

IT NEXT

FOR THE NEXT GENERATION OF CIOs

When was
the last
time you
learned a
new tech*?

The new digital regime expects you to be familiar with a lot of them. Time to explore newer methods of learning...

*This is not a story on automation replacing technology jobs



100

**Finance decision-makers
of India's top companies
will be getting together
in March 2018**

Are you there?

(WATCH THIS SPACE FOR MORE DETAILS)

For engagement opportunities, please contact

Seema Menon

seema.menon@9dot9.in, +919740394000

Mahantesh

mahantesh.g@9dot9.in, +919880436623



What those leading transformation say is that the IT leaders are responsible for the infratech part of bimodal IT while the CDOs take care of BT and more. Few IT leaders would be happy with this definition of their role.

Shyamanuja Das

Do You Have Enough Outsight?

While IT leaders are never tired of talking about digital transformation, many of the large corporations, especially where big transformation is taking place, have chosen to appoint business guys to positions like Chief Digital Officer, Head of Transformation who are leading the journey.

When I speak to many of those people leading the big change, I do ask about the role of their CIOs and IT heads. The most notable change, as compared to just 18-24 months back, is that they talk of CIOs quite respectfully, with absolutely no confusion in their minds about the demarcation between CIOs' role and their role. While their mandate is to look out for new opportunities even while carrying out change management, they see enterprise IT as the custodians of infrastructure. Their definition of 'infrastructure' varies a bit from the IT definition, though. In addition to infrastructure like cloud, datacenter and network, they see enterprise systems like ERP, SCM and security as part of infrastructure. And they see it as an absolutely important role. In fact, they say they depend critically on enterprise IT to carry out their mandate.

The IT managers would probably not like this definition of the job bifurcation, as they claim to be the drivers of digital transformation. To a great extent, that thinking has been fueled by the technology vendors who try to sell everything under the name of digital transformation.

What the CDOs, Heads of Transformations tell me—and CEOs and consultants do not disagree—is that the IT leaders are responsible for the infratech part of bimodal IT while the CDOs take care of BT and more. What makes their claim credible is that in a few organizations, IT heads do report to these leaders.

The cover story in this issue tries to find out what are the possible causes of IT people being overlooked for leading the transformation in many companies, especially which need big transformation and are not already using IT for their basic business like BFSI or IT services. It also tries to get into what the IT leaders should do and how.

The biggest reason seems to be the single-point focus of IT leaders on problem solving. When there is no problem, they are not too sure how to proceed. The businesses clearly expect transformation leadership to look out and pluck opportunities by understanding emerging technologies and how to leverage them. It is an outside-in approach to the IT leaders' inside-out approach. That is what I call outsight, as opposed to insight, on new tech.

When it comes to competence, IT leaders are second to none. But changing this job expectation is a big change. They must get ready.

Content

COVER STORY | PAGE 08-17

When was
the last
time you
learned a
new tech*?

The new digital regime required an outside-in approach. It required a new outlook and continuous updating of technology knowledge and ability to think of new opportunities using emerging technologies. Are you ready?

*This is not a story on automation replacing technology jobs

FOR THE LATEST
TECHNOLOGY
UPDATES GO TO

IT NEXT.IN



FACEBOOK
WWW.FACEBOOK.COM/ITNEXT99



TWITTER
[HTTP://TWITTER.COM/@ITNEXT_](http://TWITTER.COM/@ITNEXT_)



LINKEDIN
[HTTPS://IN.LINKEDIN.COM/PUB/IT-NEXT/68/717301](https://IN.LINKEDIN.COM/PUB/IT-NEXT/68/717301)



PAGE 04-06

The Indian CIO's Agenda in 2018



PAGE 22-24

Make Hay While The Bank Shines



PAGE 26-27

AI Driving UI



PAGE 32-33

A Cloud Above



PAGE 34-35

Why Enterprises Need A Digital Transformation Strategy



COVER
Design:
MANOJ KUMAR VP



Please
recycle this
magazine
and remove
inserts
before
recycling

MANAGEMENT

Managing Director: Dr Pramath Raj Sinha
Printer & Publisher: Vikas Gupta

EDITORIAL

Managing Editor: Shyamanuja Das
Associate Editor: Shubhra Rishi
Content Executive-Enterprise Technology:
Dipanjan Mitra

DESIGN

Sr. Art Director: Anil VK
Art Director: Shokeen Saifi
Visualisers: NV Baiju & Manoj Kumar VP
Lead UI/UX Designer: Shri Hari Tiwari
Sr. Designers: Charu Dwivedi, Haridas Balan
& Peterson PJ

SALES & MARKETING

**Director-Community Engagement
for Enterprise Technology Business:**
Sachin Mhashilkar (+91 99203 48755)
Brand Head: Vandana Chauhan (+91 99589 84581)
Assistant Product Manager-Digital:
Manan Mushtaq
Community Manager-B2B Tech: Megha Bhardwaj
Community Manager-B2B Tech: Renuka Deopa
Associate-Enterprise Technology: Abhishek Jain
Assistant Brand Manager-B2B Tech: Mallika Khosla

Regional Sales Managers

South: Ashish Kumar (+91 9740761921)
North: Deepak Sharma (+91 9811791110)
West: Prashant Amin (+91 9820575282)

Ad co-ordination/Scheduling: Kishan Singh

Manager - Events: Naveen Kumar
Manager - Events: Himanshu Kumar

PRODUCTION & LOGISTICS

Manager Operations: Rakesh Upadhyay
Asst. Manager - Logistics: Vijay Menon
Executive Logistics: Nilesh Shiravadekar
Logistics: MP Singh & Mohd. Ansari

OFFICE ADDRESS

9.9 Group Pvt. Ltd.
(Formerly known as Nine Dot Nine Mediaworx Pvt. Ltd.)
121- Patparganj, Mayur Vihar, Phase - I
Near Mandir Masjid, Delhi-110091

Published, Printed and Owned by 9.9 Group Pvt. Ltd. (Formerly known as Nine Dot Nine Mediaworx Pvt. Ltd.) Published and printed on their behalf by Vikas Gupta. Published at 121- Patparganj, Mayur Vihar, Phase - I, Near Mandir Masjid, Delhi-110091, India. Printed at Tara Art Printers Pvt Ltd., A-46-47, Sector-5, NOIDA (U.P.) 201301.

Editor: Vikas Gupta

© ALL RIGHTS RESERVED: REPRODUCTION IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION FROM 9.9 GROUP PVT. LTD. (FORMERLY KNOWN AS NINE DOT NINE MEDIAWORX PVT. LTD.) IS PROHIBITED.



The Indian CIO's Agenda In 2018

What are the top IT leaders' leadership and technology priorities this year?

By Shubhra Rishi

The world 'digital' was probably the most abused word of 2017. In the last one year, we have seen CIOs round off all technology implementations to famously calling them 'digital transformation'. Most companies today have at least one ongoing digital initiative being spearheaded by IT.

In 2018, CIOs will have to revisit their priorities and introduce new and interesting "to-dos" in their agenda. During a tweet chat, Indian

CIOs revealed their agenda this year.

CIOs in the automotive sector have been experimenting with a number of new technologies, such as IoT and machine learning, leading to the sector's transformation in the last few years. From connected cars to self-driving cars, to disrupting public transportation, and to using robots in manufacturing, the CIOs have a huge opportunity to innovate in accordance with the growing demands of their customers.

According to Jagdish Belwal, CIO-International at GE Transportation, the auto industry is moving beyond products to solutions for customers' success.

"We have many digital products which solve operational issues of customers such as, fuel efficiency, uptime, routing, among others," said Belwal.

As an overlying agenda for 2018, Belwal said that it will be the yin and yang of operate and innovate. "We need operational excellence to keep business going, and innovation to break new ground. On the one hand,

the idea is to reduce cost and on the other, it is to increase business value," he added.

Status quo is known to have been the biggest impediment to innovation and CIOs know well not to let it stand in the way of digital growth. Today, the manufacturing industry has seen some of the best examples of using robots in warehouses and big data analytics for predictive maintenance.

Ashok Jade, CIO at Shalimar Paints, said that they are exploring the use of artificial intelligence (AI) to improve sales, and machine learning to streamline manufacturing processes in their organization. In 2018, Jade also plans to invest in digital technologies for enhancing supply chain and warehouse management.

"For us digital is not just a buzzword but it is a force enabling business transformation in the organization," said Jade.

So are we quick to assume that the CIO's Agenda is primarily acceler-

ating digital transformation in 2018 or is that over simplification?

According to Avinash Velhal, Group CIO - India, Middle East & APAC - Atos International, digital transformation is about extending your technology core to the digital ecosystem. To say the least, Bimodal IT is integral part of a CIO's digitalization agenda as he/she has to take care of operational IT and innovation IT together.

Velhal said that DX requires migration from legacy systems to newer platforms. CIOs need to build a flexible and scalable collaboration environment and enable reskilling of IT workers.

Keyur Desai, CIO - Essar Ports & Shipping and Head Info-Security, Network & Communications at Essar, also feels that the CIO Agenda 2018 is a subset of the CIO's digital agenda in 2018. "The CEO and the CDO also contribute to this digital journey," he added.

CIO Challenges in 2018

These CIOs cited a number of challenges that they will have to tackle in 2018.

Apart from modernizing legacy systems and reskilling for technical and soft skills, digitalization, business alignment, security and business technologies are also seen as priorities by the CIOs.

According to Belwal, some of the biggest challenge will be repaying technical debts i.e. modernising old technologies that slow us down, talent retention, and prioritizing demand.

"Resources will be constrained. We need to cut costs from running operations and reinvest in innovation. Technologies, such as cloud, SaaS, and PaaS, allow doing both. We have to shift the balance of run versus transform cost ratios rightwards to do more with the same," he added.

The decision to hire versus contract will be another challenge.

According to Velhal, the key driver for success will involve linking digital initiatives to organizational performance.

Shadow IT is a usual suspect that will intensify the CIO's worries further.

According to Belwal, Shadow IT is a sometimes a signal of weak partner-

Apart from modernizing legacy systems and reskilling for technical and soft skills, digitalization, business alignment, security and business technologies are also seen as priorities by the CIOs





ship with business, and at others, of weak financial governance. We need to strengthen the trust and partnership and also to partner with finance and procurement teams to bring better spend governance.

