These companies have maintained a 30 percent CAGR since 2012
- In H1 of 2017, Advanced Technology start-ups drew more than an impressive 20 percent of the overall funding. The key segments were Analytics and Machine Learning/Artificial Intelligence L/AI start-ups
- The number of Cloud start-ups has also increased to over 950, with a funding share of over 15 percent in H1 of 2017

The leadership leverage

Besides market dynamics, the altering landscape, and greater funding opportunities, there is another important reason why start-ups are succeeding. And this is leadership. Start-ups are typically led by people who have decided to take this route after years of having worked in premier organizations and accumulated a wealth of experience, skill-sets and management expertise. The Founders of these companies are more often

than not people who not only have exposure to the Indian market but have also worked in global firms located in other geographies. Around 45 percent of Advanced tech start-up Founders have in fact worked in other companies before launching their own.

Today, the median age of Founders has gone up to 32 from 31 years in 2016. In the case of Advanced tech start-ups, the median age hovers around 33 years.

Almost 50 percent of Founders of tech firms and 80 percent of Founders in Advanced tech start-ups come from an engineering background.

Incidentally, the percentage of women entrepreneurs has increased since 2015. Currently there are more than 550 female entrepreneurs (more than 11 percent of the total) in the eco-system.

Another sign that the start-up eco-system is maturing and coming of age is the growing number of M&As in this segment. In H1 of 2017 itself around 50 acquisitions were executed. Besides Indian companies, even global corporates showed interest in taking over successful start-ups or those that had distinguished themselves in the market with their niche skills and focus and innovation.

The number of acquisitions made by Indian organizations in fact came down in 2017 as compared to 2016. Even among Indian Corporates, the bulk of acquisitions have been led by non-IT corporates.

Challenges ahead

Owing to recessive global conditions, economic uncertainty prevailing in the Indian and international markets and internal pulls and pressures, the mortality rate for start-ups remains high – at around 20-25 percent. Many companies die within 1.6-1.9 years of being set up. Lack of funding, failure to scale and a solid game plan are usually the culprits. In some instance, despite having raised funding, the companies failed because they did not have enough support and mentorship.

B2B start-ups meanwhile appear to be more stable as compared to B2C start-ups, and have seen a 25 percent reduction in mortality since 2016.

BPM industry embracing Digital to improve global competitiveness



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Digital has become a new revenue opportunity for the sector with service providers helping customers design and set up their Centers of Excellence (CoEs) for RPA (Robotic Process Automation).
 ”

The Business Process Management industry in India is undergoing a transformation, in sync with the Digital wave that has assumed significant proportions.

The industry itself has reached a considerable size and appears to be on target to achieve revenues of USD 55 billion by 2025, up from the FY 17 turnover of USD 29.8 billion.

The BPM sector has demonstrated the following trends over the last year. The industry:

- Has maintained steady growth, continuing to reinvent itself
- Has adopted advanced technology solutions and Intelligent Automation to make a massive technological shift towards Digital
- Is looking to improve its revenue mix from 80-85 percent traditional and 15-20 percent Digital to 60-70 percent Digital and 30-40 percent traditional by 2025

- Is witnessing an increased demand for new, unique skills – Analytics, Domain and High-end technology
- Has embraced new pricing models – from hybrid to outcome-based
- Has increased the share of unassisted work managed by software robots
- Has made Customer Experience mission critical
- Has adopted new Business Models – Strategic acquisitions, Partnerships and Hive-offs
- Has begun to explore new geographies, verticals, markets owing to dynamic shifts in the landscape

The Digital imperative

In order to keep pace with the emerging Digital environment, BPM firms have speeded up growth.

Together, they have forged new Global BPM deals in Q2 2017 worth USD 81 billion, which is the highest in the last three years.



According to NASSCOM, almost all new large BPM deals are either fixed cost or hybrid.

Digital has become a new revenue opportunity for the sector with service providers helping customers design and set up their Centers of Excellence (CoEs) for RPA (Robotic Process Automation). Global In-house Centers (GICs) are also seeing increased activity on the Digital front.

Digital Thrust

It is clear that BPM companies are veering towards Digital, as is proved by the following facts:

- Over 60 percent of all new projects have some component of Digital embedded in them
- There has been more than a 60 percent increase in revenue per FTE for Analytics
- Over 2,000 bots are currently deployed for various client services

- There are 3x new investments since 2014 on building new products and setting up Digital CoEs

Key priorities for the sector

In order to achieve their future goals and high impact across the business, BPM companies have taken several steps. Automation is one of them. This is reflected in the fact that RPA (Robotics Process Management) adoption in BPM is growing at a CAGR of over 50 percent. Existing BPM buyers and BFSI customers are leading RPA adoption. Yields productivity of 10-30 percent has been realized in offshore delivery.

