

Outlook 2022: TECHNOLOGY TO DRIVE NEXT ROUND OF INNOVATION



Hybrid Cloud and AI to Drive Sustainability for Enterprises



Viswanath Ramaswamy
Vice President, Technology,
IBM Technology Sales,
IBM India / South Asia

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OUTLOOK 2022: TECHNOLOGY TO DRIVE NEXT ROUND OF INNOVATION

The year 2021 is a major landmark for digital transformation. In this cover story, let's discover the technology trends every transforming business must master in order to ride the next wave of digital innovation

Amit Singh

Over the past two years, the world has been reeling from the shock of the pandemic, and we are now trying to navigate to our next normal. However, this represents an opportunity to engineer a better future. Of course, the pandemic has fueled trends for 2021, but it would be a mistake to view them as a direct response to Covid-19 disruption. Rather than

reorienting businesses' goals, the pandemic has put an exclamation mark on existing priorities. The pandemic challenged orthodoxies as to what can be accomplished. It showed us how much we can achieve when impediments to productivity are removed and workers are empowered to focus.

Now enterprises are looking to their technology teams to drive the next

round of innovation. "CIOs must find the IT force multipliers to enable growth and innovation, and create scalable, resilient technical foundations whose scalability will free cash for digital investments. These imperatives form the three themes of this year's trends: engineering trust, sculpting change and accelerating growth," says David Groombridge,

Research Vice President, Gartner.

Transformation is a continuous cycle, it is never complete, and companies will need to continually evolve their programs to meet customers' changing expectations. On the same line, here are the top strategic technology trends for 2022:

Generative Artificial Intelligence (AI)

One of the most visible and powerful AI techniques coming to market is generative AI – machine learning methods that learn about content or objects from their data, and use it to generate brand-new, completely original, realistic artifacts.

Generative AI can be used for a range of activities such as creating software code, facilitating drug development and targeted marketing, but also misused for scams, fraud, political disinformation, forged identities and more. By 2025, Gartner expects generative AI to account



for 10 percent of all data produced, up from less than 1 percent today.

Data Fabric

The number of data and application silos has surged in the last decade,

while the number of skilled personnel in data and analytics (D&A) teams has either stayed constant or even dropped. Data fabrics – a flexible, resilient integration of data across platforms and business users

– have emerged to simplify an organization's data integration infrastructure and create a scalable architecture that reduces the technical debt seen in most D&A teams due to the rising integration challenges.

A data fabric's real value is its ability to dynamically improve data usage with its inbuilt analytics, cutting data management efforts by up to 70 percent and accelerating time to value.

Distributed Enterprise

With the rise in remote and hybrid working patterns, traditional office-centric organizations are evolving into distributed enterprises



comprised of geographically dispersed workers.

"This requires CIOs to make major technical and service changes to deliver frictionless work experiences, but there is another side to this coin: the impact on business models," says Groombridge. "For every organization, from retail to education, their delivery model has to be reconfigured to embrace distributed services. The world didn't think they'd be

Cloud-Native Platforms (CNP)

To truly deliver digital capabilities anywhere and everywhere, enterprises must turn away from the familiar "lift and shift" migrations and toward CNPs. CNPs use the core capabilities of cloud computing to provide scalable and elastic IT-related capabilities "as a service" to technology creators using internet technologies, delivering

Autonomic Systems

As enterprises grow, traditional programming or simple automation will not scale. Autonomic systems are self-managing physical or software systems that learn from their environments. Unlike automated or even autonomous systems, autonomic systems can dynamically modify their own algorithms without an external software update, enabling them to rapidly adapt to new conditions in

manufacturing machines and smart spaces," states Groombridge.

Decision Intelligence (DI)

An organization's decision-making competency can be a significant source of competitive advantage, but it's becoming more demanding.

Decision intelligence is a practical discipline used to improve decision making by explicitly understanding and engineering how decisions are made, and outcomes evaluated, managed and improved by feedback. Gartner predicts that in the next two years, a third of large organizations will be using decision intelligence for structured decision-making, to improve competitive advantage.



trying on clothes in a digital dressing room two years ago."

Gartner expects that by 2023, 75 percent of organizations that exploit distributed enterprise benefits will realize revenue growth 25 percent faster than competitors.

faster time to value and reduced costs.

For this reason, Gartner predicts that cloud-native platforms will serve as the foundation for more than 95 percent of new digital initiatives by 2025 — up from less than 40 percent in 2021.

the field, much like humans can.

"Autonomic behavior has already made itself known through recent deployments in complex security environments, but in the longer term, will become common in physical systems such as robots, drones,

Composable Applications

In the continuously changing business context, demand for business adaptability directs organizations toward technology architecture that supports fast, safe and efficient application change. Composable application architecture empowers such



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adaptability, and those that have adopted a composable approach will outpace competition by 80 percent in the speed of new feature implementation.

"In turbulent times, composable business principles help organizations master the accelerated change that is essential for business resilience and growth. Without it, modern organizations risk losing their market momentum and customer loyalty," said Groombridge.

Hyperautomation

Hyperautomation enables accelerated growth and business resilience by rapidly identifying, vetting and automating as many processes as possible.

"Gartner research shows that the top-performing hyperautomation teams focus on three key priorities: improving the quality of work, speeding up business processes, and enhancing the agility of decision-making," reveals Groombridge. "Business technologists supported an average of 4.2 automation initiatives in the past year, too."

Privacy-Enhancing

Computation (PEC)

As well as dealing with maturing international privacy and data protection legislation, CIOs must avoid any loss of customer trust resulting from privacy incidents. Therefore, Gartner expects 60 percent of large organizations to use one or more privacy-enhancing computation techniques by 2025.

PEC techniques – which protect personal and sensitive information at a data, software or hardware level – securely share, pool and analyze data without compromising confidentiality or privacy. Current use cases exist in many verticals as well as with public cloud infrastructures (e.g., trusted execution environments).

Cybersecurity Mesh

"Data is strung throughout many of this year's trends, but it is only useful if enterprises can trust it," says Groombridge. "Today, assets and users can be anywhere, meaning the traditional security perimeter is gone. This requires a cybersecurity mesh architecture (CSMA)."

CSMA helps provide an integrated security structure and posture to

secure all assets, regardless of location. By 2024, organizations adopting a CSMA to integrate security tools to work as a cooperative ecosystem will reduce the financial impact of individual security incidents by an average of 90 percent.

AI Engineering

IT leaders struggle to integrate AI within applications, wasting time and money on AI projects that are never

enhance value through rapid AI change," predicts Groombridge. "By 2025, the 10 percent of enterprises that establish AI engineering best practices will generate at least three times more value from their AI efforts than the 90 percent of enterprises that do not."

Total Experience (TX)

TX is a business strategy that combines the disciplines of customer experience (CX), employee



put in production, or struggling to retain value from AI solutions once released. AI engineering is an integrated approach for operationalizing AI models.

"For fusion teams working on AI, the real differentiator for their organizations will lie in their ability to continually

experience (EX), user experience (UX) and multi-experience (MX). The goal of TX is to drive greater customer and employee confidence, satisfaction, loyalty and advocacy. Organizations will increase revenue and profit by achieving adaptive and resilient TX business outcomes.

TIME TO REVIEW ENTERPRISE STRATEGIES

It's time to break up with your bad customers.

Organizations often try to keep customers at any cost — even when they aren't a perfect fit. But trying to cater your product for the wrong audience is costly, emotionally and financially. Mounting frustrations will prompt organizations to acknowledge that it's OK to say goodbye, making this move one of the top Gartner predictions for this year.