Budget Vows

Desai said that there has been an increase in budget spend on new technologies with a focus on optimizing the IT landscape and developing a robust IT security strategy.

According to Gartner, top businesses are already spending 34% of their IT budget on digital, with plans to increase that to 44% by 2018.

"Our digital spend is increasing with focus on DevOps and hybrid cloud," said Head - Information Technology - Ascent Health & Wellness Solutions.

For the longest time, CIOs have said that they need to ratify their technology investments with busi-

ness outcomes. Jade said that if the CIOs can showcase business value proposition, getting the budget sanctioned is no big challenge.

Reskilling

From a skills standpoint, what is the CIO's Agenda 2018? We have known for quite some time that IT jobs will suffer at the hands of cognitive technologies. This doom was long coming. However, hiring developing and retaining top skills has been a CIO's challenge for decades.

According to Belwal, the CIO's Agenda in 2018 has to focus on reskilling and not just in digital technologies, but also the development frameworks like agile, product mindset and architecture.

Dedhia also asserts that no amount of technologies will help us if the users aren't empowered and trained well. "This gets most and ongoing attention," he added.

Like Dedhia, some CIOs have found better alternatives to deal with this skill situation.

Velhal said that developing strong bench strength with external mindset is very crucial in the digital age. "So are creating collaborative teams with a focus on governance as well as techquisitions," he added.

According to Gartner, techquisitions are acquisitions of digital or IT companies by enterprises in other conventional industries that have not created or sold information and communication technology-based products or services before. CIOs must play a prominent role in making techquisitions more successful and maximize the benefits from all financial and intellectual resources deployed.

Desai said that maintaining the skill-set has always been a challenging task and he has found resolve in managed services to address the skills part to a large extent ■

APPLY NOW

For

CSOFORUM
PRESENTS

nextCSO

THE SEARCH FOR INDIA'S FUTURE CSOs

AWARDS 2018

Follow these simple steps to transform your career and join the league of next-gen CISOs

01. Fill the detailed application form on nextcso.in

02. Participate in three compulsory online psychometric tests conducted by Central Test, France

- | | |
|----------------------|------------------------------------|
| a. CTPI-R | 19 Work-related Personality Traits |
| b. Management | Leadership Styles |
| c. Emoticon | Test your Emotional Intelligence |
-

03. Get feedback from referees (reporting manager + 2 others)

04. Applicants will be shortlisted for interviews

05. NEXTCSO Jury (2 interviews per candidate) will interview shortlisted applicants

06. Results will be announced followed by NEXTCSO Awards ceremony



Read the QR code
or visit nextcso.in to start your application today



When was
the last
time you
learned a
new tech*?

*This is not a story on automation replacing technology jobs

The new digital regime required an outside-in approach. It required a new outlook and continuous updating of technology knowledge and ability to think of new opportunities using emerging technologies. Are you ready?

By Shyamanuja Das

For close to two decades now, senior enterprise IT managers have been preached the virtue of being a 'business manager'. It's almost impossible to carry out a conversation with a CIO these days without encountering liberal use of catch phrases like thinking business, being a partner to business, business impact, business alignment...

This eagerness by enterprise IT managers to project themselves as business savvy was a direct result of a backlash from the other non-tech executives who could never relate to the jargon they spoke. While initially few cared, as IT's role grew within business—it helped achieve significant productivity gains and enhanced process efficiency—the other senior managers wanted their business problems to be solved using tech and were frustrated by the lack of appreciation of the business issues by the IT manager community and the latter's obsessions with nitty-gritties of technical issues.

The constant campaign today has resulted in an enterprise IT manager community which understands business as well as any other functional managers. The smart IT managers in many large enterprises today have a fairly good understanding of the issues, the challenges and requirements. They very often successfully partner the business process owners to solve the problems using technology.

What also enabled this is phenomena like outsourcing and cloud, which took the burden of

delivery from the IT managers to a great extent; they could now focus on working with the business managers to chart out demand—what they need—instead of doing the nuts and bolts to ensure delivery all the time.

The focused professionals that they are, the IT managers have done a fairly good job of transforming themselves as 'business managers'. While project management was the starting point, many IT leaders now have gone to equip themselves with knowledge related to business functions such as supply chain or customer service while learning leadership and business skills.

So far, so good.

New Imperative: From IT to Digital

Sometime in the last 3-4 years, the term that has come to dominate the business technology lingo is 'digital transformation'. No discussion around technology is complete without that phrase being thrown in a few times.

While everyone talks about it, only a few large corporations have earnestly undertaken the journey. But what does that mean? What does this journey entail? Why and how is it different from the way IT has been applied so far?

CIO&Leader, the sister publication of ITNEXT, has just conducted a research to find what exactly is happening as part of digital transformation in some of the largest groups (and/or group companies) of India, such as Tata, Mahindra & Mahindra and Vedanta/Sterlite.

The phrase that we hear most often when it comes to strategic use of technology is “use case”, not application or solution

While the models, objectives and approaches vary, all the practitioners and advisors agree on one point: **this journey involves proactively and continuously looking for what’s happening around and turning that to your competitive advantage.**

But haven’t businesses done it always?

Here is what is new. A significant part of that query ‘what’s happening around’ is to do with technology. As technology now impacts the entire value chain of a business—strategy, processes, products/services and customer experience—as compared to processes and in some industries, products, earlier the leadership is keen to understand how the business can build strategic advantage by *leveraging the latest technologies*. The last (italicized) part was not an imperative at the top leadership/board level earlier. Now, it clearly is.

That has brought about a change in the way businesses look at technology. So, the phrase that we hear most often when it comes to strategic use of technology is “use case”, not application or solution.

It clearly denotes one thing: you start with technology and look for how you can build a competitive advantage using that; not the other way—first articulate a business problem and then look for how you can solve that with the help of technology, which companies have been doing so far.

If it is a business problem today, it could be a competitive advantage tomorrow.

What it means is that you are continuously looking for new technologies and what they can do to determine how it can benefit your current business or create a

new opportunity for you.

That requires continuously scanning for new technology...

The Outside-in Regime

Call it the outside-in regime. Just five years back, it would have been considered politically incorrect if someone said he was looking for a business application for a new technology. Today, that is precisely what you are supposed to do.

What does it mean for IT managers? A lot.

Ironical it may sound, but that ‘proactively looking for new tech’ also explains why so many companies have appointed separate heads of transformation or Chief Digital Officers (CDOs) to drive the change, while CIOs continue to focus on larger cost-saving initiatives involving process transformation.

Today’s CIOs are business savvy, not occupied with nuts and bolts and can talk as eloquently about business as any other executive; yet, they have been overlooked for these positions especially in businesses where IT is not already the principal technology (e.g banking or insurance) because of one thing: too much focus on problem solving.

Have no illusions; problem solving is still 80% of the business. But the game-changing value creation comes from a better understanding of

Just five years back, it would have been considered politically incorrect to say you were looking for a business application for a new technology. Today, that is precisely what you are supposed to do

the environment in a more collaborative world.

It is not that the CIOs and senior enterprise IT managers are not capable of playing that role. But it is still not on their radar. They are busy becoming good 'business leaders' so much so that many are defensive talking about technology.

Many of them would rather spend their time adding to their 'business', 'leadership' skills than

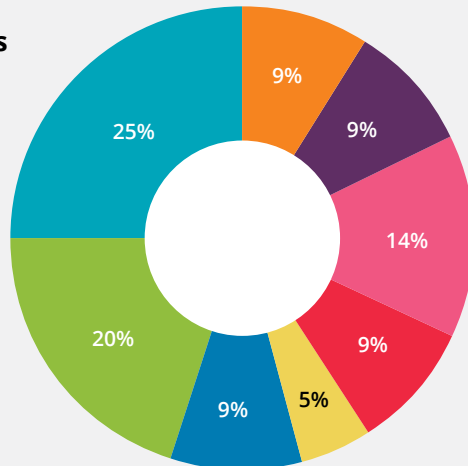
while another big chunk—one in four—said it was on specific technical skills (such as SAP or MS skills) or regulatory or standard compliance that they updated their skills with. This, it may be pointed out, is often virtually a mandatory requirement. Project management remains another favorite area with one in five having done some certification in the subject.

This subject selection clearly falls into three baskets: one, the essential skills (compliance, project management, other horizontal functions) that 50% of the respondents have chosen; two, leadership and business skills (leadership & business management, strategy/innovation) that 42% have chosen. Only 9% have gone for learning emerging new technologies—that is less than one in ten.

This just demonstrates the observation we made

Composition of Respondents

- 2010 winner
- 2011 winner
- 2012 winner
- 2013 winner
- 2014 winner
- 2015 winner
- 2016 winner
- 2017 winner



learn new technologies.

That is exactly what a survey conducted by ITNEXT confirms.

The Learning Agenda

To better understand how senior Indian IT managers have been updating themselves with new skills, we decided to conduct a research among some of the best of them. For the purpose, we chose the winners of ITNEXT's NEXT100 winners over the years. Close to 50 winners took the survey with 45% of them being winners in the last two years.

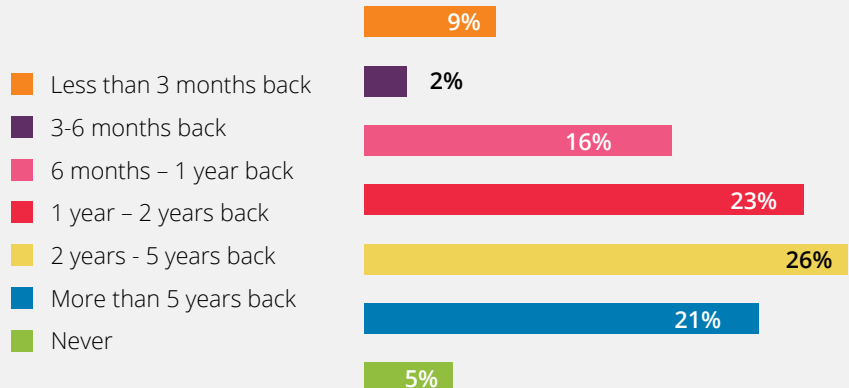
A little disturbing finding was that a little less than half of them have completed any kind of certification in the last two years. Every three out of four of the respondents said they have done some kind of certification in the last five years.

