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COVER STORY

Hyper-Convergence: A
Growing Need



— Ray O'Farrell
Executive VP and CTO
VMware

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Of Digital Transformations and Cyber Threats

“

If everything is virtualised, then it translates into more flexibility and efficiency, a seamless operation and reduced costs

”

While terms like AI, ML, RPA (Robotic Process Automation) and IoT are gaining traction and could define the 2020s, another concept that could change the way enterprises build their hardware infrastructure is HCI (Hyper-Converged Infrastructure).

A relatively new concept, the term was coined as late as 2012 and is now gaining traction becoming a multi-billion dollar global market. The Indian market is also growing at a rapid rate. With the onward march of virtualisation and cloud in the enterprise space, HCI was inevitable. Computing; storage; networking. If everything is virtualised, then it translates into more flexibility and efficiency, a seamless operation and reduced costs.

The concept of the digital enterprise is also taking place with more and more digital transformation coming to the fore. Some of the other hot trends of the year are automation, containerization, micro services and the API economy.

IT always meant change, but now the rate of change is becoming faster and faster and is encompassing both urban and rural areas thanks to the mobile cloud duo and all big and large enterprises equally thanks to a host of new technologies as mentioned above. The last mile is finally being touched by an all-encompassing technology in every corner of the globe.

Of course there's no point for an enterprise to straight away jump into all of those things without a second thought unless there's an actual need for each and every one of them and unless the issue of scalability is sorted out.

Another major threat in 2019 is also cybersecurity. The world has seen a host of such breaches in the year. In the US Florida municipalities paid hackers in excess of US\$1 million after ransomware attacks. Baltimore, Atlanta and a few other towns saw such attacks. NASA also announced that there had been a hack earlier at its Jet Propulsion Laboratory.

In Bulgaria the entire country was practically put in jeopardy when hackers went away with the tax records of every citizen in the country. Things probably reached unprecedented levels when the master hacking capability Russian secret intelligence FSB got hacked in the largest data breach in its history.

As more and more of the world goes digital, more also has to be done to bolster cybersecurity. India is no different and will face these issues as it gets more and more digitised. All the threats have to be weighed and countered along with all the benefits that the ever-changing technology is granting us.

Sunil Rajguru

TIME TO SIMPLIFY

A solid IT and intelligent infrastructure core is the foundation to innovate faster in the growing digital era, which is why having a hyper-converged infrastructure becomes imperative

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The growing digital eco-system is connecting everyone together. Already, more than a quarter of India's population is connected to the Internet and that too mostly through their mobiles. They don't just connect to seek information. They do it to conduct financial transactions, collaborate with others, consume entertainment content, run productivity applications and much more.

In fact, it's not just people, but everything is getting inter-connected nowadays, thanks to IoT. Sensors are being embedded into just about every device, be it a smartwatch or smartphone

or even cars, sports equipment, UPS or inverter. Interconnectivity has moved from H2H (human to human) to H2M (Human to machine) and even M2M (machine to machine). This has resulted in a considerable jump in the number of transactions taking place. This in turn has increased network traffic, thereby making its manageability and security more complex as it traverses through different 'clouds'. The cloud acts as an enabler to connect them for anytime, anywhere access. In fact, this growing number and types of inter-connected, data-generating devices and the cloud are re-defining the network edge.

So What does All This Have to do With Hyper-Convergence?

The basic relation between the growing digital eco-system and Hyper-Convergence is the need for speed, simplicity, flexibility and security in your data centre. You need to be able to quickly put together the required storage, compute and network equipment when you need to roll out new digital initiatives. This is difficult and time consuming with existing IT infrastructure with its disparate resources. A Hyper-Converged Infrastructure or HCI on the other hand combines virtualised storage, compute and networking into a commercial off-the-shelf server, making it easy to manage. Because of the virtualization element, HCI becomes a software-defined environment. This makes it easier to manage and reduces cost.

No wonder then that according to market experts, the HCI market is growing Year-on-Year at 46-50% in India alone. So, while edge computing hogs all the limelight because of high visibility, it's incomplete without a solid core, which comes from HCI.

As the edge has become so dynamic, existing data centres can't really respond quickly enough to the changing requirements. Let's understand this with an example. Suppose you want to integrate your customers with your CRM software, the service engineers and the help ticket application. This would have a lot of dependencies, like the right database, the right APIs that connect different applications, etc. Now suppose you have a customer complaining to the chatbot on your portal and the chatbot is not able to resolve the query. In such a case, the chatbot should be able to simultaneously connect to the CRM system and pull out the customer's details, raise a ticket, and immediately alert the field service engineer. All this would be very time consuming and complex on a traditional infrastructure. This is where you need HCI, which is all manageable from a single console.

So while on the edge, you'll have IoT devices, mobile apps, facial recognition apps, etc., that would be communicating with middleware applications like your AI system, Blockchain, the algorithms, CRM

system, databases etc. These would in turn be hosted on an infrastructure and if that's not fast enough to ensure quick response and secure enough to protect all the data, it would lead to customer dissatisfaction and security breaches.

Digital transformation is essential for just about every industry today and to enable that, you need a solid core infrastructure. Having an HCI in place ensures you get the speed, security and scalability needed to let you innovate while running your existing applications seamlessly. It allows you to connect to a hybrid cloud environment so that you can scale out to the public cloud or scale back as needed.

The basic relation between the growing digital ecosystem and Hyper-Convergence is the need for speed, simplicity, flexibility and security in your data centre. You need to be able to quickly put together the required storage, compute and network equipment when you need to roll out new digital initiatives

With Changing IT Role, Why Keep Infra the Same?

One thing is clear that IT's role in traditional enterprises is no longer about keeping the lights on in the data center. IT now has to manage a complete digital ecosystem. It's no longer about automating business processes, but to remove irrelevant ones and re-define and optimise others for both internal and external use. It's no longer about implementing hardware and applications,

but defining a digital journey using emerging technologies. It's no longer about measuring the ROI from equipment and being measured for application uptime, but about creating and measuring KPIs that ensure consumer delight. It's no longer about implementing a particular business application standalone, but more about building an eco-system of connected products.

The core IT infrastructure has to be ready to enable all this. It needs to be simple and agile to setup so that you can quickly have the resources when required. It should be responsive and scalable so that it takes care of your future needs while ensuring performance for existing ones. It should be scalable enough to deliver the desired performance, while being cost effective at the same time. It should be flexible enough so that you can mold it as per your business needs. Lastly, it should be robust and secure to ensure minimal downtime.



HYPER-CONVERGENCE: A GROWING NEED

Hyper-convergence has become an important aspect of computing today. Ray O'Farrell, Executive VP & CTO, VMWare, discussed with us the latest trends in hyper-converged infrastructure, digital transformation; and the role of developers and open source

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How is global enterprise infrastructure changing? What emerging technologies will shape digital enterprises?

Sometimes, the landscape of digital transformation is not all technology. It is teams and how people do businesses. A lot of companies that have undergone it are not tech companies but leverage tech in order to be more competitive, to build new products and to connect with customers. That has changed how those companies leverage infrastructure. In order to be innovative, a lot of focus is on the applications, the customer interface and data mining. They would like infrastructure to be autonomous and managed easily. They don't want

to be spending their developers' time on it as they would rather focus on applications.

Thanks to that, we are seeing the emergence of hyper-converged infrastructure where people are saying we don't want to be buying "my server", "my storage", "my networking infrastructure" separately and then spending time integrating and managing them somewhat independently. Instead, they want to acquire some sort of block of unified integrated

You have to look at the robustness and the quality of the technology itself

technology, as a hyper-converged infrastructure.

You obviously see the leveraging of public cloud, which is in some way addressing that same issue. These companies want somebody else to take care of the nuts and bolts of the infrastructure and also looking at it to be autonomous and self-secure to the degree to which their development organizations gets to focus on what's really important to them.

When you look at the technology that is involved in making that happen, you always see the emergence of containerised technology. In the last year to eighteen months, the whole space of cloud applications was very volatile. That seems to have stabilized a little bit thanks to Kubernetes, which allows us to focus.

For an enterprise, hyper-conversion appears to be a complex solution. How do they go about evaluating it?

When you are buying hyper-conversion, when you are trying to evaluate or build an infrastructure using hyper convert, one the core things you seek is the ability to say it has been integrated well together and "I do not have to do that". You seek an organisation that is going to be there to lend support at all times with a global presence and they should be able to work with any hyper conversion infrastructure no matter where it is. Hyper-conversion is a great advantage if you can replicate all the learning that occurred at one place anywhere else in the world.

You have to look at the robustness and the quality of the technology itself. You are looking at your application and its ability for the needs of it to be met in terms of performance. You are looking at a probability that you are going to use this technology across many different sites. Then, to what degree can I get that hyper conversion infrastructure, I will use the word different configurations, but maybe I should say is to optimise for different solutions.

So if you look at VMware hyper converge infrastructure, many people embody it in VxRail, which we work with Dell for that. But if you look at the nuts and bolts of that, then it's vSAN, vSphere and NSX. If you could get VxRail configuration for that, you get a very neat size computer infrastructure roughly of 4 servers' configuration. You get a management layer on top of it.

Now if you go and say I want to be able to go for something much larger like VxRail and VMware Cloud Foundation, it's actually the exact same technology but of a different size, different layer. Different configurations are changed on how it's

If you are a manufacturing company and you want to differentiate yourself from the company next door by your digital expertise, it's you developers and the applications they build that will do that. It means that the developer is now a key part of the buying decision

updated. So what you are getting there is this ability to keep leveraging across steps of what you are doing. So from your edge infrastructure it might be VxRail to a medium size data center which might be something like VMware Cloud Foundation. Even if you go in bridge the cloud itself which is not hyper-converge per se, you begin to see the same technology. So the ability to get that cohesiveness across all your different demands is important.

We now talk of cloud native applications while there were days when people were talking about networking and personal storage, that itself is available as a service. What do you think about it?

When people speak of VMware, they immediately think of virtualisation. In about 2004, when we got into the data center with virtualization technology, they were very much focused on compute infrastructure and how to virtualize that. Now when you take some sort of a hardware concept like compute, you can instead represent software and then because you have represented it, you can now begin to orchestrate it, manage it and optimise it. You get whole lot of flexibility you would have not got if you look at this in a pure hardware context.

That same model applies to networking, storage and to basic technology of the data center. The VMware road map looking backward: Start to compute, begin to focus on networking, begin to focus on storage in each case supplying the same virtualisations story which says, "If I make software to find that I now get all of these new and interesting things associated with the software."

We use a term SDDC – Software Defined Data Centre – which was a combination of compute, networking and storage. In some ways you will see

alternate terms, but in many ways, it's the same technology and same concepts being in cloud and private cloud. The biggest difference between what we did when you had SDDC was now management and new orchestration as a layer on top of that. This is now becoming more prevalent and important. So you are either leveraging our orchestration to manage that SDDC hyper-converged infrastructure in a public cloud or you are leveraging to manage the SDDC infrastructure in hyper-conversion or something similar on premise.

What is the secret recipe of NSX because 9 deals out of 10 you end up winning them?

We made a decision when we began to focus on network virtualisation. We have found over the years that for the most part if you write in software you continue to optimise software, the speed and power of the underlying infrastructure will allow you to do everything you need to do with that software.

So from the very beginning because we have driven that as a pure software solution, it's just enormously flexible. NSX is all software and we have to bring all those things together unified products. Apart from flexibility, VMware is built on reliable software and that has been built into our DNA. It is also coming into the telecom space. They are saying that they need to virtualize, especially when you start looking at things like 5G.

Working with developers will be important for VMware's future growth. How do you address that?

Let's look at the area of digital transformation. The people in the company that build those applications to make them successful are developers. So that puts those developers right in the critical path for the competitive strength that the company has. Now, if you are a manufacturing company and you want to differentiate yourself from the company next door by your digital expertise, it's you developers and the applications they build that will do that. It means that the developer is now a key part of the buying decision.

VMware has been for a couple of years focusing on the IT organization building just robust infrastructure where its private cloud networking was. Then the developers would run the applications on top of that but no necessarily even seeing the VMware being played there. In some ways, VMware products have made themselves invisible. However we have pivoted quite a bit towards bringing more and more solutions to the developers.

Developers are becoming more important and we are reacting to that by working more and more with them and delivering solutions they can use

One of the first things we saw is that the developers tend to leverage open source to the degree that systems coders or IT organizations were not necessarily doing in the past. So one of the things is we put more focus on working and building with the open source community. So we actually created a group specifically, an open source program office whose purpose was to make it easier for VMware developers to contribute to open source and also making it easier to make sure we were working well with those communities.

Let's look at CNCF (Cloud Native Computing Foundation) tied to some of those new developer methodologies and you will see VMware open source projects in there. One of teams in Beijing recently put a project called Harbour, which is now an official part of that software. That was one thing. A focus on open source developing tools which help the developer say here are applications that allow you to secure, deploy and manage that scale.