Here are the top strategic predictions for enterprises:

Synthetic data for better privacy

By 2025, synthetic

data will reduce personal customer data collection, avoiding 70 percent of privacy violation sanctions.

As synthetic data, which is generated using AI techniques, grows in popularity, it can serve as a proxy for real data, reducing or eliminating risks of exposing private consumer information or sensitive data. Because it's not real data, it lessens regulatory concerns and can actually provide more precise insights as AI can better model often-unpredictable customer behavior. Synthetic data can be used to train and test AI models to handle unplanned disruptions,

unexpected events and scenario planning — ultimately creating a more resilient organization.

Consumers fight data collection

By 2024, 40 percent of consumers will trick behavior tracking metrics to intentionally devalue the personal data collected about them, making it difficult to monetize.

Consumers are now hyperaware of the amount of data that organizations collect, and to avoid becoming 'the product,' they are actively trying to devalue and manipulate data

being collected. As a result, consumers are increasingly using tactics like VPNs, false information or opting out of data collection altogether.

Mining brain data

By 2027, a quarter of Fortune 20 companies will be supplanted by companies that neuromine and influence subconscious behavior at scale.

Neuromining (applying behavioral intelligence and related technology to analyze, understand and influence human behavior at scale) will enable organizations to gain a deeper understanding of consumers. This will drive better customer relationships and elevate employee engagement. As neuroscience continues to evolve, this technique will grow increasingly sophisticated and precise.

Agile in; managers out

By 2024, 30 percent of corporate teams will be without a boss due to the agile and hybrid nature of work.



With agile adoption at 30 percent and hybrid work at 50 percent of an organization, about one-third of teams can operate without a traditional manager role. The pandemic has driven increased need for organizational resilience, driving more embedded agility within businesses. By definition, agile requires an environment of trust that doesn't lend itself to traditional hierarchies. The increase in hybrid workforces reveals that a large portion of managers lack the skill set necessary to manage employees in remote or hybrid situations, and only 47 percent of employees believe that their manager can lead the team to success in the future.

Modular business or bust

By 2024, 80 percent of CIOs surveyed will list modular business redesign, through composability, as a top-five reason for accelerated business performance.

Disruption is the new normal. Even pre-pandemic, organizations were dealing with trade wars, Brexit, climate change and a host of other internal and external challenges.

Currently, 74 percent of organizations have some kind of modular or component-based technology implementation underway. Generally, organizations will be focused on flexibility and adaptability over stability in order to counter market volatility.

The war on cyberattacks

By 2024, a cyberattack will so damage critical infrastructure that a member of the G20 will reciprocate with a declared physical attack.

While recent large-scale cybersecurity attacks on hospitals, governments and energy facilities have been considered crimes, the increasingly devastating fallout means they'll soon be considered acts of war. An increase in regulation on a national level will highlight that enterprises cannot be solely responsible for limiting the scope of damage. Cyberattacks by non-state actors against critical infrastructure will eventually diminish in frequency and intensity as cybercriminals adjust to the reality of kinetic reprisals by military and intelligence agencies.

Breakup with bad customers

By 2025, 75 percent of companies will "break up" with poor-fit customers as the cost of retaining them eclipses good-fit customer acquisition costs.

Organizations often accept poor-fit customers into the sales pipeline and attempt to retain them without adequately considering how costly those customers are for the organization. It costs time and money to satisfy poor-fit customers: for example, to customize offers or design solutions to suit them. As leaders understand more about those costs, they'll become more comfortable with letting go of unproductive customers, given the drain on brand and long-term profits — not to mention the emotional toll on employees.

Hyper-fixation on hyper-tokenization

By 2026, non-fungible token gamification will propel an enterprise into the top 10 highest valued companies.

Companies are quickly recognizing the potential of non-fungible tokens (NFTs)

to grow business models and drive new revenue streams. Public blockchains are exponentially growing the ability to digitally connect value represented by tokens, bringing yet another wave of seemingly limitless opportunities in the digital world. Fungible and non-fungible tokens are driving a segment of this new phenomenon — called "hyper-tokenization."

More internet for less

By 2027, low-orbit satellites will extend internet coverage to an additional billion of the world's poorest people, raising 50 percent of them out of poverty.

Establishing cellular bases in rural areas is expensive and inefficient. Low orbit satellites offer a cheaper, more flexible solution. They're able to provide islands of connectivity, so networks can deploy directly where the customers are, rather than rolling out across a county in a linear fashion. Also, launching new satellites can be launched to address increased need. As the internet becomes more widely available, it will add billions of newly connected "netizens" shifting the internet in terms of content and culture.



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IT SPENDING IN INDIA TO REACH \$100 BILLION IN 2022

IT spending in India is forecast to total \$101.8 billion in 2022, an increase of 7 percent from 2021, according to the latest forecast by Gartner, Inc.

"The digital transformation trajectory that began as a pandemic response is here to stay for the next few years," said Arup Roy, Research Vice President, Gartner. "India has experienced one of the fastest recoveries despite being one of the worst hit regions in the second wave of the pandemic in early 2021. In 2022, CIOs in India will build on renewed interest in technology from the business to gain funding for new IT projects."

Indian CIOs are likely



to increase their spending towards projects that drive innovation and modernizing legacy systems. Hiring a workforce that can deliver on these needs will also be a key priority. Next year, Indian CIOs are prioritizing a move away from rigid and monolithic ways of

doing business to a more composable business and IT architecture where they will be able to better respond to disruptions.

In 2022, all segments of IT spending in India are expected to grow, with software emerging as the highest growing segment.

Spending on software is forecast to total \$10.5 billion in 2022, up 14.4 percent from 2021. While experiencing a slower growth rate than 2021, spending on software in 2022 is forecast to be nearly double of what it was pre-pandemic.

As hybrid work adoption increases in the country, there will be an uptick in spending on devices in 2022, reaching \$44 billion, an increase of 7.5 percent from 2021. "The growth in devices is a combination of two components – hybrid work and pent-up demand from 2020 for device upgrades," said Roy. "Spending on devices will make up 43 percent of total IT spending next year."

India IT Spending Forecast (Millions of \$)

	2020 Spending	2020 Growth (%)	2021 Spending	2021 Growth (%)	2022 Spending	2022 Growth (%)
Communication Services	22,999	11	24,000	4.4	24,551	2.3
Data Center Systems	2,614	-11.3	2,764	5.7	2,859	3.4
Devices	36,014	-5.8	41,040	14	44,132	7.5
IT Services	16,352	3	18,119	10.8	19,768	9.1
Software	7,852	17	9,188	17	10,507	14.4
Overall IT	85,831	1.5	95,110	10.8	101,817	7

HYBRID CLOUD AND AI TO DRIVE SUSTAINABILITY FOR ENTERPRISES

Viswanath Ramaswamy, Vice President, Technology, IBM Technology Sales, IBM India / South Asia

Strategic migration of workloads and adoption of open technologies will pave the way in the Hybrid Cloud era

A recent IBM Institute for Business Value (IBV) study highlighted that 99 percent of organizations in India are using varied combinations of hybrid cloud. This indicates that organizations

want a mix of public and private clouds, along with on-premise hardware or even specialized clouds for different industries. As organizations will continue to move forward in their hybrid/multi cloud journeys, determining and selecting which workloads should be moved to the cloud or stay on-premises will be

a key focus area. Open technologies and platforms like RedHat OpenShift and micro-services architecture will help accelerate and aid the organization's modernization journey.