On being asked what subject did they do their last certification/training on, more than one-third pointed to leadership and business management skills

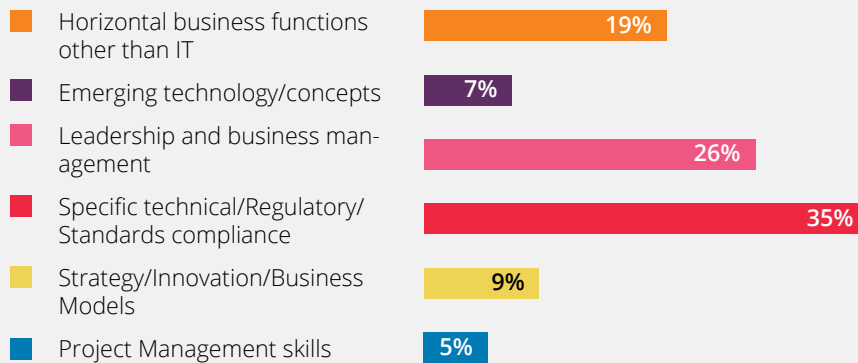
in the beginning.

However, there is good news. The realization that learning new emerging technologies is important for career progress has most probably dawned on them. When asked about what they would definitely like to learn in the next one year, a strong 28% said they would go for learning new technologies, even though leadership skills still topped the choice list.

When did you do your last certification?



What was your last certification on?



The Changing Definition of 'Knowledge'

Traditionally, for an IT professional 'knowledge' has meant knowing each and every step of a process or functionalities and capabilities of a piece of software. That itself has undergone some change with the advent of Google age, but has been replaced by knowledge of implementation and management of a technology.

A typical business leader driving digital transformation need not know the underlying technicalities of a new technology, like say blockchain, but should understand how it works, what it does and combine that with his/her understanding of the business to think of opportunities in the business, new models and new revenue streams. That requires a clear conceptual understanding of the technologies rather than the implementation issues.

The learning has to change, keeping pace with that. Most of the technical certifications by companies, commercial certifying agencies as

well as traditional educational institutions are focused on teaching/testing how much does a learner remembers and can apply to a specific problem rather than encouraging them to paint on a clean canvas or even apply that in a context that is not straightforward.

That gap, to some extent, has been fulfilled by executive programs designed by premier institutions and major global organizations. They are often designed keeping

the need in mind and are aimed at delivering a conceptual understanding of the new area and its relevance to business, often supplemented by workshops that allow and encourage participants to apply that knowledge to their own business context.

These executive courses, however, are costly, often in one specific city or institute campus and of course, are conducted on specific dates. So, very few can afford (in terms of money and time) to attend. A further disadvantage, specifically in the context of new technology areas, is that there are not enough experts, let alone practitioners, to teach.

The Massive Open Online Courses (MOOCs) seem to address these challenges. They offer several advantages. Some of them are as follow.

1. They are online. Yes, they are available online, completely removing the barrier of space. One does not have to go to Bangalore or Ahmedabad to do them.
2. They can be done at your own pace. Some of the good courses have no deadline; but many others have a start and end time limit; but within that, you can follow your own pace.
3. They are far cheaper. Most of the courses are free but charge for certification which starts as less as USD 30 and go up to USD 300 for individual course. Most are charged below USD 100.
4. The certificates are by reputed universities. Many of the certificates are given by iconic institutions such as Cornell University, University of California, Princeton, Duke, Yale and ISB.

What type of certification agency did you use?



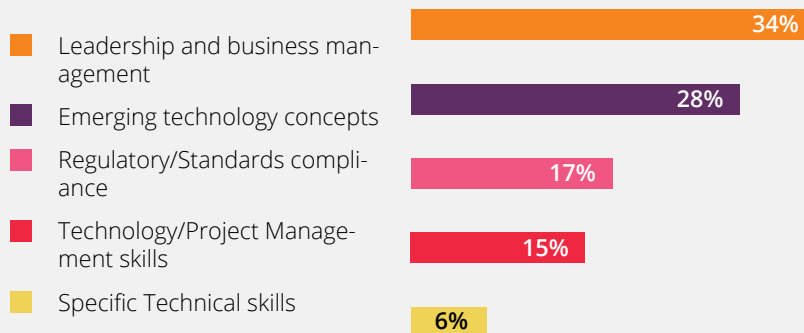
Some relevant Business Technology courses on MOOC Platforms that IT managers can benefit

Course	Platform	University	Topic	Targeted at	Length	Efforts	Course Fees	Certificate Fees (USD)
Leadership and Management for PM Practitioners in IT	edX	University of Washington	Project Management	Those looking at managing IT projects	4-weeks	2-5 hours/ week	Nil	79
Evidence-Based Technology Management	edX	Australian National University	Analytics, Technology Management	Business Managers, IT Managers	6-weeks	8-10 hours/ week	Nil	149
Blockchain for Business - An Introduction to Hyperledger Technologies	edX	The Linux Foundation	Blockchain	Business Managers, IT Managers	8-weeks	3-4 hours/ week	Nil	99
Digital Transformation Strategy	edX	Boston University	Digital Strategies	Business Managers, IT Managers	6-weeks	4-6 hours/ week	Nil	200
Knowledge Management & Big Data in Business	edX	The Hong Kong Polytechnic University	Analytics	Business Managers, IT Managers	6 weeks	6-8 hours/ week	Nil	50
Platform Strategy for Business	edX	Boston University	Technology Management	Business Managers, IT Managers	6 weeks	4-8 hours/ week	Nil	200
Industry 4.0: How to revolutionize your business	edX	The Hong Kong Polytechnic University	Technology Management	Business Managers, IT Managers	8 weeks	6-8 hours/ week	Nil	50
Data to Insights	Future-Learn	The University of Auckland	Analytics	Business Managers, IT Managers	8 weeks	3 hours/ week	Nil	89
Digital Leadership: Creating Value through Technology	Future-Learn	University of Reading	Digital Strategies, Leadership	Business Managers, IT Managers	4 weeks	3 hours/ week	Nil	89
Getting Started with Agile & Design Thinking	Future-Learn	University of Virginia Darden School of Business	Business Management, Technology Management	Business Managers, IT Managers	4 weeks	4 hours/ week	Nil	74
Digital Transformation of Business and Services	Future-Learn	Grenoble Ecole de Management	Business Management, Technology Management	Business Managers, IT Managers	4 weeks	3 hours/ week	Nil	74
Design Thinking for Innovation	Coursera	University of Virginia	Management	Business Managers, IT Managers	5 weeks	1-2 hours/ week	NA	NA
Two speed IT: How companies can serve the Digital Wave	Coursera	CentraleSupélec	Technology Management	IT Managers	6 weeks	NA	NA	NA
Emergency Management	Open2Study	Massey University	Management	Everyone	1 month	NA	Nil	NA
Cyber security & Executive Strategy	Stanford Online	Stanford University	Technology Management	IT, IS Managers, Business Managers	NA	USD 495		NA

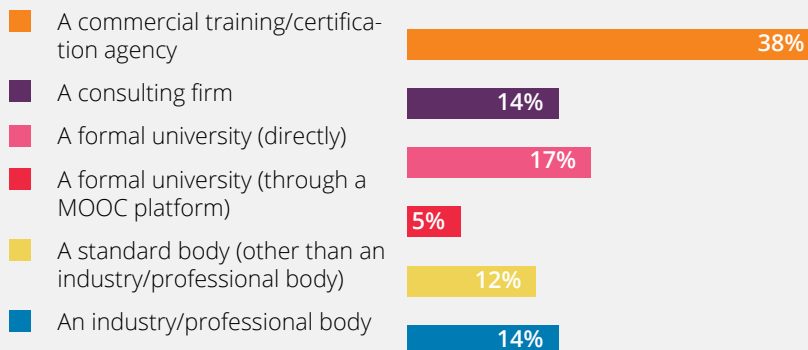
Note: While the story calls for emerging technology courses, these are not necessarily technology courses. One of the reasons is that we have not considered any multi-course programs. Many technology courses are available as multi-course specialization programs

Only 9% of IT leaders have gone for learning emerging new technologies in the last one year

What are you planning to learn next year?



What will you use for learning/certification?



5. Carefully designed course content. The courses are designed and created by leading academicians and practitioners globally and hence are very relevant. What is more, they are presented nicely.
6. Best of faculty. These courses, imparted through videos, reading material and discussion boards, have great academicians and practitioners who deliver them.
7. New emerging areas are available. One of the most important advantages is the TINA factor of many of the courses. You will simply not find them anywhere else.

- Opportunities to interact. Many of the MOOC courses have active discussion boards, where participants are required/encouraged to share their challenges, solutions (and remember, this is a global base). These discussions provide tremendous peer-to-peer learning opportunities and a global perspective.

- Many platforms to choose from. There are multiple platforms to choose from, though a few good ones such as Coursera, eDX, futurelearn, Simplilearn that deliver courses for top executives, apart from some universities' own platforms. For purely technical certification courses, there are many more like Udemy.

For some reason, though, this promising platform has not been used extensively by the IT leaders to learn.

Only 5% of our respondents said they have used MOOC platforms to learn. However, when asked what they will use in the next 12 months, a significantly more, though not dominant, share of respondents (17%) said they would use it.

