



TIME TO SOAK IN SUNSHINE p. 40



INTERVIEW: SAPNESH LALLA, CEO, NIIT LTD. p. 44



HOW BLOCKCHAIN CAN GO BEYOND BITCOIN p. 48

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VOL XXXVIII No 08 | AUGUST, 2021

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IT Person of the Year

Rajesh Gopinathan

MD & CEO, TCS

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CONTENTS

THE DQ TECHNOLOGY CHAMPIONS 34

LARGE ENTERPRISE	LARGE ENTERPRISE	SMB
 ASHISH DESAI CIO, Gasim Industries Limited	 RAJIV ARORA Global IT Hub Head - Siemens AG	 MANJUNATH PRASAD Head - IT, TV Sundram Iyengar & Sons
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INDUSTRY 4.0	CLOUD	
 YOGESH DADKE IT Leader - APAC, Axiat	 SHAJAY THOMAS Regional Head - Technology APAC, Technicolor India Pvt Ltd	

08 | COVER STORY

DIGITAL LEADERSHIP CONCLAVE & AWARDS 2020

NEW WORLD ORDER

TIME FOR TECH TO SHINE



09
IT Person of the Year
Rajesh Gopinathan
MD & CEO, TCS

16
Lifetime Achievement Award
Som Mittal
Former President & Chairman, NASSCOM

24
AtmaNirbhar Champion
Sunil Vachani
CMD, DIXON Technologies

INDUSTRY

40 Time to soak in sunshine



TALKING POINT



WE SEE TECHNOLOGY AS A KEY ENABLER FOR LEARNING

44

SAPNESH LALLA
CEO, NIIT Ltd

DEEP TECH

48 “Hodling” the line: how blockchain can go beyond Bitcoin



DQ CONCLAVE

51 New order for a new world

55 The pandemic and our future



60 The digital journey from office to home

63 From miles to mbps: the new digital reality



68 Time to gather tech armours for the third battle

72 In the pink of health, back again



74 Explained: the ‘new world order’ and us

REPORT

77 Turbo-charging industrial transformation

REGULAR

06 DQ Team

07 First Page

81 News

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Dataquest (not affiliated with Dataquest Inc., a division of Gartner Group, USA), is printed and published by Pradeep Gupta, on behalf of Cyber Media (India) Ltd, printed at M/s Archana Printers, D-127, Okhla Industrial Area, Phase-1, New Delhi 110020, published at D-74, Panchsheel Enclave, New Delhi 110017, India. Editor Shubhendu Parth. Distributors in India by IBH Books & Magazines Dist. Pvt. Ltd, Mumbai.

Subscription (Inland): ₹1200 (12 issues), ₹2400 (24 issues)

(For subscription queries contact : rsedqindia@cybermedia.co.in)

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Shubhendu Parth

Myopia – in children, of policy makers – in COVID times

The first access to a regular electronic screen in my life was that of Uptron colour television. Though my school had a computer before that, we only had the opportunity to sit in front of it while the teacher showcased how it worked once in a blue moon during the SUPW – socially useful productive work – class. TV, however, soon became the glue, as my mother used to say, warning that it will impact my eyesight. She was no doctor and there were no research back then in 1982, when, thanks to the Asian Games, colour TV sets were launched in India and became a rage.

A recent study published in the British Journal of Ophthalmology by researchers from The Chinese University of Hong Kong indicates that my mother and our elders were right. The research that compared the progression of myopia (short-sightedness) in children aged 6–8 with other Chinese cohorts in Asia found that the estimated annual incidence of myopia was 29.68% in the COVID-19 cohort compared with 11.63% in the pre-COVID-19 cohort. In other words, there has been a 2.5-fold increase in myopia incidence during the pandemic.

The reason, as the study points out is, obviously, the massive increase in screen time, be it due to studies, gaming, entertainment, social media, chatting or a combination of all. Based on the responses to a standardised questionnaire on lifestyle, the report hints towards an alarming change in children's lifestyle during the COVID-19 pandemic, with 68% decreased outdoor time and 2.8-fold increased screen time. "Evidence suggests that when children are out of school, they are physically less active and have much longer screen time, and of all the environmental risk factors that have been studied, increased outdoor time has been consistently shown to have a protective role against the development of myopia."

While India is going through an unprecedented boom in edtech and digital prowess of educational institutions is fast become a big marketing pitch, the country seems to be conveniently ignoring the red eyes of the young citizens – pushing them to a minimum four-five hours of on-screen education. The research by Zhang X, Cheung SSL, Chan H, et al is not just a reminder of grandmother's wisdom, it also serves as a warning for policy makers, educators and parents that they need to put in collective effort to prevent childhood myopia and define contours of the pedagogy for the digital-era.

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DATAQUEST IT PERSON OF THE YEAR 2020

RAJESH GOPINATHAN
MD & CEO, TCS



THE GLOBAL IT INFLUENCER

Rajesh Gopinathan is one of the youngest CEOs in the Tata Group and is seen as a personification of TCS' commitment to a culture of customer focus and exceptional service quality. He was elevated to the CEO role in February 2017 after serving TCS as its Chief Financial Officer since 2013. His astute leadership saw TCS quickly adapt to the new normal not just helped the company weather the pandemic, but also step into its next wave of growth, with an improved services portfolio in the digital realm and endless opportunities for new innovations with clients.

Under his stewardship TCS embraced a new operating model that prioritised the health and wellbeing of its employees, while enabling it to continue supporting its customers not just in their mission-critical operations, but also in their growth and transformation journey. Its Vision 25x25 and pioneering work around talent clouds have reinforced Gopinathan's credentials as a thought leader on the future of work, and a trend setter in the industry.

He has also been instrumental in crafting the second round of restructuring driving empowerment deeper inside TCS to help the company's next wave of growth. The company's agility, resilience and responsiveness during the crisis earned it tremendous goodwill from customers and enhanced its standing in the market. This enabled TCS become a USD 22.1-billion global giant by end of March 2021. With over 488,000 consultants, it also became one of the largest private sector employers globally, and was recognized as a Global Top Employer for the fifth consecutive year, with the highest retention rate.

Driven by Gopinathan, TCS achieved the USD100-billion market capitalization in April 2018, becoming the most valuable company in India. TCS was again recognised as the fastest growing brand in the IT industry in 2020. In 2021, the company's brand value soared to USD14.9 billion, further consolidating its position among the top three most valuable IT services brands globally, according to the Brand Finance 2021 report.

A fiercely capable business leader, Gopinathan has quietly become one of the most powerful forces and an influential voice of the country's IT services and digital technologies sector as well as a global influencer.



Interview



WE ARE AT THE BEGINNING OF GENERATIONAL SHIFT IN TECHNOLOGY

*An electrical and electronic engineer from NIT, Trichy and an IIM, Ahmedabad alumnus, **Rajesh Gopinathan** joined Tata Strategic Management Group in 1996 working on multiple assignments with Tata companies. He joined TCS in 2001 and was responsible for driving the company's newly established e-business unit in the United States overseeing design, structure and implementation of the new organisational structure, operating model, and financial management of its individual operating units. Most recently, as the Managing Director and CEO of TCS, Gopinathan has led the restructuring in the company and redefined its services portfolio to enable faster growth in digital services, and align it to the growth and transformation imperatives of clients. Excerpts from the interview with him:*

The first year of the pandemic had a silver lining for TCS as it emerged as one of the most valuable IT services brands in the world. How did the company manage to navigate the global crisis and emerge as a clear leader?

In many ways, the foundations that have been laid over the last two decades played an important role in how we dealt with the pandemic. I would like to highlight two primary success factors or drivers that allowed us to do well. One, the industry and TCS as its leader have always been very customer-centric. We have always redefined the approach of this industry, in terms of customer-centricity. That trust in relationship was critical in dealing with the pandemic because the clients never lost faith that we will be able to overcome it, and most importantly we will always keep their interest first and find solutions that work for all of us.

The other big aspect is the trust that we have built with our own employees, the close-knit community that we have created and the continuous focus on talent, and skilling. Each and every TCSer stood up and went

far beyond what would have been expected of them in terms of dealing with the crisis. While we have talked a lot about SBWS and remote working, I think at the heart of it is the customers' and the employees' trust in us and the employees' commitment, which helped us navigate. And while it looks quite straightforward, the size at which we are operating and the speed at which this happened is unimaginable anywhere else, or in any other industry. It was truly humbling and a matter of great pride for me to lead a team like this, through such crisis.

TCS seems to have benefitted from the long cycle of technology spending in its overseas markets, and the increase in spending from the financial sector in the US and European markets as the road to recovery begins. What do you expect in the FY 2021-22 in terms of global business?

We believe that we are at the beginning of another generational shift in technology. In the last 10-20 years, we went from client servers to web, from web to mobile, and from mobile to cloud. While we spoke of the cloud



THE NEXT FIVE YEARS WILL BE CHARACTERISED BY ADOPTION OF CLOUD BECAUSE SIGNIFICANT WORKLOADS AT THE ENTERPRISE LEVEL WILL SHIFT TO THE CLOUD.

long time back, of the digital stack, the mobile adoption was what characterised the last five years. The next five years will be characterised by adoption of cloud because significant workloads at the enterprise level will shift to the cloud.

The cloud is a new architecture stack and it is both an opportunity as well as a challenge to fully leverage its capabilities. The cloud is also likely to have a larger impact beyond technology architecture since it gives a seamless fabric. The kind of collaboration that could possibly happen between enterprises could unleash many new business models. And that itself will trigger another round of innovation, which will be technology-led. As we look forward into the next five to 10 years, we are very encouraged by the trajectory that we see and very optimistic about the extent of technology leverage, and the ability to add value to customers. We are quite positive for the medium to long term.

The year 2020 saw an important inflection point in terms of adoption of digital technologies by individuals as well as enterprises. What does it translate into for TCS in the domestic market and for the industry in general?

In the domestic market, it's a bit more complex. In some ways, our domestic market leapfrogged technology and is ahead of global markets, especially considering the size of our individual companies or enterprises. If you look at financial services and areas like payments, the Indian market is far ahead of where the international market is. Even a decade back, in terms of trade and settlement, our infrastructure was far ahead of the global infrastructure and the kind of straight-through settlements that we were able to do. That lead has been significantly consolidated and pushed forward in payments; the payments infrastructure that we currently have is absolutely second to none, especially when it comes to the consumer side,

as well as interbank settlements. These are some pockets of significant technology leadership.

There are also many areas where technology has not yet penetrated, because the extent of competition in those industries was limited. Even in many parts of manufacturing, especially on the supply chain side, there is an opportunity for significant improvement. Also, as we push banking further down into the larger heartland of the country, there is a need to link the last node of financial inclusion all the way up to the core banking system. So, there is a huge opportunity of leveraging financial technology to move forward. I feel that the country is on the cusp of significant changes across industries and the government has always taken a leadership stance on that – multiple industries have transformed, we ourselves are quite proud of MCA and passport projects, and more recently with Aarogya Setu, and health and insurance.

There are opportunities across the whole gamut of governance that could get transformed. Education is another big area where we participate significantly, especially on the assessment side. Education delivery is another space that has lots of opportunities. So it's a story of a glass half full, I think what we have, we can be quite proud of. But for our size and opportunity, I think there's a lot more to be done. But we are starting from a good base. And we have the talent that is needed to get it done.

You mentioned SBWS (Secure Borderless Workspaces) and also touched upon cloud as the next big thing. A lot has also been talked about TCS' Vision 25x25 and the talent clouds. Can you elaborate on this and also the SBWS, and your vision of the future of work?

Many a time there are ideas that keep gaining momentum and then there are some events that bring it to the forefront. SBWS and 25x25 are like those ideas. The technologies and components required for remote working have been available for some time. But we were not breaking free

from our mindset of bringing people together into large cities, into large offices and saying everything needs to be done together. The pandemic has exposed us to the possibilities, the benefits of a more distributed work environment. And we believe that, once we have crossed this line, we will never go back to the earlier model. And 25x25 is an acknowledgment of what is possible and the vision on this roadmap. But it will have to be done in a more controlled and a more planned manner.

We went from being 100% at work to being almost 100% at home and 0% at work, but we are not going from here to 25x25 directly. We will have to find some intermediate paths to get there from our more traditional starting point. But it has great implications for the country because the talent in India was distributed across six cities. And unlike other large countries, which could compete with us, talent mobility in India is absolutely secured by the Constitution. Anybody can live and work anywhere. But our work practices have not fully leveraged that. This allows us to think of it as one single talent pool and to be able to distribute work seamlessly. But we will need to work together with the government to think through jurisdictional implications and its footprint on various regulatory aspects. Considering that India is now one single market in terms of goods and services, I believe our thought process is aligned to that common path. This will help reduce the load on the large cities because rather than everybody congregating into large cities, we will be able to push work to where people would love live and have a good lifestyle. So there are multiple benefits, for the industry from the talent accessibility perspective, as well as for the country from the development of infrastructure and holistic development perspective.

As on 31 March 2021, TCS has reportedly applied for 5,879 patents of which it has been granted 1,850 patents. What kind of research and innovation work is being done by the company, and how has it translated into success?

Our research interests are quite wide and diverse as they ought to be. Research should be left open-ended so that one can explore the art of what is possible. This was ingrained into the TCS' DNA more than 50 years ago when TRDDC (Tata Research Development and Design Centre) was set up. It has been at the heart of a lot of innovation that has come from TCS on various aspects

of our service delivery. We typically look at it along two dimensions and three horizons. One is pure research. We try to bring computational thinking and leverage computational technologies as a common underlying factor. But the research interests there are very wide; more than 10 years back we came up with water filtration technology Tata Swach. The nanotechnology that was used to disperse the active agent onto rice husk came out of the TCS labs. We have also done research in education – adult literacy.

These are kind of core foundational research, which could have applicability in many areas. And then we do industry-specific research that happens under the innovation labs. These are more vertical focused – future of banking and finance, payments as a transaction mechanism, drug discovery, space, or even in areas such as algorithmic retail like merchandising supply chain. These are more tightly linked to what we do in business. The horizons are also similar. Our immediate short-term horizons are to solve the problems of here and now. And then if we look long-term into the third horizon, we have a very open ended landscape of future problems.

This helps TCS in multiple ways. We have a very strong and growing products and platforms portfolio, which has been built through this foundation of research. We are not very acquisitive and products across all areas – automation, our banking product, or in healthcare – all of this has come out of TCS research. So, there is an immediate benefit there. But it also helps nurture innovative mindset inside the company. That is something we believe is very valuable and probably under-invested in the country. It is not that we are not innovative in the country, but we do not take our innovative spirit to the next level of securing it as an intellectual asset that can be patented and leveraged. One of the big things that we do through our research is to inculcate the process mindset and institutionalise this process.

Experts often point out that we in India look down upon failure and that mindset is a not very encouraging for people engaged in R&D. What can be done to change this at the corporate and policy level?

I'm more of the camp that says it's a glass half full, half empty kind of thing. We shouldn't be too harsh on ourselves. A lot of what we've done in the past is a reflection of the fact that we weren't a very rich country; we were a



EDUCATION IS A BIG AREA WHERE WE PARTICIPATE SIGNIFICANTLY, ESPECIALLY ON THE ASSESSMENT SIDE. EDUCATION DELIVERY IS A SPACE THAT HAS LOTS OF OPPORTUNITIES.

resource-constrained country. The mindset of a resource-constrained society is different. They're more short-term and more here-and-now oriented. The unfortunate fact is that intellectual assets require financial assets to nurture and create them. It is not just the intellect, one needs the financial muscle, and we are building on it. So, we shouldn't look backwards on what we have not done in the past. It is more important to look forward. And a lot of what I said about what TCS is doing is a step in that direction – going after patents, inculcating that process, supporting over 200 computer science PhD programs in India through scholarships.

We recently conducted our annual programme TCS Innovista, where we invite innovative ideas from across the company. This year, we had more than 10,000 entries. Less than five years ago, we used to get just a couple of thousand. So being able to grow multifold and getting 10,000 people to participate when there are only around 25 prizes is a big thing, particularly when they know that 99% are not going to get anything other than the thrill of participating. So we need to find, nurture, and fund forums like that.

From a policy perspective, I think the government recognises the opportunity and that is why it has decided to create a National Research Foundation. It has set aside Rs 50,000 crore for setting it up in this budget. There's an opportunity to bring together the multiple activities happening in our educational institutions, along with models that have been successful like the National Science Foundation of the US. I think that's a space that is open for us right now. And I'm very happy to see that the last three budgets have mentioned it. So that money is available. Now we need to step up and use it.

You highlighted that TCS has been doing a lot of research that is used to develop different products

and service offering. Is that the reason that unlike many companies that take the M&A route to acquire technology, TCS follows a conservative approach when it comes to acquisitions? Is organic growth part of a deliberate strategy?

Absolutely, it's part of a deliberate strategy. But it's not an exclusive strategy in the sense that it is not that we are saying we will only go organically. In fact, we have a good history of acquisitions, whether in services, like what we did in our BPO services – we acquired the backend processing of Citibank – or growing through acquisitions in Latin America, France, Japan and other geographies. So we do have a history, but we are not a prolific acquisition engine. So our strategy is primarily organic, supplemented with acquisitions, rather than being primarily acquisitive. And we believe that when we find a new opportunity we like to give it to one of our existing people to grow it into the new business. We find the closest match, put them up and then try to put all the resources of the company to help them grow. It takes a bit more time, but it also helps us to build it right from the beginning, rather than make a patchwork. So, it is a very conscious deliberate strategy, but it's not excluding the option.

Talking about the industry, what role do you see the IT sector playing in enabling India to become a USD5 trillion economy by 2024-25?

I think the sector has a big role to play. So, of course, the first step of it has been that we provided the window to the world on what India's possibilities are. If you think about it, the largest oil exporter in the world exports USD300 billion and we export USD150 billion without digging any natural resource. We export intellectual capital and that is respected very well globally. So, our presence on the global stage in many ways has been defined by the IT industry over the last two decades.



TALENT MOBILITY IN INDIA IS ABSOLUTELY SECURED BY THE CONSTITUTION. ANYBODY CAN LIVE AND WORK ANYWHERE. BUT OUR WORK PRACTICES HAVE NOT FULLY LEVERAGED THAT.

As we look forward, the depth of talent available in the country will be a key part of ensuring that all the other industries that are stepping up, are able to leapfrog the technology transition, like I gave you the example of payments and banking. Similarly, we are seeing that it is unfolding in the telecom space and in the e-commerce space. The same opportunities are there in healthcare and supply chain for the manufacturing sector. These industries have the will to leverage this talent pool to instantly leapfrog on the technology journey compared to what other countries have done over the last two decades. And finally, as a company, our ability to use our domain knowledge, the knowledge that we gained working with industry leaders across multiple geographies, multiple markets and multiple industries, is something that is available for us to make impact both in the public sector as well as in the private sector. So, across all these dimensions, I think the IT industry is pretty much set in the path of progress for India, and will be strong player in driving this growth of the country.