Consumer Trust and Security at the forefront as cyber threats grow

While cloud-based technologies, platforms, and ecosystems expand an organization's reach and create new opportunities for innovation, they also introduce new threats. Open, secure cloud networks can create a virtuous cycle that helps businesses deliver results and accelerate innovation and collaboration. As enterprises continue to invest in cybersecurity, AI will play a critical role in helping identify and respond to threats more efficiently, and move towards a "zero trust" approach to further reduce risks.

Data Fabric will help derive insights like never

before/Data Fabric powers intelligent organizations

The 2021 Global AI Adoption Index found that businesses are actually drawing from more than 20 different data sources - such as databases, data warehouses and data lakes - with some wrestling with up to 500 data sources. Data fabric architecture integrates data across environments and processes to deliver business-consumable data for analytics and AI without the need to move the data. Thereby, helping organizations that are investing in technologies like AI, machine learning, IoT, Edge computing to get more out of their data and leverage insights to stay ahead in the competitive market.

Customer Care to provide more personalized recommendations

Virtual assistants played a key role in not only disseminating information during and



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post the pandemic but also automating workflows and tasks like vaccination appointments. In 2022, consumers will interact and receive more personalized recommendations and realized interactions from retailers and service providers through an AI-enabled customer care journey.

Businesses reduce costs by better predicting IT issues

The pandemic tasked CIOs to enable their workforces to operate remotely, manage new security challenges, derive insights from data generated across modern applications while leveraging new digital channels for employees and consumers. These conditions have intensified interest in applying AI to better predict IT issues, leading to an area called AIOps which enables organizations' IT teams to proactively manage complex workplace environments, potentially saving hundreds of thousands of dollars that could have been lost. In 2022, AIOps will enable IT teams, to diagnose problems faster and reduce time-intensive tasks enabling them to focus on delivering

higher-value work for the organization. In addition, AIOps will also help the IT teams to identify patterns indicating a potential issue before they happen.

Delivering on the potential of 5G

As a technology, 5G offers enormous potential to advance industries across streaming, communications,

to be orchestrated for the network of tomorrow. AI has the potential to quickly enable changes in the network that optimize network performance and reliability by applying machine learning, helping Communications services providers (CSPs) deliver on the promise of 5G by providing faster customer experiences.

global CIOs expect AI and other advanced technologies to have a significant impact on sustainability in the next 3 years, the highest across all the impact areas surveyed. With consumers, regulators and shareholders pushing companies to make tangible sustainability gains, AI will play a key role in helping businesses achieve sustainability benchmarks through



advanced robotics, manufacturing. However given the complexity of telecom networks today, it is clear that the tools, systems and methods need

AI to help bring Sustainability to the fore

A recent IBM CIO Study highlighted 42 percent of

greater measurement, data collection, and carbon accounting, as well as improved predictiveness and greater supply chain resiliency.

SUSTAINABILITY, CLIMATE ACTIONS TO DOMINATE 2022 DATA CENTER TRENDS

Experts see long-held conversations around efficiency and utilization in the data center evolving to reflect a more comprehensive and aggressive focus on sustainability. This movement recognizes the urgency of the climate crisis, the relationship between resource availability and rising costs, and shifting political winds around the world.

"As we move into 2022, data center operators and suppliers will actively pursue strategies that can make a real difference in addressing the climate crisis," said Rob Johnson, CEO, Vertiv. "For our part, we continue to focus on energy efficiency across our portfolio, as well as alternative and renewable energy technologies and zero-carbon energy sources, to prioritize water-free cooling technologies, and to partner with research leaders and our customers to focus on impactful sustainability efforts."

The actions data center decision-makers take on these fronts will have a profound impact on the digital economy in 2022 and beyond. The urgency of these challenges is reflected

in the 2022 trends identified by Vertiv's experts. Those trends are:

Data Centers Tackle Sustainability and the Climate Crisis: The data center industry has taken steps toward more climate-friendly practices in recent years, but operators will join the climate effort more purposefully in 2022. On the operational front,

Vertiv experts predict some organizations will embrace sustainable energy strategies that utilize a digital solution that matches energy use with 100 percent renewable energy and ultimately operates on 24/7 sustainable energy. Such hybrid distributed energy systems can provide both AC and DC power, which adds options to improve efficiencies and eventually allows data centers to operate carbon-

free. Fuel cells, renewable assets, and long-duration energy storage systems, including battery energy storage systems (BESS) and lithium-ion batteries, all will play a vital role in providing sustainable, resilient, and reliable outcomes. Thermal systems that use zero water are in demand, and we will see refrigerants with high global warming potential (GWP) phased down in favor of low-GWP refrigerants.





More immediately, extreme weather events related to climate change will influence decisions around where and how to build new data centers and telecommunications networks. Other factors, including the reliability and affordability of the grid, regional temperatures, availability of water and renewable and locally generated sustainable energy, and regulations that ration utility power and limit the amount of power afforded to data centers, play a part in the decision-making as well.

These extreme weather events will drive more robust infrastructure systems across the Information and Communications Technology (ICT) space which will need to be carefully aligned with sustainability goals. In 2022, data center and telecom operators will wrestle with these issues – and ever-present latency questions – and will drive a need for solutions that can address all of these challenges.

Artificial Intelligence Gets Real: As today's networks get more complex and more distributed and the augmented and virtual reality demands of the metaverse become more prominent, the need for real-time computing and

decision-making becomes more critical. This real-time need is sensitive to latencies, and under the increasingly common hybrid model of enterprise, public and private clouds, co-location, and edge, full-time manual management is impractical, if not impossible. Artificial Intelligence (AI) and machine learning will be critical to optimizing the performance of these networks.

It will take focus and time to collect the right data, build the right models, and train the network platform to make the right decisions. However, the programming tools have become simplified enough that data scientists are able to point computing resources at a problem without having to be experts in programming or hardware. The availability of AI hardware from established vendors, cloud options for the same, a simplified tool-chain, and an educational focus on data science has put AI in play for even smaller companies. It all adds up to accelerated AI adoption in 2022.

As with every technological advance, there are ripple effects. The increase in AI will unavoidably increase computing and heat densities and, by extension, accelerate the adoption

of liquid cooling. Among other challenges: lowering the barrier to entry places a premium on choosing the right vendors, platforms, and systems to trust.

The Post-Pandemic Data Center Takes Shape:

Some 2.9 gigawatts worth of new data center construction is under way globally – up from 1.6 gigawatts in 2020. Those data centers will be the first built specifically to meet the needs of a post-COVID world. More activity will be focused at the edge, where VMware projects a dramatic shift in workload distribution – from 5 percent currently to 30 percent over the next five years. Availability will remain the top priority, even at the edge, but lower latency is a rising need to support healthy buildings, smart cities, distributed energy resources, and 5G. 2022 will see increased investment in the edge to support this new normal (remote work, increased reliance on ecommerce and telehealth, video streaming) and the continuing rollout of 5G.