Analytics for outcomes

Increasingly, BPM players are realizing that in order to achieve better outcomes, they need to deploy Analytics. In keeping with this recognition, the number of analytics firms has rapidly risen. There are in fact more than 600 Analytics companies, over 400 Analytics start-ups and 1.3 lakh Analytics professionals in India today, establishing the nation as a global Analytics hub. Trends show that around 50-60 percent of BPM firms are integrating Analytics with operations management. At another level, the demand for Cloud-based (SaaS) and predictive Analytics solutions is driving growth. AI and deep learning solutions are getting embedded into BPM offerings.

Customer experience is king

Delivering a higher, personalized customer experience has also become imperative for

FAST FACTS

The Indian BPM industry

- The world's Number 1 in terms of BPM base
- Employing 1.2 million people on the exports side
- Having a share of 37 percent in global sourcing
- Showcasing 1.7x growth in revenues over the last five years
- Home to 400 analytics focused start-ups in India
- Having 38 percent share of employable graduates

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The emerging technology and Analytics landscape is demanding new skills centered around Big Data/Analytics, Design Thinking, RPA/AI, DevOps, and Cyber security. India, in fact, is getting recognized across the world for this Digital expertise and skills.
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BPM service providers. This is mirrored in the fact that almost 70 percent of Boardrooms view CX as the most strategic performance measure. Today, over 25 percent of BPM firms are focusing on Digital customer experience, while 15 percent are concentrating on building the omni-channel experience. Meanwhile, more than 30 percent firms are developing chatbots, mobile apps, and Cloud solutions for Digital enablement.

Platforms, co-creation and CoEs

NASSCOM's studies, conducted in partnership with research and global management consulting firms like IDC, Forrester Research, Everest Research, Morgan Stanley and BCG, indicate the following:

- There are over 100 Digital CoEs, RPA CoEs and Domain CoEs
- Co-creation is becoming important for end-to-end customer journeys and standardized operating models
- Platforms are being made available across domains, and in collaboration with other platform providers
- There is a rise of solution accelerators and chatbots

Skilling for Digital

The emerging technology and Analytics landscape is demanding new skills centered around Big Data/Analytics, Design Thinking, RPA/AI, DevOps, and Cyber security. India, in fact, is getting recognized across the world for this Digital expertise and skills.

Looking ahead

As far as the BPM industry is concerned, the sky is virtually the limit as a number of opportunities knock its doors.

- Advanced Analytics (including Analytics and Big Data) spending for instance, is projected to grow to over USD 200 billion by 2020
- Robotics Process Automation (RPA) is expected to grow into a USD 5 billion market by 2020
- AI and Machine Learning are estimated to expand the scope of BPM/ BPaaS revenues by 2-3x by 2020



- The worldwide spending on Virtual and Augmented Reality is expected to reach USD 215 billion by 2021, with growth in excess of 18x
- Chatbots are expected to power 85 percent of all customer service interactions by 2020
- Digital Assistance voice search is estimated to reach 1.8 billion by 2021 from the current 500 million

NASSCOM and the BPM sector

NASSCOM has been tracking and supporting the BPM industry, and taking steps that benefit its member companies addressing this space. The chamber of commerce has even set up an independent Council to focus exclusively on the BPM sector.

In the year ahead, NASSCOM's BPM Council will be focusing on the following:

- Right positioning India as the destination of choice for global firms to deliver transformational value and the BPM industry as a world-class sector of choice for aspiring professionals
- Establishing Data Science as the next growth trajectory for the BPM industry, one that the sector can capitalize on and provide high value services to
- Enhancing the DS and AI capabilities of the BPM industry through CoEs, to provide its members a competitive edge
- Helping the BPM sector build new-age skills and talent which will be needed over the next 2-5 years owing to the proliferation of RPA, Automation, AI, Digital, etc.
- Enabling the existing BPM industry workforce to reskill itself to become relevant for future work.

Facilitating India's most innovative tech start-ups



NASSCOM has been tracking the performance and fortunes of start-ups and emerging companies within the software product eco-system, to pick and encourage the most innovative companies in the fray. The chamber of commerce has been focusing on these players (more than 350), since 2009, when it instituted its Emerge 50 Awards to recognize the leaders in the pack.