The industry closed FY2020-21 with revenues of USD194 billion, including USD150 billion exports, USD45 billion domestic revenues, and USD99 billion IT services. Is the overall 2.3% growth good enough for the country, given that the new normal has been driving adoption of digital technologies?

As we become larger the export growth will be linked to both economic cycles, as well as the technology cycle that I spoke about. And we should seek to increase our market share in a growing pie. The global IT industry grows between 2% and 5% a year depending on where we are on the cycle over a multi-year duration. With the kind of growth we have enjoyed, we have only increased our market share. And I think there's that opportunity to continuously increase market share for the next 10-15 years easily. It is not a given, but if we stay diligent and

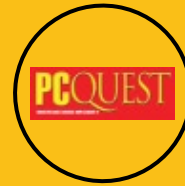
execute well, we should be able to increase our market share in the global market space.

From a more domestic perspective, I think we are likely to see much more accelerated usage as multiple industries open up. Today, bulk of the domestic industry has been driven by either financial services or the power sector that went through a fair amount of reforms, or insurance and retail. But as more and more companies come into the economy, and the relative competition increases, the role of technology leverage will become bigger. Today, technology has played a role in setting up these companies. But technology will also play a role in their competitive dynamics. Therefore, as the economy becomes wider, you will see a lot more leverage at play. So definitely 2% is just a blip. As the global markets and the economy stabilise and then start growing again, you will see that technology is at least a few percentage points ahead of that growth rate.

From the sector perspective, India seems to be lagging in software products at USD9 billion and hardware at USD16 billion, while engineering and R&D revenues dropped 0.2% to USD31 billion. Are we on the right strategic path, or do we need a course correction?

I think so because engineering is still fairly untapped field. Our role in the value chain in core IT technology versus our role in the value chain in engineering is slightly different. In engineering, we do more project related work so that explicitly on the new product development. So as the cycles of new product development are much more volatile to economic activity, whenever there is an economic upheaval, the first thing that gets axed is budget for product development. And a lot of what we do as a country in engineering is related to product development. Therefore, that volatility is natural. I think there is an opportunity to correct it by broad-basing ourselves across the value chain.

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DATAQUEST LIFETIME ACHIEVEMENT AWARD, 2020

SOM MITTAL
Former President & Chairman NASSCOM



THE DOYEN OF INDIAN IT INDUSTRY

A man with vast experience, Som Mittal, Former President and Chairman NASSCOM, has been wearing many hats during his 46 years career – from being part of the engineering and automotive industry to leading IT products companies, and later as the president of NASSCOM, senior advisor to the World Bank, McKinsey & Co., and Government of New Zealand, among others.

During his stint at the NASSCOM, Mittal set up the Data Security Council of India to promote data protection and develop best practices for cyber security and privacy. He also initiated the NASSCOM 10,000 Startups programme that aims to foster entrepreneurship, build entrepreneurial capabilities at scale and strengthen early stage support for tech startups. Over the years, with over 5,800 startups, 500 startup-corporate connects, 400 start-ups in global ecosystems, and 150 new product concepts, the programme has helped India become one of the top three startup ecosystems in the world.

Mittal also played a critical role when he steered the industry through some of its most challenging phases, including the Satyam crisis that could have severely impacted the credibility of the software sector in India. He also led the public advocacy efforts globally and was able to overcome protectionism issues in US, UK, EU, Canada, and Australia among others. Consistently reiterating commitment to free trade, Mittal took a strong stance against perils of protectionist policies, demonstrating how Indian companies contributed to local economies and at the same time ensuring that policies in India follow the same principle.

He has served as a member of Indo US and Indo EU ICT strategic dialogues, as a member of the Prime Minister's Committee on National e-Governance, and as board member of Global Advisory Council of the World Information Technology and Services Alliance. He also initiated the Digital Literacy Mission in rural areas and was a member of the committee to review the Bharat Net project that aims to provide broadband connectivity to 2.5 lakh panchayats.

Mittal is well recognised for his commitment to the cause of IT and ITES industry in India, as well as his outstanding dedication to the growth of the global information and communications technology industry.



Interview



WE ARE NOTCHES UP DIGITALLY AND SAVVIER THAN BEFORE

*An alumnus of IIT Kanpur and IIM Ahmedabad, he began his career in the engineering and automotive industry serving at Larsen & Toubro, Escorts and Nippondenso from 1975 to 1989, before shifting his gear to join the IT industry to set up Wipro's peripherals division, and later heading its server, PC and services division. Thereafter, he joined Compaq, driving its growth in India as the Country Managing Director. He was actively involved in spinning off the company's software unit, Digital GlobalSoft (now HP Global Soft Limited) and managing the integration of Digital Equipment Corporation (DEC) and Compaq, before heading DEC as its Managing Director. His bigger industry role came when he took over the reins of NASSCOM in 2008, leading India's IT services industry amid economic turmoil, political challenges, and the Satyam crisis. The doyen of India's IT industry, **Som Mittal**, shared his views on the post-pandemic challenges, opportunities and trends driving the IT and ITES sector. Excerpts:*

You have been part of the IT industry since 1989. How will you describe the change from the early days of PCs to the present everything digital era?

In the early years of IT industry in India, a lot of intellectual capital was spent with very little output. There has been a dramatic change in terms of technology over the years, in the way CPU evolved with its power and price moving in opposite directions. There was also a big change in terms of focus which shifted from hardware, technology, and enterprise to customers and their customers. Back then, information technology was limited to enterprises and EDP reports, but the moment it reached the desktop and other devices, the democratisation of technology started to happen.

I think the evolution of technology that has happened in the last 10 years was ten times faster than what happened

in the decade before it, which was fast enough. In 1999, when Digital became a software company, we had very low microwave link. Fibre was not there and one had to be in the good books of BSNL to get a link. Data connectivity was not available so easily. It was limited only to enterprise. During the last 21 years, the whole approach has changed. The availability of data connectivity for all is driving a big change. Connectivity did influence organisations in early days, but today it can impact the whole world. Today, data connectivity is not just about enterprises running more efficiently, it's about our lives.

The year 2020 was exceptional in many ways. What impact did it have on the overall IT industry and what role do you see the sector playing in enabling the economy?

For every crisis that happens, there's a silver lining



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DEMOCRATISATION OF TECHNOLOGY STARTED TO HAPPEN.

somewhere. The demonetisation, for example, accelerated digital payments. The pandemic, in particular, has been devastating. In the first six weeks, we didn't know what to do because there was a sudden lockdown. Employees didn't know what to do because their own cyber security requirements were such that there was no possibility of working from home. The government would not allow work from home because the connectivity norms did not allow it. It took us nearly eight weeks to work it out. People learned how to work from home and got the infrastructure and connectivity solutions, the government gave the required permission and the industry worked out new ways of business continuity. There's no other sector in the world that has been able to spring back to virtually the same level or more.

There have been some permanent changes in our lives too. Earlier, video conferencing was tough. I used to dread it. But everything changed suddenly, it became secure and efficient. I think technology did respond very rapidly to the needs. The other plus point that I see in coming times is enabling more women to work. Statistics indicate that we may have 50% women at the entry point in the sector, but the average number of women employees is 32%. This happens because a lot of women drop out, some leave the sector and many quit the profession because we did not allow them to work from home. With

the new normal of work from home, I expect many of them to come back – maybe not full-time, but now the industry will certainly have access to that capability and scale, and the talent pool. The efficiencies of productivity due to WFH, however, may not remain forever because it's not feasible to continue to work like this as there are negatives as well of working from home. Nonetheless, not only as a sector, but also as an economy, we are notches up digitally and savvier than before. I see a bright future and a bright role to play.

India's software and services success is an old story now. We have entrepreneurs who have made it big, but why is it that despite being the software guru, the country still does not have a Facebook, Amazon, Apple, Netflix and Google, or the likes of WhatsApp?

I agree with you. But we kind of ignore the likes of Paytm, BYJU's, and Flipkart. They may not have been completely innovative but they have scaled up in a lot of ways. We need to understand that it is only in the last several years that failure has become an acceptable outcome. Earlier, the whole model was based on arbitrage. I don't want to negate the great work that people did, because India was not known for its quality and we created it – this whole offshoring model is very much an invention of India. We made it happen and made it successful.



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For entrepreneurs, there were two big deterrents: the fear of failure and the availability of funds. I could never have been an entrepreneur since I could not afford to be a failure. Amazon and Google struggled for a long time. But they had the conviction. Besides, two things helped them – their environment was not over regulated and the availability of funding, which has just started coming to India. And of course, it depends on our capabilities of taking big risk. I still feel that we don't take those big risks today. Our R&D expenditure is very low. The stock market in India does not really support large investments as compared with margins.

I also feel that majority of the solutions in India have been aping the West. We create an ecommerce platform or look at how online teaching is happening and adopt it for Indians. We look at payment platforms that are already there and create one in India. It is kind of me too. Unless you're solving a local problem and then taking it to the world, it cannot become big. China did it right. It had its people, the technology and money, and gave relaxations in regulation. So today from nowhere, it has become the AI champion of the world.

We should not worry too much of whether we have a Google or a Netflix, but the question is, are we working towards and encouraging that to happen? I would even say no. We still have the same regulatory environment for startups as we have for large enterprises. There is mistrust between business and government.

There was a time when India countered China's prowess in manufacturing by highlighting its software power. With core technology itself moving from pure-hardware-driven to software-driven environment, do you think India still has that advantage, particularly since we do not seem any match in R&D for countries like China, Korea, the US, and even Taiwan?

Without being unfair to many people who have done

some great work, I think its unfortunate that majority of our efforts in this area has been around import substitution, which then means reverse engineering. It was very convenient for us in the industry to talk about software power and we were basking in the glory of being a superpower. However, we need to look at what China did.

I don't think China could ever match India in terms of service outsourcing, which will continue to grow. It tried very hard. China would invite us at NASSCOM all the time; it wanted to emulate us. But India continues to have an edge, not only in terms of cost and capability, but also in terms of the level of trust. But China used its power to change things for itself first. We kept talking about technology for telecom, while companies in China – ZTE, Huawei and others – kept investing in R&D. We need to understand that product development is not R&D. It is the IP that you create. Even in the US, a lot of technology happened with defence, aerospace, NASA. They fuelled innovation and a number of technologies came out of it. We have to just find our own challenges and solve them. For the first time, we saw something when DRDO announced that it has developed the medicine for COVID-19. Otherwise, those technologies are canned. Over 90% of the research in educational institutions is funded by the government. Industry barely funds 10-15%. That's where the gap is; we need to combine R&D with industry needs.

You mentioned that there is a lack of coordination between industries and academia in India. Is the industry not interested because it does not see much ROI in such partnership or research in India?

This is a point that should be debated. The industry-academia partnership in India started because the industry wanted to influence the quality of people that it



90% OF RESEARCH IN EDUCATIONAL INSTITUTIONS IS FUNDED BY GOVERNMENT. INDUSTRY BARELY FUNDS 10-15%. THAT'S THE GAP; WE NEED TO COMBINE R&D WITH INDUSTRY NEEDS.

gets and so we started helping them by giving the latest technology, and participated with them. The academia wanted to ensure good placement for its students because that raises the ranking.

A lot of good work was done but it remained there. I think the academia and the industry actually haven't worked together to achieve it though there are instances of strong collaboration as well. A lot of good work, for example, has happened at IIT Bombay. But it stops there. I don't blame anybody but there is a huge resistance beyond the two motives I mentioned. Academia is very happy to get its people placed, to get grants from the industry and its alumni. But if we want to participate and teach, we are not welcome. If the industry is able to interact and participate more, it will learn about the research at the labs and will start funding those projects. So that connect is still very transactional.

Earlier, in your opinion pieces, you have mentioned that the industry needs to address challenges like low employability, gaps in structural education reforms, lack of fiscal policy support, etc. Do you see any change in the approach and progress?

I think there has to be a very light touch regulation. I went to IIT Kanpur and never saw the government around us. Textbooks were never used unless they were bibles, like Maths. Most of the teachers taught us through notes because that was the latest based on their research. Today, there is a *bhed chaal* (mob mentality). Since we were short of talent, we started setting up engineering colleges without caring to have faculty, lab, and other infrastructure. Then we started putting conditions, reservations for faculty, for students. I think a lot needs to be done. A lot of work by people like Dr. Kasturirangan has gone into preparing the NEP, but will it be implemented, and how soon? We had two very

good people, Indians from the US, joining the sector; one became the Director of IIM Bangalore, and the other Director of IIM Ahmedabad. But both had to leave because they couldn't bear the interventions, and when they spoke out, they had consequences.

We talk about demographic dividend but it is a pity that even today, young people, not far from Delhi, are not literate – our domestic help, drivers, and others. While there is so much focus on higher education, we still haven't made it accessible to all. The pandemic has also shown how woefully short we are of doctors. We managed it in the past, but now all the cracks are visible. So, it's not just engineering. It's time to take a much broader view.

You had also outlined that India can be one of the top three innovation hubs for climate change and clinical research. Is that opportunity expanding after 2020? How can we tap it?

Climate change has two aspects. First, it is about the political negotiations. Obviously, if we do anything per capita, we will be the lowest in the world. The rest of the world may be using more energy than we do today, but as India moves up its economic ladder, we'll become bigger users. That is going to add much more carbon than all those other countries can save. So, we have an opportunity to not take the path that they did, and I think it's a big opportunity.

The second aspect is about consciousness, which is low at the moment. We have just started connecting people with electricity, so you can't tell them not to use it. Having said that, the initiatives taken to drive adoption of LED, solar power, etc. are actually increasing the awareness. But then, we also have other issues like deforestation. The industry needs to do much more and it will be unfortunate if this is forced by the West.



WE HAVE TONS OF PATIENT DATA BUT ARE MISSING A BIG OPPORTUNITY. 900 MILLION PEOPLE WILL BE VACCINATED AND WE'VE NO BACKGROUND OF THEM, EXCEPT AADHAAR NUMBER.

When we will be the net exporter, they will ask us about our carbon content, and then to measure that carbon content, we will have to buy carbon credits.

India is very good at reducing the cost when we buy something. Our driver will become competitiveness. But if there is any country that is going to suffer the most due to climate change, it is us. It's already happening and we don't have to wait for more proof.

What about clinical research?

It's unfortunate that we are the disease capital of the world. Let's not talk anything per capita, let's talk absolute numbers – whether it is diabetes, heart disease, all of them. Hence, if these numbers are large, there is an opportunity for us to be able to address them. I think we have done a fairly good job in terms of tertiary healthcare. We have some of the best hospitals, but those are limited to Tier 1 cities. We can address all this only if there is data. I think technology can help capture the information and data that is there. We will not be able to handle shortage of doctors and nurses only with physical staff. The only way we can do this is by using technology, and it has to go far beyond telemedicine. I think telemedicine has been proven and it's kind of done but we have some very good examples like Aravind Eye Hospital that is using technology to perform the cheapest, most efficient and largest number of cataract surgeries in the world.

We have tons of patient data, including in the case of COVID-19. But we are missing a big opportunity. Nowhere else in a year's time any country is going to touch so many people. Nine hundred million people are going to get vaccinated and we have no background of them. Except for the Aadhaar number, we are capturing nothing. I had COVID-19; what happened to me, what was my background, what predispositions I have, there's

no data. Even if we start capturing this data now and anonymise it, a lot more can be achieved. Announcement has been made about the national digital health scheme but I still don't have my health records fungible. I have to go to the same doctor, nobody else can see me. How long will we keep debating it? I think there is a need to speed up the process and if COVID-19 hasn't taught us a lesson, I am not sure what will.

I'm working on this new initiative 'Patients for Patient Safety' that aims to connect all sorts of secondary care hospitals, nursing homes, small hospitals because that's where the volume is. That's where all the X-rays are sitting. We want to make sure that this data can be used for diagnostics. While it is very easy for us to say we can do this, why will a doctor believe in that algorithm? For that to happen, we need rules. I know it will happen, but we are moving so slow that we will miss this opportunity of collecting the data.

Isn't that hindered by the lack of privacy act in India?

It bothers me what you said, because in 2011, under Justice AP Shah, when Aadhaar was coming in, there were concerns about Aadhaar and privacy, so we requested Dr. Montek Singh Ahluwalia to set up a group to look into it. The industry along with civil societies spent almost six months and we came out with the contours of the privacy law. It's been that long. So, if the government can act so fast on Twitter, what happened here? We did come up with rules and regulations on types of data, how to handle them, the policy, etc. We had so many laws that were written and passed in between. So is the privacy act such a big problem? I think it needs conviction. This is not going to happen unless there is a huge amount of trust that is built in the ecosystem. And there is a lack of trust.



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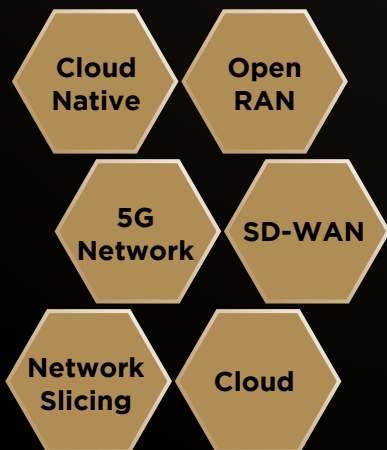
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5G is about to take the centre stage in the developing world, emerging markets have been making a concerted effort to prepare for the transition to the next-generation network.

Voice&Data Telecom Leadership Forum is organizing a full day conference in its 3rd edition of India 5G Conference with theme on **“5G for Delivering Transformation”**.

FOCUS AREA



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Leverage Voice&Data TLF platform and network.



AATMANIRBHAR BHARAT CHAMPION AWARD 2020

SUNIL VACHANI
CMD, Dixon Technologies

THE POSTER BOY OF EMS

For Dixon Technologies CMD Sunil Vachani, gaining trust of the customer for a long-term business relation and evolving as their extension has always been more important than the volume growth. The mantra ensured focus on research and development for producing world-class products through state-of-the-art facilities, making him a poster boy of electronic manufacturing services (EMS) in India. No wonder then, the company that he had set up in 1983 at a small rented facility in Noida with USD35,000 borrowed from his father, has evolved from being a 14-inch TV manufacturer to becoming India's leading contract manufacturer of electronics. Today, it manufactures smartphones for Samsung Electronics, Motorola, and Nokia; TVs for Xiaomi, washing machines for LG, and lighting products for Philips. It has also emerged as the top five LED manufacturers globally, in terms of scale.

Enabled by his clear vision of creating hardware manufacturing ecosystem in India and focus on innovation, the year 2020 also saw him drive the company to seek approval under the PLI scheme and invest Rs 250 crore to set up a new facility in Noida, with a manufacturing capacity of 25 million phones per year. Driven by his commitments to launch own designed products and tapping on the new market requirements, the company also entered the medical electronics space and started manufacturing RT-PCR test machines in India. Overall his company's shares surged 824% since the initial public offering in 2017. The company closed its books with total revenue of Rs 6,448.17 crore in FY 2020-201, up from Rs 4,400.12 in the previous fiscal.