Drive toward Integration: Various data center equipment providers have been embracing integrated systems that allow for modular capacity additions for years, with

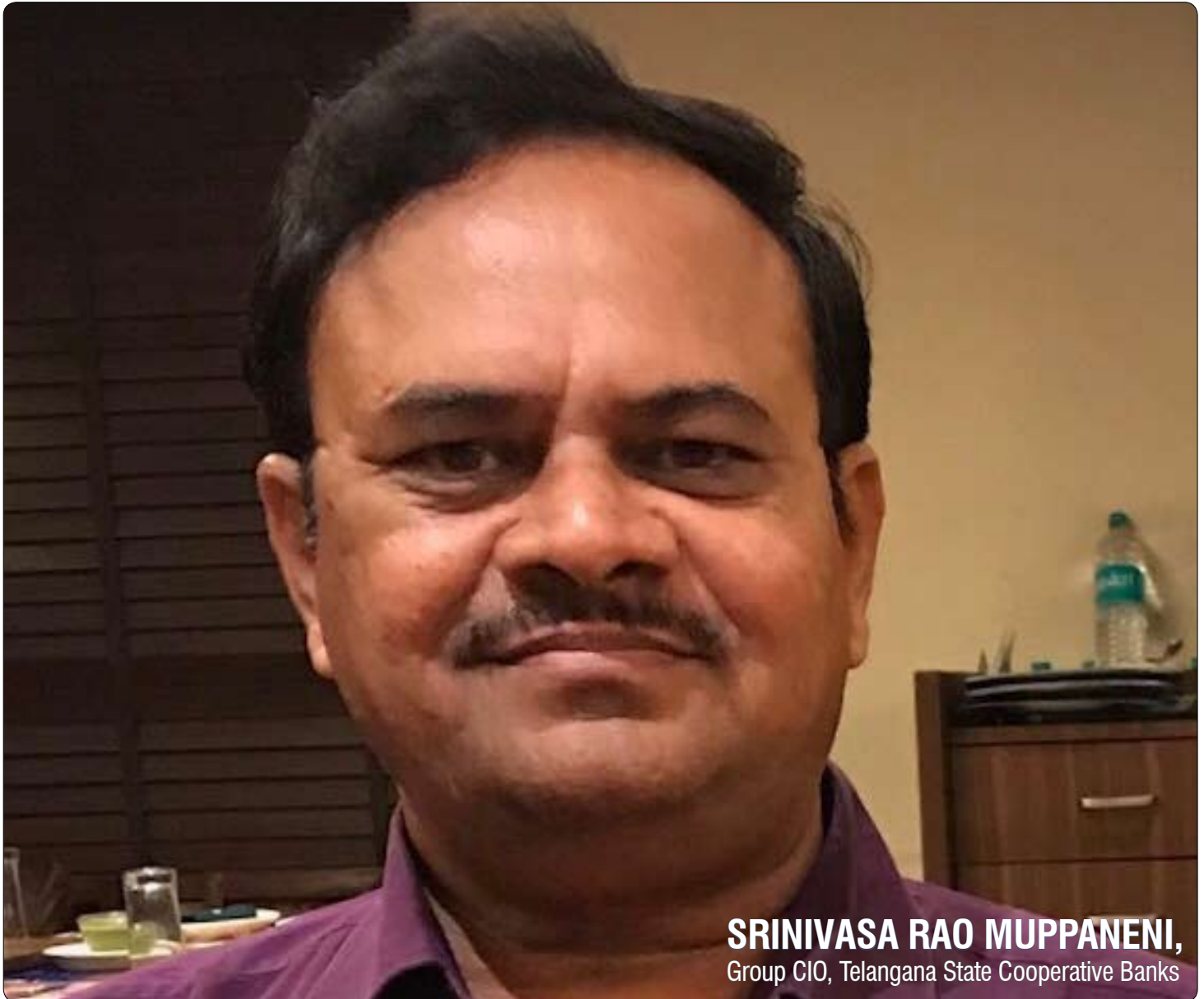
integrated racks and rows among today's most popular data center offerings. In 2022, we'll see the next step in integration as data centers work with providers to better integrate larger systems – all components of the power infrastructure, for example – and deliver seamless interoperability.

The benefits of integration as a concept are well known – reduced construction and deployment costs, flexible capacity management – and applying the same approach across larger systems delivers speed. Rack-based power solutions are early accelerators of integration momentum.

"Sustainability is increasingly making its way to mainstream conversations, and businesses will be prioritizing and building more environmentally-friendly ecosystems," said Subhasis Majumdar, Managing Director, Vertiv India. "Vertiv continues to innovate, focusing efforts on efficient, sustainable and highly available infrastructure solutions. With advanced cooling, power, IT management and integrated systems, our product portfolio offers a full line of solutions to support the unique challenges of customer data centers of every size."

CRUNCHING NUMBERS, DIGITALLY!

The banking sector has come a long way from its traditional set-up. Digital banking is the need of the hour. In this interview with Kalpana Singhal, Srinivasa Rao Muppaneni, Group CIO, Telangana State Cooperative Banks outlines the strategies that have come into play



SRINIVASA RAO MUPPANENI,
Group CIO, Telangana State Cooperative Banks

■ **With your extensive experience of over 35 years in the financial sector, what do you think are the three most crucial changes the pandemic**

has brought to the outlook of financial organisations towards technology?

The pandemic has taught us a lot of lessons, including how to live. It

has also ushered in a lot of improvements in the fields of banking and technology. The major changes have been related to productivity improvement and technology enablement. Recognising customer

expectations and needs is now important. Financial institutions, specifically banks, have to reconnect to their customers through digital channels. Earlier, a majority of the account holders used to

physically visit a bank. Now that is not the case. We need to keep creating a vibrant ecosystem and partnerships. There are many financial technology companies now. Also, risk management is now one of the main challenges for the banking industry.

■ **With the current uncertain circumstances due to the pandemic, what are the major challenges faced by the financial sector?**

A lot of new tie-ups have emerged and customers are able to engage in digital transactions through different channels without visiting a bank. As such, exceeding customer expectations is the biggest challenge that banks are now facing. Next, cyber security is of prime concern. Moreover, with the increase of taxation and other costs, smaller banks are unable to compete with the bigger ones because they cannot invest huge amounts in technology.

□ **Traditional players across the financial sector are facing continuous disruptions due to changing customer expectations and technology disruption from neo banks. How are the traditional players preparing themselves to take on these**

disruptions?

Traditional players are facing a lot of challenges because of the new financial start-ups. As said earlier, the traditional players are unable to invest in technology to the extent that new players can. Traditional players also face the challenge of improving the skill-sets of their teams because the new players are already equipped with tech-savvy employees. On the positive side, the advantage for existing banks compared to new banks is that they have the trust of their long-standing customers and enjoy a personal connection.

■ **As said, smaller banks face the challenge of dedicating funds for technology upgrades. How are they dealing with this problem?**

They are using their long-standing relationship with the customers to retain their trust. They understand very well the requirements of their customers and can customise their services accordingly.

■ **How are the banks making processes efficient, making employees productive and reducing costs in the current circumstances?**

In any organisation, human resources play a vital role. As such,

employees are being trained to become customer-centric and understand their needs. We are also collaborating with financial technology companies to move towards digitalisation. In the long run, this will help improve efficiency and reduce costs.

■ **What have been your initiatives regarding technology transformation?**

We manage 435 branches and 1,200 extension counters and are yet not able to reach the 11,000 villages of Telangana. Therefore, we are now moving forward with tab banking. Along with micro ATMs, we are now able to connect with a majority of these villages. As many as 10,500 villages are now connected through 4G mobile technology. In fact, we are now a leader in providing all our services to the rural populace of the state.

■ **What is the level of maturity you see among the banking organisations when it comes to AI-infused automation? How prepared are the banks to move automation from proof-of-concept stage to enterprise-wide application?**

Artificial intelligence (AI) can help analyse and scan transaction data and detect

irregularities while also reading behaviour patterns. The technology is definitely useful but it should not become just a selling point. It is the implementation that is important. Today, the banking sector is driven not by the banks alone but also by the technology companies.