Going forward, the businesses will require more and more 'role making' digital leaders rather than 'role taking' IT managers. That requires a change in thinking. It is not a bad idea to start in a classroom. A digital classroom that is! ■



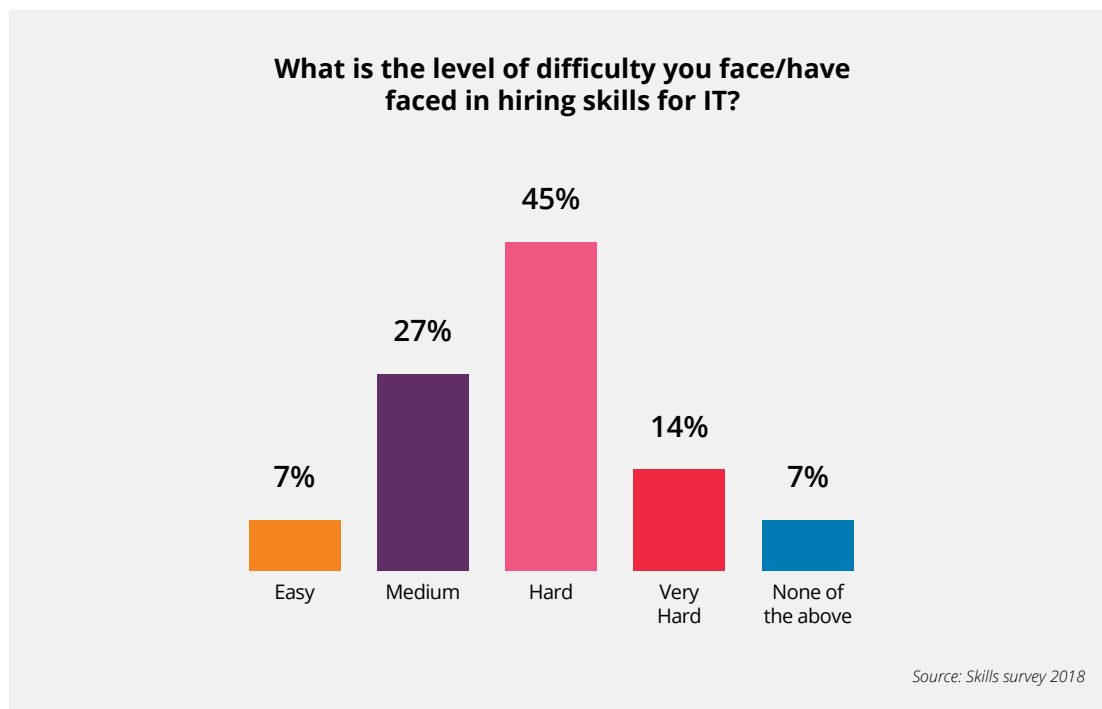
Which Specific Skills Will The CIOs Look For In 2018?

Not surprisingly, digital skills are a priority for CIOs; and they are trying out some really different ways to get them

By Shubhra Rishi

While the organizations expect the new generation of digital leaders to be more aware and think on clean canvass, it is not that the CIOs have an easy task finding even the hard skills.

A recent skill survey conducted by IT NEXT's sister publication, CIO&Leader found that 45% of Indian CIOs find it "hard" to hire the right skilled people for their department. As



many as 14%—that one in every seven CIOs—finds it “very hard” to fill high-skilled positions.

Within the traditional IT domain too, there are trends—such as automation, AI and of course, the OT-IT integration brought in by the Fourth Industrial Revolution—that are changing the way IT is planned, managed and delivered. That is creating a shortfall of new skills. In security, that has been identified as one of the biggest challenges by CISOs.

CIOs across the board identify the IT skills gap as a serious impediment to their growing digital ambition and they are under enormous pressure to help their organizations become agile and stay relevant in the current digital age.

Every CIO is probably in a classic fear-of-missing-out moment with technology. One in every third CIO is either implementing an AI-powered

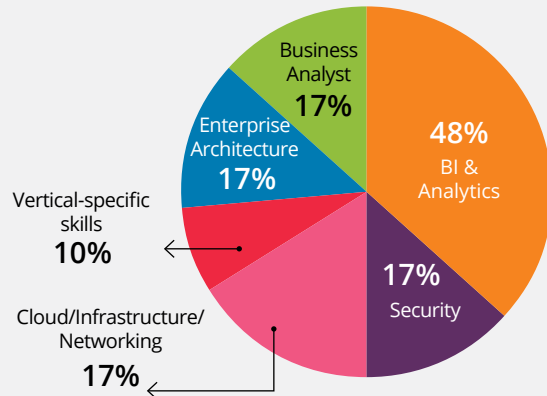
digital initiative or leading the digital transformation initiative in the organization.

According to the CIO&Leader survey, CIOs will hire skills in BI & Analytics, security, cloud, infrastructure, networking, vertical-specific skills, enterprise architecture, business consulting, among others.

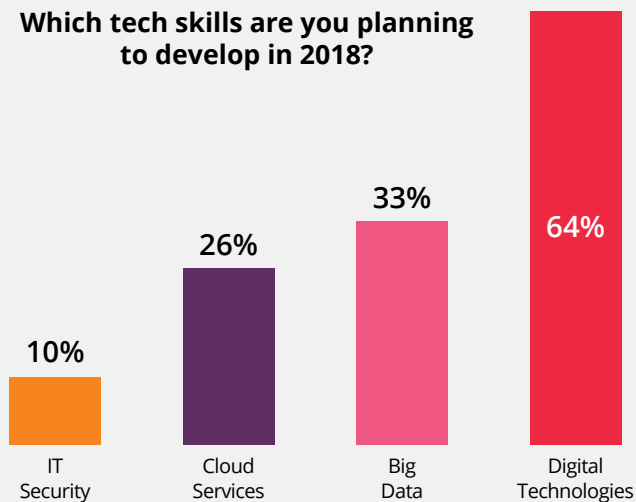
Some of the organizations—especially those that have higher IT maturity such as banking/financial services and IT/ITES—are expecting their CIOs to take up digital roles (rather than having separate CDOs) and expect IT leaders develop digital technology and business skills such as design thinking, data sciences, use-centric design and exposure to new technologies, such as IoT, Machine Learning, Big Data, and Blockchain, to drive transformation and sustain long-term benefits.

One in every third CIO is either implementing an AI-powered digital initiative or leading the digital transformation initiative in the organization

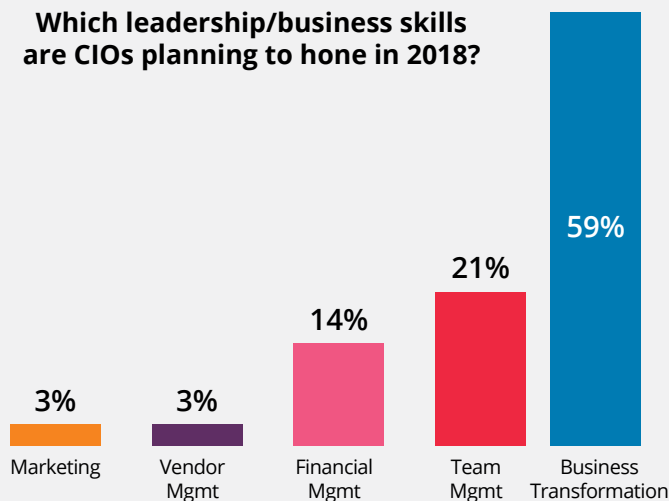
Which specific skills will CIOs hire in 2018?



Which tech skills are you planning to develop in 2018?



Which leadership/business skills are CIOs planning to hone in 2018?



Source: Skills survey 2018



Traditionally, CIOs have hired IT consultants, contractors and outsourcing services to meet this challenge, which is getting to be an expensive proposition.

Developing and retaining IT talent is a critical issue that organizations are already facing or likely to face in the future. CIOs find themselves tackling this problem head first. The other not-so-immediate solution is for CIOs to focus on reskilling and upskilling their workforce. This is definitely not an option, but is a necessity of modern times.

Some of the leading CIOs in the industry are already advocating a radical new approach. They are identifying and incubating small technology start-ups within their own organizations. This way they are able to add new skills, capabilities and competencies to their teams and stay not only relevant to their organizations, and win from within. As they cultivate new skills, CIOs are not leaving any stone unturned to develop their own leadership and technology skills. CIOs today want to be in the know and get their hands dirty as new technologies get deployed within their organizations. In the survey, 65% of CIOs said that they want to develop skills in digital technologies namely IoT, artificial intelligence, and robotics, closely followed by big data (35%), cloud services (36%) and IT security (10%). Similarly, business transformation continues to be a top priority for CIOs ■



A young Kaushik during a play rehearsal for one of his plays in Mumbai

Real to Reel

NEXT100 Winner 2017, **Kaushik Mamania**, Vice President – Engineering, UFO Moviez India shares his passion for acting and theatre

Acting is in-born, it cannot be taught!

I realized this as a 10-year old boy when I was in 6th std. That was the time when my father enrolled me for an activity workshop where I learnt acting for about 1 year on weekends. I also attended workshops on voice modulation, breathing exercises, etc., which helped me in other avenues. From then onwards, I started participating more in school acting and drama festivals and got extremely passionate about it. Since then, I started getting opportunities in several 3-hour long musical plays. I also got to do small shows on TV and radio. When I came to junior college, I participated in St. Xavier's College's Annual Malad Festival. There I won the 1st prize for a street play!

When I started my professional life, a group of us got together



through an online community. We shared the same passion for theatre and performance. We decided to put up a play of our own. Most of the participants were newbies. Some of them were doctors, architects and engineers. As we had a tough work schedule, we decided to meet on weekends and craft our own musical play. We wrote the script and lyrics for the musical and composed at least 16-17 songs for it. Right from scripting, directing, acting, costume designing, music, song-writing, stage planning, voice-overs, choreography -- everything was



Kaushik Mamania

Snapshot

Kaushik Mamania is Vice President – Engineering at UFO Moviez India. He is a winner of NEXT100 Award in 2017. He has done his Masters in Computer Applications and Bachelors in

Computer Science. He has previously worked in companies, such as DG2L, Internet Trends and Marconi Selenia. He is passionate about acting, photography and trekking.

done by us, including, funding.

Our group was called 'Prarambh Performing Arts'. We scripted a play called 'Anjor-Kaaya'. We did everything, from marketing, creating marketing posters, printing tickets, making outdoor banners, announcing on radios, etc. We invested our own money to build the sets. We staged four shows which were screened in theatres. Although we lost a lot of money due to higher production costs; yet, that was the main highlight of my acting sojourn. We were able to execute what we really loved with all of us contributing in our own little ways. What was more satisfying was the entire production was set up by an amateur group of non-theatre professionals. We were also featured in a couple of local daily newspapers. It turned out to be an exceptionally, surreal experience for all of us.