Then there's the acquisition of Heptio, a major Kubernetes story. There is Kubernetes all around. How do I get the dev ops cycle and product development story that I am working efficiently? We also work with a sister company which is Pivotal and we have actually built a product PKS, which is a combination of Pivotal and VMware technology. This is all around delivering a fairly integrated solution to leverage for CNA development.

Developers are becoming more important and we are reacting to that by working more and more with them and delivering solutions they can use. Most of those solutions in our view are about how to make the robustness, the scale, the reliability, the security, the backup, the high availability aspects of what those applications and what the developer needs to do as good as possible.

We have a very successful open source project called Clarity, which is all about how you build UI in a very easy fashion. That is something that we end up using to build our own UI infrastructure. We put it in to open source, we work with open source community and there are a fair amount of developers using that.

FROM DATA CENTRES & EDGE TO HYPER-CONVERGENCE

We conducted a couple of forums where senior technology experts discussed the kind of revamp that IT needs to go through to help companies thrive in a digital era and also touched upon Hyper-convergence. Presented is the summary

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The role of the CIO in today's digital, globalised world has evolved from addressing issues to helping businesses grow. Earlier, CIOs often stayed in the background; today they are front and centre. IT is no longer about keeping the lights on and reducing server downtime.

Digital impacts all interactions across the organizational ecosystems. Whether it's outside or inside the organisation, the business models should evolve accordingly. The CIO has to enable digital, redefine and optimize both internal and external business pro-

cesses. He also has to define the digital journey. The word transformation may sound good and look good but it will take its own time.

The benefits of the public cloud infrastructure combined with on-premises hardware. It combines computing, storage and networking that simplifies data centres and allows scalability. A parting thought was: Are we focussing on business as a primary fabric of the organization or are we driving an innovation model to drive business?

We are creating a world where everything is hyper-connected
—Ashutosh Dubey, Hewlett Packard Enterprise

The market is changing faster than ever before. Digital transformation is happening everywhere, creating new possibilities now. We are creating a world where everything computes, a world that's hyper-connected, where everyone and everything share data. The possibilities to turn all of that data into action and value—to create new experiences, new products and services and drive efficiencies—is what's driving us to a faster, more intelligent world.

It's a world where billions of connected people, devices and things are sharing data from our cars and homes, workplaces, museums, stadiums, hospitals, factory floors and your data center creating petabytes of data that bring new insights and actions—and where AI is used to make decisions faster and autonomously—with speed measured in nanoseconds.

The edge has arrived. Today we are creating the next generation of computing by combining cloud and data “actions” at the Intelligent Edge – with the beginning stages of more mainstream robotic, drone, IoT, autonomous driving and other AI adoption.

So what do we really mean by the edge? The edge is where enterprises interact with their customers; where products are manufactured; where employees work each day; where everyday people interact, purchase, explore; where technology gets put into action. The edge employs AI, machine learning and automation to continuously learn, predict, and adapt to changes, needs, and threats in real-time – and enables us to act locally, in the moment, in context – creating new possibilities in every industry.

Connecting these new insights from edge to cloud across the enterprise, integrating the data with existing business systems (ERP, CRM and more) is what's driving value and growth.

Accelerating time to value is the ultimate goal in a world where real-time is the new just-in time. Time to market. Time to insights. Time to action. Enterprises need to be obsessive about accelerating time to value – and hyper-efficient, ready to capture new opportunities and defend against disruption, increasingly in real-time.

But, being faster and more agile isn't trivial, as the apps and data that create and run our enterprises live everywhere – in public and private clouds, on and off-premises and increasingly at the edge – creating complexity. Today's infrastructure is rooted in traditional, manual-driven strategies and technology.

Enterprises must shift to a highly automated, programmable, controllable, software-defined strategy from edge to cloud with the necessary security, governance, compliance and controls. It has to be accessible and delivered as a service – so you don't have to add more high skilled people – so that your investments match your business strategy, your growth, your customer activations – so your enterprise can pivot on-demand.

Enterprises must now create and deliver services across hybrid and multi-cloud environments in a hybrid reality. To do this effectively – and efficiently – enterprises need to transform. It's not trivial – in fact the biggest challenge is people – adapting to the continuous change inherent in cloud.

Data is your IP, the new currency. To stay ahead, you have to capture, keep and refine every bit of your data. You can't afford to throw anything away because all of your data is valuable. It's all about speed to insights, everywhere from edge to cloud, and “real time” is the new “just-in-time”.

Data is coming at us faster than ever before, and from new sources, like the intelligent edge. Enterprises can barely keep up with all of this data – and the data explosion will continue.



Traditional IT has gone

—Harnath Babu, CIO, KPMG India



Today a CIO's discussion with a CEO is all about the business model and how technology can serve customers—both internal and external—and how technology is relevant for the business. Buzzwords like IoT and block chain rule. Learning these technologies is not limited to the IT team.

Some organisations have too many requirements which will come to IT and IT might become an auditing team. Unlike in the past, today most employees and users have at least a partial understanding technology. That's why earlier people used to come up with problems, but now they come up only with solutions. They may even end up teaching the tech team something. The CIO has to be ready for that. Users have become smart even in the government level and expectations had become sky high.

A CIO has to innovate and stay in touch with the business and talk business. It's not traditional IT anymore, be it cloud or traditional infrastructure. What matters is that services are given to the business for it to run, transform and grow.

When it comes to Hyper-convergence, both the business side and invisible side should be considered. The most important factor is how we are making it 100% available and scalable. For example, in an industry like retail—we need to be available and flexible for scaling up or scaling down. What is important is the clear idea on how much is allowed to be on premise and how much on Cloud.

We need to have a simplified infrastructure and ease of manageability. Additionally Hyper-convergence is not the final destination. It's a journey to a future modern environment. Many large businesses today already run largely on a virtual desktop. But there is a need for scale and it all depends on the infrastructure.

This is an evolution of what we wanted

—Sunny Sharma, CTO at Fullerton



Hyper-Convergence is an evolution of what we wanted and tech serving us in better way. There are two ways how do this. One is reactive and the other is proactive. If a CIO is doing it in a traditional way, a whole day of a CIO will end up only in doing mundane tasks.

Today any app that is built by any organization is immediately compared to WhatsApp or LinkedIn. At the enterprise level too, every IT team is expected to deliver world class services.

Around the core we're creating a digital core

—Chander Khanduja, CIO of Luminous Power Technologies



Every company's top management is looking forward to building its own digital ecosystem. Everyone is discussing about the right type of infrastructure needed to bridge the traditional ecosystem with a digital one. IT has evolved and matured and it's not just about keeping the lights on.

Earlier, a CIO's role was predominantly to minimise server downtime. Today if an organisation is not actively speaking about technology, then there is a problem. Any progressive CIO will have to decide which is core and which is not. And around the core, we are creating a digital core.

HYPERCONVERGED SYSTEM'S FILLIP TO GROWTH

India is a significant growth market for the Hyperconverged infrastructure solutions provider, Nutanix. The company has ramped up its investment significantly in the country recently by opening a customer support centre in Pune. The centre also co-locates Nutanix engineering to establish the company's second centre of excellence in India after Bangalore. Neville Vincent, VP, ASEAN, India, & ANZ at Nutanix talks more in detail about its India centres' contribution towards the company's overall innovation and growth objectives.

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How do you view the India market from the company's innovation and growth perspective?

The importance of India is two-fold from the innovation perspective. A significant part of our engineering development and support capability is resident here in India. Furthermore, we also see a lot of Indian customers at the forefront of adopting our technology beyond just our hyperconvergence operating system, such as our value-added software-defined technology around security and it might be at micro-segmentation or process application automation, application development and deployment. Those applications really solve the issue between the infrastructure and the development. Also, India as

NEVILLE VINCENT
VP, ASEAN, India & ANZ ►
Nutanix



a marketplace has also been very successful, and we are seeing very significant year on year growth here.

Would you like to take us through some of the innovation projects that you have embarked on here?

When you look at Nutanix, please look at the three categories of our offerings. The first category of offering is what we call our 'core' offering, i.e. the hyperconverged operating system, hypervisor, and management system. We have developed applications that actually sit on top of that operating system, and we call that 'Essentials'. But it is the third area of our offering, where we see the innovation occurring most, and i.e. 'data gravity'. We are now seeing data go away from the public or monolithic Cloud to the edge, where the innovation lies and that comes down to the miniaturization or the atomization of compute capability.

For example, we do a lot of work with the American military and we can actually land data center in a ruggedised box that can be fired up instantly and give the warfighter the right information at the right time to make the right decision. We enable the simplification and the mission criticality of the data center in a box. We're also talking to Indian agricultural companies as to how we can put a data center in a drone using video technology to look at the plantations and use video analytics which can be processed within the drone to determine what is the right time for harvesting.

Do the partnerships with AWS and HPE help you to tap new customers in India?

These two partnerships have two very different purposes, but it is all about bringing the freedom of choices for the customers. When we first came to market, we wanted to express our opinion as to how best to configure hardware to run a software. So, we had our own appliances. And as we expressed that opinion, different hardware vendors begin to understand that. And so we then began to have different relationships, be it with Dell, or with

Lenovo and now with HP—we've given customers the freedom of choosing their hardware.

It's a very positive platform partnership for us as there's a lot of enterprises that use HPE platforms, and we see that has been an incremental factor for the adoption of our technology. But with AWS, it's around the freedom of choice regarding the Cloud. We have got customers the freedom of choice for platform, and freedom of choice for hypervisors now. I think this allows us to be seen as an operating system company with enterprise applications to improve services and innovation and hence, we give that freedom of choice to the customers. We are also looking to make inroads into traditional verticals like hardcore manufacturing, automobiles, with some of our partnerships.

A significant part of our engineering development and support capability is resident here in India. Furthermore, we also see a lot of Indian customers at the forefront of adopting our technology beyond just our hyperconvergence operating system

How do you look at India in terms of talent and how does it help to pursue your innovation objectives?

I can only say that when 20 percent of the Nutanix workforce globally, sits in India, I think that says a lot about how crucial is India from the talent and innovation point of view.

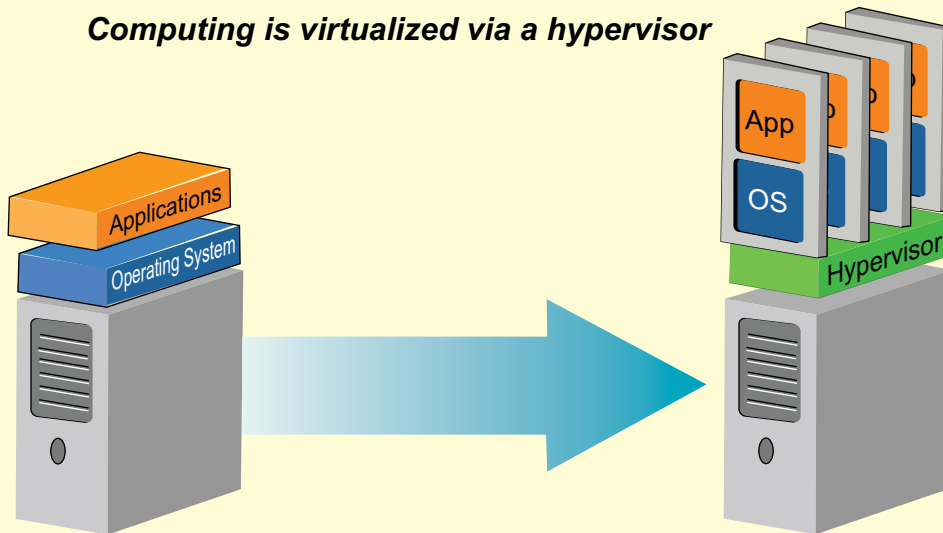
How crucial is India from future growth perspectives?

It is a significant revenue contributor to us. Unlike other tech companies, India revenue of Nutanix is higher than that of China's. Normally, for any other tech companies that we compete with, China does 3X or 4X of that India does for us. India has been a revelation of sorts, and if we maintain our past trajectory of growth, we will double our customer base in eighteen months. India holds one of the highest AHV adoption rates in the whole world and it also, the fourth largest revenue contributor within the Asia Pacific. If you look at all of our deployments in India, 80 percent of them have utilized our own license-free hypervisor AHV and when you look at the historical growth rates, they're quite significant. So I think what's the real driver, is the continued adoption of AHV as hypervisor being the key enabler and for our growth movement forwards.