■ **What kind of budget increase have you seen in the pandemic period?**

There has been a lot of reduction in costs during the pandemic. Simultaneously there is an increase in investments in digital channels and cyber security. The government has been supportive but while the bigger banks have been able to manage the situation, the smaller banks have been unable to meet the expectations of the regulators and the government.

■ **What would be your top technology focus areas over the next couple of years?**

The first and foremost is to ease digital connectivity with customers. We need to build bondage with the customers through round-the-clock digital availability. Meanwhile, regulatory compliance has become very crucial and we need to be very cautious. And of course all this has to be integrated in such a way that we get a decent return on our investments.

SEEKING THE RIGHT SOLUTIONS

In this chat with Kalpana Singhal, Sanjay Mishra, CIO, Larsen and Toubro Construction elaborates about how IT must be viewed not as a technology per se but as a solution-enabler to enhance the growth of an organisation



SANJAY MISHRA,
CIO, Larsen and Toubro Construction

■ **The past two years have dramatically changed the outlook of enterprises towards technology and technology leaders. How has**

this added focus and responsibility making life challenging for technology leaders like you?

The one big thing that has happened in the

course of the pandemic is that IT implementation has come to the fore. Every company has had to shift its attention to digitisation. Today, it is digitisation that helps companies move

forward and this is equally true of the construction sector.

■ **The construction industry has always been labour-intensive.**

So, has technology adoption been a challenge?

Even if it is labour-intensive, there are many ways in which technology can be deployed. For instance, we have started giving our workers RFID-enabled helmets. It helps us track their location, movement and also productivity. We also use a few augmented and virtual reality tools for training. We are also implementing technology that can be used via a mobile phone. All this is helping make things easier.

■ What are your recent technology initiatives in the organisation and what are the benefits that have accrued out of these steps?

The biggest advantage is that we can now have immediate meetings through mobile phone technology. So this works as a great collaboration tool. Secondly, given the fact that the pandemic is not going to disappear too soon, the work-from-home concept is gaining ground and we are all becoming comfortable with this new normal. We are now using data and online communication to smoothen all the processes. Ultimately, the tools must help in enhancing productivity while also boosting business.

■ What are your top technology focus areas and priorities over the next 2-3 years?

Technology brings with it the big issue of cyber security. We need our data to be protected and so that is going to be

“ We have started giving our workers RFID-enabled helmets. It helps us track their location, movement and also productivity. We also use a few augmented and virtual reality tools for training. We are also implementing technology that can be used via a mobile phone. ”

our prime focus area. We are working on installing systems that will help our data be secure at all times. Another big factor is integration. All the available data cannot work in isolation and even technology tools cannot do so. There has to be total integration of machine data or operational data so that it makes sense to everyone in the team. Further, we are working hard on attracting and retaining technical and domain expertise. Talent is required to keep the systems running and we would like to have the

best people on board.

■ So where do you see the construction industry in the near future in terms of new technology adoption and what are the key trends?

As of now, there is a

interaction with customers easier because you can now show them what the structure will finally look like. 3D printing is also getting into vogue along with geo-spatial technologies. Amidst all this, tools that help make the operation safer for our workers are also gaining in importance.

■ What is the best thing that excites you about your role?

It gives me immense pleasure to see that the applications and the tools that have been developed are being used by design engineers with a great amount of interest. Also, it is a great feeling to work with an organisation that empowers you to develop solutions and provides a platform to work with the best of talent.

■ Do you have any message for our audience?

A crucial thing is that you can't be an IT person if you don't know the business very well. You have to make sure that you are part of the business and you must understand all its products very well. Don't talk about the features of IT. Talk about the solutions that will help the business or the company grow. You have to know what your clients are looking for and then set up systems that will enable the team to deliver those things.

D-Link introduces AI enabled Router for a never-before Wi-Fi experience

The R15 Eagle PRO AI router combines Wi-Fi 6 with powerful Artificial Intelligence to give home and small offices an innovative network experience!!!



D-Link, a global leader in networking and connectivity technologies, makes available its all-new R15 EAGLE PRO AI AX1500 Smart Router in India. The all new R15 EAGLE PRO AI Router combines the latest Wi-Fi 6 technology with artificial intelligence to offer incredible Wi-Fi coverage and speed - delivering a continuously optimizing and improving network, ideal for home users and small offices.

D-Link R15 AI Router is packed with cutting-edge AI features to keep everyone connected, no matter what they're doing online. This

advanced series of Router from D-Link brings AI-enhanced capabilities to

optimize the Wi-Fi, keeping network performance at peak all throughout, and allowing users to experience the convenience of AI powered Wi-Fi Network.

The R15 Eagle PRO AI Router is one of its kind, with a host of AI enabled features. The built-in AI Wi-Fi Optimizer continuously scans for the Wi-Fi channel with the least interference to always offer the best connection. At the same time, the AI Traffic Optimizer prioritizes the most critical internet usage for optimal online experience and stability. AI Parental Control allows parents to be completely in charge of their children's online activity like internet Pause / start, website filtering, managing multiple profiles, internet access scheduling, bedtime scheduling etc. Thereby ensuring kids online safety

is always prioritized. This Router also features the AI Mesh Optimizer, which strengthens the connection between mesh nodes to deliver seamless and reliable Wi-Fi. Now Managing Wi-Fi is easier than ever before with the integrated AI Assistant. As it continuously reviews the network and monitors data usage, sending recommendations and weekly reports to the EAGLE PRO AI app.

The R15 EAGLE PRO AI AX1500 Smart Router offers dual-band wireless speeds of up to 1,500 Mbps, delivering blazing-fast wireless coverage with increased range and reliability. This allows Wi-Fi to be experienced like never-before and offers a perfect solution for those who require stable Wi-Fi with minimal interference. Backed by EAGLE PRO AI App this router brings intelligent one-touch set-up for seamless connectivity, along with a host of AI benefits.

What's more, the R15 is compatible with Google Assistant and Amazon Alexa, allowing users to use voice control to manage their network easily and conveniently.

Going forward D-Link will expand its offering with more & more products featuring AI capabilities, thereby allowing its users to experience the best of Wireless Network.

D-Link R15 EAGLE PRO AI Router specifications:

- AX1500 Dual Band Smart Router
- Built in latest Wi-Fi 6 Technology
- AI Mesh supported
- Up to 1500Mbps speed (300 + 1200)
- Full Gigabit Ethernet (WAN x 1 & LAN x 3)
- 4 External Antenna & 1 internal antenna for EAGLE PRO AI
- Support WPA-3 Encryption
- Firmware Over-the-air Upgrade
- Built in EAGLE PRO AI features

MAXHUB Launches V5 Series Interactive Flat Panel Displays powered by Intel for Corporates



MAXHUB, a premier provider of collaborative communication and interactive class delivery solutions, today launched its V5 Series interactive flat panel displays. The V5 Series comprises of 3 different Series - Classic Series (C

Series), Vogue Series (V Series) and Transcend Series (T Series). All panels are powered by Intel®Core™ i5/ i7 Processor

And come in 55", 65", 75", and 86" sizes.