This year too, NASSCOM celebrated the performances of the 50 Emerge winners (from a list of 450 nominees) on the sidelines of NASSCOM Product Conclave, its flagship event for the Indian start-up segment. The chosen ones were predictably focused on

B2B, Cloud, platforms, infrastructure, enterprise products, Big Data, Mobile, Analytics, Deep-Tech (AI, Machine Learning, Natural Language Processing, Blockchain) and IoT, hardware and wearable technologies.

Around 75 percent of the Emerge 50 submissions were in the B2B segment and 80 percent of them had a global market orientation this year, underscoring the fact that Indian companies were now pushing their products to tougher and bigger markets.

Interestingly, there was a good combination of hardware and software companies that were part of the Top 10 companies.

These organizations were handpicked through a rigorous screening and selection process led by NASSCOM's Knowledge Partner for the initiative – design evaluation firm Grant Thornton (GT) – internal evaluation by NASSCOM specialists, jury rounds in three cities and final validation.

The jury of 70 members meanwhile, included Angel Investor Ajay Lavakare; Anil Joshi,

The rich diversity of applications received for the Emerge 50 Awards this year showcased the maturity of the product eco-system in the country. The majority of the companies had witnessed customer traction and had a clear go-to-market strategy.

Sangeeta Gupta,

Senior Vice President, NASSCOM



Managing Partner, Unicorn India Ventures; Anuja Shukla, Strategic Technology Partner Growth Lead, Google India; Milind Hanchinmani, Director, Asia Pacific & Japan, Developer Relations Division, Software and Services Group, Intel among others.

These experts assessed and scrutinized the nominees on the basis of over 30 business and technology parameters, including value proposition, market differentiators,

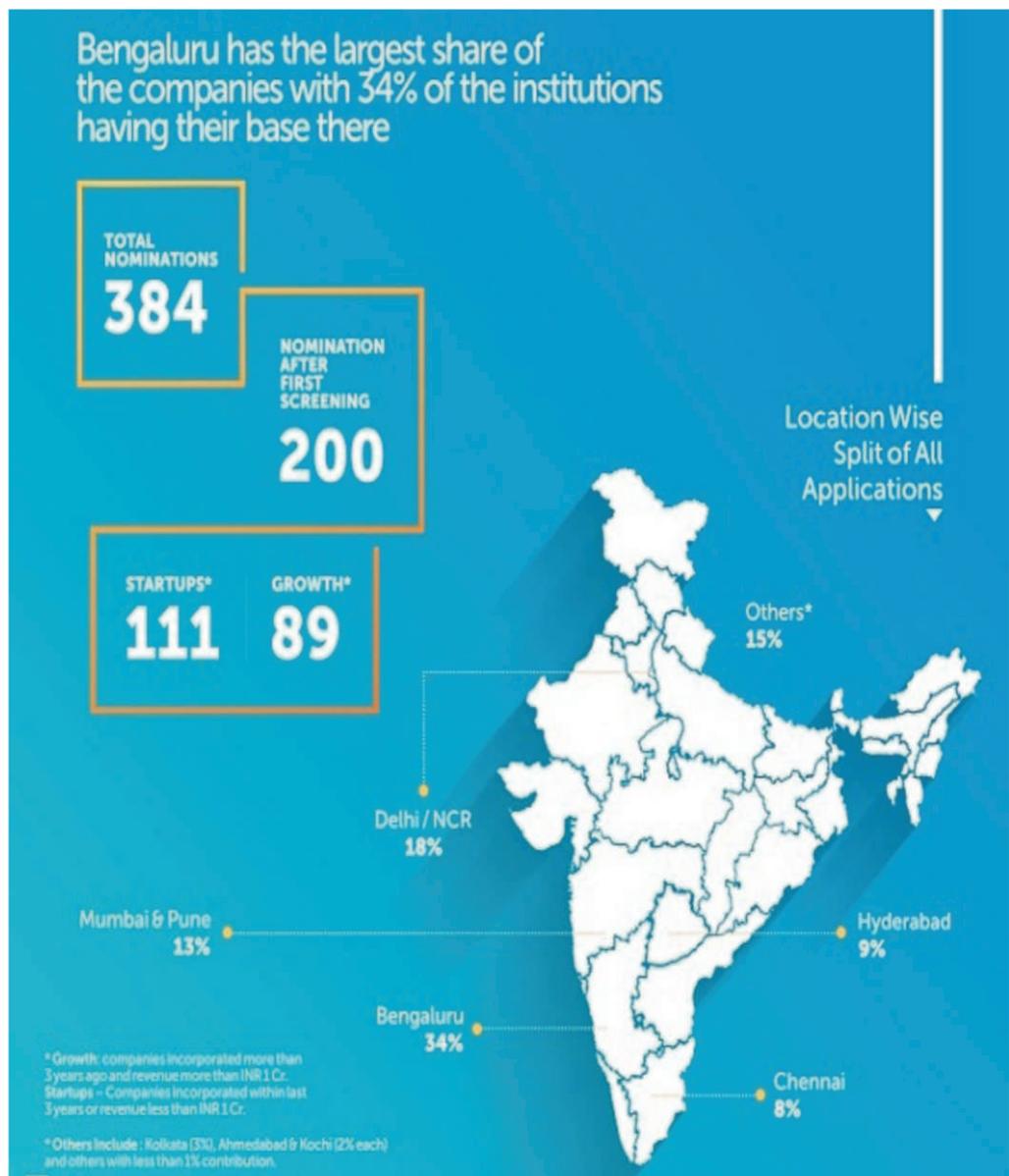
customers, market visibility, scalability, financials, growth and most importantly, innovation impact.