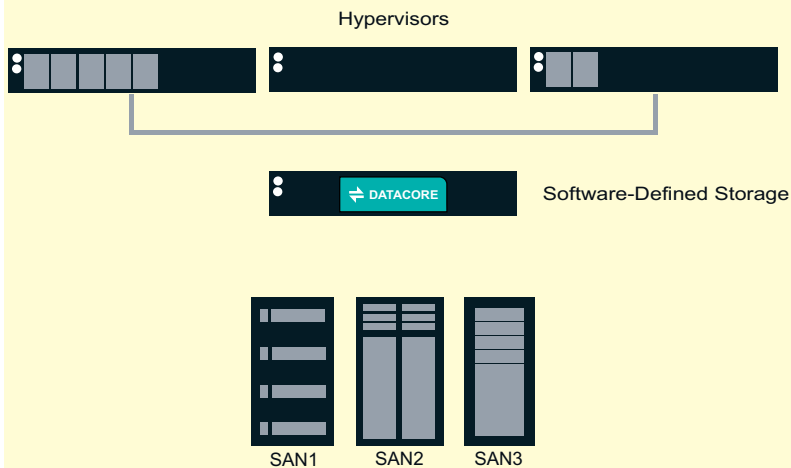


Hyper-converged infrastructure (HCI)

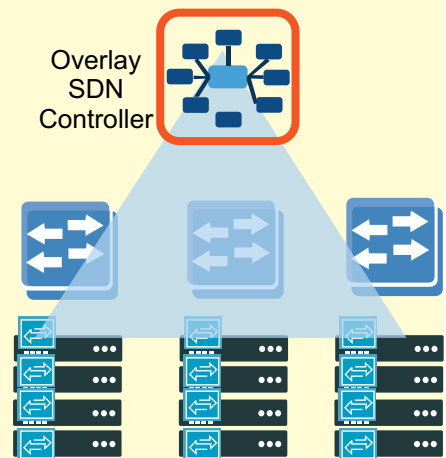
Computing is virtualized via a hypervisor



SAN is virtualized via software-defined storage



Networking is virtualized via software-defined networking



Commercial off-the-shelf (COTS) servers.



INFRASTRUCTURE FOR AUTOMOBILE SECTOR

Following a detailed evaluation, Force Motors chose HPE Infrastructure platform to host the new and enhanced business-critical applications in perfect alignment with Forces' ambitions and digital journey

PCQ Bureau

Force Motors has witnessed remarkable success since its inception in 1958. Since the last few years the group is on an expansion spree with path-breaking new products, JVs and being the sole supplier for Engines/Axles for big names like Mercedes and BMW. The expansion outpaced the existing IT infrastructure necessitating significant enhancements. The group realised that a total Infrastructure and Applications revamp was essential to support its aggressive plans. The company needed an IT infrastructure that could become the foundation for all current and future group applications, thereby allowing the company's business to continue steadily on its development path.

Following a detailed evaluation, Force chose HPE Infrastructure platform to host the new and enhanced business-critical applications in perfect alignment with Force Motors' ambitions and digital journey.

Business Growth Drives the Need for Change

Force Motors, flagship company of the Dr. Abhay Firodia Group, has achieved new milestones reflecting growth in both organic and in-organic mode. These upgrades concurrently demanded reengineering of the business processes, necessitating infrastructure and application scalability to boost the organisation's analytical capabilities which are extremely crucial in today's data-driven economy. To understand how Jaya Hind Industries and Force Motors overcame this scenario with the help of HPE and Unique Systems, let's take a closer look at its business.

Jaya Hind Industries (part of Dr. Abhay Firodia Group) is among India's largest and most trusted, end-to-end solution providers for critical aluminium



castings to the global OEMs. The company has a wide portfolio of manufacturing critical components ranging from 5gm upto 30kg, serving a variety of industries in automotive as well as non-automotive



"Many factors contributed to our decision to go with HPE, primary being scalability, SAP certified appliances, futuristic infra, cost, relevant credentials and the fact that HPE allowed us maximum reutilization of our existing investments in products that were

still under support."

**—Abhijit Bhalerao, Head, IT,
Force Motors Group Companies**

OEMs. Jaya Hind Industries has India's one of the largest in-house tool design and manufacturing capability and largest die-casting capacity.

Force Motors is a leading supplier of utilitarian, low cost, mass transport vehicles like vans, trucks and buses for over 60 years. As a part of its ongoing growth plan, Force Motors has also become a leading supplier of power trains to BMW and Mercedes. The group has also recently acquired Volkswagen's MAN Trucks manufacturing plant in Madhya Pradesh, India and signed a joint venture agreement with Rolls-Royce Power Systems AG to manufacture high-powered diesel engines. The company has achieved new milestones with several launches of new vehicles, designed and developed indigenously as well as with support of Global Design Houses.

The expansions had stretched the group's IT infrastructure to its limits, hindering its ambitious business initiatives. Multiple SAP landscapes, Dispersed Infra, Necessity of faster Dashboarding and Analytics with drill downs to Nth KPI/Document, Administrative complications, Technology advancements were some of the complexities & key technical challenges on-hand.

Strong business growth at Force Motors made their existing solutions inadequate in coping with the latest technological and business needs. The need for a robust, dependable and agile system thus became imperative for the planned large scale IT transformations in the group. The program in the first year included an IT infrastructure upgrade, S/4 HANA migration for 3 SAP Landscapes, Upgrade of the Dealer Management System and implementation of HR solutions suite, Business Intelligence etc. for the group.

HPE Chosen to Lead the IT Transformation

With a clear vision to upgrade & consolidate the group's IT infrastructure for the applications to support the diverse business portfolio of the group, the IT leadership took charge of the situation and created a project roadmap with well-defined milestones. An SAP sizing report was created and used to study, analyze and deliberate on the requirements. Every miniscule technical detail was considered like CPU architecture (Intel Skylake or Broadwell) and Memory DIMM combinations, considering the size of HANA database, as SAP HANA was part of the roadmap.

The key business requirements were taken into consideration while putting together a comprehensive RFP document. Scalability was one

"The HPE solution supports large data volumes on SAP HANA database and is optimized to run SAP business application workloads guaranteeing predictable application performance. Managing HPE solutions was also easy as the CS500 HANA Appliances

come with dedicated HPE CoE (Centers of Excellence) support, which ensures unified problem resolution, 24x7"

—Joybrata Mukherjee, Director, Channel, SI, Alliances & Service Providers, HPE India



key driver. The solution had to be scalable enough to meet the growing business demands of the group. SAP certification was another key parameter to ensure predictable and reliable performance of the solution. A few other crucial parameters like supported software, OS, middleware, TCO, support services and leveraging of existing investments were also critical for Force Motors.

The team evaluated different solutions from leading OEMs on the basis of an elaborate RFP. For several months, the IT team carried out a detailed analysis of vendors and their products and key differentiators respectively. At the end of this period, the group awarded the project to HPE and Unique Solutions. According to Abhijit Bhalariao, who heads the group IT and an expert having led many HANA consulting projects in the past, "Many factors contributed to our decision to go with HPE, primary being scalability, SAP certified appliances, futuristic infra, cost, relevant credentials and the fact that HPE allowed us maximum reutilization of our existing investments in products that were still under support."

Evolution towards a Transformative Thinking

A complete revamp of the IT infrastructure and business applications is a long journey, which is best taken in stages. While part deployment of HPE Infrastructure has taken place at Force Motors, the rest is in the pipeline and moving as planned. The group has deployed SAP S/4 HANA for both Force

Motors and its parent company, Jaya Hind Industries. Earlier, each business was running separate production clients on the same instance of SAP. Now, they decided to host two different SAP S/4 HANA landscapes in a multi-tenant deployment on HPE's ConvergedSystem CS500 appliance. The recent JV in Power systems too has a separate green-field S/4 HANA landscape.

System downtime and data loss can be a nightmare for any organisation, which is why Force Motors needed a water-tight high availability solution. For this, the company took HPE Service guard kit. "HPE Service guard kit ensures 24x7 application availability by continuously monitoring the health of the infrastructure and other resources impacting availability of the workload or service within a cluster. This has also ensured better RPO/RTO due to its automated failover of the operating system and database," said Joybrata Mukherjee, Director, Channel, SI, Alliances & Service Providers, HPE India

The company further plans to use SAP Fiori and CDS platform to generate insights from HANA's embedded analytics, augmented with SAP's data warehousing with BW on HANA and Business Objects solutions.

"Our digital strategy is an evolving journey woven with numerous such threads (initiatives) to achieve process improvements, automations, enhanced customer experience bearing in mind the technology disruptions, changing product roadmaps, and Industry 4.0 expectations. New solutions like S/4 HANA, Business Intelligence, new HR solution suite, upgraded Dealer Management system and several others to be hosted on HPE Infrastructure are an essential part of this digital expedition we have embarked upon," said Abhijit Bhalerao.

Force Dealer Management System (FDMS), the other major business-critical application would be upgraded on latest technology platforms (Hardware + OS + Database) to give dealers a superior experience while eliminating performance bottlenecks like complex reports, browser incompatibility, etc. The new dealer management system would be hosted on HPE's Synergy Composable Infrastructure and HPE 3PAR Storage providing single pane management and templated provisioning of resources.

"We've been an HPE Gold partner for over two decades. The new infrastructure for Force Motors was completely designed and deployed by us. We have all the required skillsets and experience of deploying solutions on SUSE, RHEL, VMware and backup solutions on complex infrastructure landscapes with

"In Unique Solutions and HPE, we have found a reliable partner. Their solution understanding, expertise and excellent service support are proven through almost a decade long strong association with them."

**—Praveen Karnavat,
President,
Corporate Materials,
Force Motors**



HPE's CS500, Synergy, 3PAR, and StoreOnce", said Arif Poonawala, Director, Unique Solutions.

Key Reasons for Choosing HPE and Unique

Quality is a way of life at Force Motors. It's ingrained in everything – culture, products and people. Technology could not be an exception to this mantra and hence to have the best quality Infrastructure as a platform, HPE was chosen for this Digital Transformation journey.

HPE's Infrastructure was the right fit in terms of solution requirements and compatibility with existing and newer versions (planned) of SAP deployments at Force Motors. There had also been a 15-year long partnership between Unique Solutions/HPE and Force Motors. Thus, factors such as collaborative support provided by HPE, its Serviceguard business continuity solution, audit-compliant backup solution, and the capability to leverage existing investments played an important role in tilting the balance in favor of HPE and its channel partner Unique Solutions.

Future Roadmap

Force Motors will soon have a future-proof IT infrastructure to boast of. The new scalable architecture would lay the necessary foundation to ensure that Force Motors can sprint ahead on its ambitious plans especially with large transformations like MES & Groupwide PLM already under discussion. IT will no longer be an obstacle to growth but would be an enabler during this journey.

In words of Pradeep Dhadiwal, Sr. VP, Corporate & Controlling, Force Motors, "Digital transformation is no longer a matter of choice that an organization can make. It is inevitable."

Source: CMR

TODAY'S SOLUTION; TOMORROW'S GROWTH

The humble barcode has been around for decades. However, as we are on the brink of entering the 2020s, this technology is going as strong as ever and barcode products are headed for an exponential growth in both India and the world. It was in this context that CyberMedia-PCQuest and Honeywell AIDC conducted a customer-end user-meet titled "Today's Solution; Tomorrow's Growth" in Bengaluru. Teams from both Honeywell and VMware explained the technology, products and market in great detail to an enthusiastic audience that led to an intense and insightful question and answer session.

PCQ Bureau







Sunny Makroo, Honeywell AIDC APAC Enterprise Lead

Proceedings

The proceedings began with Honeywell AIDC APAC Enterprise Lead Sunny Makroo, who gave the audience an overview of Honeywell and also talked in detail about manufacturing applications and solutions along with the Warehouse Management System (WMS) and value drivers.

Warehouse management will move from pen and paper to digital and integrated solutions will be required for things like inventory reading, warehouse stock taking and in manufacturing to track and trace the product.



Solutions Architect Nijil talked about end to end solutions for manufacturing, logistics and distribution including voice based ones too. Honeywell delivers critical solutions throughout the supply chain right from manufacturing to logistics to the distribution centre to retail and on to the last-mile delivery and finally to the customer.

Nijil outlined the entire workflow chart of a manufacturing plant along with how mobile solutions and vehicle solutions could be integrated into it. Solutions were presented for work in progress, improving the entire gamut—picking and staging, put-away and replenishment, receiving, inventory management, labelling and tracking, loading and shipping, quality control, time and attendance along with labour tracking, security and access control.



Nijil, Solutions Architect, Honeywell AIDC





Customer Marketing Manager Dolly Choudhary explained to the audience why the store still matters in retail and management solutions related to it. Some very interesting and surprising statistics were presented with relation to online purchasing and those in the stores.

Dolly also explained how to create a thriving in-store ecosystem. When it comes to mobile asset management, the Honeywell Operational Intelligence ecosystem takes greater control over all the businesses' electronic devices, regardless of brand, across all locations. This cloud based platform helps stores optimize device utilisation, including repair and replacement. Mobility Edge is a unified platform for mobile computing that accelerates deployments, optimizes business performance, extends life cycles and strengthens security.

Displays

On display were all the relevant devices. In mobile devices, CT40 is for the retail floor, CT60 for the retail backroom and there's also an RFID reader called the IH21, which is compatible with the CT40.