Since the first launch

in 2017, MAXHUB has tremendously changed the landscape of modern meetings with its conference IFP products. With the launch of V5 Series its new goal is to offer simplicity to a broad range of workspaces that used to have time-costly and labor-intensive sessions. MAXHUB ventures to be different with these 3 new series –

- Classic Series inherits concept of minimalist design while delivering intuitive interactions
- Vogue Series values both professionalism and innovation with varying color options
- Transcend Series represents MAXHUB's unyielding fervor for technology and

intense curiosity towards the future

These panels are enhancements over the last range of MAXHUB panels. They offer stunning features like –

- 4K Ultra HD resolution for crisp image quality
- Built-in seam speakers to deliver exceptional audio
- 12MP to 48MP HDR Camera (depending on the series) with Speaker Tracking makes meetings clearer
- Multiple easy-to-use annotation tools
- Extensive connectivity features for enhanced learning, sharing, and collaboration in professional environments



like conference rooms, meeting rooms or huddle rooms

VC ready features and Whiteboard Application facilitate more productive and efficient decisions. Price Range of V5 Series Panels starts from Rs. 2.5 Lac and goes up to Rs. 12 Lac. These interactive panels will be available at leading AV Solution Partners

These are compatible with all the major platforms, software and peripheral hardware.

- Classic Series is available in 55", 65", 75" and 86" sizes
- Vogue Series is available in 65" and 75" sizes. It features white, turquoise and gold versions to fit different styles of interior décor
- Transcend Series is available in 65" and 86" size. The 48MP Flip-Over Camera steals the show

Commenting on the launch, Avinash Johri, Executive Director, MAXHUB, said, "We are extremely excited to come up with our interactive flat panel displays designed to cater to the growing needs of the modern corporate environment. These Intel powered devices will serve as the perfect embodiment of innovative technologies that will assist in the ever-changing work environments and enhance the quality of conferences and meetings. Combining VC ready features with productive-discussion facilitators, it is aimed at significantly accelerating the hybrid-working mode through efficient and effective engagement."

Chris O'Malley, Education and Corporate Collaboration Global Marketing Director, Internet of Things Group, Intel commented - "MAXHUB stands by its policy of MAXIMIZING EFFICIENCY. We support their endeavor with our advanced products that facilitate MAXHUB Products in providing great experience and efficiency thereby reducing effort and maximizing results. We have been working with MAXHUB globally to provide the best-in-class products to end customers and our collaboration for V5 Series of Panels is a new edition".

Apart from V5 Panels, MAXHUB also launched their range of Video Conferencing Products which includes Webcams, PTZ Cameras, Conference Bar, Speakerphone and 360-degree webcam. These unified communication devices assist in clear and effective communication.

MAXHUB V5 is set to empower your meetings, drive your business and connect your resources, ever more closely.

Checkout the complete range at www.maxhub.com/in

Azim Premji Foundation Uses Salesforce Technology for its Covid-19 Vaccination Program across India

Azim Premji Foundation has collaborated with Salesforce to use its VaxIT app to enable the foundation's large on-the-ground program to help accelerate Covid-19 vaccination across India. The foundation's program that will use VaxIT is spread across 25 states serving some of the disadvantaged communities in the country.

The VaxIT app, which was developed on the Salesforce platform for the Azim Premji Foundation and its partners, tracks vaccination status to assist people schedule and tracking their vaccines. Over 3500 Primary Healthcare Centers are part of the Foundation's mission, which seeks to assist over 3 million people (PHC). VaxIT, a multi-language and offline mobile app accessible on the Android app store, aids volunteers, program managers, field data administrators, and others in supporting the vaccination process, including outreach and mobilization, dosage recording, and planning.

The collaboration comes at a time when, when there appears to be a sufficient supply of vaccines across the country, while factors such as mobilization and outreach with accurate data



ARUNDHATI BHATTACHARYA,
CEO, Chairperson,
Salesforce India

remain the challenges in getting closer to 100 percent of the country's population vaccinated.

Anurag Behar, CEO, Azim Premji Foundation, said, "Throughout the pandemic, we have organized ourselves to provide a comprehensive response to the situation – addressing healthcare and humanitarian needs – both inextricably tied dimensions of the crisis. This collaboration with Salesforce is an important element in our large-scale program to support the country's Covid-19 vaccination effort."

Arundhati Bhattacharya, CEO, Chairperson, Salesforce India, said, "At Salesforce, we are deeply committed to our people and the communities in which we live and work, we firmly believe that business and technology can be a powerful platform for change. As we race to deliver one of the largest mass vaccination campaigns in human history, we believe our collaboration with Azim Premji Foundation will help with the safe and equitable distribution of Covid-19 vaccines across India."



ANURAG BEHAR,
CEO, Azim Premji Foundation

Technologies that will Change the Dialogue – 2022 and Beyond



We are living in a do-everything-from-anywhere economy enabled by an exponentially expanding data ecosystem. It's estimated 65 percent of Global GDP will be digital next year (2022). This influx of data presents both opportunities and challenges. After all, success in our digital present and future relies on our ability to secure and maintain increasingly complex IT systems. Here I'll examine both near-term and long-term predictions that address the way the IT industry will deliver the platforms and capabilities to harness this data to transform our experiences at work, home and in the classroom.

What to look for in 2022

The Edge discussion will separate into two focus areas – edge platforms that provide a stable pool of secure capacity for the diverse edge ecosystems and software defined edge workloads/software stacks that extend application and data systems into real world environments. This approach to Edge, where we separate the edge platforms from the edge

workloads, is critical since, if each edge workload creates its own dedicated platform, we will have proliferation of edge infrastructure and unmanageable infrastructure sprawl.

Imagine an edge environment where you deploy an edge platform that presents compute, storage, I/O and other foundational IT capacities in a stable, secure, and operationally simple way. As you extend various public and private cloud data and applications pipelines to the edge along with local IoT and data management edges, they can be delivered as software-defined packages leveraging that common edge platform of IT capacity. This means that your edge workloads can evolve and change at software speed because the underlying platform is a common pool of stable capacity.

We are already seeing this shift today. Dell Technologies currently offers edge platforms for all the major cloud stacks, using common hardware and delivery mechanisms. As we move into 2022, we expect these platforms to become more capable and pervasive. We are already

seeing most edge workloads – and even most public cloud edge architectures – shift to software-defined architectures using containerization and assuming standard availability of capacities such as Kubernetes as the dial tone. This combination of modern edge platforms and software-defined edge systems will become the dominant way to build and deploy edge systems in the multi-cloud world.

The opening of the private mobility ecosystem will accelerate with more cloud and IT industries involved on the path to 5G. Enterprise use of 5G is still early. In fact, today 5G is not significantly different or better than WiFi in most enterprise use cases. This will change in 2022 as more modern, capable versions of 5G become available to enterprises. We will see higher performance and more scalable 5G along with new 5G features such as Ultra Reliability Low Latency Communications (URLLC) and Massive Machine Type Communicators (mMTC), with dialogue becoming much more dominant than traditional telecoms (think: open-source ecosystem, infrastructure companies, non-traditional

telecom).

More importantly we expect the ecosystem, delivering new and more capable private mobility, will expand to include IT providers such as Dell Technologies but also public cloud providers and even new Open-Source ecosystems focused on acceleration of the Open 5G ecosystem.

Edge will become the new battleground for data management as data management becomes a new class of workload. The data management ecosystem needs an edge. The modern data management industry began its journey on public clouds processing and analyzing non-real-time centralized data. As the digital transformation of the world accelerates, it has become clear that most of the data in the world will be created and acted on outside of centralized data centers. We expect that the entire data management ecosystem will become very active in developing and utilizing edge IT capacity as the ingress and egress of their data pipelines but will also utilize edges to remotely process and digest data.