Companies from leading metropolitan cities like Bengaluru, Delhi NCR, Hyderabad, Chennai dominated the submissions followed by other tier-1 cities. Firms of Indian origin based out of the UK and US made up the rest of the submissions.



While India has historically seen traction in the B2C segment, it is great to see entrepreneurs shift focus to B2B this year. The rise of automation presents a huge opportunity to build successful enterprise product businesses that compete globally, as well as in India, which is at the cusp of a massive Digital revolution.

Atul Batra, Chair, NASSCOM Product Council



introducing the league of 10

HERE'S A LOOK AT THE TOP START-UPS FROM THE SELECT EMERGE 50 GROUP



CYCLOPS MEDTECH

Founded in 2015 by Niranjan Subbarao, Srinivas Dorasala, and Ravi Nayar, Cyclops MedTech is medtech start-up working on vestibular, surgical and eye-tracking solutions for the masses. The company was conceived with the idea of developing a vertigo diagnosing device at an affordable cost. Its cutting-edge, complete balance assessment platform Cyclops BalanceEye is an assessment tool that encompasses hardware, software, and Machine Learning module on the Cloud.

ELASTIC BEAM

Founded in 2015 by Uday Subbarayan and Bernard Hardguindéguy, the security start-up leverages its in-depth API intelligence to provide a precise and accurate detection of API misuse, coupling AI with real-time data. It has already developed the third generation of its product and is available for hybrid, public or on-premise Clouds. The product's innovation lies in the fact that it leverages its in-depth API intelligence to provide a precise and accurate detection of API misuse.



E-MART SOLUTIONS

Founded in 2015 by Aditya Bhamidipaty, the start-up enables marketers to automate real-time, behavior-based messaging to deliver personalized and unique messages/SMSes/e-mails through its product First Hive. The Big data/AI/Adtech/Deeptech start-up with its brand First Hive offers personalized communications and helps enterprises drive efficiencies in the marketing matrix. It has developed a product that can talk to consumers personally, where instead of broadcasting one message, companies can have a unique conversation with each consumer.

HUG INNOVATIONS

Founded by Raj Shekhar Neravati in 2014, the Deeptech/IoT start-up has built a smart watch named Hug Smartwatch that employs gesture control for various activities like playing music, etc. The smartwatch has an SOS button which can be pressed in danger. This sends an immediate message and enables family and friends to live track the location of the person needing help. Interestingly, the watch has customized maps to show the user the nearest hospitals and police stations – basically emergency services they can contact if family and well-wishers are not available.



INDIQUS

Founded by Sunando Bhattacharya, Shiva Kumar and Swati Samaddar in 2013, IndiQus Technologies has developed apiculus CSP, a Cloud business platform that enables enterprises and Cloud service providers to run their businesses on the Cloud. The Big data and Analytics start-up has deep domain knowledge in managed Cloud services and has developed Open and flexible solutions that service providers, enterprises and telcos can adopt to enhance their Return on Investment.



INTELLICAR TELEMATICS

Founded by Karn Makhija and Kaushik Raju in 2015, the start-up provides real-time tracking with 80 features to enhance safety and security of vehicles. The Big Data and analytics start-up offers customers the experience of using futuristic vehicle telematics solutions to make fleet management easier and more convenient.