A strong believer in India's ability to harness the Y2K moment for electronic hardware, Vachani has also been working with industry bodies for change in mindset and policy to create a very strong component ecosystem that is vital for making hardware manufacturing more viable in the country, and right environment including funding mechanism to support R&D efforts and design companies in the country. His perseverance and resilience led Dixon Technologies to scale operations to massive scale, enabling it to carve a slot amidst global manufacturing majors and script a Made in India showcase and success story.



Interview



THE FUTURE OF INDIA LIES IN DESIGN-LED MANUFACTURING

*Set up in 1993 in Alwar, Rajasthan, the company started its electronics manufacturing journey with colour TV in 1994. Today, Dixon Technologies is the largest home-grown design-focused and solutions company manufacturing products in the consumer durables, lighting and mobile phones markets in India. While it did foray into branded products, it quickly did the course correction to become the leading contract manufacturing player making its CMD **Sunil Vachani** the poster boy of EMS. The company carved a slot amid the global manufacturing majors to script a Made in India success story. Excerpts from the interview:*

The year 2020 was a period of major success for Dixon. How will you describe the year in terms of the challenges and achievements across product lines?

No doubt, it's been a very challenging year for all of us, first as a country, and then as an industry and a company. But I think everyone has shown that we are very resilient. And that's the reason we could bounce back strongly. In spite of a complete lockdown for almost a couple of months after the first wave, and the subsequent slowdown, the company was able to do extremely well for the full financial year, with full credit to the team for their dedication and hard work.

The second wave was less severe in terms of at least the impact on business because the lockdowns were more local in nature. Thus, factories could operate with reduced manpower and safety norms in place. But of course, the impact on our people was much larger. And it was quite unfortunate what we had to go through as a country. It was a difficult circumstance, also within the company as many of our employees suffered from the disease. But it's good to see we are finally coming out of it. The economy is bouncing back slowly, and production levels across manufacturing plants are limping back to normal.

In terms of achievements, can you elaborate the year 2020 from the company's perspective of products and tie-ups?

The company was able to start the new plant for manufacturing of fully automatic washing machines, and the entire plant was set up during the pandemic. It will be operational in the next few months with trial runs. The company is venturing into new verticals, and we have announced our entry in IT hardware. We are looking at entering in more home appliances categories, such as refrigerators, and the construction has already begun. We are also one of the companies that applied for the PLI (Production Linked Incentive) scheme. In addition, we have tied up with new customers and started export of mobile phones for the first time. We believe we will be the first Indian company to export 5G phones.

Dixon Technologies has been approved by the Centre for incentives under the PLI initiative. How will it help the company expand its capacity and benefit the industry at large?

I think this was made possible only because of the proactive policies initiated by the government of India. The PLI policy, which was first announced for mobile phone manufacturing and then for 13 other sectors is a



WE HAVE TIED UP WITH NEW CUSTOMERS AND STARTED EXPORT OF MOBILE PHONES FOR THE FIRST TIME. WE BELIEVE WE WILL BE THE FIRST INDIAN COMPANY TO EXPORT 5G PHONES.

game changer. I say this because it ticks all the boxes – it creates the scale that is required to be a global player, builds a strong component ecosystem that had been missing all the while, and brings in large ecosystems into the country, which is extremely important for India to become the manufacturing hub of the world. The PLI scheme also helps build or create Indian champions.

Since you talked about manufacturing and how the PLI scheme is helping in a big way, one major concern for all is related to semiconductors. We are doing great in assembling things but can India also emerge as a semiconductor player?

I am of the firm view that we cannot become a global manufacturing hub for these products without a robust and strong component ecosystem. While the PLI scheme will definitely help, we have to go beyond it, because let's not forget that the component industry was the first to have zero duty regime for the last many years. Basically, it has been competing without any duty protection, and with many disabilities in place. Thus, it's not a very easy industry for attracting investments. So far, the companies that have set up a component ecosystem have done it for addressing only a small percentage of the local market. It's clear that if you have to be competitive in components, you have to set up capacities that are global in nature. The PLI scheme and SPECS (Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors) will definitely help attract a strong component ecosystem into the country.

Coming to the question on semiconductors, it's clear that globally, manufacturing of semiconductors is happening only with the help of the government– whether it's financial or other incentives. It's great to see that our government has realised that we need a strong component ecosystem including semiconductors. Recently, the government came out with EOIs for attracting large fabs

in the country. It's an encouraging sign, but it's not going to be easy, and a lot of hand-holding will be required by the government.

Reports indicate that Dixon is planning to invest Rs 250 crore to expand mobile handset production. Can you elaborate on the plan? How will it help create and nurture the ecosystem?

The company's foray into mobile manufacturing started almost four years back with manufacturing smartphones for certain brands. After that, we entered the feature phone category where we are the largest player, and then came the PLI where Dixon was one of the five companies selected by the government of India for manufacturing mobile phones. Our manufacturing unit, which has just been set up, commenced production a few months ago and we are looking at manufacturing almost 5 million phones from this particular unit. A new plant is being set up in Noida with a constructed area of almost a million square feet, which will have a manufacturing capacity of almost 25 million phones a year.

And will they be the nearby Asian countries or beyond?

We are already looking at exporting to mature markets such as the US in a few months and that will include even 5G devices.

Overall, mobile phones contribute around 12% of the company's total revenues. With India majorly moving towards a mobile economy, and 5G around the corner, what kind of growth are you looking at?

Next year, the company is targeting a turnover of almost Rs 14,000 crore, out of which we expect mobile phones to provide a significant 4,500 to 5,000 crore. So, yes, the percentage of mobile phones revenue is going to increase substantially.



IN INDIA, WE FROWN UPON FAILURE AND THAT'S A KEY DIFFERENCE BETWEEN MATURE ECONOMIES AND US. IN A MATURE ECONOMY, COMPANIES CAN FAIL AND ARE ALLOWED TO FAIL.

And this will be more from the exports or from both domestic and international markets?

This will be at least 65% from the exports and the balance from the domestic market, which will be extremely positive both for the company and the country.

Dixon recently ventured into medical electronics. What products are you planning to manufacture and what market share are you targeting?

When we look at a new product category, we see whether a few boxes can be checked. One, does the product fit into the large-scale category, both for global and domestic markets. Two, does it enable us to launch our own designed products in the future. Three, is there a scope for considerable backward integration rather than mere assembly. And four, is there is a potential for outsourcing, and whether outsourcing increases as a percentage and as a trend in that particular category. When we looked at these points, we found that medical devices such as RT-PCR test machines had a huge potential, both for domestic and export markets. So, we tied up with a design company and became the manufacturing partner.

One of the criteria you mentioned is whether the company can launch its own designed products. DTIL has three R&D facilities in the country. What kind of research are you doing?

Our objective is to offer own-designed products across each of our product categories over a period of time. In the home appliances category, we have the largest range of semi-automatic washing machines, with almost 180 models. Even in our lighting category, almost 85% of the total revenue comes from our own designed solutions. In fact, as far as LED lighting is concerned, we were responsible for coming out with an extremely low cost solution; the first time EESL launched the UJALA scheme, aimed at distributing low-cost bulbs to rural markets, we

jointly worked with a customer and designed the cost-effective solution.

Reports indicate that despite a vast pool of workforce, the higher education system in India is unable to produce quality engineers and design architects. Have you faced any talent issues? What should the country do to build the skill and entrepreneurial ecosystem?

I don't think it's a problem of producing quality engineers. It's about providing the right environment. Globally, Indian engineers have created the best hardware and software designs across product categories. And the reason is that they have been provided the right kind of environment. Additionally, we need to encourage and nurture design companies. Setting up a design company in India and becoming successful at it is not easy, due to funding and financing issues. Besides, in India, we frown upon failure and that's probably one of the key differences between mature economies and us. In a mature economy, companies can fail and are allowed to fail, and can start again. We need to start creating funds and give incentives for investments in R&D.

ELCINA predicts that the Indian EMS industry may touch USD152 billion by 2025, up from USD23.5 billion in 2019-20. Can India really push its growth from the existing level in four years? What do we need to do to support this as a country?

As far as the numbers are concerned, there is no doubt that we are sitting on a huge opportunity to make India the next global hub for manufacturing of ICT products. The reason is that we have a large domestic market for these products, providing the advantage of generating scale, which is extremely important for export competitiveness. In the domestic market for LCD televisions, we are at a level of 17 million television sales per annum. Yet, the penetration levels are hardly 14-15%. This shows that



VIETNAM EXPORTS ICT PRODUCTS WORTH USD90 BILLION
WHEREAS OUR EXPORTS ARE AT USD11-12 BILLION. IT GIVES YOU
AN IDEA OF THE HUGE POTENTIAL THAT EXISTS IN INDIA.

there's a huge scope for growth. Moreover, there are strong tailwinds in the favour of our country and the company. Globally, everyone is looking at China plus one for sourcing in terms of hedging their bets. And India is extremely attractive to potential investors. If you look at Vietnam, you will find that it exports almost USD90 billion worth of ICT products, whereas our exports stand in the range of USD11-12 billion. It gives you an idea of the huge potential that exists and what we can do as a country.

At the same time, we do have some disability factors, in the form of land acquisition, which is extremely inefficient. We have issues of high finance and logistics cost and, most importantly, lack of a strong component ecosystem. We have been working as an industry body and discussing these issues with the government, and a lot has happened in the last seven or eight years. However, we need to get a number of MSMEs into the component ecosystem. In countries such as China, SMEs are the backbone of their component ecosystem. We need to make it easier for them to set up shop in India. The state and other local governments could offer them a plug and play model. Also, while we do have an interest subvention scheme for some of the sectors, it only benefits the direct exporter. What we need is a scheme that covers the entire ecosystem, including the manufacturer and its suppliers.

You mentioned that one of the reasons India is likely to become a hub is the scale of the domestic market. But that scale was always there. And we had hardware and EMS players such as Weston, Uptron, Videocon, HCL and Zenith. So why did it take so long for Dixon to happen in India?

We did have local demand but not local manufacturing, and a lot of the demand was being met through imports. If you look at mobile phones, maybe we had a huge demand for them 10 years ago, but there were hardly anything being manufactured in the country. If you compare it

with today, almost 90% of the mobile phones sold in the country are manufactured in India. Moreover, the mindset of entrepreneurs has changed. Earlier, people used to look at setting up small plants catering to small percentage of the Indian market. But now, the mindset is to set up large plants and large-scale backward integration for products where we can become global players.

Actually, that was the question – why did a similar company not emerge earlier despite the market?

I have a personal story to answer this. I remember visiting a very senior bureaucrat many years back and talking about India's potential of becoming a global hub for manufacturing of electronic hardware. When I talked about our plans, what we were looking to achieve as a company, I was told that our strength lies in software. They felt that India didn't have the strength to become a big player in electronic hardware manufacturing. So, as I mentioned, the biggest change that has happened is the change in the mindset.

As an example from the automobile sector, we have seen how one Maruti Suzuki created an ecosystem and the ancillary companies that emerged have now become global suppliers. But we don't see this happening in the hardware and electronics system. Why?

Yes, I often give the example of the automotive sector as a huge success story because this is one industry which caters to the domestic market with local manufacturing. The sector has players who are the largest in the world in terms of exports. There's also a strong auto component ecosystem in place. The origins of this success story lies in right policy initiatives. If you have to encourage manufacturing in India, you need to have the right duty structure – customs duty and indirect taxes. If you look at the auto components, there was a basic customs



WHAT WE NEED NOW ARE RIGHT POLICY INITIATIVES, COMPONENT ECOSYSTEM AND DESIGN-LED MANUFACTURING, AND MORE FTAS WITH CONSUMPTION-BASED ECONOMIES, AMONG OTHERS.

duty, a large one, then a lower duty structure for some of the components, and then the lowest for the raw materials. Unfortunately, we have not had that kind of a situation in the electronics industry. We rushed into free trade agreements with countries that were not even large markets, but were competitors like us, for example ASEAN countries. We should have signed FTAs with consumption-based economies, such as the US, the UK, and European Union. But, I am glad it has started happening now. Coming back to the auto industry, once you have the correct duty structure in place, it brings manufacturing into the country. And then if there is a large scale, the component ecosystem develops around it. Thus, a correct policy framework is extremely important.

In some of the recent interviews, you have said that this is the golden moment of electronics manufacturing in India. If I look at it from the policy and other framework perspective, is it not too early to announce this?

Well, not at all. We call it the Y2K moment for electronic hardware. And there are many reasons for that. First of all, we have already achieved that scale in some other categories. In LED lighting, for instance, Dixon today is probably among the top five globally in terms of scale. In mobile phones, some of our players are extremely large, there is huge scale-up and the component ecosystem is developing, and we also have the PLI in place. This is the stage where we are just taking off. I am extremely confident that India will emerge as a hub for manufacturing these products and Dixon will be at the forefront of this revolution.

Dixon has also showcased what can be done in terms of the global contract manufacturing? What are the upsides and challenges?

I think the opportunities are very clear. If you look at LED lighting as a category, the global market is about

USD130 billion and India is hardly exporting anything. Similar is the case with mobile phones and we are already targeting USD100 billion dollar worth of exports as a country. What we need now are the right policy initiatives, which have already begun. We need to continue pushing for the component ecosystem and design-led manufacturing, encouraging design houses to set up operations, and signing more FTAs with consumption-based economies.

How big is the threat from countries such as Vietnam, Malaysia and Thailand that are doing pretty well in manufacturing?

India has certain unique advantages. Firstly, we have a large domestic market that helps us get the scale, which is extremely important for competing in global markets. We have a huge strength in designing and availability of engineers. In terms of labour cost, we are probably one of the lowest in the world. In terms of productivity, Indian operators and manpower are as efficient, if not more, as the best in the world. Many global companies that have manufacturing base in India and other parts of the world have said that the Indian plants are the most efficient in terms of productivity.

Where do you think the future of India as a global supplier lies – in hardware or in software or will it be a sweet spot somewhere in between?

The future lies in design-led manufacturing. In most of the products, including mobile phones, it's a combination of strength in hardware design and software that really comes into play. Going forward, companies will have to build such strength in-house, and really try to churn out more of their own designed products than just being an EMS player. As a country, we do have that strength. We just need to create the right environment for this to happen in a big way.

RANKING OF TOP 100 ENGINEERING COLLEGES EMPLOYABILITY INDEX

SEPTEMBER 2021

HOW EMPLOYABLE ARE STUDENTS
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The DQ Awards 2020: Methodology and criteria

As in the last 28 years, the winners of the Dataquest Leadership Awards for 2020 were selected through a three-tier evaluation process, i.e. open nomination, research by the Dataquest editorial team, and evaluation by the award jury chaired by Rajendra S Pawar. The jury was co-chaired by Prakash Kumar, CEO, Wadhvani Institute for Technology and Policy, and Pradeep Gupta, Chairman, CyberMedia Group.

The other members of the jury included Golok K Simili, Chief of Technology, Ministry of External Affairs, Government of India; Kulmeet Bawa, President and Managing Director, SAP Indian Subcontinent; Neeta Verma, Director General, National Informatics Centre; Rajen Vagadia, VP and President, Qualcomm India; Sameer Garde, President India and SAARC, Cisco; Sandip Patel, Managing Director, IBM India; UB Desai, Director, IIT Hyderabad; and Yugal Kishore Sharma, Chief Executive Officer, ONEOTT iENTERTAINMENT Ltd.

In Phase 1 of the process, Dataquest sought open online nominations from the industry. The online form was available for anyone to submit their own nomination or that of others. In Phase 2, the Dataquest editorial and research team went through each nomination, performed research on each individual, organisation and project, filtered them as per the pre-defined criteria (see Selection parameters for DQ awards nominations), and created dossiers for each of the nominees. The nomination dossiers were

shared with the jury members for their review before the virtual jury meeting.

Following the COVID-19 protocol, Phase 3 of the process – jury meeting – was held virtually, where the jury members discussed the final list and reviewed each nomination using supporting data provided by the Dataquest editorial. After the first elimination round, discussions were held and three nominees were shortlisted as contenders for the IT Person of the Year Award for 2020. The next round of discussion dwelt on the achievements of each contender – their track record, accomplishment in the last 12 months, and contributions to the company stakeholders, the industry and the nation. After much discussion and deliberation, the jury members unanimously named Rajesh Gopinathan, CEO and Managing Director of TCS, as the IT Person of the Year for 2020.

For the Lifetime Achievement Award (2020), the jury deliberated on the long-term impact of the initiatives, decisions, and actions of the three shortlisted nominees to unanimously select Som Mittal, Former President and Chairman of NASSCOM, as the winner. Keeping in view the unprecedented pandemic situation and the need to recognise efforts for a self-sustainable India, the jury recommended a one-time special 'AatmaNirbhar Bharat Champion Award' to Sunil Vachani, CMD of Dixon Technologies, for scripting a Made in India hardware sector success story.

Selection parameters for DQ awards nominations

- The nominee should have been associated with the IT industry for a reasonable period of time.
- The nominee should have an outstanding contribution, directly or indirectly leading to the growth and development of the Indian IT industry.
- Initiatives taken up by the nominee in last 12 months that led to gains for the organisation and contributed to the growth of company stakeholder value.
- The nominee should be regarded for the highest standards of ethics and responsible conduct.
- If the nominee has already been awarded IT Person of the Year, the nominee cannot be considered for the award for the next three years.
- For the Lifetime Achievement Award an important criterion was the nominee's contributions to the industry in the last two decades or more in helping shape the Indian IT sector.
- If the nominee has already been awarded Lifetime Achievement Award, the person cannot be considered for the award the second time.

DQ Hall of Fame: IT Person of the Year

1993	N Vittal	2007	Ajai K Chowdhry
1994	Ashok Soota	2008	Lakshmi Narayanan
1995	Shiv Nadar	2009	Government-Appointed Board of Satyam
1996	N R Murthy	2010	Pramod Bhasin
1997	Dewang Mehta	2011	N Chandra
1998	R S Pawar	2012	Francisco D'Souza
1999	Azim Premji	2013	CP Gurnani
2000	B Ramalinga Raju	2014	Kunal Bahl
2001	Pramod Mahajan	2015	Rahul Sharma
2002	Sunil B Mittal	2016	Vijay Shekhar Sharma
2003	Deepak Puri	2017	Bhavish Aggarwal
2004	S Ramadorai	2018	Ritesh Agarwal
2005	Kiran Karnik	2019	Prakash Kumar
2006	Nandan M Nilekani		

DQ Hall of Fame: Lifetime Achievement

1994	Prof R Narasimhan	2007	Narayana NR Murthy
1995	FC Kohli	2008	Prof DB Phatak
1996	Dr N Seshagiri	2009	Azim Premji
1997	Prof V Rajaraman	2010	Shiv Nadar
1998	Prof HN Mahabala	2011	Kiran Karnik
1999	Maj-Gen Balasubramanian	2012	S Ramadorai
2000	Dr S Ramani	2013	Ajai Chowdhry
2001	Dewang Mehta (posthumous)	2014	Saurabh Srivastava
2002	Sam Pitroda	2015	Nandan Nilekani
2003	Vijay P Bhatkar	2016	Vineet Nayar
2004	N Vittal	2017	Ashok Soota
2005	Hemant Sonawala	2018	Arjun Malhotra
2006	Arun Kumar (posthumous)	2019	RS Pawar

THE DQ TECHNOLOGY CHAMPIONS

As part of the leadership award to recognise the efforts, innovations, and achievements by those at the helms of implementing digital technologies, Dataquest presented the Digital Warrior award to 23 practitioners from across the industry.