As the data management ecosystem extends to the edge this will dramatically increase the number of edge workloads and overall edge demand. This correlates to our first prediction on edge platforms as we expect these data management edges to be modern software-defined offerings. Data management and the edge will increasingly converge and reinforce each other. IT infrastructure companies, like Dell Technologies, have the unique opportunity to provide

the orchestration layer for edge and multi-cloud by delivering an edge data management strategy.

The security industry is now moving from discussion of emerging security concerns to a bias toward action. Enterprises and governments are facing threats of greater sophistication and impact on revenue and services. At the same time, the attack surface that hackers can exploit is growing based on the accelerated trend in remote work and digital transformation. As a result, the security industry is responding with greater automation and integration. The industry is also pivoting from automated detection to prevention and response with a focus on applying AI and machine learning to speed remediation. This is evidenced by industry initiatives like SOAR (Security Orchestration Automation & Response), CSPM (Cloud Security Posture Management) and XDR (Extended, Detection and Response). Most importantly we are seeing new efforts such as the Open Secure Software Foundation in the Linux Foundation ramp up the coordination and active involvement of the IT, telecom and semiconductor industries.

Across all four of these areas – edge, private mobility, data management and security – there is a clear need for a broad ecosystem where both public cloud and traditional infrastructure are integrated. We are now clearly in a multi-cloud, distributed world where the big challenges can no longer be solved by a single data center, cloud, system or technology.

What to look for beyond 2022

Quantum Computing – Hybrid quantum/classical compute will take center stage providing greater access

to quantum. In 2022 we expect two major industry consensuses to emerge. First, we expect the industry will see the inevitable topology of a quantum system will be a hybrid quantum computer where the quantum hardware or quantum processing units (QPU) are specialized compute systems that look like accelerators and focus on specific quantum focused mathematics and functions. The QPUs will be surrounded by conventional compute systems to pre-process the data, run the overall process and even interpret the output of the QPUs.

Early real-world quantum systems are all following this hybrid quantum model and we see a clear path where the collaboration of classical and quantum compute is inevitable. The second major consensus is that quantum simulation using conventional computing will be the most cost effective and accessible way to get quantum systems into the hands of our universities, data science teams and researchers. In fact, Dell and IBM already announced

significant work in making quantum simulation available to the world.

Automotive – The automotive ecosystem will rapidly shift focus from a mechanical ecosystem to a data and compute industry. The automotive industry is transforming at several levels. We are seeing a shift from Internal Combustion Engines to Electrified Vehicles resulting in radical simplification of the physical supply chain. We are also seeing a significant expansion of software and compute content within our automobiles via ADAS and autonomous vehicle efforts. Finally, we are seeing the automotive industry becoming data driven industries for everything from entertainment, to safety to major disruptions such as Car-as-a-Service and automated delivery.

All of this says that the automotive and transportation industries are beginning a rapid transition to be driven by software, compute and data. We have seen this in other industries such as telecom and retail and in every case the

result is increased consumption of IT technology. Dell is actively engaged with most of the world's major automotive companies in their early efforts, and we expect 2022 to continue their evolution towards digital transformation and deep interaction with IT ecosystems.

Digital Twins – Digital Twins will become easier to create and consume as the technology is more clearly defined with dedicated tools. While gaining in awareness, digital twins is still a nascent technology with few real examples in production. Over the next several years, we'll see digital twins become easier to create and consume as we define standardized frameworks, solutions and platforms. Making digital twin ideas more accessible will enable enterprises to provide enhanced analytics and predictive models to accelerate digital transformation efforts. Digital twin adoption will become more mainstream with accelerated standardization and availability of solutions and framework, bringing deployment and investment costs down. Digital twins will be the core driver of Digital transformation 3.0 combining measured and modeled/ simulated worlds for direct business value across industry verticals.

As a technology optimist, I increasingly see a world where humans and technology work together to deliver impactful outcomes at an unprecedented speed. These near-term and long-term perspectives are based on the strides we're making today. If we see even incremental improvement, there is enormous opportunity to positively transform the way we work, live and learn and 2022 will be another year of accelerated technology innovation and adoption.



JOHN ROESE,
Global Chief Technology Officer, Dell Technologies

Veeam Appoints Anand Eswaran as CEO; Replaces Bill Largent

Veeam Software has appointed Anand Eswaran as its new Chief Executive Officer (CEO) and a member of the company's Board of Directors. William H. Largent (Bill Largent) will step down as CEO to focus on his role as Chairman of the Board of Directors. Veeam, which crossed \$1 billion in ARR this year and has over 400,000 customers, is at the heart of the data ecosystem and orchestrates data movement, control and trusted protection in any environment and across Hybrid Cloud.

Eswaran joins Veeam from a successful tenure at RingCentral where he was President and Chief Operating Officer (COO), overseeing exponential growth and customer expansion. In the company's most



ANAND ESWARAN,
CEO, Veeam

recent financial results under Eswaran's leadership, it reported ARR of \$1.6 billion, a 39% increase year-over-year.

Bill Largent has been a key pillar of the company over the past 15 years. Under Largent's leadership, Veeam has enjoyed a record year of profitable growth in 2021, and was recognized as a Leader for the fifth time by Gartner in its 2021 Magic Quadrant for Enterprise Backup and Recovery Solutions – the second year as the highest ability to execute, and with its market leading growth, secured the #2 position worldwide in terms of market share.

"The data management landscape is evolving at an exponential pace. Veeam is the unequivocal market leader, and is the most trusted partner to help customers securely navigate the complexity of protecting their data to keep their business running; to bolster this position we continue to challenge the status quo, innovate, and ensure we are anticipating customer needs," said Bill Largent,

Chairman of the Board of Directors at Veeam. "I am excited to welcome Anand as Veeam's new CEO. Anand brings extensive experience in developing new business models, executing on market expansion and driving growth with an inclusive purpose-led and people-first culture.

To have someone with Anand's experience on board will lead us into a new era of success, as we further accelerate into the cloud and evaluate the opportunity for Veeam to be a publicly traded company in the future."

"Veeam is a unique company that is growing significantly faster than the market. I am delighted to be joining such a talented team at an exciting time in its journey," commented Anand Eswaran, CEO at Veeam. "Data is exploding and has become one of the most important assets for all organizations. As such, data management, security and protection are pivotal to the way organizations operate today, and failure to have a robust strategy can be catastrophic. Veeam has a unique opportunity to break away as we sit in the middle of the data ecosystem, with the most robust ransomware protection and ability to protect data wherever it may reside."

Eswaran's strategic vision, inclusive leadership and track record in driving growth is well recognized, and he has the perfect background to lead Veeam to achieve the next \$1B in ARR and beyond. At RingCentral, he led Product, Engineering, Sales, Marketing, Services, Customer Care, Operations, IT, and Human Resources. Prior to RingCentral, Eswaran was responsible for Microsoft's Enterprise Commercial and Public Sector business globally; earlier in his tenure at Microsoft, he led Microsoft Services, Industry Solutions, Digital, Customer Care, and Customer Success — a global team of 24,000 professionals.

Prior to joining Microsoft, Eswaran was the Executive Vice President of the \$5.4B Global Services business at SAP, leading 17,000 business process and technology professionals to accelerate customer and partner value creation through SAP's enterprise applications. He has held multiple other leadership roles include Vice President of Global Software Services at HP, Vice President of Global Professional Services at Vignette (now OpenText), and Senior Manager at Braun Consulting (now Fair Isaac).