MINJAR CLOUD SOLUTIONS

Founded by Vijay Rayapati, Anand and Aparna Sharma in 2012, Minjar Cloud Solutions with its Botmetric Cloud offering helps enterprises take data-driven decisions. The Botmetric Cloud management platform covers all the aspects of public Cloud management – security, cost and operations. Botmetric uses ML and AI to create smart, context-aware Cloud fixes for saving costs, achieving security compliance, and DevOps automation.



stellapps
Smart Systems, Stellar Applications.

STELLAPPS

Founded by IIT and IIM alumni Ranjith Mukudan, Ravishankar Shiroor, Praveen Nale, Ramakrishna Adukuri, and Venkatesh Seshasayee in 2011, Stellapps leverages IoT, Big Data, Cloud, Mobility, and Data Analytics to improve Agri supply chain parameters, including milk production, milk procurement, cold chain, animal insurance and farmer payments. Stellapps launched its SmartMoo platform, which is capable of supporting data arising out of tens of millions of liters of milk through milk production, procurement and cold chain flow across millions of farmers.

UBER DIAGNOSTICS

Founded by Ashim Roy and Avin Agarwal in 2013, Uber diagnostics has come up with an automated healthcare diagnostics solution, Cardiotrack. The device employs ML, IoT, Big data and AI to analyze the scans of ECGs and provide accurate predictive diagnosis and interpretation for faster



UNIPHORE SOFTWARE SYSTEMS

Founded in 2008 by Umesh Sachdev and Ravi Saraogi, the big Data/Cloud start-up provides speech analytics, virtual assistant and voice biometrics. While the speech analytics product auMina mines conversations, listens to words and uses them to improve service delivery and increase revenue with actionable insights, virtual assistant akeira is a smart and intuitive virtual assistant solution that makes premium service delivery seem effortless through a human-like machine interface.

Preparing for the Automation age



Automation in the age of Digital is slowly gaining traction. Its promise, acknowledged several decades ago, has gained greater credibility as organizations the world over embrace it to gain efficiency and productivity, cut costs, and basically change the way they work.

According to studies by the McKinsey Global Institute (MGI), while less than five percent of all occupations can be automated entirely using demonstrated technologies, about 60

percent of all occupations have at least 30 percent of constituent activities that can be automated.

Clearly then, Automation is here to stay. MGI, in its January 2017 report titled: 'A future that works: Automation, Employment and Productivity' says:

- In this Automation age, robots and computers can not only perform a range of routine physical work activities better

Destination Dalian

McKinsey Global Institute provides some interesting insights on how tech disruptions such as Automation can change the world of work:

- With recent developments in Robotics, Artificial Intelligence, and Machine Learning, technologies not only do things that only humans could do, but can also do them at superhuman levels of performance
- Some robots that are far more flexible – and a fraction of the cost – of those used in manufacturing environments today can be “trained” by frontline staff to perform tasks that were previously thought to be too difficult for machines
- Robots are even starting to take over service activities, from cooking hamburgers to dispensing drugs in hospital pharmacies
- Artificial Intelligence is also making major strides: in one recent test, computers were able to read lips with 95 percent accuracy, outperforming professional human lip readers who tested at 52 percent accuracy
- Amazon employees can pick and pack three times as many products per hour with the help of robots.

and more economically than humans, but can also perform tasks that include cognitive capabilities such as making tacit judgments, sensing emotion, or even driving!

- The automation of activities can enable productivity growth and other benefits at both the level of individual processes and businesses, as well as at the level of entire economies. MGI estimates that automation could raise productivity growth on a global basis by as much as 0.8 to 1.4 percent annually.
- At a microeconomic level, businesses can achieve competitive advantage from Automation technologies owing to increased throughput, higher quality, and decreased downtime.
- Many workers will continue to work alongside machines as various activities are automated.
- Activities that are likely to be automated earlier include predictable physical activities, especially prevalent in manufacturing and retail trade, as well as collecting and processing data, which exist across the entire spectrum of sectors, skills and wages.

Automation of course, will not happen overnight. Its pace and extent of adoption is expected to be driven by the following:

- Technical feasibility, since the technology has to be invented, integrated and adapted into solutions that automate specific activities.
- Cost of developing and deploying solutions, which affects the business case for adoption.

- Labor market dynamics, including the supply, demand, and costs of human labor as an alternative to automation.
- Economic benefits, which could include higher throughput and increased quality, as well as labor cost savings.
- Regulatory and social acceptance that can affect the rate of adoption even when deployment makes business sense.