LARGE ENTERPRISE



ASHISH DESAI

CIO, Grasim Industries Limited (Aditya Birla Group)

For his impressive role in successfully leveraging internet of things (IoT) in manufacturing and showcasing how to reduce mean time to recovery (MTTR), mean time between failures (MTBF) and avoid procurement of new equipment by predictive alerts.

LARGE ENTERPRISE



RAJIV ARORA

Global IT Hub Head – Siemens AG

For empowering the business by executing ambitious workplace transformation through a new normal hybrid working model, enabling enhanced collaboration, productivity and scalability. Rolled out remote field services, AR/VR solutions for sales and marketing, as well as incubated a solution center to drive digitalisation of niche technologies.

SMB



MANJUNATH PRASAD

Head – IT, TV Sundram Iyengar & Sons

For driving cost optimisation initiative in servers, network, and end-user support, and rolling out collaboration tools and cloud infrastructure, along with secure access to sustain end user productivity across the organisation.

SMB

**SUBODH JHA**

GM-IT, WheelsEMI Private Limited

For creating eye-catching customer service infrastructure leading to business impact and speed with remarkable use of ERP and digital transformation tools.

AUTOMOTIVE SECTOR

**AJITSINGH NAWALE**

Head – IT, Mahindra CIE Automotive Ltd

For his role in transforming customer communication and reducing costs through strong use of robotic process automation (RPA) and enabling savings of 2-3 hours daily from multiple divisions and 2-3 FTEs across multiple divisions on real time basis.

CHEMICAL SECTOR

**DR. MAKARAND SAWANT**

Sr. GM-IT, Deepak Fertilisers and Petrochemicals Corporation

For using digitisation at scale and implementing the concept of a smart factory with compelling results like improvement in plant overall equipment effectiveness (OEE), overall process effectiveness (OPE), quality, and improved business continuity.

EDUCATION

**ANAND RUHELA**

Head – IT, Sikkim Manipal University

For his role in setting up telemedicine and infrastructure to enable remote delivery of specialist health care services to under-served in remote areas, thereby people do not need to travel to multi-specialty and tertiary care hospitals.

FMCG SECTOR



VISHAL JAIN
Head – IT & Infra, FieldFresh Foods

For his role in creating operational network to enable plants on IoT platform for predictive analysis, thereby reducing maintenance costs and leading adoption of IT-as-a-Service model. He also created better SLA to reduce over IT cost by 22% and provide more agile and secure IT infrastructure.

IT & ITES SECTOR



ARCHIE JACKSON
Sr. Director, Head of IT & Security, Incedo Inc

For his role in transforming the security infrastructure using forensic- and offensive-based approaches, including zero-trust architecture and end-to-end SASE. He also led implementation of DevSecOps.

IT & ITES SECTOR



UMESH BHAPKAR
Sr. Director-Systems/CIO,
Synechron Technologies

For his role is setting up an amazing example of how agility can lead to business resilience. His initiative ensured 100% business continuity with rapid scaling up of IT Infrastructure.

LIFE SCIENCES



DIPESH THAKAR
CDO/CIO, Meril Life Sciences Group

For creating a compelling instance of how business continuity can be achieved and how digital assets can be centralised with rapid business results and differentiators.

MANUFACTURING SECTOR



SHARAD KUMAR AGARWAL
CIO, JK Tyre

For driving adoption of versatile berth of technologies like SD-WAN, fleet management, and robotic process automation (RPA). His efforts enabled the company achieve remarkable revenue growth and cost management.

MEDIA



SARBANI BHATIA
Sr. Vice President – IT, Jagran Prakashan Ltd

For demonstrating how advertising revenues can be strengthened using technology. She also successfully implemented various services and apps, including a dynamic, secure and intuitive self-served enterprise interface to optimise connections between people, processes and systems.

GOVERNMENT SECTOR



NITIN VISHNU CHOUDHARI
Scientist D & District Informatics Officer,
NIC – Akola

For his role in effectively implementing solutions to ensure no disruption of any e-governance project in Akola and ensure that the business keeps running well with pandemic readiness.

PSU



CK PRASAD
Regional GM & Head IT, Railtel

He illustrated a solid use-recipe of infrastructure as a code and hyper-converged infrastructure (HCI). His efforts enabled Railtel significantly cut infrastructure spending and vendor lock-in, as also reduce TCO. He also demonstrated how adherence to interoperability for Industry 4.0 can be smoothly achieved.

COOPERATIVE BANK



DIMPLE SANTWAN

Chief Information Security Officer,
Saraswat Co-operative Bank Ltd.

For her role in bolstering security of the bank using a 360 degree approach, by not impeding but smoothening areas like customer service and speed of operation.

FINANCIAL SERVICES



DR MUKESH MEHTA

Chief Technology Officer, Batlivala & Karani Securities Ltd

An advocate of people-first, technology-later he deployed in-house CRM, research automations, hyper-converged infrastructure (HCI), as well as led 10G network upgrades and infra refresh with distinctive impact.

FINANCIAL SERVICES



V SENDIL KUMAR

CTO, Shriram Capital Ltd

For a focused mobility, security and cloud solution approach for a seamless operation and for demonstrating how customised approach can be effective for digitalisation of various business services and functions.

ENGINEERING SERVICES



SANDEEP JAMDAGNI

CIO, Ashiana Housing Ltd

For driving digital transformation in the organisation and empowering sales team with mobile-platform based tools with real-time information and personalisation by transforming CRM in a successful way. This helped for improve customer interaction and increase customer satisfaction.

BUSINESS CONSULTING



HARNATH BABU
CIO, KPMG – India

For by adoption of humans + machine model, and combining state-of-the-art infrastructure, cloud and analytics to build anywhere workplace environment, bring in agility and driving collaboration. His recipe ensured that people can work at scale with zero drop in productivity.

CUSTOMER EXPERIENCE



BINITA PRASAD
Head-IT, Sany Heavy Industries India Pvt Ltd

For driving creative use of communication tools with self-service team and integrating with SRP, elevating communication between customer and service teams, and innovative use of mobile platforms including integration with ERP for faster turnaround time (TAT).

INDUSTRY 4.0



YOGESH DADKE
IT Leader – APAC, Adient

For leading smart factory project roll out, as well as deploying digital twins, robotic process automation (RPA), and internet of things (IoT). He also led compliance and control roll out, EUC security policy roll out, and preventive and predictive SCM support in driving industry 4.0.

CLOUD



SHAJY THOMAS
Regional Head – Technology APAC,
Technicolor India Pvt Ltd

For driving work from home initiative in the not so easy visual effects, animation, and gaming sector and ensuring all functionality with zero security incidents for 6,000 artists, and 100% business continuity.

Time to soak in sunshine

The IT/ITES sector witnessed significant digital transformation in recent years. The numerous initiatives that began indicate action-packed times ahead



The rapidly rising demand for cloud-based technologies and digital transformation has attracted heavy investments in the setting up of massive data centres in India. Global investments are estimated to touch a whopping USD200 billion annually by 2025. Here are some key deals that throw light on the technological developments and trends in the industry.

- Cloud computing, social media, and data analytics are three avenues in which IT companies will witness massive opportunities for growth. The SMAC (social, mobility, analytics, cloud) market is expected to be valued at over USD200 billion in the current fiscal year.
- In January 2021, TCS launched a tailored version of TCS Cloud Exponence on Microsoft Azure, its



CLOUD COMPUTING, SOCIAL MEDIA, AND DATA ANALYTICS
ARE THREE AVENUES IN WHICH IT COMPANIES WILL
WITNESS MASSIVE OPPORTUNITIES FOR GROWTH.



RESEARCH HAS SHOWN THAT ~70% OF ALL THE RANSOMWARE VICTIMS END UP PAYING THE RANSOM RATHER THAN RISK LOSING CRITICAL DATA.

flagship platform for offering smart cloud-based services.

- In February 2021, HCL Technologies entered a five-year 'Digital Workplace Services' agreement with Airbus to create an enhanced platform for enabling Airbus employees across the globe to provide customers with a better experience and service quality.
- In March 2021, Tech Mahindra partnered with Enate, a UK-based Robotic Process Orchestration (RPO) solutions company that offers an RPO-based platform for business process management (BPM), workflow, and workforce management. The partnership was aimed at improving the synergy between the employees and technologies such as RPA bots, artificial intelligence, machine learning, and natural language processing.
- In April 2021, Infosys and BP partnered to implement an integrated energy-as-a-service (EaaS) offering. This was aimed at effectively managing customers' energy assets and services.
- In April 2021, Infosys collaborated with ArcelorMittal to deliver the next-generation application and BPM services to the company's European arm.
- Other key players in the industry are focused on the development of differentiated and superior cloud platforms/products to maintain a competitive advantage.

The IT and ITES sector is already witnessing a surge in the demand for transformative technologies, which will continue to drive growth in the coming years.

GROWING CHALLENGES

With the accelerated digital transformation during the pandemic, IT/ITES companies are under pressure to scale up to meet the demand and ensure that the systems they deliver work seamlessly. Moreover, these systems must function smoothly with all the security enhancements

while ensuring that the increasingly stringent regulatory demands are met.

Rapid response during COVID-19: Bringing the entire workforce online is no easy task and poses serious challenges for IT/ITES companies. Scaling up cloud capacity, improving accessibility, enabling remote training, managing the increasing use of VPNs for data security, and meeting the constant need for upgrading new apps to cater to the changing demands are some of the major challenges these organisations must overcome.

Evolving security threats: As technologies evolve, so do the methods of compromising their effectiveness. With the number of scammers and ransomware on the rise, IT leaders need to rethink their strategy in dealing with credential management and create a strong culture of cyber awareness within the organisation. Research has shown that ~70% of all the ransomware victims end up paying the ransom rather than risk losing critical data. IT/ITES companies must therefore focus on protecting data with stringent security measures.

Integrating SaaS with containerisation: As businesses transform, the applications of evolving technologies are many and the need for creating a one-size-fits-all solution is a high priority for CTOs and CIOs. 2021 will therefore witness increased adoption of the 'container' approach which simplifies the development, shipping, and deployment of SaaS solutions.

Data privacy and governance: Data privacy norms are becoming stricter, thus making data security and its governance one of the most pressing challenges for IT/ITES companies. This is especially challenging when third-party service applications are involved in the process as it raises the need for maintaining constant communication with all departments to ensure thorough vigilance.

While focusing on these concerns, IT/ITES companies will have to ensure that the consumer experience is not



COMPANIES ARE INVESTING HEAVILY IN R&D AND THE TRAINING OF THEIR EMPLOYEES TO CREATE A WORKFORCE THAT IS EFFICIENT AS WELL AS PRODUCTIVE.

affected. With all the changes happening at the back end, a smooth front-end experience will become critical.

HERE ARE THE SOLUTIONS

According to IBEF, companies are applying various strategies to deal with the challenges at hand, some of which are listed below.

Migration to the SMAC space: Clients in the SMAC space work majorly with big data and rely upon the inferred trends and observations to make business decisions. IT/ITES companies are fulfilling this need by offering comprehensive big data services to provide clients with meaningful insights.

Mergers and acquisitions: In April 2021, Wipro acquired Ampion, an Australian company providing engineering services, cybersecurity, and DevOps. Even Qess Corp (a business services platform) acquired a 30% stake in Conneqt Business Solutions Ltd. for USD27.9 million.

R&D investments: Companies are investing heavily in R&D and the training of their employees to create a workforce that is efficient as well as productive. R&D also takes up a major chunk of the companies' investment strategy, which is also critical when the margins are under tremendous pressure from underperforming markets. Innovation is key amid the changing business landscape.

Differentiating product and pricing: Since most IT/ITES companies have similar offerings in the market, companies are working on introducing key differentiators that make their services stand out among the rest, e.g., 'Building Tomorrow's Enterprise' by Infosys. Indian IT firms are also adopting global pricing strategies to enter the rink with global giants such as IBM and Accenture.

Dedicated verticals: In February 2021, TCS strengthened its association with Amazon Web Services (AWS), by introducing the TCS AWS Business Unit (BU) – a dedicated vertical that combines the technical know-how and market expertise of the two giants under one roof.

TAP THE OPPORTUNITIES

The Indian IT sector is set to be driven by robust demand and expertise. Some drivers of growth include the following (source: IBEF):

Cybersecurity: The Ministry of Home Affairs and the National Critical Information Infrastructure Protection Centre have come together to work on strengthening the nation's cybersecurity amid allegations that Chinese attacks may have disrupted the operations at a certain stock exchange in Mumbai. The strategy could unlock a plethora of opportunities for IT/ITES firms.

Talent pool: In FY21, the industry is expected to recruit over 138,000 net new employees, raising the total employee base to 4.47 million. As more companies embrace digital transformation, IT roles in 2021 will be focused on technologies like IoT, AI, AR (augmented reality), and VR (virtual reality). Considering the scale of transformation and the number of organisations adopting it at once, the IT workforce will witness increased activity this year.

Cloud market: The public cloud market in India stood at USD2.32 billion in FY2020. It is rising at a CAGR of ~30% and is expected to touch USD8.61 billion by FY2025. This market is going to be one of the key drivers of growth in the coming years. From 2019 to 2025, the cumulative investments in data centres in India are estimated to reach ~USD28 billion, at a CAGR of ~5% (two times faster than the global average).

Infrastructure: The demand for Security-as-a-Service and the need for improved detection and rapid response capabilities are all set to skyrocket the infrastructure software revenue in India, which is estimated to touch USD4.6 billion in 2021, an increase of 12% YoY.

THE OUTLOOK

The outlook for companies in the IT/ITES sector looks promising. Special economic zones are expected to drive



DURING 2019-25, CUMULATIVE INVESTMENTS IN DATA CENTRES IN INDIA ARE ESTIMATED TO REACH ~USD28 BILLION AT A CAGR OF ~5% (2 TIMES FASTER THAN THE GLOBAL AVERAGE).

Parameters	STPI	SEZ
Term	<ul style="list-style-type: none"> 10 years 	<ul style="list-style-type: none"> 15 years
Fiscal benefits	<ul style="list-style-type: none"> 100% tax holiday on export profits Exemption from excise duties and customs 	<ul style="list-style-type: none"> 100% tax holiday on exports for first 5 years Exemption from excise duties and customs
Location and size restrictions	<ul style="list-style-type: none"> No location constraints 23% STPI units in tier II and III cities 	<ul style="list-style-type: none"> Restricted to prescribed zones with a minimum area of 25 acres

the IT sector. Tier II and III cities are also expected to emerge as the new data centres. To further boost growth, Software Technology Parks of India (STPI) has set up 57 centres across the country to facilitate rapid single-window clearance and the availability of necessary infrastructure facilities. STPI units can claim excise duty exemptions on the procurement of indigenously manufactured goods.

The expansion of focus areas will also contribute to growth in the future. Areas such as telemedicine, remote monitoring, and clinical information systems will continue to remain in demand and push the IT sector forward.

In the utility segment, the need for standardisation of set processes is expected to require immense assistance from the IT industry. Meanwhile, digitised

content is on the rise and in conjunction with superior connectivity, which has led to the adoption of IT services by the media as well. RBI is also looking at reducing the cost of digital transactions to promote digital banking in India.

Furthermore, the release of 5G wireless technology by telecom companies is expected to fetch at least USD10 billion worth of global business to Indian IT firms during 2019-25. With all the above facts in mind, we are optimistic about the IT/ITES industry's performance in the days to come.

Agarwal is President, Judge India – Global Delivery, The Judge Group





SAPNESH LALLA
CEO, NIIT Ltd



WE SEE TECHNOLOGY AS A KEY ENABLER FOR LEARNING

*The COVID-19 pandemic could be a big cue to develop responsive learning organisations, the right intersection of education and technology and full-stack capabilities. **Sapnesh Lalla**, CEO, NIIT Ltd tells us more about the new ABCs, especially the Cs, of learning as we battle, and move past, the crisis.*

What changes have you observed during the pandemic and which ones do you see continuing, and gathering traction, in your landscape as we move ahead?

In the learning and development (L&D) landscape, adaptability and agility have emerged as the most important qualities for a corporate learning organisation to have. Organisations that are able to respond nimbly to sudden disruptions display what we call the 4Cs of adaptability – one, capabilities: the need for specialised capability sets required to take advantage of the latest technologies and methodologies is exploding. Two, capacity: the ability to flex organisation capacity up and down in response to rapid changes in demand has become critical. Three, customer-centricity: a deep understanding of customer needs and commitment to delivering a world-class customer experience seamlessly are vital today, and four, cost-control. It's never been more important to not

just reduce costs but also move fixed costs to variable.

I believe that this is also a great opportunity to define the future of L&D – the skills and competencies that organisations will need, what the future hybrid workplace looks like and how that defines the learning experience, how we can build a responsive learning organisation structure that can adapt to changing needs, and finally the technology we need to enable a digitally fluent learning ecosystem. At NIIT, we are focused on helping our customers navigate these uncertain times in an age of digital transformation. Digital is here to stay.

From students' interest to start-up activity, and investors, there is a lot of focus on edtech from across the sectors. What is the right way for a player to move forward here? How is NIIT realigning to this new set of market dynamics?

These are truly interesting times for edtech, both globally



ORGANISATIONS THAT CAN RESPOND NIMBLY TO SUDDEN DISRUPTIONS DISPLAY THE 4CS OF ADAPTABILITY – CAPABILITIES, CAPACITY, CUSTOMER-CENTRICITY, AND COST-CONTROL.



**A NATIONAL SURVEY BY ADVISORY FIRM RBSA ADVISORS
HAS REPORTED THAT EDTECH IN INDIA IS POISED TO BECOME
A USD30 BILLION INDUSTRY IN THE NEXT 10 YEARS.**

and in India. Globally, it is on a high growth trajectory. HoloniQ, a global education market intelligence firm, has estimated that by 2025, education will be a USD7 trillion industry, out of which edtech alone will contribute more than USD400 billion. The research also found that globally, venture capital investment in edtech more than doubled from 2018 to 2020.