Currently, Mumbai has a phenomenal theatre scene, just like Delhi. I belong to the Gujarati community and there



Kaushik has acted in a number of Gujarati plays and his inspirations include Naseeruddin Shah, Aamir Khan, and Paresh Rawal



are a lot of Gujarati shows that take place throughout the year in this city that never sleeps. I stay close to Nehru Centre where annual theatre festivals involv-

ing Urdu, Gujarati and Bengali plays are organized. People from all parts of India come and show their local flavor and talent. It's all about presence of mind unlike in movies where there are retakes. Bloopers do happen on stage but that's the real art of how well you cover them up without the audience actually knowing that's happened. To be able to draw the audience into your act is the most satisfying part of doing a theatre show.

The play that we did was a collection of four stories based on love. I played the central character. The play was a mix of multiple languages: Hindi, English, Hyderabad and Urdu. I actually did the role that involved the Urdu part although I'm a Gujarati and it was not my strong area. At the end of the play, when people came up and congratulated Dr. Zaheer Shaikh, who was the writer and director, and I. The compliment in itself that I performed well and role in terms of the Urdu diction and that I articulated that language well. This was a key achievement in my acting journey.

Acting as a career demands a lot of time and dedication. Actors who have managed to do this have been successful – looking at the likes of Naseeruddin Shah, Aamir Khan, Akshay Kumar and Paresh Rawal. I've seen plays of Naseeruddin Shah and Paresh Rawal and there's just one word to describe them – wow! However, in our current roles and profession these days, it's getting extremely difficult to eke out time to set up a play. A play takes a lot of energy and time than a TV or movie in terms of the number of rehearsals and production planning. So I'm not sure if I'll be able to script and execute a play again. But if I manage to find the time and space to be able to explore that feeling again, I would make sure that I do a rather stellar job of it ■

As told to Dipanjan Mitra, Content Executive-Enterprise Technology, ITNEXT





How Big Data And AI Are Powering Enterprises

How these technologies are giving businesses a new lease of life

By Aashish Kalra

The world is transforming and economies like India and China that remained undiscovered in early 90s, hold the potential to be discovered as growth stories and creators of asset class because of their ability to create unstructured data sets. Data is the next natural resource, like air, oil, water, and the convergence of Big Data and Cloud

powered by AI and ML is a potential multi-trillion dollar opportunity.

Artificial Intelligence is no longer a theory, it is for real because of the availability of unstructured data, high bandwidth and affordable computing resources.

Discovering AI is the New Normal

As the world transforms, businesses

are going to need a lot of elements to implement AI. They need an element of Big Data and Cloud, then they need to manage data, followed by an ability to see panoramic view of data to innovate and help businesses leapfrog and most importantly, draw insights to take the decisions. Majority of the companies will not be able to articulate the problem or hire the people to execute.

There will be businesses with the resources and capital to get to decisions while some may still be finding the way to cross the bridge. Discovering the power of AI for your business will be the new impact. Gartner recently estimated that the term "AI" ranked seventh in the most searched terms. This is significant jump compared to January 2016 when "AI" was not even in the top 100 for the same category.

Artificial Intelligence is transforming the way businesses are defined, designed and delivered and enterprise value is captured. Asian economies like India and China are poised to leapfrog the world in Artificial Intelligence as the demography is not constrained by legacy usage of computers or tablets so they can move directly to the phone. Also, India and China are creating unstructured data at a very rapid pace and has datasets in volume that very few countries possess.

In the Asian context, India is a country with inefficiencies and lack of infrastructure in financial services, retail, education, health services, insurance and manufacturing. Most of these sectors have limited innovation in technology due to the majority of transactions being done in cash. Now, with the increasing adoption of digital currency, it will create a treasure trove of data in every industry. With incredible advances in Artificial Intelligence, India Inc. will have the ability to upend, disrupt and create industry-shaping companies from scratch. Mobility in India will drive digital adoption. As the next 700 million Indians get online – they will create data on how they live, move, transact and interact. This will in turn create opportunities in healthcare services,



Gartner recently estimated that the term 'AI' ranked seventh in the most searched terms

transportation, building better cities, retail, e-commerce and media.

As we approach this future, we will see startups and big companies alike take advantage of Artificial Intelligence to re-invent and innovate. The vision of Digital India requires considerable investment and a sustained push to create better infrastructure and development of talent to support this transformation. If we can combine the efforts in government policy and innovation that young Indians are creating today, India will leapfrog the technologies of yesterday and emerge as the engine of global growth.

On a larger context, application of Artificial Intelligence to cross-functional departments can generate insights adding immense value to ingrained business processes in terms of improving performance on a proactive basis. For implementing Artificial Intelligence at an enterprise level, both AI and businesses have to 'Think Big, Start Small and Act Fast'.

So, that's the global context of what businesses should be trying to solve. The first thing is to capture the data and place it in databases that can handle that volume of data. This is not your traditional databases. The second part is how you analyse it. Today, the world analyzes it by

brute force but tomorrow, we are convinced that the world will analyze large parts of data with Artificial Intelligence. Once you get to that point, the way we deal with information, the way the world works transforms itself. It is no longer is transactional, it is relationship.

Identifying hidden correlations is the aim of applying AI to business processes. Data-rich and digitally transformed organizations are going to have an advantage here compared to ones that are not capturing their data.

Former organizations should start understanding the power of AI and start identifying different processes in business units where they can maximize results with the usage of AI.

In the years to come, enterprises will scale new heights by exploring this untapped data and extract incremental value. AI powered by Big Data will affect almost all facets of our existence ultimately influencing the way enterprises chase growth, to positive effect.

Whether businesses are ready or not, AI is going to take us over with its disruption and it is going to work in the favor of those who are better prepared ■

The author is Chairman, Cambridge Technology Enterprises Limited



Make Hay While The Bank Shines

Adequate and timely access to agricultural credit plays a crucial role in improving farm production and productivity and thereby the livelihood of farmers

By M.S. Rama Rao

Adequate and timely access to agricultural credit plays a crucial role in improving farm production and productivity and thereby the livelihood of farmers. Nearly 80% of our agriculturists are small and marginal farmers, heavily dependent on credit for carrying on their seasonal agricultural operations. The over hundred year old Cooperative Credit System (CCS) in the country has been a major provider

of agricultural credit, mainly short-term loans for raising crops, serving an estimated 50% of all farmers served by institutional credit agencies, with over 75% of the its credit disbursal being for small and marginal farmers.

The rural cooperative banking system in our country is well over a century old, having taken birth in around the first decade of the 20th century during the British period. Although the system was intended to be shaped along the

lines of the *Raiffeisen* Cooperatives in Germany, as autonomous self-reliant institutions, over time it took shape as a government supported mechanism for providing credit to the farmers in the rural areas.

Over the decades and right into the early 90's, the cooperative credit and banking system shored up as the mainstay for providing credit to the agriculturists, with the Reserve Bank of India right from its own inception detailing a policy of production-oriented systems of lending for agriculture and providing concessional refinance to the cooperative banks, towards supplementing their resources in meeting the credit requirement of agriculturists in the rural areas.

The rural cooperative credit mechanism in India essentially comprises two parallel structures viz. the three tier short-term credit structure for dispensation of short- and medium-term credit for crop production and agriculture allied activities; and the long-term credit structure for providing long-term credit for investments in agriculture e.g., land development, farm mechanization, horticulture, etc. These institutions have been supported both by way of policy and refinance supported for a considerable time by the RBI and later by the ARDC and NABARD.

The short-term credit and banking structure in most states comprises State Cooperative Banks (St.CB), District Central Cooperative Banks (DCCB/CCB) at the District level, and Primary Agricultural Credit Societies (PACS) at the village level. Some smaller states /UTs have only State Cooperative Banks and PACS. The State and District level institutions which are part of the short-term credit structure are recognized as banks by the RBI and carry out various banking activities in addition to providing agricultural credit through the PACS at the grassroots level. However, the PACS which are actually the last mile connect to the farmer, are not recognized as banking institutions. They are, however, exempted

from the provisions of the Banking Regulations Act, giving leeway for them to undertake banking activities. Many PACS undertake basic banking services for members along with credit and various other functions, such as input distribution, running consumer stores, warehousing, procurement & marketing, Public Distribution System (PDS), etc.

The foray of commercial banks into agricultural credit post nationaliza-

ing this, the short-term cooperative credit and banking system continues as a potent instrument in meeting the credit and related needs of the farmers. Around 5.5 crore farmers, mostly small and marginal farmers, continue to be dependent on the PACS supported by DCCBs, numbering 380 with around 14000 branches and 32 state coop banks for their agricultural loans. There are around one lakh PACS spread across the rural areas



Many PACS undertake basic banking services for members along with credit and various other functions, such as input distribution, running consumer stores, warehousing, procurement & marketing, Public Distribution System (PDS), etc

tion, setting up of RRBs, adoption of the multi-agency approach and directed credit programs, saw in their wake the fall in the share of amount disbursed by rural cooperative banks for agricultural credit. In the euphoria of expanding credit supply by commercial banks, the need to shore up these institutions that up until then had played a major role and are geographically positioned for a better outreach, had been lost sight of. Central regulatory and financing agencies are observed to have maintained an arm's length in this regard. Notwithstand-

of the country, with over two-third of them being operationally viable.

However, the grassroots level operations of this century old structure continue to be driven by outdated manual systems and processes, standing in the way of timely and adequate provision of credit to the farmers. As the PACS are not considered a part of the banking & payments system, the benefits of technology and digital payments environment is as yet to be positioned for ensuring timely and hassle free credit to their members. Given the

vast geographic outreach of the Cooperative Credit Structure, there is urgency in mainstreaming the PACS into the emerging techno-banking digital environment in a big way towards providing agricultural credit, other loans, agricultural inputs, basic banking facilities, procurement, warehousing and marketing and a host of other services. In the context of renewed signals of distress from farmers across various parts of the country, it is imperative to rejuvenate PACS through technology and provide them the interface to the mainstream banking environment and enable digital banking and payments related services at their end, so that their outreach can be fully harnessed in meeting the various needs of the farmers.