In scanners, while the Voyager is the traditional model, XP is high performance and battery free, Orbit is fixed or mounted and the 8680i is a wearable piece. In printers, the RP is the mobile version, while the PC43K is the kiosk model.

Even the QR code has become a big part of everyone's life with UIADAI updating the digitally signed QR code on the new Aadhar card to enable

an offline mechanism to quickly verify the legitimacy of the Aadhar card. Honeywell India's first and only brand having STQC certified barcode scanners.

Online, Honeywell Marketplace is a convenient portal for a wide array of software and mobile applications that help optimize in-store operations. New apps from Honeywell its ISV collaborators are added all the time to support key retail tasks and help solve emerging challenges.

Also highlighted were key manufacturing of 2019 like the Internet of Things (IoT), Industry 4.0, additive manufacturing, automation and augmented reality.

For one, 91% of overall retail dollars are still spent in the store versus online. Also, in 9 out of 11 retail categories, consumers prefer to buy in-store versus online. Finally, 78% of shoppers choose in-store pick up to avoid shipping costs from online purchases



David Holland, Workforce Transformation Specialist, VMware

Workforce Transformation Specialist David Holland, from the VMware team, touched upon the importance of the workplace platform. Workspace ONE is India's first intelligence-driven device management system that can manage and secure any corporate-owned, purpose-built mission critical device. You can use it on both the iOS and Android operating systems along with Windows 10, Mac and Chromebook. It is the de facto leader in the User Environment Manager space.

Nitin Kelvekar, also of VMware, revealed the importance of device market trends and introduced the Internet of Things (IoT) in the enterprise. That includes wearables like smart glasses and smart watches; peripherals like mobile printers and enterprise sleds; single-purpose devices like interactive kiosks and digital signage.

Manufacturers struggle with tracking and tracing the thousands or even millions of physical assets in their warehouses. This tracking may be at a pallet level, box level or even item level. Many manufacturers also need to monitor and direct the movements of their employees to increase productivity and efficiency at the same time avoiding accidents along the production line. All in all, the solutions mentioned at the meet proved to be a great help to businesses around the barcode systems in this ever-changing technological world.



Gallery



SEAMLESS MIGRATION

As enterprises migrate to public cloud, they face challenges as well as new dimensions of work management. Varoon Rajani, Co-Founder & CEO, Blazeclan Technologies, interacted with us to share his thoughts.

Sunil Rajguru
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What are the typical problems that large enterprises in India face while trying to embrace digital transformation? What is the typical migration journey?

At Blazeclan, we believe in cloud-led and cloud-enabled transformation. Any business looking to go digital or scale in today's fast paced environment has to have cloud as its core of their technology landscape. Since our inception, we have been a user of AWS cloud for all the projects that we have delivered for our customers. We have helped companies to move entire data centres to cloud across APAC.

The most common problem faced by large enterprises is how to move infra seamlessly and predictably to cloud. Governance and security on cloud is another major concern. Optimising applications and expenditure on cloud is one more area where CIOs look for our expertise. Building skill sets on cloud tends to get difficult and dealing with the changes that cloud brings in terms of processes and people can be quite challenging.

Companies take different ways to migrate to cloud. This is primarily driven by the reason to move to cloud. We have seen 2 typical patterns:

1. First one is to save cost. This is usually done by shutting down data



VAROON RAJANI
Co-Founder & CEO
Blazeclan Technologies

centres. To do so, the primary step is to calculate the TCO (Total Cost of Ownership) and ROI (Return on Investment) of moving to cloud. This will also include the Public Cloud platform selection. Once the ROI and TCO are clear and approved, enterprises typically migrate a few servers as proof of concept that helps them understand the technical as well as governance challenges of migration. Based on the success of the pilot migration, a time-bound mass migration plan from the data centre to the cloud is created. The migration journey to save cost is often driven by hardware refresh or data centre contract renewal

2. Second pattern is driven by innovation and automation. This is for those enterprises where focus is to improve the speed of innovation and response to customer demands as more and more companies are becoming digital. For this, the approach is to migrate application by application. Here, typically the companies look at refactoring or modernising the applications while migrating the cloud. This approach allows the companies to use the benefits of cloud like elasticity, scalability and fault-tolerance by upgrading their applications. This a longer approach, but one that suits well for customers who are undergoing digital transformation. The cost benefits with this approach may be a bit delayed.

You have a diverse range of clients like finance and media companies along with the BSE. Is it a one size fits all or are the needs and implementations of these entities totally different?

We help our customers with cloud led and cloud enabled digital transformation. We believe, an organisation can be truly digital only if they are agile and nimble in responding to their customer and market demands. To be truly agile and nimble, organisations need agile infrastructure along with agile processes, which is what public cloud is. We help our customers with cloud advisory and migration services, automation of their entire IT tool chain along with managed services of their cloud infrastructure.

There is no one size fits all approach for cloud adoption. Each company is driven by their own business priorities. As explained earlier, two of

the major priorities that customers have is rapid digitisation or cost savings. Each company makes choices based on these priorities.

With microservice architectures becoming more prevalent and cloud automation enabling the use of APIs seamlessly, customers will now have access to applications with best of technologies from across different clouds. Though this may take a longer time to become a reality in larger enterprises due to their limited skill sets and capabilities, but we see a trend of using a service from the cloud based on the value it provides.

What problems will the Indian industry face while moving from a scale-based model to a skill-based one? What are the factors that individual companies need to take note of?

The way the technology ecosystem has evolved, applications today are tightly integrated with the infrastructure. Previously there was a clear segregation between the teams that developed the application and the team that procured and managed the infrastructure.

Due to this, there were silos in the

operations and in the skill sets. People were labelled as infrastructure specialists or application developers, with knowledge of one or more programming language.

With Cloud computing, infrastructure can be managed by code. This means that developers can manage infrastructure to an extent and hence need to understand and learn infrastructure management, networking, security in a better way. For infrastructure specialists, there is a lot of automation and optimisation that cloud brings in, which really frees up a lot of their time.

With these changes, companies will have to look at ways to deploy large teams of engineers they have in different areas effectively by cross-skilling them. Cross skilling people will reduce team sizes and time of operations as automation will be the fore front. However, there will also be companies who would

“As companies become comfortable to move to the public cloud, they also become wiser in their choice of cloud platforms. Now companies are more open to multi-cloud deployments. A major reason for that are the varied choices available today”

be looking at cross skilling from a rapid growth point of view and hire more such people to scale in the industry quickly

The cloud can provide a lot of agility and scalability to all manner of individual companies. Can you explain this in greater detail?

Public cloud infrastructure is designed in such a way that it is highly scalable and is on-demand. What this means is that anyone looking to buy any infrastructure, for example a server to host an application, can do this within a few minutes with a few clicks. Compare this to the earlier scenario for enterprises where there was a longer procurement cycle to purchase a server, harden it and then deploy the application.

As public cloud is on-demand and pay as you go, the smaller businesses or start-ups do not have to invest heavily on IT infrastructure. They now have access to the same scale and quality of infrastructure as any of the larger enterprises. This was not possible earlier since setting up IT infrastructure involved a lot of cost. This has given a level playing field to smaller businesses who are now able to scale faster at a lower cost and are competing aggressively with their larger competitors. You can see the number of start-ups have increased in the last decade, a lot of it is possible because of the access to on-demand, pay as you go IT infrastructure.

With cloud computing 2.0 closing in and XaaS becoming a reality, what can the industry expect in the next 5 years?

While a lot of the services are available as services, we are still far away from having a world where XaaS is a reality. More than XaaS, what we see customers benefiting the most is from the on-demand availability of services, pegged with pay as you use pricing. Customers do not want to invest heavily in products upfront, and then worry about utilization. They would prefer to use on demand services as and when required. Majority of the start-ups and more and more enterprises are now moving to this model.

AI, machine learning, Big Data and mobility are fast changing fields. How is the new cloud technology integrating all these changes?

Cloud computing has reduced the costs of storage significantly and has increase the processing speed of data tremendously because of its on-demand and scalable infrastructure. Companies are now storing every single byte of information that is generated

Each major public cloud provider is investing heavily on the data processing, ML and AI capabilities and we will see a lot of innovation coming through over the next few years in this area. Without public cloud computing, very few companies would have been able to invest in big data, ML or AI

since the costs are very low.

With this scalable infrastructure, companies are now able to spinoff large compute clusters to process the data and then shut it off without investing in setting up the infrastructure.

Both these points have led to an increased adaption of Big data, machine learning and AI within companies.

Each major public cloud provider is investing heavily on the data processing, ML and AI capabilities and we will see a lot of innovation coming through over the next few years in this area. Without public cloud computing, very few companies would have been able to invest in big data, ML or AI.

What more can the Indian government do in promoting cloud computing in all the diverse sectors like healthcare, agriculture, education, land management and utilities?

If the government wants its Digital India initiative to succeed, it must whole heartedly adopt public cloud for its own projects. They should also encourage start-ups to venture into areas of e-governance, payments, education, agriculture among others to truly digitise these industries. For digitisation, cloud computing must be the core.

The first thing the government needs to do is to have a clear data residency regulation/policy in place along with a set of security compliance for the usage of public cloud computing in public sector. This will benefit a lot of start-ups and companies to innovate without restrictions and at the same time use the best in class technology. Apart from this, there should also be awareness created among government departments at both federal and state level about the benefits of public cloud.

ENABLING THE FUTURE DEVELOPERS

As technologies continue to get cheaper, more people are becoming developers and a lot of them are self-taught. Even designers and animators are writing codes today. Trends show that the developer population all over the world is growing considerably. The numbers right now are anywhere between 23-30 million and it's going to be 100 million soon, says Shiven Ramji, SVP, Product, DigitalOcean. The Cloud service provider wants to address these next-gen developers who are focused on bringing new ideas to life and are working mostly in small startups or businesses. He explains how it is trying to empower these developers by addressing their pain points and reveals what's in store

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How do you enable the next generation of developers?

As we are very hyper-focused on a specific market segment, we keep the products simple, easy and intuitive to use, making it easier to take ideas to production as fast as possible.

For example, a lot of such businesses find managing cloud infrastructure and DevOps experience very complex. So, we keep the product very simple and take on more management services and operations to let developers focus on their core areas. But simplicity doesn't mean fewer features or less power; it means tailoring the experience right for the developers. So, if you know DevOps well, we are not taking your configurability away.

We also keep the pricing simple, predictable, and such that it scales as you scale. Generally, cloud consumes a big portion of the operational costs for new businesses, especially if it's a digital startup. Hence, instead of charging customers for every single add on and feature and service, we take a group of features or products and capabilities, package them



SHIVEN RAMJI
SVP, Product, DigitalOcean

together so that the customer has predictable pricing.

How do you hand-hold your customers throughout this journey?

Unlike enterprise-focused companies, we do it with very little consulting. We focus on building products and experiences and try to invest as much as we can into the self-service part. We believe in scaling self-service and the idea is simple. We try to automate as much of the operational processes that a customer has to go through. We also try to guide our users as much as possible with everything from product documentation to tutorials, so that they can self-serve themselves. Now, of course, there are moments when customers do require specific help from us and this is where our support comes very handy.

Some businesses asked us for premier support, which we have started piloting with select customers in the US currently and we're slowly expanding that pilot to more customers in different markets, including India.

How do you plan to meet the scale-up needs of these customers?

We have been scaling our platform to continue to serve the startups that are scaling significantly. There are two ways to look at these scale-up requirements. First, does your platform scale in general? For example, can it handle the sudden traffic spikes? Second, do you have enough offerings for me to continue to use your services? We've made massive investments in scaling both.

We have had our own story of scaling and supporting half a million active customers as well. We've delivered lots of products and features rapidly over the last year, to continue to be a platform of choice for the startups and a platform that they can rely on as they scale

Now, if the idea is successful and you are now scaling and growing, your next point of attention tends to be around support and security and we try to include them in the product experience. We are also among the top five destinations globally for developer learning content

Could you give us a glimpse into some of the recently launched offerings?

Two recent launches that have surpassed our initial expectation are the Managed Kubernetes and the Managed Database-as-a-Service. Despite being in limited availability, the adoption for both the products had been way higher than what we initially anticipated. The customer feedback and response from developers is also extremely positive. Our managed database offering starts at just 15 USD a month, which also acts as a good entry point for customers.

How do you help developers deal with the challenges thrown in by emerging and complex technologies such as AI and ML?