In India too, edtech is on a roll. Particularly, due to the pandemic, many edtech companies experienced a hockey stick growth, driven by the rapid adoption of digital delivery platforms. A national survey by advisory firm RBSA Advisors has reported that edtech in India is poised to become a USD30 billion industry in the next 10 years. Capital firms are also bullish on the Indian edtech companies and have invested more than USD2.5 billion in 2020 alone.

So yes, these are indeed exciting times to be in the edtech industry. But it is important for the players to constantly focus on 'learner-centricity' and continuously strive to deliver value for the learners.

So, what do we need to remember well to capture this trajectory?

A recent survey conducted in India by TeamLease Edtech suggests that 85% of the students say they failed to learn 40-60% of the course material. This is a worrying factor

that reinforces our belief that the effective amalgamation of education and technology has a long way to go.

We, at NIIT, have always believed that we are not in the business of providing courses. Rather, we are in the business of transforming lives. We not only enable our learners with some discrete skillsets but also transform them into career-ready professionals. It is this principle that continues to drive us, as we adapt with the new market dynamics.

For us, the last one year has been a year of disruption, a year of learning and, also a year of transformation. We transformed our business to NIIT digital, and all our programmes are delivered digitally. We also added quite a few programmes to our portfolio on data science, cloud DevOps, cybersecurity, game development and 5G technologies. We are in the process of exploring new products, new domains and new avenues.

You have been bringing out many interesting initiatives such as launching the Axis Bank–NIIT Digital Banking Academy, expanding the Digital Reality and Immersive Learning Solutions practice, and conducting research on adaptive learning organisations. What's the idea and ambition behind these?

Our focus has always been to help customers realise the



**IMMERSIVE LEARNING IS THE FUTURE OF LEARNING –
EMPLOYEES ARE NOW CONSUMERS OF VAST AMOUNTS OF DIGITAL
CONTENT AND SEAMLESS HIGH-QUALITY DIGITAL EXPERIENCES.**



IN THE COMING YEARS, MORE AND MORE TRAINING PROGRAMMES WILL ADOPT A PREDOMINANTLY DIGITAL DELIVERY MODE, WITH MINIMAL ON-GROUND SESSIONS.

business value of learning through our efforts on running training like a business. Immersive learning is the future of learning – employees are now consumers of vast amounts of digital content and seamless high-quality digital experiences, whether they are watching Netflix or shopping on Amazon. We need to bring the same level of engagement to corporate learning. When it comes to immersive learning, it is not just the VR or AR technology that brings the experience to life for the learner, but also the deep science of learning behind the technology that helps the learner relate to the experience at a visceral level to change behaviour. There are many innovations in this space, and we are keen on exploring these with our partners.

As far as the research on adaptive learning organisations is concerned, I would say that it is an idea that was ahead of its time. We initiated this research before the pandemic in association with Josh Bersin Academy. When we released the adaptive learning report in the middle of the pandemic, we realised how being adaptive enabled these organisations to be much more resilient in adverse times. Interestingly, these high-performing organisations also spent 27% less time than underperforming organisations.

Can virtual tools, robotics, gamification, cloud platforms, etc. really redefine the corporate training space in a major way? How does NIIT reckon these changes?

Absolutely. Technology is transforming every aspect of our lives and training is no different. We have learning experience platforms on the cloud that help employees learn in the flow of work. We have incorporated robotic process automation in learning administration, and have a number of bots who do everything from course scheduling to reporting. Our focus has always been to

automate what we can to eliminate manual errors in learning operations. We see technology as a key enabler for learning.

What are your observations and game plans for concepts like blended learning?

We have been the pioneer of 'blended learning' in India, long before the term was coined. Before the pandemic, almost all our programmes used to contain a healthy blend of online and on-ground components. However, due to the pandemic, we have been compelled to migrate all our programmes to a completely online delivery mode. I think in the coming years, more and more training programmes will adopt a predominantly digital delivery mode, with minimal on-ground sessions. But, I wish to emphasise that completely digital does not mean that we have eliminated the instructors and mentors. We have always seen technology as a force multiplier and we continue to do so.

What about personalised learning and lifelong learning? Are you focusing on that as well?

Yes, that is also an intrinsic part of our custom content and curriculum design offering in the enterprise space. For example, we have created many onboarding programmes that involve e-learning pre-work, combined with virtual or face-to-face instructor-led training as well as performance support materials. We don't just stop there – we ensure that learning is applied through on-the-job training with managers and supervisors and learners can improve with continuous reinforcement and feedback.

Moreover, with rapid technological changes and emerging business models, the shelf life of skills has decreased exponentially. Therefore, it is imperative for each individual to commit to 'lifelong learning' in order to adapt to the fast-changing realities and for personal growth.

“Hodling” the line: how blockchain can go beyond Bitcoin

While countries across the globe mull over whether to legalise Bitcoin or not, they should start examining how to use blockchain in the cryptocurrency market



Many were pleasantly surprised when, recently, El Salvador, a third world country in Central America, passed a law to make Bitcoin a legal tender. El Salvador doesn't have its own currency and uses the US dollar for all its work, so this would be an additional currency for it. When Bitcoin is finally implemented there, it could be used for making unlimited payments or transactions and for paying taxes. Furthermore, any exchanges made through Bitcoin would not be subject to a capital gains tax. Contemporary economies such as Panama, Mexico and Paraguay are expected to follow suit soon. But what about the major

economies? Why hasn't India adopted this? They have the largest remittance market; surely, this would ease the process, wouldn't it? While India does have its own currency, Bitcoin is being considered as an asset class, though it will definitely be taxed very high.

Even if SEBI, the Ministry of Finance and the cryptocurrency industry in India work together to set some regulations, there's still some worry as to Bitcoin's volatility and fluctuations. Or else, how will Bitcoin have its credibility established when there's a growing trend of naysayers and how would...? Oh, wait. Why is this being spoken about? Is that it? Why is it that this whole battle



THROUGH BLOCKCHAIN, ASSETS – TANGIBLE OR INTANGIBLE,
COULD BE TRACKED IN A BUSINESS NETWORK TO RECORD LITERALLY
EVERYTHING THAT ONE WOULD WANT TO KNOW.



A NEW PHENOMENON WITHIN BLOCKCHAIN IS THE SMART CONTRACT,
WHICH SELF-EXECUTES AND WHERE ALL TERMS AND CONDITIONS EXIST
ON A DECENTRALISED BLOCKCHAIN NETWORK.

of Bitcoin's trustworthiness and its applications dominate the tech news, so much so that it completely shrouds the wonderful potential of what blockchain can do for the world?

For the uninitiated, blockchain, in its core essence, is a kind of database. Centralised networks rely on intermediaries like banks for transactions between two parties, because of the established authenticity and trust, vindicating the validity of the transactions. In order to fend off any fraud and double-spending, these transactions are recorded through a ledger, for which intermediaries take a fee. Decentralised systems, on the other hand, are recorded via a network of computers and when a transaction occurs, it is transmitted to other computers and complex cryptography authenticates the validity of that transaction, which is immutably encrypted and verified on a reliable network. Generally, 500 transactions form a block, and the first and the last block transactions are securely linked to other blocks via a key, thereby becoming blockchain. This can be accessed by anyone who has a personal node; every individual node would have a copy of the chain every time there are new blocks.

The foundation of any business is data and information. The quicker it is received and the more accurate it is, the better it is for the organisation. What's happening in businesses is that records are duplicated and double counted. Such systems are assailable and would be vulnerable to cyberattacks. If there is not enough transparency, it would hinder and curb the verification of data. A business fallacy that's often promulgated is that lots of money need to be spent in order to make money. While true, to some extent, businesses need to be resilient and antifragile in trying times and one of the ways this is possible is by having success that is affordable, instead of success that bleed companies dry. The efficiency of companies is often compromised because they're susceptible to human error, which may also happen due to middlepersons. Generally speaking, organisations

need a better way to operate. Blockchain would be apt because it would be able to furnish transparent and swift data and information that is stored on a ledger, which can be accessed only by authorised network members.

Through blockchain, assets, be they tangible or intangible, could be tracked in a business network to record literally everything that one would want to know. That would mean anything of value can be tracked and traded through blockchain. Payments can be transacted, and production, accounts and orders can be tracked; the sky is the limit. With the aforementioned nodes, a transaction can be tracked end-to-end. Yet, with this whole distributed ledger technology and with the growing digitisation around us, blockchain isn't being capitalised on to fully optimise operations.

Organisations can do this in various ways. One of them is through a peer-to-peer private blockchain network, where the company has complete control over the network and keeps a ledger. Public blockchain networks, on the other hand, include stuff like Bitcoin, which everyone can buy and engage in. Elon Musk recently drew attention to the fact that Bitcoin consumes a whole lot of energy, so it has faced some flak. But even the way organisations operate currently must be observed. Many of the things we consume are not because of just one entity, but due to an amalgamation of suppliers who sell different components and institutions who bring together the product or service by astutely marketing it. A fair metaphor would be a set of pillars that hold up a fort. If one of those pillars collapses, the whole system falls apart.

The supply chain of an enterprise is a composite network of data, relationships and schedules. One tiny error can disrupt a perfectly oiled machine. Thus, companies need to speed up and become more cost-effective. One possible suggestion is to make use of blockchain by digitising systems across supply chains by connecting everyone from banks to ports to services to customs to logistics providers and many more across various organisations



AS LONG AS ALL EYES ARE ON CRYPTOCURRENCY AND ITS LEGALITY,
BLOCKCHAIN WILL NEVER BE PROPERLY TALKED ABOUT AND WILL
PROBABLY STAY INHIBITED AS A TECHNOLOGY.

and countries. Products and services also have stages of their life: from barley to beer, for example. The problem with this system is that if one of these components fails, the whole thing breaks down. The technology of blockchain makes for a better mousetrap by endeavouring to provide records that are easily accessible and digitally permanent so that the individuals concerned would be able to see the status of the product at every single step.

A new phenomenon within blockchain is the concept of a smart contract, which refers to a contract that self-executes. All terms and conditions of all parties are pre-agreed to and pre-determined and written directly into the code, and exist on the aforementioned decentralised blockchain network. Making external parties obsolete, these smart contracts make sure that all parties in the agreement adhere to the terms and conditions while running without any downtime. As long as a party follows through on its end of the deal, smart contracts ensure that it is paid. If another party reneges, goods are returned. If this were to happen in the real world, you'd probably have to wait for ages, with all the intermediaries, including government members, lawyers, judges and others to intervene, advocate and adjudicate. Furthermore, in the smart contract process, when all the conditions of a contract are met, the next action is triggered.

This also helps with KYC (Know Your Customer), just in a different way. Employees and customers would have digital IDs and with this data stored on a secure blockchain network, it would minimise the risk of any kind of fraud, be it money laundering or identity theft. There would be complete transparency as the information could not be changed; furthermore, blockchain could be used by institutions to learn about various patterns of consumers and how to build a loyal consumer base. This also means that adept marketers could use the data available to them to ameliorate the ROI they accrue.

With something as significant as formulating an enterprise blockchain application, it is absolutely imperative to make

sure one has a comprehensive and robust security strategy that utilises efficient cybersecurity frameworks and the very best mechanisms to mitigate cyberattacks, fraud and any other forms of risk. In this new Industrial Revolution, when companies are aiming to be antifragile, employees need to be nurtured and encouraged to employ non-linear thinking, which means that they need to upskill and re-skill to acclimate to the digitisation around us. Speaking of employees, blockchain can also be used to pay the labour force via cryptocurrency, especially in bigger conglomerates with even international workers. Why use this? It's because, unlike in traditional banking systems, this would allow transactions without any exorbitant fee. Sounds like a boon. That's another feather in the cap of the blockchain phenomenon.

When Satoshi Nakamoto first wrote about his invention of Bitcoin 12 years ago, he probably wasn't prescient enough to know he'd significantly contribute to the positive disruption that blockchain could be able to render. No doubt, cryptocurrency has had its fair share of both endorsers and cynics. In the world of tech and finance, it's never going to be a polemic subject as to what its limitless possibilities as well as drawbacks are and where it is headed.

Blockchain can definitely help businesses elevate their operations and efficiency. But is blockchain and its uses in tech a feasible idea? Yes. Is it a possible idea? Yes. Is it a probable idea? Undetermined. As long as all eyes are on cryptocurrency and the legality of it, blockchain will never be properly talked about and will probably stay inhibited as a technology, never to see the light of day. To be honest, it's probably ahead of its time, but a good Socratic discourse around blockchain as a technology may help make it a reality, as a step in the right direction, bit by bit.

Meshram is Managing Director, Asia and Europe, Spinnaker Analytics



NEW ORDER FOR A NEW WORLD

The pandemic has ushered in a new lease in our daily lifestyle, economy and society. The next step is to identify and embrace all things digital

Dataquest recently organised its annual Digital Leadership Conclave that was attended by over 1,000 delegates and an illustrious list of speakers across IT, ITES, education, healthcare, and manufacturing

sectors as well as policy makers, academia, investors, and other stakeholders from the ecosystem. The conclave with theme 'New World Order' focused on the role of digital technologies in the new normal and how they are



BY MAKING AAROGYA SETU A PARTNER IN THE VACCINATION PROCESS, THE COUNTRY WAS ABLE TO INCREASE THE REACH AND INCLUSIVITY TO 400 MILLION PEOPLE IN SIX MONTHS.

– Dr. RS Sharma, CEO, National Health Authority



THE HOSPITALITY SECTOR HAS BEEN HARMED THE MOST BUT IS USING NEW OPPORTUNITIES SUCH AS VOICE-ACTIVATED DIGITAL BUTLERS AND AUTOMATED REVENUE MANAGEMENT TOOLS.

— **Ajai Chowdhry**, Member – Consultation Group on Science, Technology and Innovation Sector, NITI Aayog

impacting life and society, enterprises, and the economy. The experts also deliberated on how India needs to prepare and be ready for the 3rd wave of COVID-19, and the initiatives that the IT industry can take to deal with any such eventualities.

Delivering the keynote address on ‘Digital Imprint of the Vaccination Programme’, Dr. RS Sharma, CEO, National Health Authority shared his experiences of driving the massive vaccination programme for COVID-19 using the Aarogya Setu platform. “India is a large, diverse country and not everybody here can use a digital platform. The vaccination requires two doses and people find it difficult to keep a record. Hence, we need a system that is easy to operate and can help schedule an appointment and also remind people of their doses.”

He highlighted that the need was to facilitate the process using mobile phone, but since a large population in the country does not have a smartphone, it was decided to allow four people to register using one smartphone. “The system needed to be robust and scalable.” Dr. Sharma added that by making the Aarogya Setu app as a partner in the vaccination process, the country was able to increase

the reach and inclusivity. Emphasising that it is the only app in the world to scale up to 400 million people in six months, Dr. Sharma said that this made it possible for policy makers to plan the vaccination strategy.

The conclave also presented an interesting dialogue between Dr. Devi Prasad Shetty, Chairman and Executive Director, Narayana Health and Arun Seth, Trustee, NASSCOM Foundation. Speaking on the role of technology in healthcare, Dr. Shetty said that within five years, smart doctors will be able to dramatically change the way healthcare is delivered. “The mortality rate will go down significantly. Technology can transform healthcare.”

Delivering the special keynote on dynamics of the new world order, Ajai Chowdhry, Member –Consultation Group on the Science, Technology and Innovation Sector, NITI Aayog, pointed out that there has been a massive uptake in digital payments and e-commerce due to the pandemic. “The digital ecosystem built over the years has proved crucial,” he said, highlighting the role of NPCI in the emergence of the digital payment system in India.

Talking about the impact on technology adoption due to the health crisis, he said that the change in digital portfolios



COVID-19 MADE US REALISE WE ARE CAPABLE OF DOING MUCH MORE. WE HAVE THE TOOLS AND TECHNOLOGY TO SOLVE PROBLEMS OF HUMANKIND. IT IS UP TO US TO ORGANISE THEM.

— **Debjani Ghosh**, President, NASSCOM



PENETRATION OF MOBILE BROADBAND HAS TRANSFORMED THE MARKETPLACE. WITH AUTOMATION, PEOPLE WILL GET MORE INFORMATION AND BE LESS EXPLOITED. THERE WILL BE A DIFFERENT SOCIETY AROUND US.

– Samar Mittal, Head – Cloud Network Services, India Market, Nokia



WITH THE HELP OF NATIONAL LANGUAGE TRANSLATION MISSION, WE WILL MAKE LANGUAGE EXCHANGE HAPPEN. WE ARE LOOKING AT DIGITAL ECONOMY AND CAN REACH USD1 TRILLION BY 2024.

– Anil Jain, CEO, NIXI

in healthcare, pharmaceutical, and financial sectors has been much higher than any other sector. He also touched upon areas that were impacted the most. “While sectors such as education, entertainment, and lifestyle have been affected, the sector that has been harmed the most is the hospitality sector. But this has also thrown open new opportunities. Major hotel brands have started to use voice-activated digital butlers and automated revenue management tools.”

Chowdhry also pointed out that the pandemic has created the opportunity for VR-based travel experiences. “Public broadcasters and museums are also looking at VR, wherein you can see beautiful videos in 360 degrees. As VR becomes more advanced, it will bring people to places that were never visited before.”

DIGITAL TECHNOLOGIES AND INNOVATIONS

Earlier in the day, Rajen Vagadia, VP and President, Qualcomm India and SAARC talked about how integrated technology has become part of the human life. “We are able to connect wirelessly today. The networks and devices have become so common that we take them for granted.” He added that going forward, most of the technologies

will have 5G as a foundation – be it healthcare, education, robotics, virtual classrooms or tech-assisted learning.

“There will be smart cars, smart appliances, and even smart industries. In smart cities, monitoring of civic infrastructure will be required. This will increase reliance on cloud computing. This will also make it essential to cut down the data sent to the cloud. Processing huge amounts of data is more secure when it is done close to the cloud. Here, edge computing will play a big role.”

Speaking at the conclave, Samar Mittal, Head – Cloud Network Services, India Market, Nokia, said that digitisation is happening all around us. “Penetration of mobile broadband has transformed the marketplace. With 5G, we can expect to see transformation across sectors. With automation, people will be able to get more information and be less exploited. There will be a different society around us.”

Sharing her thoughts on the role of digital technologies and innovations to improve healthcare, and in addressing looming crises such as climate change, access to education, and eradication of hunger, Debjani Ghosh, President, NASSCOM said that emerging technologies like artificial intelligence (AI), robotics, and quantum computing



WE DID NOT HAVE A TEMPLATE TO DEAL WITH THE PANDEMIC AND LOCKDOWN. IT GAVE US AN OPPORTUNITY TO STEP BACK AND REFOCUS ON WHAT WE WANTED TO DO

– **Palash Nandy**, CEO, Numeric



GOING FORWARD, MOST OF THE TECHNOLOGIES WILL HAVE 5G AS A FOUNDATION – BE IT HEALTHCARE, EDUCATION, ROBOTICS, VIRTUAL CLASSROOMS OR TECH-ASSISTED LEARNING.