The ideal technology solution must facilitate Rupay Card based operations through ATMs and micro-ATMs on KCC Accounts by farmer members on their accounts with the PACS, in tune with RBI/NABARD guidelines. The technology solution needs to be a cost-effective centralized solution with extensive parameterization to support the local usage and custom; be easy to use by grass-roots level staff, preferably being picture/icon driven and having online help facility as well as being available in local languages. It should be expected to cover the entire functionality of all types of agricultural credit, covering short, medium- and long-term loans in a wide spectrum of parameterized options of loan products, origination and sanction systems-covering processes that span across different tiers of the credit system; cover different reporting system requirements to district level, state level, NABARD and GOI levels; handle various national and state level schemes, such as crop insurance, interest subsidy and subvention, etc. The coverage of solution should include basic banking like savings bank, term deposits, recurring deposits, pigmy deposits, different types of non-agri. loans,



personal loans, consumer loans, gold loans, etc. which PACS do. It should handle under the automated environment, various other functions handled by PACS, such as seed, fertilizer and other inputs supply, consumer stores, PDS, outlets for other items of business, as also warehousing, procurement and marketing, etc. On positioning such solution, online access to ground level information is expected to enhance inputs for policy formulation and facilitate timely monitoring of the progress of various schemes.

The state of Odisha, in which the cooperative banks have a share of around 65% in agricultural credit, has been the early mover and taken the lead in adoption of technology in all the three tiers of the cooperative credit structure from the state level to village levels on the above lines. The implementation, currently in the final stages, provides Rupay Kisan card-based operations to the farmers across the state. The adoption of technology in the cooperative credit system here has also facilitated direct benefit transfer of money into farmers' accounts of

proceeds of paddy procurement made by state agencies running into several thousands of crores.

Such technology led transformation of this important segment of our rural eco-system across the country is expected to go a long way to help in mitigating the problems of our farmers. It is in recognition of this imperative that the GOI in the Union Budget for 2017-18 has made its policy and financial commitment towards computerization of all viable PACS in the country over a span of three years. It expected that technology adoption on the lines adopted by Odisha state will find favor for replication across the country for the benefit of a huge segment of farmers in our country comprising mostly small and marginal holders who are wedded to the cooperative banks for their credit and other needs. This would further the cause of financial inclusion of the excluded and marginalized segments of the rural population in a big way ■

The author is Chief Product Officer, VSoft Technologies



CFO INDIA

NETWORK

Intelligence . Leadership . Transformation

A PEER-POWERED,
KNOWLEDGE - BASED AND
COMMUNITY-LED INITIATIVE
FOR CFOs



AI Driving UI

As per Gartner, by 2022, personal devices will know more about an individual's emotional state than his/her own family

Emotion artificial intelligence (AI) systems are becoming so sophisticated that Gartner predicts that by 2022, personal devices will know more about an individual's emotional state than his/her own family. AI is generating multiple disruptive forces that are reshaping the way we interact with personal technologies.

"Emotion AI systems and affective computing are allowing everyday objects to detect, analyze, process

and respond to people's emotional states and moods to provide better context and a more personalized experience," said Roberta Cozza, research director at Gartner. "To remain relevant, technology vendors must integrate AI into every aspect of their devices, or face marginalization."

The current wave of emotion AI systems is being driven by the proliferation of virtual personal assistants (VPAs) and other AI-based

technology for conversational systems. As a second wave emerges, AI technology will add value to more and more customer experience scenarios, including educational software, video games, diagnostic software, athletic and health performance, and the autonomous car.

"Prototypes and commercial products already exist and adding emotional context by analyzing data points from facial expressions, voice intonation and behavioral patterns will signif-

icantly enhance the user experience,” said Cozza. “Beyond smartphones and connected home devices, wearables and connected vehicles will collect, analyze and process users’ emotional data via computer vision, audio or sensors capturing behavioral data to adapt or respond to a user’s wants and needs.”

Other personal device predictions from Gartner include:

By 2021, 10% of wearable users will have changed lifestyles, and thereby extend their life spans by an average of six months.

As AI emotion systems evolve there is huge potential for specialized devices, such as medical wristbands, which can anticipate life-threatening conditions and facilitate an early response system. At the same time special apps are also being developed for diagnostic and therapy services that will help to recognize conditions such as depression or help children with autism.

“Even a basic wearable device could have a positive impact on the wearer’s health,” said Annette Zimmermann, research vice president at Gartner. “We are seeing growing numbers of users actively changing their behavior for the better with the adoption of a wearable device. Not only can this have beneficial influence

By 2020, 60% of personal technology device vendors will use third-party AI cloud services to enhance functionality and services

on the amount of exercise they do but there is evidence that one or two out of 10 smart watch and fitness band users discover a condition such as sleep apnea or cardiac arrhythmia through wearing the device.”

By 2020, 60% of personal technology device vendors will use third-party AI cloud services to enhance functionality and services.

Cloud-based AI technologies are driving compelling user experiences on a variety of connected devices. Cloud offerings from the big tech players, such as Google, Microsoft, Amazon, Tencent, Baidu and IBM, are starting to proliferate due to their attractive cost model, easy-to-use integration and potential to create complex services. A major catalyst for device vendors to use cloud AI services is the increased usage of VPAs and natural-language technologies,

while the adoption of VPA-based, screenless devices such as Amazon Echo and Google Home is also on the rise, further increasing usage of cloud AI services.

“We are starting to see adoption of these services from high-profile vendors that are using them to widen their reach,” said Anthony Mullen, research director at Gartner. “Fitbit uses Alexa Skills to make user stats and functionality available through VPA speakers just as Netflix uses Actions for Google Assistant to voice control its service. Ultimately, vendors will compete on the best user experience and the smartness of their products, not the technology behind it.”

Through 2022, security technology combining machine learning, biometrics and user behavior will reduce passwords to account for less than 10% of all digital authentications.

Password-based simple authentication is becoming less and less effective for personal devices. Even today’s popular biometric technology — fingerprint authentication — is only around 75% successful due to contaminants such as dirt and sweat.

“Users need more convenient and accurate options for unlocking their devices,” said CK Lu, research director at Gartner. “Security technologies that combine machine learning, biometrics and user behavior will become necessary to improve ease of use, self-service and frictionless authentications. Within the next five years new security technology will recognize the user, prevent fraud and detect automation threats such as malware, remote access trojans and malicious bots.” ■





Taking Care Of Risky Business

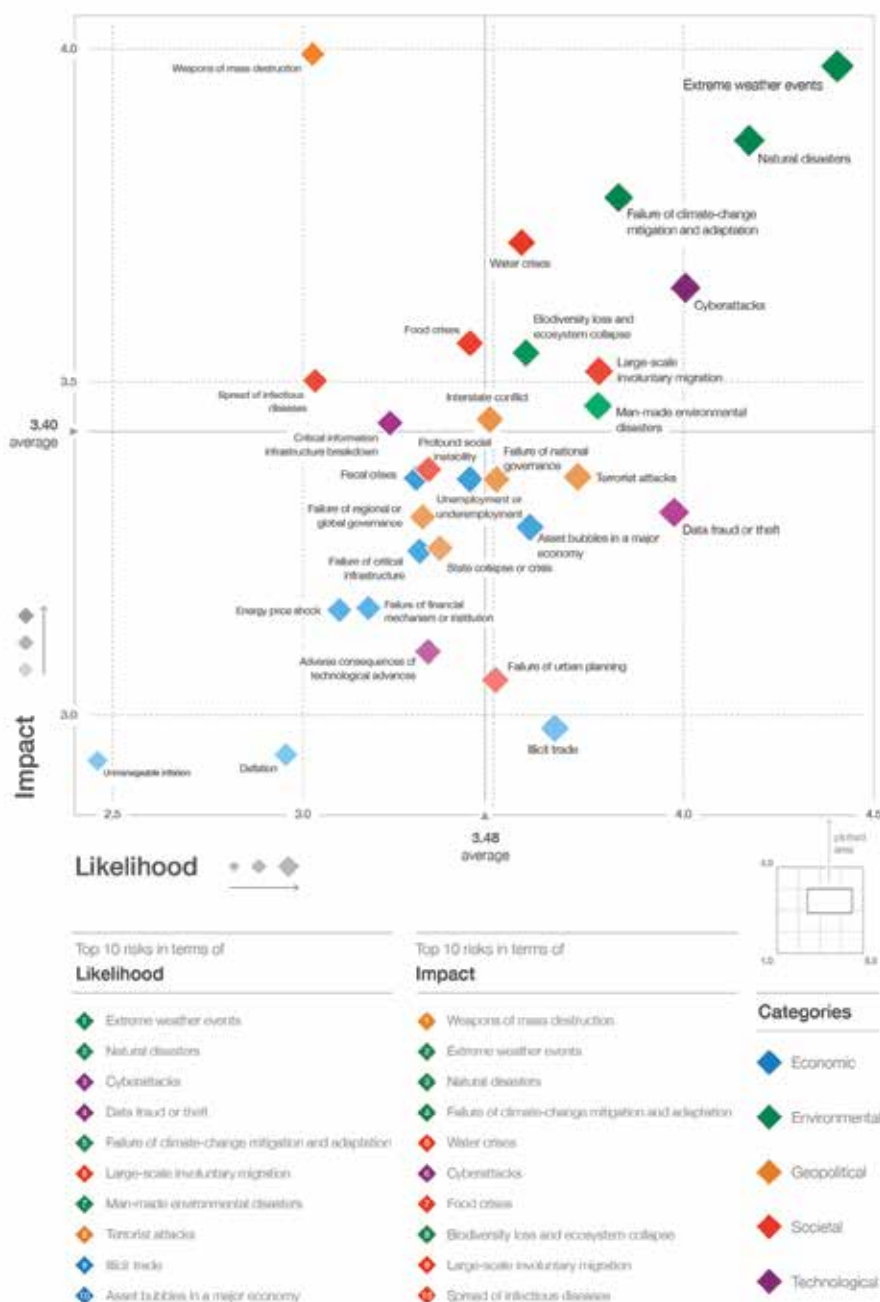
Despite concerns about AI and robots, adverse consequences of technological advances are still seen as a comparatively lower risk

Two of the top five most likely global risks are cyber risks, according to the *Global Risk Report 2018*, released recently by the World Economic Forum (WEF). Risks of cyberattacks and data fraud or theft are seen by WEF members as the third and fourth most likely risks in 2018, next only to two environmental risks, extreme weather events and natural disasters. The events of 2017 have also led to cyber-

attacks being seen as the 6th most impactful perceived global risk in 2018. This is the highest rank for a technological risk in the list of most impactful risks since the beginning of the publication of the report in 2012. This means cyberattacks are seen to impacting the earth more than food crises, biodiversity loss, large scale involuntary migration (refugee crisis) and spread of infectious diseases.