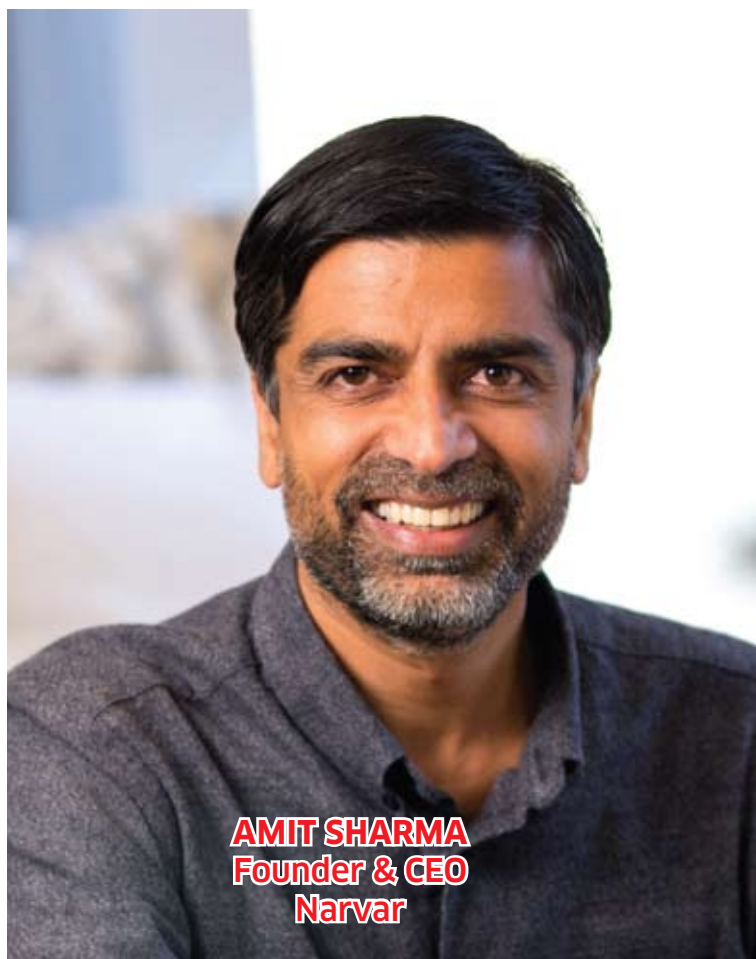
We have plans to provide some building blocks. In our future products roadmap, we plan to provide GPUs and an AI/ML sort of experience on top of it. However, we do have some select applications for AI and ML. We provide CPU-optimized virtual machines or droplets to run the AI/ML workloads. A lot of companies building text analytics are running their AI ML workloads on our platform.

The real problem in the AI ML space is that there is a lot of data is messy and not normalised. Some data scientists want to do modelling, training, and inference and there are data engineers, who are doing all of the backend normalization and cleansing of the data. So, I feel there is an unmet need of making that experience simple, and easy. So, we are trying not to provide just the GPU, but give the software stack on top of that and make AI and ML accessible to even more people.

EXCITING INDIAN E-COMMERCE MARKET

Narvar is India's first enterprise platform for post-purchase customer experience in the E-commerce sector. As an enterprise-grade customer engagement platform, Narvar enables seamless post-purchase experiences that retain and engage customers from cart to doorstep. Here, Amit Sharma, Founder & CEO, Narvar, talks to us more about the company and the E-commerce market

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AMIT SHARMA
Founder & CEO
Narvar

Can you explain what Narvar is and what it does?

We are a software company that works with E-commerce brands and retailers to engage end consumers. World over, even if you look at large sites like Amazon, they all start as "value seekers". That's the first iteration and generation. But then they gravitate towards choice and convenience and are willing to pay for it. For example, membership is a convenience that you are ready to pay for.

In a brick and mortar store you can

We are a software platform that is one of the building blocks for the ecosystem that helps brands and leaders to engage their consumers in these key areas. Nowadays you can engage consumers in so many different ways and channels

buy a product and walk out with it immediately. You can't do that in an online store. So, we focus on the consumer cycle. Online platforms focus on demand generation or user acquisition. That means upstream in the funnel; through promotions, or discounts or bringing customers to them. What we focus on differentiation is that once you make a commitment, you think about when to actually click the buy icon, what happens after that. That's our interest area because the consumer has made a commitment. He's not a shopper anymore but your customer.

The shopping brand may do nine things right but if the last experience is not good you may never shop there again. No matter how many benefits, one hassle will make it not worth it anymore. And if due to smooth operations, you're not calling your call centre and they're not emailing you back and forth, your immediate cost of servicing customer in terms of customer service agent and call centre goes down. Those are the immediate tangible way that retailers can measure the ROI

What is the Indian market e-commerce overview?

Broadband investment and hardware prices are all going down, making smartphones more accessible. The payments scene is changing dramatically and 5G is also coming. The Government is making concerted efforts too. Also what has changed in last few years is that in the relevant players, there is an appetite for buying enterprise grade software.

More and more global brands are coming to India through the online E-commerce route. Consumers are getting more comfortable in buying high purchase point items online. Women are getting more comfortable too. The next generation millennial shoppers are also coming online. They don't have the other preconceived notion of the older generations. Just look at the flourishing apparel and footwear sales. In the past you couldn't imagine say Rs 20,000 being spent on apparel online.

That's the case with the cities, but slowly

disposable income trickle down to Tier III & IV towns too. If we look at Europe, we have E-commerce in 18 languages because there is enough of a demand. India has more languages than that and similar language software will see that market being tapped too. That's why it's really exciting times to India market as so many changes are happening.

What is your Indian market strategy?

Our platform has broad appeal even for the Indian market. We focus on where we are adding value with focus on ROI. There are many issues like in cash on delivery co-ordinating on real time delivery vis a

vis the recipient. We find that an SMS alert, which worked in the past may not now and hence we may switch to a WhatsApp alert. We are doing many things like that.

How will the IoT affect E-commerce?

IoT can be applied in a couple of areas like Smart Homes and automobiles. Then there are voice enabled devices like Alexa. However your smartphone is also similarly voice-enabled. But it comes back to my earlier question: What kind of use cases you're solving which

brings choice and convenience to the consumer. In the next three to five years we will be able to leverage more in the wall space environment and visual touch with ecosystem. It may not be a significant share of Indian market, but it will be there.

Taking a mature market like South Korea: Only 25% shopping is done online and 75% in stores, which are reinventing themselves. Similarly, IoT may become something in single digits.

What about cloud and AI?

Consumer demand is forcing companies to change their approach. But sometimes you can't keep up with the pace of change. In house rate of innovation may not be able to keep pace with what is happening outside. So enterprise companies are investing cloud and AI because they know that the long term cost of ownership is cheaper there.

We have a team in Bengaluru and partner with brands and retailers to enable our capabilities with their technology platform. We are taking two-pronged approach: Investing in our business development so that we can educate and create awareness in the market. We're also investing in our design and research in our engineering capacity in India. That will help us tackle the new use cases for India region

IT PLATFORM FOR REAL ESTATE

Platform developers are going in ever new directions to target more and more sectors. Anand Moorthy, CEO, Props {AMC}, talks about his IT platform which brings all real estate agencies together

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ANAND MOORTHY
CEO, Props {AMC}

Tell us about your GIS-enabled Data platform, other B2B tools and their IT-enabled technological aspects

A Geographical Information System (GIS) is a system designed to capture, store, manipulate, analyse, manage and display the data related to position of earth's surface. GIS can relate distinct information by using location as the key variable. Location in earth are recorded as date/time of occurrence, X, Y and Z coordinates representing Longitude, Latitude and Elevation respectively. GIS can be used to provide visual interpretation of data. Google Map is an excellent example of GIS application that people are using in everyday life. One of the main applications of GIS is to get through the traffic problem, for finding the location and making important decision.

In Real Estate industry, location is always one of the determining factors and top priority for property seekers. GIS technology helps to deliver what property seekers are in need off through connecting the data with location intelligence.

Props {AMC} offer a GIS based solutions called Zone {Matrix} designed for bringing "Property Rights & Transaction Data" of real estate on a single integrate platform using GIS tools. Presenting users with a visual representation of all the information affecting the desirability and value of a property can transform the way how anybody adapt to buy, sell, lease any real estate.

Users can quickly locate their property and explore the valuable information such as online lease & sale listings, registered lease & sale, government value, land ownership, mortgages, building permissions, court cases, property tax

In Real Estate industry, location is always one of the determining factors and top priority for property seekers. GIS technology helps to deliver what property seekers are in need off through connecting the data with location intelligence

The platform can be considered equivalent to a "CIBIL" kind transparent quick check platform to get not so easily accessible data to ensure one knows the advantages and disadvantages related to the unit, property and land

dues, development potential, land use, zoning, reservations, nearby amenities, road width, vacant plots, open area ratio, building grade, neighbour rating, toxic sites, recent sales, demographics, building height, mean sea level and many more information.

What is the spread of the company and its marketing strategy to expand in the next 3-4 years?

Our clients are private wealth and HNI presently and they are spread across more than 15 cities within India. Additionally, we are pitching to lenders, ARCs, trustees, valuers, brokers to use the platform and hence the company's endeavour is to undertake heightened digitisation and make platform deliver an intelligence B2B proposition to cut transaction time dramatically.

How is this company operating in the domain in various verticals of the real estate?

The company has started the GIS enabled platform 3 months ago and have been able to hook valuers, law firms and international property consultants who have collectively done 7000 searches on our platform. The company is in nascent stages presently but will soon establish multiple denominators effecting liquidity quotient of any property in city.

How do you help the developers and architects?

For developers and architects, we are the first one to create a development potential calculator for Mumbai. So, with very quick inputs one can calculate the Floor Space Index (FSI) for a particular project, based on the DCR 2034-Mumbai.

NEW AGE PLATFORMS

New age technologies are producing platforms for businesses to grow faster. Kunwar Asheesh Saxena, Co-Founder & CTO, RedDoorz, talked to us about the platforms that his organisation is using successfully, with additional comment from Amit Saberwal, Founder & CEO, RedDoorz

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How do your technological solutions work?

Our one of the major platforms, RedFox, is a revenue management tool that enables the organizations to double it reach in multiple locations according to different kinds of consumer behaviour. RedFox is a data-based platform that can identify trends by analysing different indicators of user interactions, marketing and transactional data-sets. It also helps in price analytics by reading a large volume of distributed data, including geography, occupancy rates, profitability, type of the day and seasons.

The system understands the current revenue

situation and updates the hotel prices based on potential revenue forecasts. Pricing, occupancy, and demand are predicted by applying

How do the new age technologies help in your work?

ML helps in data processing. RedFox improves efficiency by 90% and brings down cost. It gives live revenue report and closes inventory immediately. It uses algorithm to select available property and also does property management. We also use a discovery tool to bring more customers per event.



“When we onboard properties, we bring them through a rigorous training program that ensures they have the knowledge and competency to operate according to our brand standards. Once they are on board, we have built a technology around smart analytics that computes an overall score that captures their compliance. This technology is able to take into account all forms of interactions (e.g. customer feedback and necessary daily steps from a property owner/operator) and accurately predicts which properties are not up to par. We then have a specialised operations team comprising of ex-hoteliers to visit those properties and recommend improvements. For example, our VP of Operations is from Intercontinental Group.”

– **Amit Saberwal, Founder & CEO, RedDoorz**

RedFox's other features are –

- Full automation with minimum need for manual intervention
- Managing property requests for out-of-order inventory for select dates
- Handling last-minute market fluctuations with minimal manual effort
- Automated handling of overbooking and low occupancy
- Conducting sales on selected properties and rooms at a fixed price for a defined inventory target

What are the other technological tools you're using?

Our organisation works toward providing low-cost branded, standardised hotel rooms everywhere in South East Asia. Apart from RedFox, we use as our core technology products a package of booking engine, RedSpark, RedPartners and RedDoorz MidOffice.

Redspark offers website & mobile app development, IoT and several other customisable technological solutions for enterprises that seek better ROI results. RedPartners Streamlined online check in functionality and provides hassle-free inventory management. Our Partner Program also provides rewards, recognition, and benefits to individual owners. MidOffice tracks and manages guests check-in/check-out and bookings.

HPE ADVANCES HYBRID CLOUD STRATEGY BY EXTENDING AI, COMPOSABILITY AND PARTNERSHIPS ACROSS PORTFOLIO

Hewlett Packard Enterprise has announced the continued expansion of its hybrid cloud portfolio with enhanced automation, more choice, workload-optimised solutions, and a consistent experience across clouds. These updates include extending AI-driven operations and composability across its portfolio, adding new workload-optimised infrastructure, and expanding choice of clouds through new partnerships with Google Cloud and Equinix.

Businesses embracing digital transformation are moving critical workloads to the cloud, and are looking to tap an increasingly diverse portfolio of intelligent and automation services, and infrastructure platforms that simplify choice to improve their cloud experience. Organisations are making investments in multiple clouds, but they're lacking operational consistency. In addition, all this data and technology, regardless of deployment model, needs to be managed and organisations are rapidly approaching limitations without automation. They need to bridge the physical and multiple cloud worlds to achieve agility and scale, and keep pace with today's data-driven businesses.