Based on these factors, MGI states that it could take decades for Automation's effect on current work activities to play out fully. While its impact might be slow at the macro level within entire sectors or economies, it could be quite fast at the micro level, for an individual worker whose activities are automated, or a company whose industry is disrupted by competitors using automation.

Will Automation kill jobs?

While fear persists regarding Automation creating mass unemployment owing to surplus human labor across the globe, the fact is that world's economy will require human resources, in addition to robots, to overcome demographic aging trends in both developed and developing economies. Also, as the nature of work changes and processes are transformed by Automation of individual activities, people will perform tasks that are complementary to the work that machines do (and vice versa). These shifts will change the organization of companies, the structures and bases of competition of industries, and business models.



Preparing for the Automation age

ACTION PLAN FOR BUSINESS LEADERS, POLICY MAKERS AND WORKERS

BUSINESS LEADERS

will need to:

- Conduct a thorough inventory of their organization's activities and create a heat map of where automation potential is high
- Identify business processes and activities that can be Automated and reimagine them to take full advantage of Automation technologies
- Assess the benefits and feasibility of these Automation-enabled process transformations
- Consider how to best redeploy the labor that may be displaced owing to Automation, whether within their own organizations or elsewhere
- Retrain and roll out skill-raising programs to support workers shifting to new roles and taking on new activities

POLICY MAKERS

Will need to:

- Take measures to raise skills, promote job creation, rethink incomes and social safety nets
- Encourage and enable rapid adoption of Automation technologies in order to capture the full productivity boost necessary to support economic growth targets
- Think through how to support the redeployment of potentially large numbers of displaced workers
- Invest in developing the technologies themselves, and also in Digitally enabled infrastructure to support Automation
- Take care of labor redeployment
- Encourage new forms of technology-enabled entrepreneurship, and intervene to help workers develop skills best suited for the automation age
- Consider ideas such as ideas such as earned income tax credits, universal basic income, conditional transfers, shorter workweeks, and adapted social safety nets if automation does result in greater pressure on workers' wages

WORKERS

will need to:

- Work more closely with technology, freeing up more time to focus on intrinsically human capabilities that machines cannot match yet
- Identify the skills that could be useful for them to acquire from a labor-market perspective, and what activities will be complements of activities that are likely to be automated
- Seek opportunities for retraining (especially middle-level workers) to prepare for shifts in their activities toward those that are complements of activities the machines will start to perform
- Develop agility, resilience, and flexibility at a time when everybody's job is likely to change to some degree
- Build capabilities such as logical thinking and problem solving, social and emotional capabilities, providing expertise, coaching and developing others, and creativity, which machines are hard pressed to perform

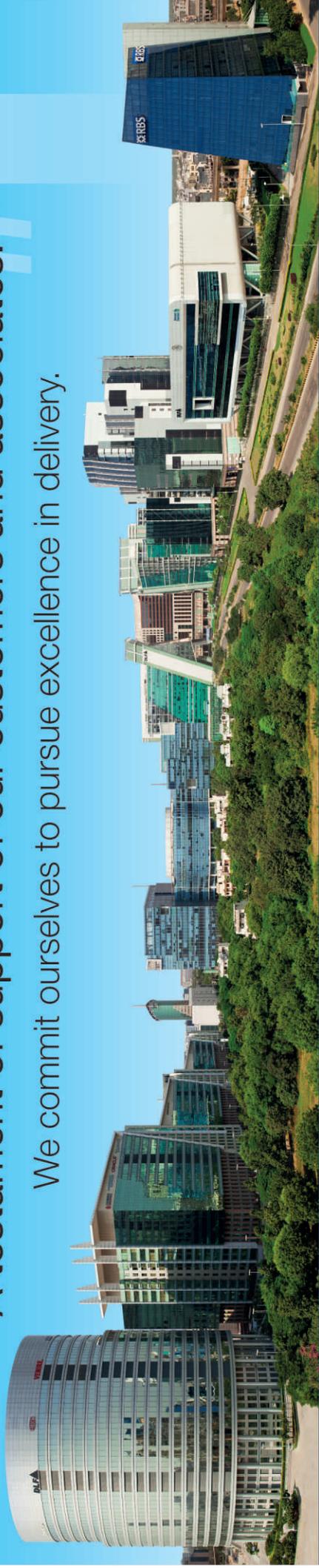


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Smartest Building of India
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The Times of India & Honeywell
2015-16

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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