– **Rajen Vagadia**, VP and President, Qualcomm India & SAARC

are helping tackle some of these mega problems. “The ability to innovate and the speed of innovation help determine the possibility of overcoming a challenge. This COVID-19 crisis made us realise that we are capable of doing much more. We have the tools and technology to solve some of these problems challenging humankind. It is up to us to organise them.”

Talking about digitisation and its impact on the society, Anil Jain, CEO, NIXI said it has changed and impacted the whole world. “People, businesses, international relations, and boundaries have all been impacted. We are seeing that things are getting miniaturised. Less number of machines can do more things now. We can book food and vaccination via a mobile app. We can get taxi within five minutes.” He also stressed on the fact that data consumption has become critical in the new normal.

“In the future, there will be borderless business transactions. We are already working on driverless cars. There will be factories, colleges, etc., without manpower. With the help of national language translation mission, we will make language exchange happen. We are looking at digital economy and digital security, and can reach USD1 trillion by 2024.”

Palash Nandy, CEO, Numeric, said that the lockdown presented a lot of opportunities. “We did not have a template to deal with the pandemic and lockdown. It gave us an opportunity to step back and refocus on what we wanted to do; it made us think about different business models, and ensured that we become stronger as an organisation through digital transformation. It made us think how digital technologies can be used to enhance customer experience.”

The day’s event also included the top three IT industry awards – the DQ IT Person of the Year Award, the DQ Lifetime Achievement Award, and the AatmaNirbhar Bharat Champion Award. Dataquest also presented the Digital Warrior Awards to CIOs and technology leaders for their roles in implementing important projects across 23 categories.

The conclave was supported by Nokia as the Technology Partner, ST Telemedia as Gold Partner, NIXI as Internet Partner, NIIT as Training Partner, and Numeric as the Power Partner. The event was also supported by Apeejay Education as Academia Partner, IESA as Associate Partner, CMR as Research Partner, and VConfex as the Platform Partner.

The pandemic and our future

The pandemic poses a question – would the way we entertain ourselves, heal ourselves, and learn and use technology change forever after the crisis? Yes, and no



The pandemic has changed everything. And as we move ahead, the way we entertain ourselves, heal ourselves and learn new skills – all will undergo massive shifts.

“The complete incarceration of all of us at our homes has been a big mind shift for many of us. There has been huge growth in entertainment options but there have been other interesting changes alongside – like interest



OUR COMPLETE INCARCERATION AT OUR HOMES HAS BEEN A BIG MIND SHIFT. THIS HAS LED TO INTERESTING CHANGES LIKE INTEREST IN GAMING AMONG THE OLDER GENERATION.

– Meena Ganesh, CEO and MD, Portea Medical



ONLY 10 MILLION PEOPLE BUY FROM MAJOR E-COMMERCE PLAYERS WHILE 70 MILLION PEOPLE HAVE MADE ONLY ONE TRANSACTION IN A WHILE. SO THERE IS HUGE SCOPE FOR GROWTH.

– Sukanta Dey, CEO, Sdela Consulting

in gaming. Some of the older generation have taken to virtual Bridge. It boggles my mind what new set of activities for engagement we have moved to. These have not only affected entertainment but created a different sort of society by bringing people together. Of course, time will tell how much of this will continue while we move to normalcy. I am waiting to buy popcorns and watch a movie in a theatre,” Meena Ganesh, CEO and MD, Portea Medical, expressed when she painted a picture of the new digital world from her lens.

Moderating the panel discussion on Digital Life and Society at the Dataquest Digital Leadership Conclave, Sukanta Dey, CEO, Sdela Consulting, seconded how physical entertainment will continue to change even after the pandemic is out of the way. But he also argued that there is a lot of untapped room in e-commerce. “Only 10 million people buy from major e-commerce players, while 70 million people have made only one transaction once in a while. So there is a huge scope for the industry to grow.”

Medical care, just like entertainment, will also continue to embrace a massive change – especially in the mindset.

HEALTH – RESET

“Most houses have got a little mini-hospital corner now, with basic supplies, first aid, medicines and small equipment set up there. Going forward, in-home hospitalisation will deepen. This will become a regular feature. The OPD of the hospital will be visited less and less, I guess,” Dey opined.

Ganesh also outlined the big shift in the healthsector, like tele-consultations gaining legality. “That led to massive increase in the number of tele-consultations, new solutions coming up, and new ways of tracking people no matter where they are. People have also become cautious about complicated health conditions, some of which have to be managed in a remote way only, like diabetes.”

Remote ICU solutions, strong remote monitoring with thin bandwidth, real-time tracking, and adoption of similar technology by senior doctors were some big turns that we have seen till now. “Mental health consultation – done in the privacy of one’s home is a big example of the change that works well.”

So with healthcare, entertainment, etc. changing so much, will we also change the way we learn?



IN EDUCATION, SCHOOLS ARE KEEN TO GET BACK TO THE PRE-PANDEMIC SETUP. PEOPLE ARE MISSING SOCIALISATION FAR MORE THAN THEY MISS CLASSROOMS.

– Rajendra S Pawar, Chairman and Co-founder NIIT Ltd



STEVE JOBS KNEW WHAT USERS WANTED BUT NEVER CONSULTED ANY USER. THAT'S A VISIONARY MINDSET AND PEOPLE LIKE JOBS CONVINCED USERS WELL ON WHAT REALLY WORKS BEST.

— Dr. UB Desai, Founder Director, IIT Hyderabad

CLASSES – RESET

Is the era of campus-based education over now? Rajendra S Pawar, Chairman and Co-founder, NIIT Ltd., has a definitive answer here. “Not even one child I have come across says one does not want to go back to school. Not even one. It’s a deeper issue. This period has flexed people’s behaviour. In education, schools are keen to get back to the pre-pandemic setup. People are missing socialisation far more than they miss classrooms. This is also a very important part of education – soft skills, interpersonal behaviour, personality and character-building. Higher education students, undergraduates, etc. will see a different change. They are independent but are also looking for socialisation. They have found that when they want to explore their areas of curiosity, they can find some avenues of enrichment – and at their pace. Also, many teachers see that some students who do not – otherwise – ask questions are opening up in the digital mode.”

But there is a downside to these changes too. “Bored students and exhausted teachers – is something we need to accept too. In the workplace, there are few complete free course options. Also, every teacher knows that if left to themselves, some students will not carry a book. But in the absence of anything else, people have to learn the new way. A major portion of students do not have access to devices too,” he reminded.

That means there are some skills that will stay relevant and some will not. “The skill of learning-to-learn will be a big one and the most important skill. Mobility of the mind is important because the 21st century is the century of the mind. People working with people, and people working with ideas – they would become crucial.”

As we move towards the future, we might also have to rethink what users want from technology and innovations now.

INNOVATION – RESET

As to human-centric technologies, Dr. UB Desai, Founder Director, IIT Hyderabad reasoned that users have to be part of these technologies – whether in brainstorming, conceptualisation or development. “This has played a big role in design and architecture where there is a lot of back-and-forth between user and developer. But in the silicon space, things get complicated. Is human-centricity really required? If so, how does it work? Cars and chairs are different but what about phones and aircraft? In a sense, there is a balance between human-centricity and technology. Rotary phone lasted for a long time. Is iPhone human-centric? Let’s think deeply about it. Steve Jobs knew what users wanted but never consulted any user. That’s a visionary mindset and people like Jobs convince users well about what really works best. Did the Wright brothers do any user-centric study? I am doubtful.”

His argument was interesting. “Users look a year or two ahead but visionaries look far ahead. The way Elon Musk and Jeff Bezos look at space travel, for instance, is far ahead. That’s a complex problem to solve – should an innovator take a user along or be a bold visionary with development of something that is far out in the future?”

Once the base technology is there, user-centricity can be embraced, he suggested. Today’s new communication and interaction tools help with real user perspective, especially with AR and VR. Stressing on an eclectic approach, he said, “Perhaps we should coin a new name where we merge user-centric approach with a visionary approach.”

Indeed, an eclectic approach is what we need now for a lot of aspects of our life which would be both digital and physical.

New World Order

Time for Tech to Shine

Friday, 23 July 2021 | 9:30 – 5:30 PM

#ictawards

Watch on Demand

 @Dataquest_India

<https://shorturl.at/gjDE3>

Team Dataquest thanks speakers, panellist, delegates and partners for making Dataquest Digital Leadership Conclave & 28th edition ICT Awards a stellar success

10

Sessions

26

Topics

33

Speakers

1K+

Attendees

23

CIO Awards

3

Jury Leadership

510

minutes of unique content

5K+

Engagements

The Digital Imprint of the Vaccination Program



Dr. R S Sharma, National Health Authority

Dynamics of the new world order



Ajai Chowdhry, Founder, HCL

Digital Life & Society



Rajen Vagadia, Qualcomm India & SAARC

Digitisation – a catalyst in transforming society.



Samar Mittal, Nokia

Deep Tech Mission Critical Innovations



Debjani Ghosh, NASSCOM

Digital Acceleration



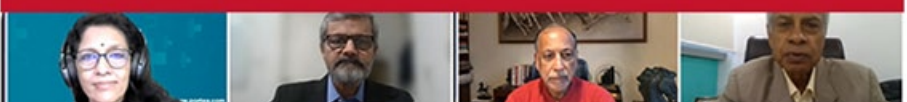
Palash Nandy, Numeric

Digital Identity suitable to Digital Entrepreneurs in India



Anil Jain, NIXI

Digital Life & Society



Meena Ganesh
Portea

UB Desai
IIT Hyderabad

Rajendra S Pawar
NIIT

Sukanta Dey
Sdela Consulting

Digital Enterprise



Bimal Khandelwal
STT GDC India

Kapil Mahajan
Safexpress

Anil Chopra
CMR



Harnath Babu
KPMG



Umesh Mehta
Jubilant Lifesciences

Preparing for the 3rd Wave of COVID



Pradeep Gupta
CyberMedia Group

Vipul Singh
Aarav Unmanned Systems

Prakash Kumar
Wadhvani Institute
of Technology
& Policy



Arun Karna
AT&T



Amit Sinha Roy
Tata Communications

New World Order: Time for Tech to Shine



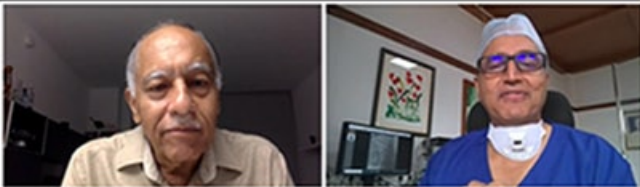
Som Mittal
NASSCOM

Sameer Garde
Cisco India and SAARC

Rajesh Gopinathan
TCS

Sunil Vachani
Dixon Technologies

Leaders' Talk



Arun Seth
Nasscom Foundation

Dr. Devi Prasad Shetty
Narayana Health

Digital Economy



Neeta Verma
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Technology

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National Internet Exchange of India

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NIIT

Training

NUMERIC
A Group brand | legrand

Power

APEEJAY EDUCATION
SOARING HIGH IS MY NATURE

Academia

IESA
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Taking India to ESDM Leadership

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The digital journey from office to home

The pandemic has caused almost a complete shift to remote working, compelling businesses to adopt the latest of tech gears and keys to stay in the game



From big IT majors and real estate players in metros, to co-working set-ups and cozy WFH desks in small towns – everyone has seen the massive shift that

affected their lives during the pandemic. As we dust off the shockwaves and tactics that kept everyone afloat in the lockdown, we need to ask a big question now. What



ONE THING FOR SURE IS THAT THE WORLD IS NOT GOING BACK TO EARLIER WAYS OF WORK. THE YOUNG TALENT, ESPECIALLY, IS NOT SO OPEN TO PREVIOUS MODES OF WORK.

– Harnath Babu, CIO, KPMG India



THE ORGANISATION HAS TO BE INTELLIGENT, ESPECIALLY IN THE LIFE SCIENCES INDUSTRY, WHERE PATIENTS ARE INCREASINGLY TAKING CONTROL OF THEIR HEALTH APPROACHES.

– **Umesh Mehta**, EVP & Global - CIO, Jubilant Life Sciences

happens to the workplace as we move forward? Would the pendulum swing back? Shall we freeze the new modes with something tech-savvy and agile?

Well, when an office shifts from an expensive real estate or a big town headquarter to a second-tier city street, a lot happens as a dominoeffect. The near 100% shift to work-from-home has also created a massive push to move everything on the cloud and the need for new digital approach and data-driven business innovations. Moderator Anil Chopra, Sr. VP, Research and Consulting, CMR, got some levels deeper into this paradigm with a multi-faceted panel at the DQ Digital Leadership Conclave, discussing on cloud, WFH, intelligent enterprise and reshaping the business.

GETTING FLEXI

Harnath Babu, CIO, KPMG India, explained how the WFH aspect is transpiring with the redefining of office and telecommuting. “One thing for sure is that the world is not going back to earlier ways of work. The young talent, especially, is not so open to previous modes of work. We are looking at how to rewire policies to new needs and

habits. Interestingly, BYOD trends and SASE-related evolutions were there in some shape or form but they are progressing at a new speed now. Earlier, humans were the most fragile elements and if they failed, initiatives tended to flop. Now, there is so much awareness on AI, ML, IoT, and digital tools in the new world. This world is completely hybrid and automated.”

A key point that the discussion touched well upon was the area of creating hybrid cloud business models. Kapil Mahajan, Group CIO, Safexpress, talked about several challenges related to scalability, vendors, availability and outsourcing. “Getting a unified view across many applications is tough. There are also multiple points of failures. We need to have a lot of tools in place, especially from the open source stack. Portability and loosely coupled APIs are also emerging as significant aspects. We are always weighing the costs with the ease of running a cloud. But the business outcomes outweigh these challenges. Technology is also advancing a lot and many tools are coming up to address these issues.”

Would enterprises find hybrid clouds challenging in terms of governance and redundancy management? Yes,



CFO IS CHANGING FROM THE CUSTODIAN OF TRANSACTIONS TO ENABLER OF TRANSFORMATIONS. NOW, CFOs WILL UNLOCK NEW VALUE POINTS.

– **Bimal Khandelwal**, CFO, STT GDC India



GETTING A UNIFIED VIEW ACROSS MANY APPLICATIONS IS TOUGH. THERE ARE ALSO MULTIPLE POINTS OF FAILURES. WE NEED TO HAVE A LOT OF TOOLS IN PLACE, ESPECIALLY FROM THE OPEN SOURCE STACK.

– Kapil Mahajan, Group CIO, Safexpress



he said but iterated that a number of tools and approaches are emerging to take care of such challenges.

GOING AGILE

No matter what format and what tools would come into play for the workplace of the new decade, one thing is for sure – agility would become a hygiene factor of sorts. Umesh Mehta, EVP & Global-CIO, Jubilant Life Sciences, expanded on the need for intelligence and agility in the new enterprise. “Personalisation and patient-centric models are shaping up. The organisation has to be intelligent, especially in the life sciences industry, where patients are increasingly taking control of their health approaches. Big data is also driving health networks with therapeutic outcomes at lower costs and with new ecosystems. We are serving customers with more holistic approaches and collaborations. I also see life sciences companies starting to collaborate more closely with quality suppliers for enriching customer needs.”

Incidentally, finance leaders are also shaping business transformation and digital acceleration in 2021 and beyond. Bimal Khandelwal, CFO, STT GDC India, shared his perspective for an era where resilience is not a choice

but a staple during the pandemic. Did it increase the costs of IT initiatives in the longrun? His perspective is based on three fundamental points. “The need to be derived from the new workplace shift is that of digital upskilling. We need to develop capabilities and motivation for the new ways of working. We need to accelerate adoption of cloud technologies with the right choice. CFO is changing from the custodian of transactions to enabler of transformations. Now, CFOs will unlock new value points. Digital is the future, we used to say to convince the C-Suite, but the pandemic has made that expression redundant.”

A lot of adjacent areas like the WFH model, the network essentials of a smart and dynamic organisation, and the evolving cloud environment need to be addressed here when we think of how to get ready for the workplace ahead.

Overall, the new world looks more intelligent and more hybrid than it ever was – or it ever could be – if not for the imperatives seen in the last two years. Not only our offices but also our work approach has changed. As the office shrinks and the workplace expands, let us see where we go next.

From miles to mbps: the new digital reality

As we move into a larger share of digital economy, collaboration among key stakeholders is imperative to truly adapt to the changing needs of post-pandemic era



A digital economy is like any other economy. Except that it works differently, with different tools, pace, habits and ecosystems. So how many of these have been cracked well in India? And has the pandemic

slowed us down or pushed us ahead on this road?

An interesting panel at the DQ Digital Leadership Conclave came up with some hard-hitting answers at the panel discussion on Digital Economy. And most of them



THE WHOLE OF INDIA HAS ADOPTED DIGITAL ACROSS EDUCATION, HEALTHCARE AND MORE. TODAY, THE FIRST CHOICE IS AN ONLINE DOCTOR CONSULTATION FOR A HEALTHCARE NEED.

— Neeta Verma, Director General, National Informatics Centre



FROM GYM TRAINERS WHO CAN DO IMMERSIVE TRAINING TO MAIDS USING YOUTUBE FOR RECIPES – EVERYONE IS, AND WILL BE, ADAPTING TO TECHNOLOGY.

– **Vinish Bawa**, Head of Emerging Business, India Market, Nokia

galvanised on the need to have a digital mindset and an ecosystem – working in islands would not help anymore.

WE BECAME FAST

Why are we discussing about digital economy now when we are on this path for some time already? This poignant remark from the session moderator Sukanta Dey, CEO of Sdela Consulting, holds a lot of cue.

“Necessity has driven innovation, and so has the pandemic. No wonder, India has accelerated the digital journey. The country is very tech-savvy, from the humble rickshawallah to the urban smartphone owner. Use of digital economy by our citizens is very high,” What we saw in the pandemic was a fast track, echoed Neeta Verma, Director General, National Informatics Centre.

“During the pandemic, technology has been the centre of the action, across all walks of life. Digital transformation is at the core of strategy for every enterprise – private, public, government, everyone. We have seen how the whole of India has adopted digital across education, healthcare and more,” she said.

“The adoption is so remarkable that otherwise it would have taken us years to bring this change. Today, for instance, the first choice is an online doctor consultation

when it comes to a healthcare need. Digital India, Aatma Nirbhar Bharat Abhiyan and Make in India will give us a different level of digital confidence and last-mile inclusion as we keep progressing at the policy level,” Verma added.