As in previous years, this year's report also

The Global Risks Landscape 2018



Source: World Economic Forum Global Risks Perception Survey 2017–2018

draws on WEF's annual *Global Risks Perceptions Survey (GRPS)*, which is completed by around 1,000 members of its multi-stakeholder communities.

According to the GRPS, *cyber threats* are growing in prominence, with *large-scale cyberattacks* now

ranked third in terms of likelihood, while *rising cyber-dependency* is ranked as the second most significant driver shaping the global risks landscape over the next 10 years.

"Although in previous years respondents to the GRPS have tended to

be optimistic about technological risks, this year concerns jumped, and cyberattacks and massive data fraud both appear in the list of the top five global risks by perceived likelihood," observed the report.

The fear is Real, Illustrates the Report

Cyber breaches recorded by businesses have almost doubled in five years, from 68 per business in 2012 to 130 per business in 2017, according to *Accenture 2017 Cost of Cyber Crime Study*. Having been choked off by law enforcement successes in 2010–2012, "dark net" markets for malware goods and services have seen resurgence, noted an IBM report in March 2017.

In 2016 alone, 357 million new malware variants were released and "banking trojans" designed to steal account login details could be purchased for as little as USD 500, says the report quoting Symantec ITR. In addition, cybercriminals have an exponentially increasing number of potential targets, because the use of cloud services continues to accelerate and the Internet of Things is expected to expand

from an estimated 8.4 billion devices in 2017 to a projected 20.4 billion in 2020, according to Gartner.

"What would once have been considered large-scale cyberattacks are now becoming normal," the report notes.

In 2016, companies revealed



Two of the top five most likely global risks are cyber risks, according to WEF's *Global Risk Report 2018*

breaches of more than 4 billion data records, more than the combined total for the previous two years, according to an IBM whitepaper quoted by the report. Distributed Denial of Service (DDoS) attacks using 100 gigabits per second (Gbps) were once exceptional but have now become commonplace, jumping in frequency by 140% in 2016 alone, says Akamai report. And attackers have become more persistent—in 2017 the average DDoS target was likely to be hit 32 times over a three-month period, according to the Akamai report.

The financial costs of cyberattacks are rising. A 2017 study of 254 companies across seven countries put the annual cost of responding to cyberattacks at GBP 11.7 million per company, a year-on-year increase of 27.4%, according to Accenture. The

cost of cybercrime to businesses over the next five years is expected to be USD 8 trillion, according to a Juniper research.

Ransomware attacks accounted for 64% of all malicious emails sent between July and September last year. Notable examples included the WannaCry attack, which affected 300,000 computers across 150 countries, and Petya and NotPetya, which caused huge corporate losses.

Beyond its financial cost, the WannaCry attack disrupted critical and strategic infrastructure across the world, including government ministries, railways, banks, telecommunications providers, energy companies, car manufacturers and hospitals. It illustrated a growing trend of using cyberattacks to target critical infrastructure and strategic industrial sectors, raising fears that, in a worst-case scenario,

attackers could trigger a breakdown in the systems that keep societies functioning. Many of these attacks are thought to be state sponsored. WannaCry's ultimate impact was relatively low, largely because a "kill switch" was discovered, but it highlighted the vulnerability of a wide range of infrastructure organizations and installations to disruption or damage.

Since the 2015 attack on Ukraine's power grid—which temporarily shut down 30 substations, interrupting power supply to 230,000 people—evidence has been mounting of further attempts to target critical infrastructure. In 2016, for example, an attack on the SWIFT messaging network led to the theft of USD 81 million from the central bank of Bangladesh. The European Aviation Safety Agency has stated that aviation systems are subject to an average of 1,000 attacks each month. Last year saw reports of attempts to use spear-phishing attacks (stealing data or installing malware using individually targeted email scams) against companies operating nuclear power plants in the United States.

"Most attacks on critical and strategic systems have not succeeded—but the combination of isolated successes with a growing list of attempted attacks suggests that risks are increasing. And the world's increasing interconnectedness and pace heightens our vulnerability to attacks that cause not only isolated and temporary disruptions, but radical and irreversible systemic shocks," says the report.

In addition to cyberattacks, other technology risk identified by the report include critical information infrastructure breakdown, which is seen to have more possible impact than fiscal crises and social instability and adverse consequence of technological advances, which still ranks low in terms of both impact and likelihood but with AI and robotics developing fast, it could emerge as a bigger risk in the years to come ■



A Case For Gender Equality At Davos 2018

It was one of the flavors of this year's gathering of leaders. Other popular topics include AI and protectionism

The world witnessed the World Economic Forum Annual Meeting at Davos, Switzerland. Davos 2018 is one of the first world conferences this year to discuss Gender Equality on a global platform – a topic that made headlines all through last year. There were other major topics too – Climate Change, Artificial Intelligence – but the conference has set a precedent for the rest of 2018.

The gender discussion precipitated into every panel, every speech, and every session. Some of the sessions worth mentioning were Ali-

baba's Founder Jack Ma's talking on gender equality in his organization, special address by Justin Trudeau, Canada's Prime Minister and the panel on Gender, Power and Stemming Sexual Harassment comprising The Vice President of Microsoft, Canada's Minister of Women, and other leaders.

Canada has set an example in diversity where Trudeau himself is championing diversity by setting up a gender equal cabinet comprising 50% men and 50% female. Canada currently ranks 11 in WEF's *Global Gender Gap Report 2017*. By 2026, a

new McKinsey report estimates that narrowing the gender gap in Canada could add USD 150 billion to its economy.

Norway, ranked first in WEF's Global Gender Gap Report 2017, started early, when in 2003, it imposed a gender quota obliging companies to ensure at least 40% of board members were women. Its ratio of women to men in the job market is 0.95, while the ratio of female to male earned income is 0.79.

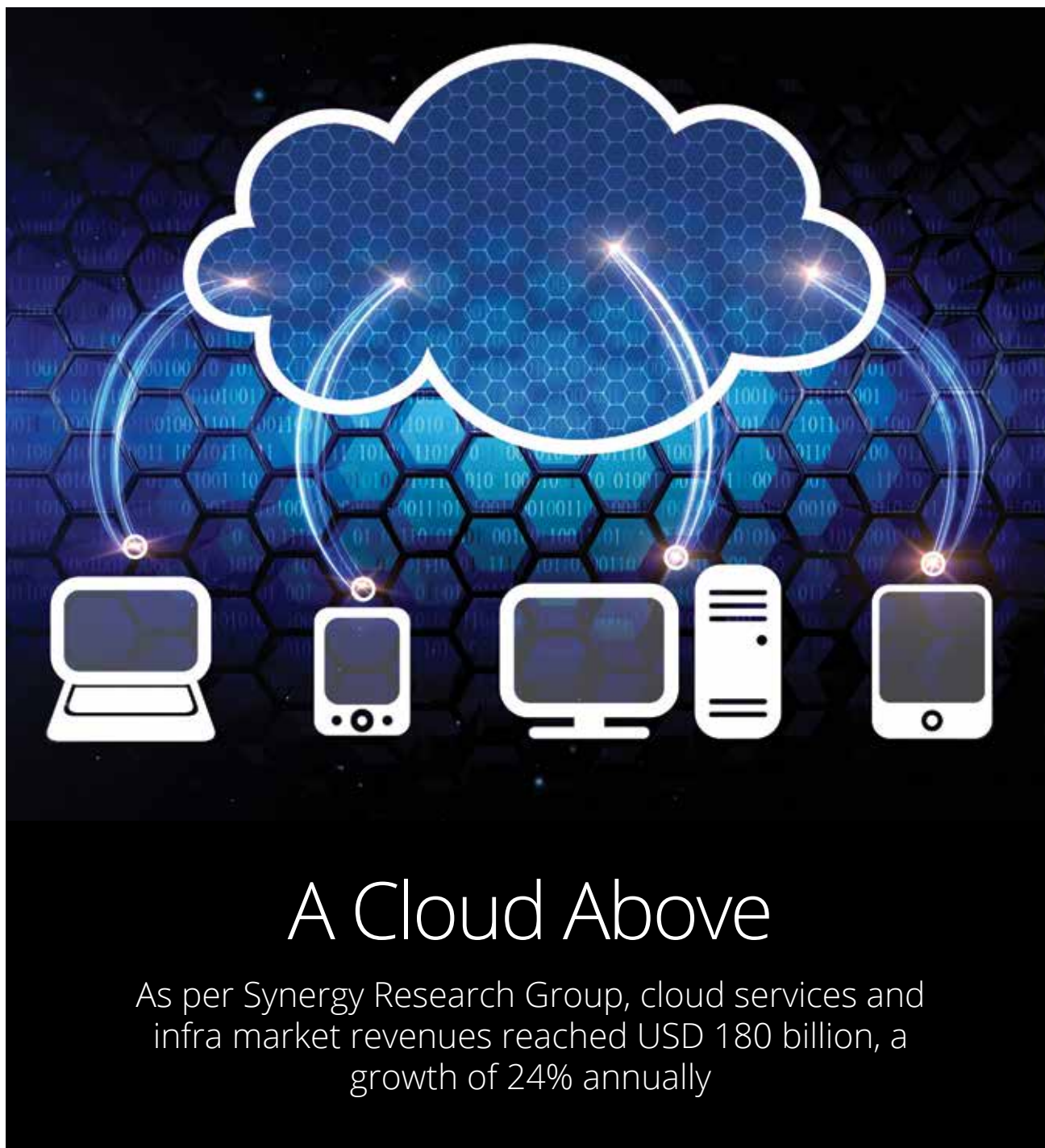
India is stacked much low at 108 in the report. India, ranked at 108, presents a gross contradiction. The report highlighted Indian women's poor labour participation in India at around 0.28 while 0.66 of women are still unpaid for work. According to a 2015 McKinsey report, Indian women's contribution to GDP than the global average of 37% and the lowest among all regions in the world.

The Indian BPM-IT industry is the second largest employer of women. But unfortunately, only 17% of senior roles are held by women in India, says a global survey by Grant Thornton. The survey of 5,500 businesses in 36 economies further revealed that 41% of the Indian businesses surveyed did not have a single woman in a leadership role. Adding insult to injury, the survey highlights that only 7% of the senior management (CEO/ Managing Director) roles were held by women in India.