TECH MAHINDRA INTRODUCES K2, ARTIFICIALLY INTELLIGENT HUMAN RESOURCE HUMANOID



Tech Mahindra has introduced K2, the first HR Humanoid for its Noida Special Economic Zone Campus in Uttar Pradesh, India. A perfect blend of knowledge and kindness, K2 will take over the routine HR transactions to provide constant assistance to the HR team in creating an enhanced employee experience. Tech Mahindra's first HR humanoid was introduced in its Hyderabad campus, earlier this month.

K2 leverages state of the art Artificial Intelligence technology and initiates conversation without any need for wake-up commands. Keeping in mind the needs of the specially abled, K2 can respond to queries with text display along with Speech. K2 can address general and specific HR-related employee queries as well as handle personal requests for actions like providing payslip, tax forms etc., and will enable the HR team to focus on other important areas for employee development.

DELL TECHNOLOGIES ACCELERATES ARTIFICIAL INTELLIGENCE ADOPTION ACROSS APJ

"The timely adoption of AI will create new opportunities that will deliver concrete business advantages across all industries and business functions," says Chris Kelly, VP, Infrastructure Solutions Group, Dell EMC, APJ.



"Companies looking to thrive in a data drive era need to understand that investments in AI are no longer optional – they are business critical. Whilst complex in nature, it is imperative that companies quickly start moving from theoretical AI strategies to practical deployments to stay ahead of the curve."

"The APJ region is building intelligent organisations powered by data, with AI technology woven into their digital fabric," said Andrew Underwood, CTO, High Performance Computing & Artificial Intelligence, Dell EMC, APJ. "The Dell EMC AI Experience Zones provide a unique space where customers and our partners can explore, test out, and learn about the different physical and virtual components that make up an AI ecosystem. This initiative is the focal point of our commitment to fostering knowledge sharing between CIOs, our ready team of technology experts, and industry partners to accelerate AI adoption and innovation for the region."

DIGISOL SYSTEMS ANNOUNCES APPOINTMENT OF DEVENDRA KAMTEKAR AS CEO

DIGISOL Systems ., a subsidiary of Smartlink Holdings., appoints Devendra Kamtekar as CEO of the company. In this role, he will be responsible for leading the business and driving growth by focusing on emerging market opportunities.



Announcing the appointment, K.R. Devendra Kamtekar Naik, Chairman and Founder DIGISOL Systems said, "DIGISOL is currently on the verge of a tremendous growth curve and we believe it's an ideal time to increase our presence across key markets and product segments through a focused approach. Devendra Kamtekar as CEO of DIGISOL Systems, would help us drive forward our growth plans by leveraging his rich experience across these markets and product segments. His transformational leadership approach and fresh thinking will strengthen the company's operations and will lead DIGISOL to greater heights."

LINODE EXPANDS GLOBAL DATA CENTRE NETWORK TO INDIA

Linode, an open cloud provider, opened its newest data centre today in Mumbai, India. The data centre expands the company's global footprint to one of the fastest growing developer and technology regions in the world. The new data centre is Linode's tenth, worldwide.



In launching its Mumbai data centre, Linode offers the region's five million developers and the organizations they support a more affordable and local alternative to hyperscale providers currently serving the Indian market. "We built Linode to democratise cloud computing, to make it more accessible to more people and to do so at price points that make it more affordable than what's currently available to them," said Christopher Aker, Founder & CEO, Linode. "Our entry into the Indian market opens the door for a wave of new innovation previously closed off to a significant number of developers and businesses in India."

NORTON LIFELOCK STRENGTHENS FOOTPRINT IN INDIA



Norton LifeLock, a Symantec brand has announced it is expanding its product availability in India to add new online marketplaces, starting with Amazon.in.

Norton LifeLock's Consumer Cyber Safety platform includes access to Norton Security solutions that provide protection for devices against malware, viruses, adware, and ransomware on various platforms.

"As consumers' information and online activities are increasingly tracked, bought, sold, or even exposed in the underground economy, it is essential for our brand to be available on platforms where our customers are organically present," said Ritesh Chopra, Director, Norton LifeLock, India. "Having our products available on important marketplaces such as Amazon.in, that have a vast reach, will complement our existing website sales and allow us to reach a larger base of consumers. Most critically, we can reach customers located in tier-two and tier-three markets to help educate them and help keep their data and identities safe."

TEAMVIEWER EXCEEDS 2 BILLION INSTALLATIONS ON DEVICES ALL OVER THE WORLD

TeamViewer, has announced that its software has been installed on more than 2 billion devices globally - representing 2 billion uniquely generated IDs. In October 2015, after ten years in business, TeamViewer was activated on 1 billion devices. Now, only three and a half years later, another 1 billion installations have been added.

A key factor in this success story is TeamViewer's business model. The software is free for private use, helping family and friends with their day-to-day technical requests in real-time, while business customers need to buy a subscription. This has promoted the viral spread of TeamViewer and generated a loyal user base that is not only quick in downloading the latest version of the software, but also happy to provide valuable feedback. This way, TeamViewer not only ensures high quality standards, but is able to get a comprehensive picture of how the market responds to its product.

PUNDI X INTEGRATES TELEGRAM CHAT AND ADDS CRYPTO GIFT FEATURE FOR ITS XWALLET APP

Singaporean blockchain company, Pundi X is rolling out new features for XWallet, the mobile app allowing individuals to better manage their crypto assets and make crypto payment easy at the physical retail outlets across 25 countries.

In a recently released update, XWallet has integrated with instant messaging app Telegram, allowing users to send and receive tokens while chatting with others. The supporting tokens for this new feature include BTC, ETH, NPXS, BNB, XEM, and NPXSXEM.

XWallet 2.0 boasts of all new exciting features and support in the XWallet app, including Telegram chat, Crypto Gift, QTUM support, and enhanced user experience.

"Since we launched the XWallet, many users have been introduced to various cryptocurrencies and use cases, allowing them to be more comfortable in owning and using digital assets," said Zac Cheah, Co-Founder & CEO, Pundi X. "With these new features, we hope that XWallet users will find more ways to use their crypto assets through our app."



THOUGHTWORKS RAMPS UP INDIA INVESTMENT WITH NEW MUMBAI OFFICE

ThoughtWorks recently ventured into India's financial capital and set up a new office to cater to its BFSI clientele. As part of ThoughtWorks' continued growth in India, the Mumbai office offers clients technology consulting, product driven strategies and platform thinking to thrive in a sector that is heavily driven by cutting edge technology demands.



Speaking on the company's plans to strengthen its foothold in the sector, Sudhir Tiwari - Managing Director, ThoughtWorks in India said, "The Indian BFSI industry is experiencing a seismic shift. Banks are turning to digital natives like ThoughtWorks to build digital platform capabilities and deliver exceptional service at scale. Banks are working on the business imperative of creating futuristic systems and architecture by putting technology at the core of their organisation. For us and our India growth plans, Mumbai, India's financial capital, makes perfect sense as the next step. We are delighted to set foot into the city and leverage our more than 25 years of tech expertise here."

ThoughtWorks' Mumbai office is located at the Hiranandani Business Park in Powai and serves as a launchpad for experienced technologists and full stack developers. ThoughtWorks will also invest in nurturing its employees through high intensity training and programmes. The Mumbai center will initially be supported by ThoughtWorks' Pune office, with plans to further expand its workforce in the city.

150 BOTS FUEL UP HDFC LIFE'S PERFORMANCE ENGINES

HDFC Life Insurance Company Limited is one of India's leading private life insurance companies and is at the forefront when it comes to technology and innovation. The Company has invested in technology over the years to build robust backend as well as front end systems to improve efficiencies and offer superior levels of customer experience. The Company today announced that it has successfully deployed 150 bots to offer a seamless experience to employees as well as customers.

Parvez Mulla, Chief Operating Officer, HDFC Life said, "This journey started a few years ago when HDFC life introduced various stand alone and workflow systems across the value chain of insurance covering new business, policy servicing and claims. Given the complexity of the insurance products, spread across geographies, multi-distributor model, HDFC Life has strategically identified, experimented and deployed Robotics Process Automation (RPA) to automate and simplify its processes."



PANASONIC INDIA APPOINTS SHIRISH AGARWAL AS MARKETING HEAD

Panasonic India announced the appointment of Shirish Agarwal as the Head of Brand and Marketing Communications. Spearheading the vertical, he will be responsible for devising marketing strategy for products/ services and driving sustainable growth for the company.



Shirish Agarwal

Shirish is a Marketing Communications professional with 15 years' experience and has worked with several leading brands such as Samsung India, Hewlett-Packard India and Times Internet among others. He holds expertise in brand, media and communication strategy, digital advertisement optimisation, consumer insights, B2B and channel marketing with a strong focus on business & ROI.

BLUE PRISM AND SYNECHRON PARTNER TO DRIVE AUTOMATION FOR FINANCIAL SERVICES AND INSURANCE

India's only ISO certified IT Trade Association, Computers & Media Dealer's Association (CMDA), Pune elected its new managing committee at their Annual General Body meeting held recently.

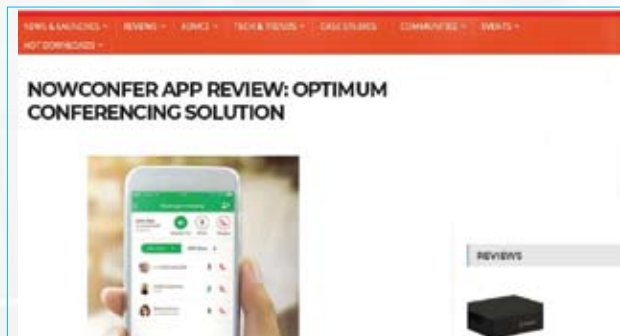
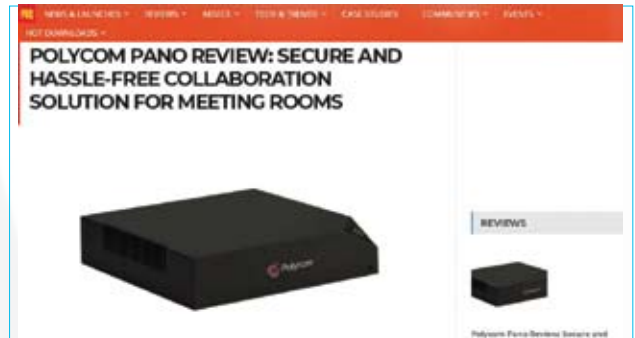


Kausar Dabhiya was elected as a new President of CMDA for the year 2019-2020 while Mangesh Bhalerao was elected as the secretary along with the new managing committee. The new managing committee includes Rahul Hajare (Vice President), Chintamani Kuber (Treasurer), Mujaffar Inamdar (Joint Secretary). The other committee members include Nitin Kulkarni, Vishal Mohan Kale, Prashant Mahadik, Pravin Hebare, and Ravikumar Shetty while the advisory committee members include Yogesh Godbole, Narendra Bheda and Narendra Modi.

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BLUEPARROTT B550-XT REVIEW

The all-new BlueParrott headphone, B550-XT, comes with a promise to stay longer and offer great comfort. BlueParrott B550-XT features an IP54-rated design making it water and dust proof. The headset is equipped with Bluetooth 5.0, 380 mAh battery and a strong Microphone with a frequency range of 150-6800 Hz.

Build and comfort

The headphone is quite lightweight and comfortable to wear for long hours. The earpads are made of high-quality rexine, feels like leather, and filled with ample of cushioning. The headband has significant padding and it holds the head softly. It has been designed smartly to fit easily on different head sizes but can feel tight at times.

The mic of the headset can be flipped over the top, enabling the user to wear the earpiece on the left or right. The mic is covered with a padded windscreen that hides a bi-directional electret.

The controls are quite simple, there is a BlueParrott button, below it a power/pairing button, and dedicated plus/minus buttons for volume. The BlueParrott button can be used for different functions using the companion app. The button can act as a call answer and end button as well as it can also summon the voice assistant on your phone.

Voice control

The headphone comes with built-in voice controls but they are quite limited. You can check battery life or redial the previous number, but we found phones assistant better in response.

The BlueParrott app

The app is free for Android and iOS phones, you can connect the headphone easily using Bluetooth connectivity. It lets you configure the BlueParrott button as well as can read messages for you. Also, it enables you to connect to a third-party app, triggering voice memos or speed dialling, or disabling it.

Performance

The headphone houses a 36mm driver delivering 150Hz-6.8kHz. The headphone is loud enough and delivers a balanced sound whether you are on call or listening to the music. However, it is built to take calls, so we used the device in various environments to check its capabilities.

While using the headphone in day-to-day life, we got it a comfortable headphone but sometimes the pressure on the skull was a bit high. The sound quality in metro and in public places was great, even the person on the other end was able to get the voice clearly.

Connectivity is also a plus to this headphone; the range of the Bluetooth is about 5 to 7 meters.