Speaking of which, one is naturally nudged towards the digital forces that have emerged stronger during the pandemic. Yugal Kishore Sharma, Chief Executive Officer, ONEOTT iNTERTAINMENT spelt out how contactless and experiential future e-commerce are enabling the engines of this new genre of economy.

“India has quickly adapted to a lot of changes. There are so many mobility platforms and smartphone devices. The world has split into two big halves – before and after corona – and has pushed a fast-forward button which is unprecedented,” he said.

Sharma further added that while his organisation embraced the ‘stay home, stay online, and stay safe’ mantra in the first wave, the mantra would continue to stay for some time to come. “Almost all applications are now coming up from home. From a distance, the current digital divide between the haves and have-nots looks interesting. Today, everyone has a level-playing field,” he said.

He also pointed out that e-commerce platforms have become part of one’s life. “Almost every part of our daily



FOR A RESILIENT ECONOMY, WE NEED TO FOCUS ON THE FOUR PILLARS OF DIGITAL ECONOMY, COLLABORATIVE DIGITAL ENVIRONMENT, DIGITAL SOCIETY AND TRUSTED USE OF DATA.

– **Golok K Simili**, Chief of Technology, Ministry of External Affairs



THE WORLD HAS SPLIT INTO TWO BIG HALVES – BEFORE AND AFTER CORONA – AND HAS PUSHED A FAST-FORWARD BUTTON. ALMOST EVERY PART OF OUR DAILY LIFE IS ONLINE NOW.

– Yugal Kishore Sharma, Chief Executive Officer, ONEOTT iENTERTAINMENT

life is online now. Digital economy will play a much more important role ahead, also as every citizen is well-versed with digital applications. The best part is that government machinery and connectivity aspects are becoming strong. It is like the kuccha-road-to-highway transformation that has changed the infrastructure in the country. The real transformation at a multiplier level will be taken care of by digital infrastructure.”

WE BECAME FLUID

As to reimagining customer journey during COVID-19, Vinish Bawa, Head of Emerging Business, India Market, Nokia, explained how technology is a critical piece in all this change. “Everyone in an average Indian house is using high bandwidth today. Look at the sheer uptick in usage of broadband and data. Soon, even the pets in the house will find ways to use data,” he quipped, and elaborated how exponentially the needs of customer have gone up. “Economies and societies have to still adjust to the new digitised reality. There is no alternative. From gym trainers who can do immersive training to maids using YouTube for recipes – everyone is, and will be, adapting to technology. That’s where 5G will be relevant as data increases even further in usage.”

But can such an economy also be a resilient one? Golok K Simili, Chief of Technology, Ministry of External Affairs, unravelled that aspect well by touching upon four pillars that we need to focus on. “Digital economy, collaborative digital environment, digital society and trusted use of data. We need a hyperscale data centre. We should also consider the kind of digital work happening in India and globally, various applications and services as well as data localisation happening here. The future looks promising.”

WE ARE BECOMING FUTURISTIC

As contactless transactions, online communication and

experiential technologies are becoming the new normal, as homes are evolving into new centres of education, work, entertainment, and conference rooms, the economy is opening its arms to new opportunities as well as regulatory challenges which the panel deliberated on from various angles.

Simili emphasised that we need to have a cloud-first approach. “There has to be an approach towards efficiency, cost-benefit ratio and sustainability. That is not possible by the government alone and we need larger industry participation.” He also discussed how the other core sectors like agriculture and retail gain when digital economy becomes strong.

Verma reminded how much we need to cultivate a sharing culture on areas like threat intelligence and a swift incident response team. Other issues such as democratisation of technology, Fibre to the Home (FTTH) networks and a second wire in the home for back-up connectivity were suggested by Sharma. “For me, FTTH is not Fibre to the Home but Future to the Home,” he stated.

But then, there is a flip side to all things digital.

Bawa added how devices have expanded in usage, data consumption and applications. “Security should be paid attention here – from the start to the end point. It’s a fundamental issue. Also, devices need to adapt well to new needs like smart factory and smart agriculture.”

Diversity in the country, elimination of middlemen, and digital boosters have shone brightly during the pandemic for the Indian economy. As the panel also concurred, a new era has started for the world after March 2020. Digital is a big leveller and a differentiator as well. But India has its own challenges – the last man standing in the village should get the same benefit as us.

The miles are being defined by mbps and that’s the way forward. That’s the future. Bright and digital.

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Time to gather tech armours for the third battle

As the third wave is expected to be round the corner, we need to have the right technologies to be well-prepared. This time, let's not repeat the same mistakes



Well-prepared is half the battle won. Nothing proves this better than the aftermath of the second wave of the COVID-19 crisis. There is no doubting what we have seen. The question now is –

would we repeat these mistakes? “Whether there is a third wave or not, we should certainly prepare for it,” said Arun Karna, MD and CEO, AT&T Global Network Services India Pvt Ltd. And he is right.



WE NEED TO BE WORKING ON PREDICTIVE AREAS, INFRASTRUCTURE, IDENTIFICATION, MONITORING, ETC. ALL THIS REQUIRES A GOOD PLAN, GOOD TECHNOLOGY AND GOOD LEADERSHIP.

– Pradeep Gupta, Chairman, CyberMedia Group



ML AND NLP ARE BEING USED WITH DIFFERENT LEVELS OF ACCURACY, ASSUMPTIONS AND MODELS FOR PREDICTION. WHY NOT HAVE THIS INFORMATION READILY AVAILABLE ON AN APP?”

– **Prakash Kumar**, CEO, Wadhvani Institute of Technology & Policy

Technology will take the shape of many avenues and answers in enabling this readiness, such as contactless processes, better and faster prediction, drones, workplace automation and a lot more.

He was speaking at the panel discussion on ‘Preparing for the 3rd Wave of COVID-19’ at Dataquest Digital Leadership Conclave recently. The panel discussion was moderated by Pradeep Gupta, Chairman, CyberMedia Group.

PREDICT WELL

Yes, we have both the tools and the prerogative to find innovative readiness in fighting the many ramifications of the pandemic. “Digital and contactless technologies can help soften the blow and aid recovery as the situation evolves,” Karna suggested.

Prakash Kumar, CEO, Wadhvani Institute of Technology and Policy explained the role of prediction with reasonable accuracy. “In natural disasters, there is a huge peak and then it subsides. But with a crisis like COVID-19, the effect is longer. That’s what changes on how we look at data for prediction here. So how do we evacuate and what

actions can we take? In infrastructure creation, in impact minimisation, in identification of areas of impact – in all these, technology can be very useful. Information can be made publicly available on a ready app.”

Kumar recommended that use of AI and ML can be substantial in prediction areas – how people move and how we form assumptions. “Emerging technologies like machine learning and NLP are being used with different levels of accuracy, assumptions and models. Why should we not have all this information readily available to a person on an app?”

Karna added that there has been a marked increase in adoption of digital technologies. “Those enterprises that had not embarked on digital journeys were badly affected. Those that were fairly down the road on digital adoption not only survived, but even thrived – such as online marketplaces, entertainment, IT companies, edutech, fintech, and healthtech. The increased dependence on digital technologies has blurred the distance between physical and digital worlds. This growth will continue, thanks to business imperatives. We need more flexibility now to customise products as per customer’s needs.”



WE NEED TECHNOLOGIES FOR RAPID RESPONSE WITH ENOUGH FLEXIBILITY, SCALABILITY AND MINIMUM HUMAN INTERVENTION. THE DRONE TECHNOLOGY IS ONE SUCH EXAMPLE.

– **Vipul Singh**, CEO, Aarav Unmanned Systems



IN THESE TIMES OF STRESS, THE EMPATHETIC STYLE OF LEADERSHIP WOULD BE GOOD. NOW WE NEED BOLD, INTUITIVE AND RESILIENT STYLE OF LEADERSHIP TOO.

— Arun Karna, MD & CEO, AT&T Global Network Services India Pvt Ltd

AUTOMATE FOR BALANCE

Touching upon one of the important challenges of the new normal and WFH era, Gupta wondered how can one manage growth and create work-life balance.

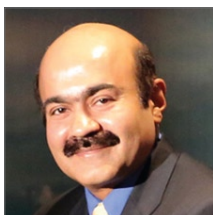
“In first wave of the pandemic, we were locked in, but the second wave has affected us in a serious and deep way,” averred Amit Sinha Roy, Global Head of Marketing and Communications, Tata Communications. “So it really affected work-life balance. Moving forward, we need to look at some best practices. Now, the office and home have merged into one. We need to be able to create some distinction in a structured way. The way of WFH needs to be more evolved, and the work-life balance has to be clearly demarcated. It has got all meshed up right now.”

FLY WHEN YOU NEED TO

People have short memories, so we need to remember and build awareness programmes based on first and second wave’s lessons, said Vipul Singh, CEO, Aarav Unmanned Systems, pointing at workplace solutions and automation to get ready. He picked up some absolutely

essential technologies for third-wave readiness. “We need technologies for rapid response with enough flexibility, scalability and minimum human intervention. The drone technology is one such example, and all the characteristics I mentioned fit well with it. India can learn from other parts of the world on how they have used this. We also need to create awareness well in advance with communication technologies. Also, artificial intelligence can compensate for human presence.”

UAVs can play a big role in delivery of vaccines too. “We have a wide variety of topology in India. Some terrains, especially in the North East, are difficult. That’s where all logistics issues start. Mobilisation of emergency supplies is largely dependent on land-based logistics and humans. That’s where drones can help. There are no obstructions in a 3D aerial space with no landslides or weather issues.” He illustrated how ICMR is running a pilot project for validating the technology’s potential and defining the standards. “IIT Kanpur, etc., are also running these tests.” Drones are being used for operations of assets in industrial use cases as well.



WE NEED TO EMBRACE WORKFORCE FLEXIBILITY THROUGH THE EMPOWERMENT OF ADAPTABLE OFFICE INFRASTRUCTURE WITH REMOTE ACCESS, SECURITY, ETC.”

— Amit Sinha Roy, Global Head of Marketing & Communications, Tata Communications



A BIG PART OF 'RETURN TO WORK' HAS TO BE STRENGTHENED BY RIGHT SOLUTIONS FOR WORKFORCE SAFETY AND MITIGATION OF UNNECESSARY CLUSTERING, AMONG OTHERS.



AND, OF COURSE, LEAD RIGHT

All this would call for the right leadership, Gupta argued. Karna seconded that and said, “In these times of stress, the empathetic style of leadership would be good. Now we need bold, intuitive and resilient style of leadership too. You not only have to lead but also have to be seen to be leading. Because all informal structures that we previously had, are no longer available for the leader to show up. There is an increased dependence on digital, so the organisation would also need to align well with digital culture – till the last link in the chain. The workforce wants balance – it cannot be all about productivity increases. The enterprise should account for workforce expectations and concerns as well.”

AGILE IS THE NEW A

The role that enterprises can play has become profound. Roy shared that we need to embrace workforce flexibility. “We need the empowerment of adaptable office infrastructure with remote access, security, etc. A big part of ‘return to work’ has to be strengthened by right solutions

for workforce safety and mitigation of unnecessary clustering, among others.”

That’s where a multipronged approach to security would come in. Karna advised for a protective all-encompassing layer with software-defined threat detection and response mechanism. The security paradigm is now moving to recover and retaliate. “Network and security are a single dialogue. SASE, for instance, is the new paradigm.”

In the first wave, we saw how big companies adapted and started manufacturing sanitisers or providing oxygen support. The pandemic has changed the very fabric of the business – in many places, cited Roy as he underlined the role of agility in business models.

India is one of the leaders in technology. We should use that carefully.

“We need to be working on predictive areas, infrastructure, identification, monitoring, etc. All this requires a good plan, good technology and good leadership. The wheels of the economy have to run on these important components,” Gupta said. He surmised well – we need to be prepared. Technology should help. We also need a multidimensional approach to do that.

In the pink of health, back again

The healthcare industry holds more importance than ever for everyone on the planet. Strategic tech measures, and not rash decisions, are the need of the hour



The world is part the second wave and is already bracing up, in many ways, for the next turn of the crisis. What would this mean for the healthcare space, as an industry and as a mind-set both? To begin with that's a very poignant and a relevant question, right now; a question that can have many answers. But the candid and brave one is what we need to hear before we step further into the new normal. And this answer hints that being panic-driven or using knee-jerk reactions won't do. But at the same time we cannot afford to be reckless or random in our responsiveness to what happens next. The issue was taken up in the Leader's Talk at the Dataquest Digital Leadership Conclave between Dr. Devi Prasad Shetty, Chairman and Executive Director, Narayana Health and Arun Seth, Trustee, NASSCOM Foundation.

Pointing out that while it will be very difficult to predict about the third wave, Dr. Shetty says that gradually the

pandemic is becoming like an endemic disease. "We may not see the kind of peak that we have seen in the past. People have been vaccinated or exposed to the virus. We should be mentally prepared. COVID-19 is something we need to accept to learn to live with."

He lists down a lot of good things that have happened due to this pandemic. "Some years back patients sitting in my office came from remote corners and not many had heard of internet or telemedicine or cloud. It took 20 years for us to convince about the advantage of telemedicine. It took lot of cajoling. But nothing happened. In two weeks, telemedicine became a reality and got legalised."

That's a ramification that the industry can appreciate. Who could have thought that we needed a pandemic to make telemedicine gain adoption and acceptance on many dimensions! In fact, COVID has turned the world upside down and it will not change again.



IT TOOK 20 YEARS FOR US TO CONVINCED ABOUT THE ADVANTAGE OF TELEMEDICINE. IT TOOK LOT OF CAJOLING. BUT NOTHING HAPPENED. IN TWO WEEKS, TELEMEDICINE BECAME A REALITY AND GOT LEGALISED.

– **Dr. Devi Prasad Shetty**, Chairman and Executive Director, Narayana Health



WHAT SHOULD THE TOP IT LEADERS IN INDIA BE LOOKING AT NOW? CAN IT USE THIS MOMENTUM TO GET THE SAME OUTCOME ON HEALTH EXPENDITURE AS THE US DOES?

– **Arun Seth**, Trustee, NASSCOM Foundation

Seth seconds that but wonders what should the top IT leaders in India be looking at now? Can IT use this momentum to get the same outcome on health expenditure as the US does?

India will become the first country to dissociate the healthcare quality factor with affluence – that's a prediction a confident Dr. Shetty makes. "Some of the top doctors across the world live the India and stand out so well. Within the next seven years, it will become legally mandatory for doctors to get second opinion from software. Essentially, technology will change everything. Today, we have conquered the Moon and the Mars but we know so little about the complex human body. That's the next conquest area for innovative engineers and doctors. We will great outcomes of technology in areas like the cost of healthcare, affordability, access, morbidity rates. We are the right country for that transformation to happen."

So like we proved in IT, can we repeat that feat? Can India be the medical care star of the world, Seth asks? Dr. Shetty explains that it is all about our attitude. "No

American doctor wants to work outside the US. No British doctor works outside England. But Indians do it for both good opportunities and for expanding their learning. We are willing to work with healthcare systems in other parts of the world. This is supported by healthcare platforms and technology. This is a great combination."

But there is a lot that needs to change, in many ways, and in a consistent manner. We spend more money to keep ourselves healthy than we spend for food – is there not something wrong somewhere, Dr. Shetty stimulated a big question and hoped for technology to change this dilemma.

Can India be the hub of manufacturing medical devices? Seth added to that ambitious train of thought. Dr. Shetty was optimistic about this ambition. "When you convert atoms into bytes, amazing things can happen."

Indeed. As India picks up the positive dominoes of the pandemic, there is a big opportunity to keep the traction on and to keep bolstering our healthcare and innovation muscles in better ways.

Explained: the ‘new world order’ and us

With COVID accelerating adoption of digital technologies, India with its massive domestic market is gearing up to become a hardware hub. Here is what it needs to do



Is India a software powerhouse or a hardware one? Well, doesn't the answer depend on which decade you are talking about? If it was some decades back, the

perception would have leaned more towards hardware areas. That is until, of course, the big software switch happened.



THE LAST THREE-FOUR YEARS HAVE BROUGHT MORE CHANGE THAN EVER. WHAT EXCITES ME THE MOST IS HOW THE COMMON MAN IS USING TECHNOLOGY TODAY.

— Som Mittal, Former President & Chairman, NASSCOM



WE CANNOT BE WORLD LEADERS BY IMPORTING COMPONENTS AND EXPORTING PRODUCTS. WE NEED TO HAVE A STRONG COMPONENT ECOSYSTEM.

– Sunil Vachani, CMD, Dixon Technologies

So where exactly are we moving to now?

Som Mittal, Former President and Chairman, NASSCOM, tells you how his journey over the decades has made him witness the transformation of India from a hardware to a software and services industry. When he shares all the ups and downs that the industry has seen in terms of network connectivity, brand perception, infrastructure, and more, you do sit up and listen. “The last three-four years have brought more change than ever. The COVID-19 impact has helped in accelerating innovation. Productivity went up. What excites me the most is how the common man is using technology today. Cloud, which was in so much discussion, would not have seen the kind of adoption it saw in this phase. Now, you do not have to build everything. There is emergence of hyperscalers as well, which are more than storage and cloud providers. I hope technology would really shine. Even in services, the focus is shifting to customer’s customer.”

Looks like Pradeep Gupta, Chairman, CyberMedia Group opened a can of butterflies when he asked the panel at DQ Digital Leadership Conclave some very stimulating questions. A lot of ideas and arguments

blossomed there. Gupta asked, “What causes these changes and how do we evolve into a new world order?”

THE LIGHT AND THE TUNNEL

When he brought the spotlight on hardware and how China has taken a sort of lead, Sunil Vachani, CMD, Dixon Technologies, explained that digital inequality, which was very profound earlier, has widened in the pandemic. “The growth has been most unequal both in terms of nation and people. What people are going to need now, post the pandemic, are two things – data and devices. This is an opportunity for both the country and the industry. We have seen great demand but at the same time huge component shortages. How can we create a strong and vibrant component ecosystem in the country – we need to address this question. A lot will have to be done. But there are issues and there are solutions.”

The great thing, despite naysayers, that has happened is the mindset change that India can be strong in hardware as well.

Sameer Garde, President India and SAARC, Cisco India unlocked the network and communication aspect of this



IF WE LOOK AT SOME START-UPS IN INDIA, THEIR GROWTH HAS BEEN IMPRESSIVE IN TIER 2 AND 3 CITIES. THE DIGITAL LANDSCAPE HAS BECOME A LOT MORE SECULAR.

– Sameer Garde, President India & SAARC, Cisco India



THE GREAT THING, DESPITE NAYSAYERS, THAT HAS HAPPENED IS THE MINDSET CHANGE THAT INDIA CAN BE STRONG IN HARDWARE AS WELL.

evolution for India. Garde averred with the arguments for digital literacy and hardware ecosystem. “This country has changed a lot in the last few years. Data usage has gone up tenfold. Users of our SaaS products have also increased in an unprecedented way. We had to manage this in a drastic manner – like changing engines during the flight. We were adding capacity at a massive and rapid pace.”