Vertiv Partners with Tech Consortium to Lead Low-Carbon Fuel Cell Development for Data Centers

Vertiv has announced that the Clean Hydrogen Partnership will provide EUR 2.5 million to help fund a project to develop low-carbon fuel cells to power data centers. It is expected this could reduce carbon emissions from operations by up to 100 percent. The EcoEdgePrimePower (E2P2) project is a revolutionary proof-of-concept initiative aimed at developing and demonstrating minimal environmental impact fuel cells that provide cost-effective and robust prime power solutions for data centers.

A consortium of seven organizations – Equinix, InfraPrime, Rise, Snam, SolidPower, Tech4Fuel, and Vertiv – will collaborate to explore an innovative integration of solid-oxide fuel cells with uninterruptible power supply (UPS) technology and lithium-ion batteries to provide resilient and clean primary power to data center deployments and other critical infrastructure. Implementing natural gas solid oxide fuel cells (SOFC) as a primary power source would help pave the way for the use of green hydrogen in fuel cell applications, both backup, and primary.

Giordano Albertazzi, President, Vertiv EMEA, said, "Vertiv is proud to actively contribute to the E2P2 proof-of-concept initiative and looks forward to provide next-generation power solutions to its global customers."

The E2P2 project is the latest in a series of initiatives Vertiv has undertaken in the field of sustainability and the broader Environmental, Social, and Governance (ESG) arena. The E2P2 project is part of the company's endeavor to prioritize and promote the development of clean, sustainable, and renewable power solutions for use in the data center sector.



GIORDANO ALBERTAZZI,
President, Vertiv EMEA

Lenovo Expands ThinkEdge Server Portfolio to Deliver AI Platform at the Edge



Lenovo Infrastructure Solutions Group (ISG) has expanded its Lenovo ThinkEdge portfolio with the launch of the new ThinkEdge SE450 server, delivering an artificial intelligence (AI) platform directly at the edge to accelerate business insights. The ThinkEdge SE450 advances intelligent edge capabilities with best-in-class, AI-ready technology that provides faster insights and leading computing performance to more environments, accelerating real-time decision making at the edge and unleashing full business potential.

"To better address challenges and capture competitive advantage from today's Smart Normal, businesses must be able to harness real-time AI insights directly at the edge-sites. With speed and agility being top-of-mind, we are developing powerful, secure, and flexible solutions that reduce response time to market and increase value to customers," said Sumir Bhatia, President – APAC, Lenovo ISG. "We have designed the ThinkEdge SE450 server to minimize business complexities and enhance compute power in remote locations with a wide variety of workloads. Whether it is real-time patient monitoring, diagnoses, in healthcare, or efficient traffic management

systems in smart cities, or predictive maintenance on the manufacturing line, we are delivering on our promise of AI at the edge".

Edge computing is at the heart of digital transformation for many industries as they seek to optimize how to process data directly at the point of origin. Gartner estimates that 75 percent of enterprise-generated data will be processed at the edge by 2025 and 80 percent of enterprise IoT projects will incorporate AI by 2022. Lenovo customers are using edge-driven data sources for immediate decision making on factory floors, retail shelves, city streets and telecommunication mobile sites. Lenovo's complete ThinkEdge portfolio goes beyond the data center to



SUMIR BHATIA,
President – APAC,
Lenovo ISG

deliver the ultimate edge computing power experience.

Designed to stretch the limitations of server locations, Lenovo's ThinkEdge SE450 delivers real-time insights with enhanced compute power and flexible deployment capabilities that can support multiple AI workloads while allowing customers to scale. It meets the demands of a wide variety of critical workloads with a unique, quieter go-anywhere form factor, featuring a shorter depth that allows it to be easily installed in space constrained locations. The GPU-rich server is purpose-built to meet the requirements of vertically specific edge environments, with a ruggedized design that withstands a wider operating temperature, as well as high dust, shock and vibration for harsh settings. As one of the first NVIDIA-Certified Edge systems, Lenovo's ThinkEdge SE450 leverages NVIDIA GPUs for enterprise and industrial AI at the edge applications, providing maximum accelerated performance.

Security at the edge is crucial and Lenovo enables businesses to navigate the edge-to-cloud frontier confidently, using resilient, better secured infrastructure solutions that are designed to mitigate security risks and data threats. The ThinkEdge portfolio provides a variety of connectivity and security options that are easily deployed and more securely managed in today's remote environments, including a new locking bezel to help prevent unauthorized access and robust security features to better protect data.

The ThinkEdge SE450 is built on the latest 3rd Gen Intel Xeon Scalable processor with Intel Deep Learning

Boost technologies, featuring all-flash storage for running AI and analytics at the edge and optimized for delivering intelligence. It has been verified by Intel as an Intel Select Solution for vRAN. This pre-validated solution takes the guesswork out of the evaluation and procurement process by meeting strictly defined hardware and software configuration requirements and rigorous system-wide performance benchmarks to speed deployment and lower risk for communications service providers.



JENI PANHORST,
Vice President and General
Manager, Network & Edge
Platforms Division, Intel

"Our collaboration with Lenovo helps enterprises across many sectors drive business value through network transformation and edge computing," said Jeni Panhorst, Vice President and General Manager, Network & Edge Platforms Division, Intel. "Resilient and flexible edge servers built with 3rd Gen Intel Xeon Scalable processors provide enhanced performance enabling the delivery of innovative AI-driven services where customers will expect them."

Channel Point



Artificial Intelligence the big Opportunity for ISVs & Channel Partners

The days of channel partners being a step behind technology giants are gone. Now the latest technologies that vendors offer and curated into cutting edge solutions by ISVs & channel partners, adding a huge amount of value to the solutions, leverage to the vendors and of course- years to the life of user companies.

Artificial intelligence is one space that is fast developing in its applicability to all sectors, globally. In fact, this is one such technology which is along with a shift in the partner ecosystem is accelerating digital transformation, return to smarter working, and building strategic ecosystems that can drive better business outcomes.

However, India still has a long way to go to be able to utilize AI solutions to add value to business solutions, and we are still experimenting. But to take things forward, its time ISVs also work on their AI abilities, deep understanding and agile processes to offer the advantage AI offers to industry. One of the most significant areas where AI is used widely to develop solutions is in the start-up and small scale sector. Perhaps that's where synergies need to be built, because experts say, that's where most of the AI adoption in India will ultimately take place.

However, factors such as lack of clarity of rules and regulations and the issues of integrity and ethics with AI and ML solutions is hampering the market growth of AI in India. Policy documents and working drafts on Artificial Intelligence issued by the Niti Aayog recognize ethical and fundamental concerns with the implementation of AI and hints towards a self-regulatory approach towards the same in coming times. Also, since data plays a huge role in AI and machine learning apps, there are issues of policies and compliances to be resolved a well!

Perhaps it's also time for ISVs & channels to create their own IPs in the AI space! This could be their opportunity to make inroads into the AI adoption that is expected to reach \$500B by 2024, globally. Some of the critical areas where channel partners could add value is chatbots, virtual assistants while the government can utilize AI in citizen services, security, and smart cities. This could provide a significant push to the AI market, especially for the ISV and channel.

In the overall India Artificial Intelligence market share, southern region has captured major pie since 2019 and are expected to lead throughout the forecast period. Further, increasing government spending in research and development of AI based technological advancements would fuel market growth over the coming years.

In 2020, Indian AI startups raised \$836.3 million, the largest funding outlay during the last seven years. During the same year, Indian government increased the outlay for Digital India to USD \$477 million to boost AI, IoT, big data, cybersecurity, machine learning and robotics.

Either case, it's time for India to develop the ecosystem needed in channels for leveraging AI for better business and to grow to meet world standards of technology adoption.

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