Price: ₹ 21,579

Overall: **8/10**

SCORE

PRICE: **7/10**

PERFORMANCE: **9/10**

FEATURES: **9/10**

KEY SPECS: Speaker 36mm, Speaker sensitivity 50mW, Speaker frequency range 150-6800 Hz, Microphone frequency range 150-6800 Hz, Microphone sensitivity -47dBV/Pa, Standard USB-B connector (1m), Battery 380mA, Bluetooth 5.0

PROS: Perfect mic, comfortable, voice control

CONS: A bit expensive

You can pair up to 8 devices, connect to two at the same time (multi-use).

Battery life

BlueParrott claims to offer 24 hours of battery backup and the battery performance is also equal, which is excellent. But as we mentioned earlier, it's built for calls not for music so if you are listening to music the battery life will vary depending on your usage.

Bottomline: The BlueParrott B550-XT is a perfect headphone for excellent call quality in different environments. It fits comfortably and has great battery life.

VIVO Z1 PRO REVIEW

The new-age customers look for style, power and camera but at the competitive price. Vivo understands the needs of Indian consumers that's why now it holds top third rank in the Indian mobile market. Vivo's next smartphone Z1 Pro is the right example of balance between price and features.

Vivo Z1 Pro comes in three variants – 4 GB RAM + 64 GB ROM, 6 GB RAM + 64 GB ROM and 6 GB RAM + 128 GB ROM at the price of 14990, 16990 and 17990 respectively. However, the mid-segment is filled with lots of devices with various attractive features, yet Vivo Z1 Pro stands out of the crowd.

Design

The front has a large 6.53-inch screen with 90.77% screen to body ratio. The FHD+ display has a hole in the upper left corner for the front camera. The punch hole for the camera won't distract you when using the phone, the placement is perfect neither too large nor too small for a selfie shooter. The screen is quite sharp and offers great viewing angles. It produces vivid colours with perfect balance. The screen is legible in almost all conditions, however, in direct sunlight conditions, it might trouble you with dark theme and videos.

The back is identical to most of the mid-range devices. It has a glossy rear panel with a multi-coloured gradient finish that looks to attractive. The glossy plastic back attracts smudges, but thankfully not much. Also, the phone shipped with silicon back cover that protects the devices from smudges and scratches.

The back holds a fingerprint sensor and triple camera setup including the flash. On the right side, it has the power and volume rockers and a physical Google Assistant button on the left side. The phone supports two Nano-SIMs and has a separate microSD card slot.

At the bottom, the Z1 Pro has a speaker grill, 3.5mm jack and MicroUSB, which we were not expecting this time from Vivo.

Camera

Vivo Z1 Pro has triple rear camera module consists of a main 16 MP main camera + 8 MP wide-angle camera + 2 MP depth camera. The triple camera setup makes a perfect combination to capture beautiful shots. Daylight shots are perfectly balanced with loads of details and vibrant colours. The camera is quite snappy even with HDR mode.

The rear triple camera setup lets you capture wide-angle shots, but with less details and looks over-processed. The night shots were also good with a decent amount of details and controlled noise.

The camera UI may take some time to get used to, however, it has a clean interface with lots of features and fun functions. The main features are at the bottom of the screen, just above that you can see the capture button and then above that there are more icons for various other functions including portrait, and wide-angle button.

The front in-display 32 MP camera with f/2.0 aperture is capable of capturing decent shots. Camera UI doesn't offer portrait or depth effect with the front camera but it has lighting effects and some other fun AR stickers.

Performance

Vivo Z1 Pro is equipped with most recent and powerful Qualcomm Snapdragon 712 processor along with integrated Adreno 616 graphics and an X15 LTE modem. Combined with 6 GB of RAM the phone becomes

— Ashok Pandey
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Price: Starts at ₹ 14,990

SCORE

PRICE: 9/10

PERFORMANCE: 9/10

FEATURES: 9/10

Overall: **9/10**

KEY SPECS: 6.53-inch FHD+ screen with 2340 x 1080 resolution, Qualcomm Snapdragon 712 AIE CPU, 6 GB RAM, inbuilt storage 64 GB (Expandable upto 256GB), 16MP+ 8MP + 2MP rear and 32MP front camera, 5000mAh Battery

PROS: Triple camera, battery, performance, design

CONS: UI

a beast to run almost every app and game.

We used the device for quite a long time and stuffed it with various apps and games including PUBG Mobile and daily productivity apps. Z1 pro handles all the app easily, even multi-tasking was quite smooth.

The mid-range Vivo Z1 Pro handled high-graphics intensive games, Asphalt 9, Mortal Kombat and PUBG, without any performance lag. However, we were able to feel a little heat while playing games for a longer time.

Vivo added game mode in the phone called Game cube that you can find in settings. This enhances gaming performance as well as let you block unwanted notifications, etc.

Battery life

Z1 Pro is backed by 5000 mAh battery. We were able to use the phone for more than one day in one full charge. With moderate usage, it can easily manage one and a half-day of battery life that includes internet browsing, games, videos etc. In our video loop test, we were able to watch 5 movies, 17 hours 47 minutes.

Bottomline: Vivo has done a great job, the combination of the latest Snapdragon processor with Adreno GPU makes it capable of handling high-graphics intensive apps and games. The triple rear camera is a plus for photographic enthusiasts. The massive battery lets you play with the phone more than a day. Overall, it's a perfect device to consider at this budget.

LOCAL KNOWLEDGE; GLOBAL TECHNOLOGY

With multinational conglomerates acquiring local companies, now many IT companies are flaunting local knowledge with global tie up. Palash Nandy, CEO, Numeric interacted with us to share some details.

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The technological details of the two products and how they are unique as compared to other similar products in the market

At Numeric, we strongly believe in need based innovation and that truly reflects in all our products. Our strong in-house R&D quickly translates the needs of the customer into a quick reliable solution. Being part of Legrand, a global leader in electrical and digital infrastructure, gives us a distinct advantage of being a Glocal brand – Global expertise with deep local market knowledge.

To cite examples of our need based innovation are Keor series that we had launched late 2017, and the recent launch of Daker DK Plus. With KEOR series, our Keor HP/HPE UPS was designed to give ease of access from the front, breaking the otherwise conventional way of how UPS was accessed from the back. This not only ensured compact footprint but also resulted in overall operational efficiency thus saving real estate space. Our Keor series are also extremely user friendly wrt Installation, commissioning or subsequent servicing.

Numeric's Keor HPE is designed keeping in mind the operational cost burden of the customers. The high efficiency double conversion, transformer free architecture and internal battery option reduces total cost of ownership. The technology conversion control reduces maintenance cost significantly, extending the life of all critical components and battery. The Keor HPE UPS guarantee maximum real power, 11% more than the competitor products.

Due to the several advantages that this range



PALASH NANDY
CEO, Numeric

offers, the products have had good acceptance levels since the launch, and have already allowed us to gain many prestigious customers across verticals. DAKER DK Plus, a single phase high density UPS that we

launched in June is pegged as the most eligible UPS with unparalleled features. The UPS that can be used both in Rack and Tower mode has a rotatable display screen and offers upto 98% efficiency. DAKER DK Plus has been designed keeping in mind the challenges of the new age business. It is also the only Product Environment Profile (PEP) certified product thus making it an environmental friendly product.

A brief profile of your presence and growth in India and also about your geographical spread across the country.

Established in the year 1984, Numeric is now one of the top three UPS manufacturers in India. Numeric introduced its first UPS in the year 1985, and subsequently other power conditioning products. The combination of having very good quality products with the best in class service infrastructure helped us build a sustainable business model. Numeric soon emerged as a leader and since then it has evolved as the undisputed leader in Single Phase UPS and Line Interactive UPS for 26 consecutive years.

Numeric became part of Legrand, a global leader in electrical and digital infrastructure in 2012. Being part of Group Legrand gives us the distinct advantage of bringing in the latest technology from across the world, customised to suit Indian needs. Today Numeric has a complete solution in UPS across Line Interactive, Online Single Phase, Three Phase and the latest generation Modular UPS. This enables Numeric to cater to any application from 600 VA to 21 MW and across market segments – Datacentres, IT/ITeS, BFSI, Manufacturing, Healthcare, Education, Government, Infrastructure, SOHO, Retail, Hotels etc.

While we continue to maintain our leadership position in Line Interactive and Single phase, we gained in-roads in Three phase and Modular UPS. Similarly, we have also expanded our customer base in many verticals like healthcare, manufacturing and retail. Numeric, over the years has built the largest service networks in the country, consisting of 255 direct service centres across India. Close to 1200 people are dedicated in the service operations, of which, there are close to 900 field technicians.

What enterprises are your potential clients and how do you reach your clients?

Numeric offers seamless quality power solutions for all kinds of customers – industrial to commercial to residential. We have a wide product range from 600 VA to 21 MW across three phase, single phase

and line interactive UPS. With over one million active installation base across the country, we have a wide-spread customer base from large companies to SOHO across verticals and applications.

From ensuring power continuity to country's infrastructure like airports, metro stations, security surveillances to powering ATMs of almost all leading banks to ensuring continuous support to critical life care equipments at leading hospitals to power backup needs of the modern age educational institutions, we serve customers across verticals.

Your relationship with Group Legrand - what kind of commercial tie up you have with them, the length of this relationship and how it has evolved

Legrand, a 6B€, global leader in electrical and digital infrastructure acquired Numeric in 2012. Since then Numeric is a group brand of Legrand. With this Numeric gained access to global technology solutions from across the world to bring in the best of latest technology and custom made to suit Indian market requirements. From being a strong single phase brand, Numeric over the years have gained strong foothold in three phase and modular UPS markets expanding its customer base to key verticals.

Numeric is poised to offer integrated solutions to clients in the electrical digital infrastructure space leveraging the width of the Legrand product offer. For instance, for large data centers and micro data centers, we as a group have an integrated solution approach, from digital infrastructure, power infrastructure to intelligent PDUs to cabling solutions to maximum uptime through high efficient UPS systems. Our integrated solutions approach addresses the key challenges of data centers - energy efficiency, uninterrupted data availability, scalability and security.

Elaborate upon your global advantages

Being part of Group Legrand gives us access to best in class technology world-wide that directly translates into robust solutions and high efficient products. Today, we are positioned as a Global Company – Global expertise with deep local market insights.

With an integrated solution approach, Numeric combines its expertise in power backup solutions with the Group offering of the wide range of electrical and digital infrastructure products to offer customers the best of world-class products. Being a part of Legrand, allows Numeric to do justice to global clients also.

NOT ALL TECHNOLOGY MAY SUIT YOU!

ThoughtWorks is a company which provides software design and delivery, along with relevant tools and consulting services. Martin Fowler, the Chief Scientist, ThoughtWorks, is a regular public speaker and author of many books including Refactoring, which made the practice of code refactoring popular. We caught up with him and got his views on a few issues

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MARTIN FOWLER
Chief Scientist
ThoughtWorks

How agile is better and cheaper technology

It comes down to our focus on technology. And this understanding, which a lot of people don't get, is that high quality technology is cheaper and faster. In most of the things in our life we're expecting to pay more for quality. If you want the better phone or better car you pay more. For software, it's not like that. The internal quality of software – how well it's written, how well it's modularised and how well it's tested – the higher the quality, it's actually cheaper to produce.

And it's much faster to change. That understanding is something that we at ThoughtWorks do. Similarly, if you build the software fast, it doesn't matter how good it is, unless you have good collaboration with the rest of the business. That's another area where we need to have an understanding. That's part of

the whole agile software movement.

On the whole concept of micro services

Well one of the things that we found is that some organisations have struggled because they're building a very large piece of software. When they want to make some changes to parts of it, they can't because it's just so big. The team of people producing it is similarly interconnected.

One of the things that happened was that we started talking about this about five or so years ago. The idea of micro services is where you take a big system and you break it down into small pieces. Each piece has a team of people behind it, but we're able to work on that piece and deploy that particular piece only.

However, the question is, if you've got all of your system now divided up into these separate pieces, what happens to the user interface (the front end). In some places that remains still one big thing. But then I can't put my stuff into production without coordinating with everybody else, who is working on the same front end. So what is microservice? Does it break down the front end in similar lines?

So I can put my service, I can upgrade my service, upgrade the front end to that service and put the whole thing in production without affecting everybody else, without having to coordinate with everybody.

Micro front end is really just a development of this specific method of front end in coordination with what we did in the back end. However, this isn't for everybody. It's not the approach you should use everywhere. In fact, it's not an approach that you should use in most places.

On Artificial Intelligence and Machine Learning

There's still a bit of ML going on, but it's still a very small portion. And to me, the real challenge with any kind of AI or ML system isn't so much how it comes up with answers: It's how it can explain the answers it came up with. That is a really open challenge with AI systems at the moment. What happens when you say to an AI: Well, why? What's the reason?

This is especially true when any disaster occurs. A good example of such a system is the 737 Max, taking over the human pilots and the crashing the aeroplane. No one cared about it until people died. That's always been the case with computer systems.