Underrepresentation of women in the global workforce is a recurring issue. WEF presents a demure figure of 217, the number of years it will take for disparities in the pay and employment opportunities of men and women to end.

A year ago, it was at 170 years.

At Davos 2018, world leaders and CEOs have emphasized on the importance of gender equality in the workforce. It is time for other countries and governments to act, like Canada, to alter their policies like Norway, and to create equal opportunities in countries around the world ■

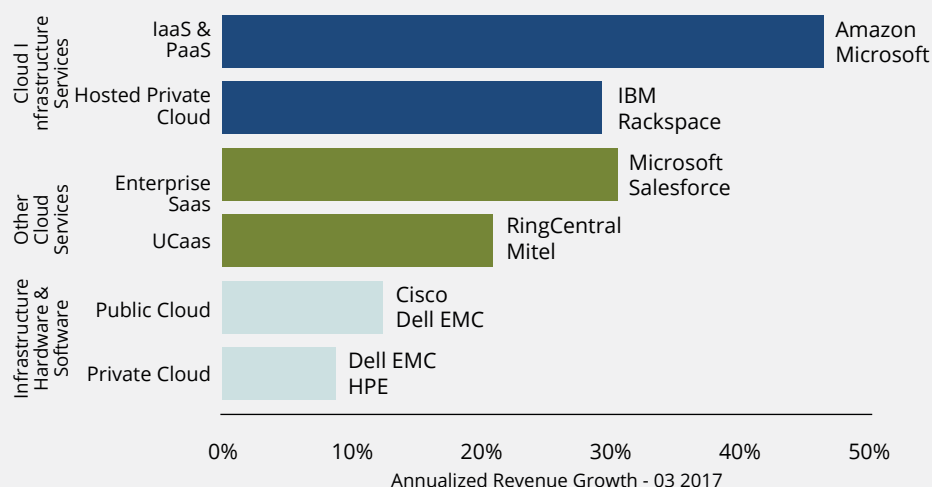


A Cloud Above

As per Synergy Research Group, cloud services and infra market revenues reached USD 180 billion, a growth of 24% annually

New data from Synergy Research Group shows that across six key cloud services and infrastructure market segments, operator and vendor revenues for the four quarters ending September 2017 reached USD 180 billion, having grown by 24% on an annualized basis. IaaS & PaaS services had the high-

Cloud Market Growth & Segment Leaders - 2017



Source: Synergy Research Group

Over the period Q4 2016 to Q3 2017, total spend on hardware and software to build cloud infrastructure approached USD 80 billion, split evenly between public and private clouds, though spend on public cloud is growing more rapidly

est growth rate at 47%, followed by enterprise SaaS at 31% and hosted private cloud infrastructure services at 30%. 2016 was notable as the year in which spend on cloud services overtook spend on hardware and software used to build public and private clouds, and in 2017 the gap widened. In aggregate cloud service markets are now growing over three times more quickly than cloud infrastructure hardware and software. Companies that featured the most prominently among the 2017 market segment leaders were Amazon/AWS, Microsoft, IBM, Salesforce, Dell EMC, HPE and Cisco.

Over the period Q4 2016 to Q3 2017, total spend on hardware and

software to build cloud infrastructure approached USD 80 billion, split evenly between public and private clouds, though spend on public cloud is growing more rapidly. Infrastructure investments by cloud service providers helped them to generate over USD 100 billion in revenues from cloud infrastructure services (IaaS, PaaS, hosted private cloud services) and enterprise SaaS – in addition to which that cloud provider infrastructure supports internet services such as search, social networking, email, e-commerce and gaming. Meanwhile UCaaS, while in many ways a different type of market, is also growing strongly and is driving some radical changes in business communications.

“We tagged 2015 as the year when cloud became mainstream and 2016 as the year when cloud started to dominate many IT market segments. In 2017 cloud was the new normal,” said John Dinsdale, a Chief Analyst and Research Director at Synergy Research Group. “Major barriers to cloud adoption are now almost a thing of the past, with previously perceived weaknesses such as security now often seen as strengths. Cloud technologies are now generating massive revenues for cloud service providers and technology vendors and we forecast that current market growth rates will decline only slowly over the next five years.” ■



Why Enterprises Need A Digital Transformation Strategy?

The success of organizations and emerging startups will certainly depend on their pace to adapt to a digital transformation strategy

Today we are in the age of digital disruption and the constant evolution in technology is making everyone work on the go. It is all the more imperative for companies of all sizes including emerging startups to grasp that no one is immune to this reality anymore. Across every industry, customers, and employees alike are demanding greater mobility; easier

and more transparent access to information of all kinds; and flexible, pleasing user experiences. Internal operations, too, are being transformed as companies look to digitize and automate everything — the factory, the supply chain, marketing and sales, HR, administration, even maintenance and ticketing.

The success of organizations and emerging startups will certainly



Jay Kinra
Partner at HokuApps, India

A good digital transformation strategy will help you synchronize your business by seamlessly improving the interactions between your people, processes, and products

depend on their pace to adapt to a digital transformation strategy including the adoption of enterprise mobility. Partnering with the right technology company to automate their systems and execute this strategy quickly is imperative. However, if you think your company should be cautious in its approach to digitization, think again, because even if you are moving slowly and carefully, your competitors aren't. According to a recent Forrester study, a large percentage of executives think that almost half of their revenue will be influenced by enterprise mobility by 2020.

A good digital transformation strategy will help you synchronize your business by seamlessly improving the interactions between your people, processes, and products. In addition it will help you to streamline processes like unnecessary double manual entry into various unconnected systems and facilitate the best internal practices within all your teams. This not only cultivates a cohesive working atmosphere but also ensures that every team is on track to meet their goals and more focused on being thought leaders rather than doing mundane manual work. The separate components of your digital transformation can work together to help you achieve a holistic environment that benefits you, your employees, and most importantly, your customers. At this point, few people would argue against the importance of a good digital transformation strategy— and

mostly everyone understands that having a mobile-ready team is indispensable for a modern workforce.

While your technology partner will help you to streamline your business activities, it is equally important to keep a track on the overall cost effectiveness of implementing this technology. Here are some methods of determining the effectiveness of your mobile strategy:

Revenue vs. costs: Once you have decided to embark on a digital transformation strategy and deployed the platform with the help of your technology partner, you can start calculating the financial benefit it has on the organization as a whole. Some key metrics would include company process efficiency, less man power on manual processes, increased sales figures, profitability and time to market.

Turnaround Time (TAT): Another aspect of the ROI of your digital transformation strategy includes how much time does the organization saves on cost. Automation plays a huge part in allowing your team to save time and execute multiple activities simultaneously. Since technology helps you to capture raw data, you can easily track the improvement on the turnaround time of multiple tasks in your organization right in the palm of your hand and on the go.

Increase in Productivity: Automation enables your employees to concentrate on larger strategic roles, while the mundane work is on auto pilot mode. It ensures that your

employees have more time to think creatively rather than wasting time on tedious day-to-day activities. Reducing the need for employees to travel—and cutting back on the time they take to complete tasks—are also distinct ways to increase the ROI of a good digital transformation strategy.

Adoption rate: You have to make sure that technology deployed is customized to your business needs. This way your employees spend no time to adapt to new processes, which ensure less wastage of time. Involve your team members and take suggestions on the kind of platform and processes that will suit their working style. An ideal technology platform will ensure a smooth transformation from traditional to the digital route tailor made to the way that your company operates. Looking at how quickly and actively your employees adopt the new technologies that you roll out can help you understand the strategy's effectiveness.

Customer experience: Your customers represent your company. How loyal are your customers is as important as the loyalty of your employees. The improvement in your company's internal performance automatically reciprocates how your customer feels about you. Timely delivery, of products and services, prompt replies to customer complaints, timely resolutions to customer complaints, etc. are all the parameters by which you can gauge the customer experience ■



Two times
the revelation



Uma Nath Tripathi

Project Director,
EICE Consultants & Engineers

IDEAL GADGET:

Apple iPad



APPS I USE A LOT:

Gmail

IDEAL COMPANY:

I would like to build one

**MY FRIENDLY PEER IN
THE IT COMMUNITY:**

Rajeev Shukla

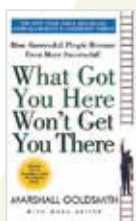
Product Manager - IT,
Bechtel India Pvt. Ltd.

*The perks of having Rajeev as a pal:
I can discuss IT-related problems and
explore new technologies and tools*



**A BOOK ON MY
BEDSIDE:**

*What Got You Here Won't
Get You There*
by Marshall Goldsmith



ON MY PLAYLIST:

Ghazals by Jagjit Singh



A SHOW I LIKE TO WATCH:

Ted Talks

TECH LEGEND I ADMIRE:

N.R. Narayana Murthy

FAVORITE TECHNOLOGY COMPANY:

Google



डिजिट अब हिंदी में

देश का सबसे लोकप्रिय और विश्वसनीय टेक्नोलॉजी वेबसाइट डिजिट अब हिंदी में उपलब्ध है। नयी हिंदी वेबसाइट आपको टेक्नोलॉजी से जुड़े हर छोटी बड़ी घटनाओं से अवगत रखेगी। साथ में नए हिंदी वेबसाइट पर आपको डिजिट टेस्ट लैब से विस्तृत गैजेट रिव्यू से लेकर टेक सुझाव मिलेंगे। डिजिट जल्द ही और भी अन्य भारतीय भाषाओं में उपलब्ध होगा।

di9it.in
NOW IN HINDI



www.digit.in/hi
www.facebook.com/digithindi

डिजिट



518

applicants applied
for NEXTCSO
Awards last year

24

won the title of
nextgen CSOs

**This year we are looking for
30 candidates
who demonstrate excellence,
innovation and leadership
in information security**

HAVE YOU APPLIED YET?

Last date of application:
4th MARCH 2018

#NEXTCSO

CSO FORUM
PRESENTS

nextCSO

THE SEARCH FOR INDIA'S FUTURE CSOs

AWARDS 2018

For more information visit nextcso.in
Contact us at info@nextcso.in, or call us at 0120-4010955