He, however, challenged the contention that the digital divide has expanded during the pandemic. “I feel that the gap between the haves and have-nots has shrunk. Even if we look at some start-ups in India, their growth has been impressive in tier 2 and 3 cities. The digital landscape has become a lot more secular.”

THE HAVE-NOTS HAVE HAD IT

There is, clearly, a lot more that India can spruce up and manufacturing is an area on top of this list. Gupta segued into the gap that exists in the manufacturing capability of the country. Here, Vachani appreciated the PLI scheme. “In a lot of categories such as ACs and LEDs, a large part of the domestic demand is being met by the country. We cannot be world leaders by importing components and exporting products. We need to have a strong component ecosystem. Wherever there is a strong fab landscape, the government has played a very important role. In future, the PLIs should focus on developing this ecosystem.”

Maybe that’s the trickle-down path we need to follow, as Gupta added, from end product capability to component to chips. Mittal illustrated here how we changed on the car manufacturing front and how the downstream effect has created the very vibrant automotive industry in India.

The panel further unravelled the core theme of the post-pandemic new normal. It talked about the new

world order from the perspective of India’s unique strengths and challenges.

There is a lot that the private sector can do, Vachani weighed in when Gupta asked about the right way and approach the government can take in these directions. “We will have to look at encouraging design in India too.” Mittal echoed Vachani’s hope and assured that the country has capabilities for the design frontiers that we need to bolster. “Government has played a good role in many areas for the industry. When the trust level is high, the scope is huge. This is the time to build that trust and leverage our own capabilities – for example, STPI.”

Here, Garde illustrated how the pure PPP model is working in the space of passport model. He added, “Yes, we have challenges in digital literacy and a lot of socio-economic gaps. We need digitisation for helping the country in these areas. With 5G and disruptions in agriculture, as well as collective ownership (government as well as tech companies, start-ups, industry players, etc.), we are at the cusp of massive growth ahead. I am very bullish on the next three to four years.”

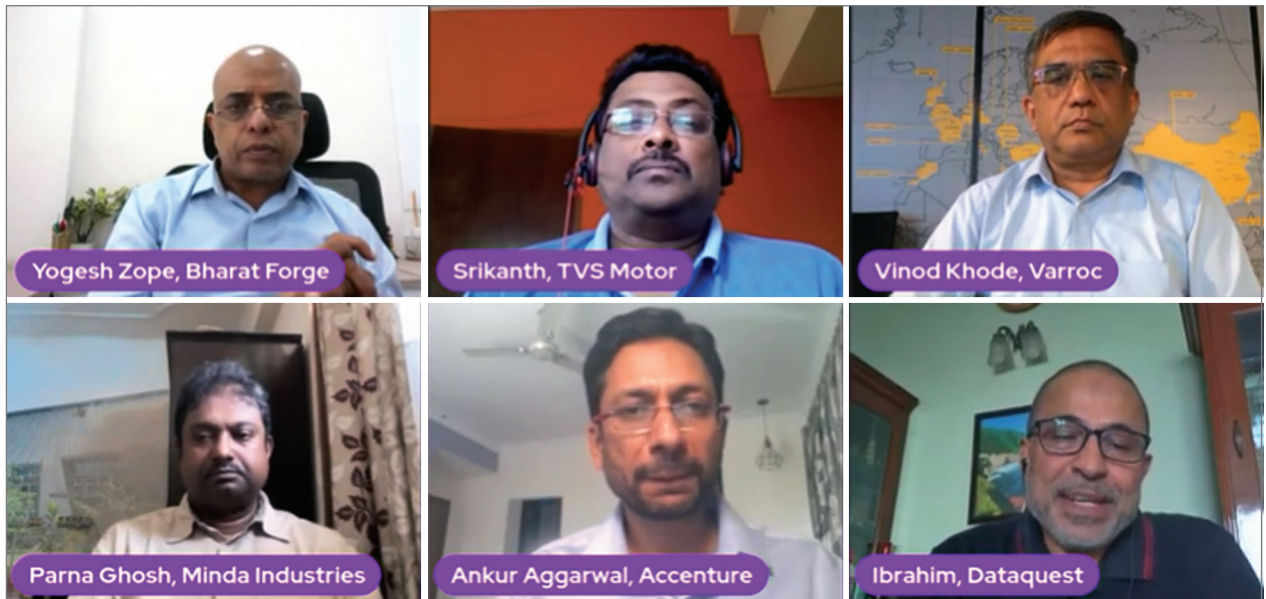
As to counting blessings and looking at the sunny side, Vachani said, “We need to create a good environment for companies to set up manufacturing base in India. We need to have the correct duty structure in place to have the correct basic manufacturing set-up. This will make it easy to attract investments. We also need to make smartphones more affordable and put them in the hands of the customers for the Bharat we still need to reach.”

Mittal seconded that by underlining how the SME segment faces a number of constraints in that context. But he also mentioned a strong competitive advantage that India has – low-carbon strength and sustainability.

As Mittal rightly surmised, the best years of the industry are still ahead. Time to get going.

Turbo-charging industrial transformation

The Dataquest webinar on Technology Vision for Industrial Equipment unveiled some interesting aspects of post-pandemic challenges and the formula for growth



Reinarnation – and that too in a huge and unprecedented way – is what happened when cars replaced horse-carts and when Model T became a common denominator for automotive industry. The impact that the industry saw in these historical turning points back then was felt very strongly again. It happened in the last few months when the industry was shaken and stirred in a disorienting way due to COVID-19. What transpired was a much-needed transformation that had been kept on shelf for a long time. And all that got done with a new clock altogether. This time the needle moved quickly, very quickly.

It was a big leap; and taken in a fast-forward mode – as some CIOs and CXOs shared during an interesting webinar on ‘Technology Vision for Industrial Equipment’ hosted by Dataquest in partnership with Accenture.

The panel that was moderated by Ibrahim Ahmad, Consulting Group Editor, CyberMedia unravelled some unexpected positive side-effects that the crisis brought for this industry’s technology deployment. The panellists discussed the challenges and paradigms that industrial equipment and automotive companies faced during the pandemic. It addressed how these enterprises are managing all those disrupted manufacturing and supply chains operations, as also how are they dealing with worker absence, travel limitations, customer outreach, collaboration, and more. The core discussion was on how technology helps to enable the transformation that these enterprises need to make.

Ahmad posed many ideas for the panel to brainstorm upon and, hence, share hands-on experiences about. “Has the crisis accelerated the need to move to



THE CRISIS HAS THE DYNAMICS OF PUSHING PEOPLE OUT OF COMFORT. BALANCING RESILIENCE AND PROFITABILITY, QUALITY, SUSTAINABILITY IS WHAT WOULD BE CRITICAL NOW.

– **Ankur Aggarwal**, Managing Director - Technology, Accenture India



THE SHIFT FROM CAPEX-ECONOMY TO DATA-DRIVEN ECONOMY IS REMARKABLE. THE ENTIRE THINKING AND ROADMAP NOW DEPENDS ON DATA. IT IS ESSENTIAL THAT DATA IS CAPTURED CORRECTLY.

– **Parna Ghosh**, Vice President & Group CIO, Minda Industries Ltd.

Industry 4.0? Any key business challenges with supply chain management and how is technology being used to enhance supply chain efficiency,” were some of the questions he asked. He also wanted to know which technology innovations are being inspired by the current crisis, and one that will have a lasting effect on this sector? The panel dissected a lot of words in a new light – artificial intelligence (AI), blockchain, internet of things (IoT), digital twins, cloud, automation tech, and AR/VR, etc.

The discussion was ignited well with these sparks and accelerated into many areas showing just how deeply, and swiftly, technology has transformed this space during the pandemic.

LEGACY IN THE REAR-VIEW MIRROR

Yogesh Zope, CDO, Kalyani Group talked about the challenges in operational and business areas after the advent of the pandemic. “The struggle for most industries was different in the first wave and the second wave. In the second wave we could keep the operations on. Of course, the supply chain challenges were very high. Right from steel to other supporting-supply chain

areas, as well as absenteeism of skilled workers. The pandemic, has, however pushed the transformation to a large level. Typically companies with legacy of 60 years find changing anything as a time-intensive process. The speed seen during the pandemic was unprecedented.”

Zope shared examples like how the audit process was ensured even with remote inspections where the company used real-time information and AR etc. to blend comfort and rigour for certification processes. He also shared about an auto-supply chain network where a collaborative space with an open network makes it conducive to exchange data.

Vinod Khode, Group CIO, Varroc also talked about how AI and technology-enabled testing as well digital-twin capabilities were leveraged in a huge way during this phase. “The positive side of the crisis is speed. We achieved a lot of ground as an industry – in a short span of time. It is similar to what the world saw during World War II. The quantum of innovation that was seen in World War II would have taken years otherwise.”

“At the end of the day, a business is dealing with a customer,” Khode said, adding that the company made a very big effort on MRP. “After doing a lot of hand-holding



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– **Yogesh Zope**, CDO, Kalyani Group



THE POSITIVE SIDE OF THE CRISIS IS SPEED. WE ACHIEVED A LOT OF GROUND AS AN INDUSTRY – IN A SHORT SPAN OF TIME. IT IS SIMILAR TO WHAT THE WORLD SAW DURING WORLD WAR II.

– **Vinod Khode**, Group CIO, Varroc

and governance, we saw a huge jump in the impact. Two areas where we saw disruption was in inventory management and fluctuations in demand. Technologies used to tackle these challenges were both existing ones and new ones. We also keep an eye open for what is a coming next so upcoming technologies are also in the mix. We had to maximise their usage; and optimise operations and handle master data management and clean data very well so that these new technologies could sit very well on this foundation.”

DATA IS THE NEW PETROL

Data was a word that punctuated almost every CIO's experience-kit. “The shift from Capex-economy to data-driven economy is remarkable. The entire thinking and roadmap now depends on data. It is essential that data is captured correctly,” said Parna Ghosh, Vice President and Group CIO, Minda Industries Ltd.

He also talked about digital forces in financial tools and HR areas. “The major focus has shifted to materials and supply chain in our business. Most organisations were lacking digital muscle in these areas. Supply chain automation and logistics’ transformation have

happened in a massive way. The same is visible in safety improvement and customer experience-elevation. The use of digital technologies is transforming the organisation in a major way. Shared mobility has reached its peak. Connected vehicles and telematics will also see a new trajectory in the next four or five years. That’s going to be the future.”

What he stressed upon is that now digital is not for the sake of digital. “The way top management and customers look at technology is different. It connects to some business case, bottom-line and customer experience in some way.”

Srikanth Subbu, CISO, TVS Motor Company talked about risk control and risk management. “A lot of innovations are happening but the adjacent risks have to be addressed well. Also technology is making inroads in plants. We are evaluating AI and Machine Learning in operational areas.”

Rajesh Mishra, SVP and CDO - Business Processes and Systems, Volvo Eicher Commercial Vehicles Ltd. also shared how migration and experimentation have been easy during the slowdown phase. “One has to find different ways to manage the outcomes. For instance,



The absenteeism of skilled workers and dominance of contract workers, when a lot of people had gone home, made way for new training initiatives.

— **Rajesh Mishra**, SVP & CDO - Business Processes & Systems - Volvo Eicher Commercial Vehicles Ltd.



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— **Srikanth Subbu**, CISO, TVS Motor Company

we had some digital ecosystem already in place and for some redesign parts and validation lifecycle aspects we embraced technology very well. Also digital twin initiatives could be explored. We have a very robust manufacturing set-up. The absenteeism of skilled workers and dominance of contract workers, when a lot of people had gone home, also made way for new training initiatives.

Ankur Aggarwal, Managing Director - Technology, Accenture India spelled out the role of data analytics. He gave a peek into the refreshed dashboard for the industry. “As we can see, a significant level of disruption has happened. It is fascinating to use past data and predict future amidst a huge degree of uncertainty. Forecasting demand is challenging even in normal times so how to do that in uncertain times – that’s a new paradigm. Companies are trying to figure out what’s going on out there, including changes in customer behaviour. They need agility to incorporate this external data. Some companies are also looking at other economic indicators to assess the impact of the epidemic. Data analytics takes a paramount role from here on,” he said.

PRESS 4 PLEASE

The panel also shared the ground impact and the issues of Industry 4.0 in a broad way. Zope contended how it is the way to reduce dependencies and communication gaps.

“Industry 4.0 started with Germany and then moved to Europe and the US. The proliferation of RPA and IoT was gradual. Now Industry 4.0 is not an option. If you are not modern and smart as an enterprise, you would not be able to attract talent as well,” Ghosh said, underlining how it is crucial to stay relevant and not end up as a dinosaur.

“The crisis has the dynamics of pushing people out of comfort,” Aggarwal surmised stressing that, “Balancing resilience and profitability, quality, sustainability is what would be critical now.”

Clearly, the pandemic phase has turned out to be a positive pressure-valve in turbo-charging transformation that was, otherwise, slated for a day way ahead in the future. It has become just the fast lane that technology needed to rev up its role in the automotive industry. Technology has finally taken the driving seat here. And it’s moving forward.

Fleet management installations to touch 6.8 million units in India by 2025

India had around 3.5 million unit of fleet management systems deployed in vehicle in 2020. According to a recent research report by IoT analyst firm Berg Insight, the total installed base of fleet management systems in the country is growing at a CAGR of 14% and is expected to reach over 6.8 million units by 2025. The fleet telematics industry in India is in many respects still nascent and major parts of the addressable market remain largely untapped. The uptake of fleet management solutions is however growing and the market is to some extent favoured by government regulations such as AIS 140.

According to Berg Insight Principal Analyst Rickard Andersson, WheelsEye, LocoNav, Uffizio and Letstrack rank as the largest solution vendors in India. "These four companies have a total installed bases of over five lakh units on their respective platforms across all applications and geographies, though the shares represented by fleet management solutions on the Indian market vary substantially."

He further noted that Tata Motors and Ashok Leyland were the leading players in the OEM segment. The former



has collaborated with UK-based Microlise for many years and the company has now launched a next-generation connected vehicle solution developed in house. Ashok Leyland has reached more than 150,000 vehicles on its connected vehicle platform, working with Trimble which provides the hardware. Trimble is also a leading high-end fleet management solution provider in the aftermarket segment in India.

Software market in India to reach USD7.6 billion by end 2021

A recent report by International Data Corporation (IDC) estimates that the software market revenue in India is likely to touch USD7.6 billion by the end of CY2021. The India software market was pegged at USD7.0 billion in 2020, registering a growth of 13.4% year-over-year (YoY) compared with that in 2019. India accounted for 17.5% share of the overall Asia/Pacific (excluding Japan and China) (APEJC) region software market in 2020. Microsoft, Oracle, and SAP maintained their leadership positions in the India market during the same year.

As per IDC's current estimates, engineering applications, collaborative applications, customer relationship management (CRM) applications, enterprise resource management (ERM) applications, and content workflow and management applications are the leading software segments in terms of revenue. The collaborative applications market witnessed the highest growth of 36.7% in 2020, followed by artificial intelligence (AI)



platforms and system and service management software at 30.9% and 24.8%, respectively.

IDC estimates India's overall software market to grow at a compound annual growth rate (CAGR) of 11.6% from 2020 to 2025. India enterprises will continue to invest in technologies that will help them spur innovation to improve operational efficiency and employee productivity, and in turn, maintain business momentum.

Kaspersky, Bharti join hand to offer mobile internet security

Global cybersecurity company Kaspersky has partnered with Bharti Airtel to provide instant security for internet users in India. The collaboration between the two companies will allow Airtel customers to purchase Kaspersky Total Security solution directly from the Airtel Thanks app, including exclusive deals from Kaspersky.

Eugene Kaspersky, CEO of Kaspersky, said: "We're very much looking forward to supporting Bharti Airtel, the leading global telecommunications company and one of the biggest mobile service providers, in its goal to protect their users, create a more secure internet, and build a safer digital world together with Kaspersky. I'm convinced that this partnership will further contribute to establishing Airtel as an innovational pioneer and a leader in its industry."

Pradipt Kapoor, CIO, Bharti Airtel said: "As customer lifestyles become increasingly integrated with digital platforms, it becomes paramount for all of us to secure these journeys with the right solutions. Airtel is working round the clock to deliver a secure network experience through world-class infrastructure and partnerships. We are delighted to partner with Kaspersky and make their solutions easily accessible for Airtel customers, who can purchase and install these in a matter of minutes and enjoy complete peace of mind."

The alliance is formed with the aim to increase the cybersecurity awareness amongst Indian internet users and encourage them to practice cyber safety in the wake of growing cyber threats, the company stated in a press release. Cyber threats are constantly evolving and cybercriminals in the past two years have been actively targeting internet users in India. In the first quarter of 2021 Kaspersky products detected 37,650,472 different Internet-borne cyber threats. "Mobile users are also at risk as cybercriminals are constantly targeting them for financial gains, as well as to obtain important private data. Mobile threats in India have drastically increased since 2019 and are becoming more targeted and sophisticated in nature. India ranked 7th amongst the countries attacked with Mobile Threats in 2020," it said.

MOVEMENTS



SAFI OBEIDULLAH IS CITRIX GLOBAL VALUE ADVISORY

Citrix has announced that Safi Obeidullah has been promoted to Global Head of Value Advisory. Based in Sydney, Australia, Obeidullah will report to Carle Quinn, Vice President of Customer Value and Workforce Transformation at Citrix. Responsible for supporting and accelerating customers' digital transformational experiences, Obeidullah will lead business strategy advisory on behalf of Citrix. He will help to ensure our customers can harness the power of Citrix solutions and services and partner offerings to achieve the best business outcomes.



CAPRI GLOBAL BRINGS IN RAHUL AGARWAL AS CTO

Capri Global Capital Ltd (CGCL), a diversified NBFC, has appointed Rahul Agarwal as Chief Technology Officer (CTO). In his new role, Agarwal would head the technology vertical and will take up the responsibility of all technology functions across the company. He will also be driving digital transformation initiatives, deploying technology interfaces to enable tailor-made services as well as incubating strategic IT solutions for CGCL product categories. Agarwal is a technology leader with over 17 years' experience in building products, platforms, services, and leading teams across diverse industry sectors.



UPSTOX APPOINTS THIPPESHA DYAMAPPA AS CTO

Investment platforms Upstox has appointed US-based Thippesha Dyamappa, former director of software development, international retail at Amazon, as its Chief Technology Officer (CTO). Dyamappa brings in a unique mix of tech capabilities and organisational acumen, 20+ years of software engineering experience in building best-in-class organisations in six countries – India, Brazil, China, Jordan, UAE, and the US. The appointment of Dyamappa is the first step towards the next phase of Upstox's expansion into global markets. The company also announced that its co-founder Shrini Viswanath, who was looking after the technology stack, will now take on a more strategic role in the organisation.



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