If you can't go back and figure out why you got the answer you did, then you've got problems. That's going to be an issue for many ML systems if they

Micro front end is really just a development of this specific method of front end in coordination with what we did in the back end. However, this isn't for everybody. It's not the approach you should use everywhere. In fact, it's not an approach that you should use in most places. But in those places where it is important

become more prevalent. But at the moment, it's still really a small part. Most of what we do is not AI. People talk about it a lot, but it's actually not that important.

On open source today

We've certainly seen a lot of improvement in the open source movement. We are certainly seeing a lot more acceptance and we see it in our work too. Back in the early 2000s we really had to fight to use open source technology in our software development projects. Now it's pretty much understood and straightforward. That's true across the industry. People are used to using open source work.

On ThoughtWorks

We are primarily a software delivery organisation and we work with other companies to do software development. We tend to work primarily on data intensive systems within the companies. It's a lot of data flowing around databases, that kind of thing. We often get involved primarily with custom software, particularly around things where companies like competitive advantage. We work for organisations that have a need for important software that's really important for their business but they don't have the enough in house capability to do it themselves. And we provide that.

DATA FOR SUSTAINABILITY

Today, it is imperative to leverage IT to attain the long-term goal of Sustainable Development. That is how, AI and the IoT may be valuable tools. In this regard, Haber Technology “helps industries become sustainable by converting data to actionable intelligence”. Vipin Raghavan, Co-Founder & CEO, Haber Technology, talks about how such technology is implemented and can greatly benefit public utilities.

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Can you elaborate on how you developed your technology?

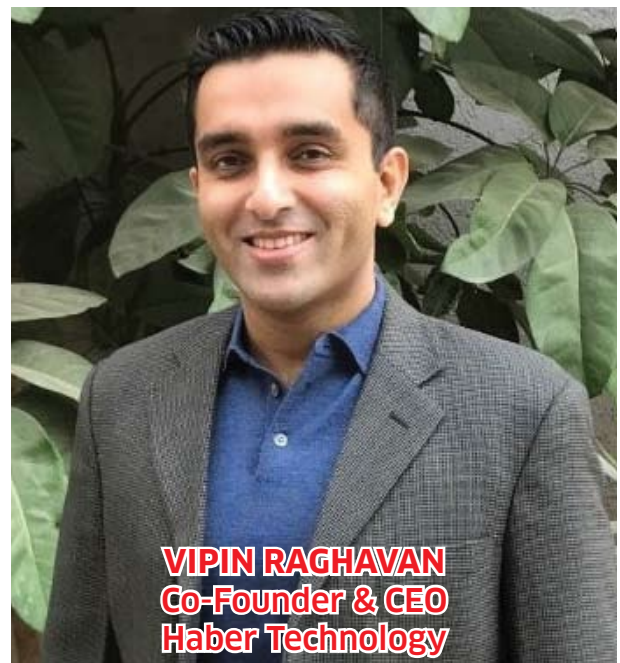
Over the past few years there has been an explosion in unstructured data across industry driven by affordable sensing technologies and adoption of analytical instrumentation. This sudden increase in data has resulted in industries spending significant amounts of time collecting, organising and analysing content and very little time driving value with the data. The application of machine learning to this data can uncover hidden insights leading to unprecedented value creation. This is the gap that Haber’s industrial IoT platform, eLIXA, addresses.

Please tell us in detail how the technology is used and implemented

eLIXA has a data acquisition layer which measures critical process parameters using its inbuilt sensors in real-time. Additionally, the product integrates with the plant’s DCS or SCADA from where it acquires additional process parameters. This data is processed using the inbuilt edge computing hardware and relayed in real-time to the cloud. In the cloud, the company, analyses longer term data as well as data across multiple installations in the same plant using its proprietary machine learning algorithm. The result of this analysis is a new intervention model which is pushed to the edge. The edge operates using the latest intervention model at any given point in time. This ensures the plant is being optimised on a real-time basis and takes in to account all subtle changes and/or major shocks.

Can you highlight how it has made a difference in utilities?

Power plants and water utilities can gain much



from using data driven solutions for streamlining operations. Real-time monitoring and control of critical parameters can help utilities and power companies operate efficiently, protect assets and provide better services. Power plant and water utility operations are critical, and any downtime can be very expensive. HABER’s solutions ensure plant asset preservation, help maximise production and optimise water use. With very little margin for error and steep cost of down-times, Haber is a partner that knows how to improve reliability and reduce variability. This is accomplished by tracking critical parameters in real time and understanding trends and spotting issues and opportunities. Haber’s platform eLIXA leverages data in real time and translates this into

actionable intelligence. Efficient heat transfer and asset preservation are critical to power generation. Haber can help power plants increase their cycles of concentration in their cooling towers thus significantly decreasing their water footprint. Also, Haber ensures efficient boiler operations with fewer maintenance related shutdowns. Water utilities can rely on Haber to efficiently and effectively process fresh and waste water. With HABER's eLIXA platform, utility managers get access to the whole picture in real time.

Discuss some case studies

1 - India's Largest Specialty Paper manufacturer reduces contaminant related downtime using eLIXA Technology for Dissolved Air Flotation

Large volumes of water are used in a typical deinking plant. The effluent water streams come with various treatment challenges and significant variability in quality. Reuse of this water back in the process is critical to the sustainability of operations. Usage of recycled paper and deinked pulp is a popular trend across the paper making industry.

The economics and sustainable nature of recycling is very compelling for many paper makers. With the use of deinked pulp also comes the challenge of treating and reusing the water used in the deinking plant. HABER's turbidity control programme built on top of the eLIXATM platform is helping a large specialty paper maker effectively recycle its effluent from the deinking plant back in the process.

Prior to implementing the solution, with variations in furnish quality, the plant experienced wild swings in performance in the deinking plant DAF (dissolved air flotation) concentrate. The concentrate could not be recycled back in the system and when it was tried, resulted in sticky issues due to conglomeration of fines and subsequently poor paper machine function. The highly turbid effluent with high anionic trash content was very difficult to treat consistently. Significant cost of fresh water and discharge limitations were some of the other constraints.

This meant a solution that reacted to stress in real time and delivered results with the least possible variability irrespective of variability of input. The customer wanted to continue to use a variety of furnish based on economics and market conditions. HABER's turbidity control programme was best suited to the situation.

Chemical preparation and selection was automated reducing manual input and minimising operational costs. Real-time monitoring and control

eLIXA is an easy to deploy intelligent edge guided with cloud computing which delivers dynamic goal based automatic intervention resulting in noticeable improvements in raw materials yield, consistent product quality, higher equipment availability and lower downtime. It empowers plant managers and CXOs with historic and real time trends and insights enabling operational intervention to achieve productivity goals and optimise costs

built on the AI platform meant the system knew when stresses were going to occur and how to react ahead of time. Also the intuitive dashboards offered streams of intelligence to the plant leadership team. In the future data and control of the ETP can be integrated to the existing control system allowing for an integrated single point control solution.

Results

The solution has resulted in worry free operations of the deinking plant and total reuse of treated water with no adverse impact on downstream operations. The sticky problem and paper machine function issue has been completely resolved, reducing contaminant related downtime by 10 hours every month. Turbidity of DAF concentrate is now controlled tightly within the desired parameters. Variation in furnish no longer results in variation in concentrate turbidity. As a result, the mill is able to use a larger variety of recycled furnish bringing overall raw material costs down.

Automated monitoring and control has also resulted in lower chemical consumption and related costs. Understanding the complex process needs and complex water loops in the paper industry through a mechanical, operational and chemical approach is critical in the solution development. HABER's standardised turbidity control solution is best suited for the paper making industry and industries with high variability in effluent quality. HABER's solution

requires little to no customisation resulting in quicker implementation and value delivery.

2 - Paper Mill increases sludge production by 20% and reduces fresh water use

Backdrop

One of the largest newsprint and paperboard manufacturers in India uses recycled furnish as raw material. The mill was running a dual component primary sludge dewatering programme in the wastewater treatment plant. After commissioning a new paper machine, the mill was looking for higher consistency in sludge dryness and increasing the throughput of the sludge press.

The existing solution was unable to support the processing of sludge up to the equipment design. Moreover, bio-sludge could not be processed to the desired dryness levels. HABER has implemented a cost effective programme and enabled the processing of bio-sludge along with primary sludge. This helped the customer to comply with local solid waste management regulations.

Programme

The wastewater treatment plant collects effluent from the paper machine, the board machine and from the deinking plant. The deinking plant sludge consists of fibre fines with high residual ink and very high inorganic content.

The sludge dryness is critical as it is fired in the boiler along with coal. After careful lab evaluation, HABER selected its two component programmes i.e. cationic coagulant and cationic flocculant which has given better results compared to the competitor programme. Further, we had seen encouraging results with primary sludge plus bio-sludge combination.

eLIXA is a secure cloud-based platform that integrates data collected through sensors across the plant and controls mechanical, operational and chemical parameters. Data can be accessed and controlled through existing plant SCADA or through web-based dashboards

Sustainable operations are critical to all industries today. In this extremely competitive environment, efficient operations are also very critical. The customer was interested in a solution which was both cost effective and reduced their environmental footprint significantly with no disruption to its continuous operations

Results

HABER program was started in the sludge press with different dosing points and we have followed industry best practices with respect to the application.

Automated Preparation and Dosing System: Deployment of HABER eLIXA automated preparation and dosing system has enabled high polymer efficiency and consistent results at lower dosages. Additionally manpower required for manual preparation and dosing could be redeployed.

Mixing Technology: Using HABER's proprietary mixing technology, 500 cubic meters of fresh water which was previously used daily for inline dilution of the polymer solution was replaced with the sludge press filtrate. Additionally this filtrate did not have to be sent back to the ETP.

With HABER dual component programme coupled with automated make-down and dosing and mixing technology, consistent dryness target values were achieved compared to the competitor programme with a significant reduction in programme cost. Further, we are able to process bio-sludge along with primary sludge as and when needed. With the mixing technology, fresh water used in inline dilution was also eliminated.

Conclusion

The mill has achieved its goal of processing higher volumes of sludge and bio-sludge with lower variability in sludge dryness at lower dosages of coagulant and flocculant thereby significantly reducing the cost of the program. Additionally, fresh water savings has contributed to the mill's sustainability goals.

FOOTFALLS IN INDIAN MARKET

This company is increasing its presence in Indian market through online and physical stores and also through marketing partners. It aims to launch branded products to suit Indian consumer's affordability. An interaction with Manvendra K Chandola, CEO, Riversong Technology, reveals the company's work and future plans

PCQ Bureau

Riversong's journey in India

Riversong, a subsidiary of IMG Technologies, founded in 2015 and headquartered in Shenzhen, China, started the Indian operations in December 2017. We commenced our operations only through online platforms initially, but now we have expanded our footprints to shop-in-shops and multi brand outlets. So, far our experience in India has been overwhelming and the new products in the pipeline are also being scheduled for launch in the Indian market keeping the interest of the Indian audience in view. We aim at delivering the best quality products to our consumers at the most competitive prices.

Currently we are positioned as a brand for the niche segment of the tier I and tier II cities and aim to become the leading global brand for smart devices. The Indian market is now warming up towards our products and we are hoping that we continue to meet our customers' requirements.

Industry overview- current scenario and growth prospects of the industry

India has one of the fastest growing tech industries which has evolved tremendously in the last few years and is estimated to grow up to USD 1.9 billion by 2020. Being a developing nation, India has immense potential of growth especially for new brands and innovative products. A drastic shift has been observed in the consumer behaviour in the Indian technology market. Brands experienced a gap for smart wearables in the market and are now launching innovative gadgets to fill the gap.

Expansion and growth plans of the brand

Currently, our focus is to position Riversong as a premium and user-friendly brand. Since everyone is going digital nowadays, we are going to leverage online market as a key platform to showcase our brand. But it is imperative to have physical presence in the market as well, for the walk-in customers where Riversong



is present through Multi-brand stores. Currently we have 24 SD, 108 Micro distributors covering over 12500 outlets. Our Plan is to reach 25k outlet by the end of Oct'19 and will have PAN India presence.

New innovative products

The product portfolio of Riversong India ranges from audio products like sports wireless earphones, headphones, speakers, fitness wearables like smart fitness tracker, smart watch etc., smart home appliances like smart bulbs, smart plugs to charging cables, portable chargers etc.

Global consumer tech market vs Indian market

The global consumer tech market was valued at around USD 1,172 billion in 2017. It is expected that it will reach approximately USD 1,787 billion in 2024, growing at a CAGR of slightly above 6.0% between 2018 and 2024. Currently, India is accountable for approximately 55% market share of the USD 185-190 billion global services sourcing business in 2017-18. The global market is still running ahead of the Indian market. We have the same product range in all our markets but yes, the feedback varies from country to country.

ATL and BTL initiatives planned for the coming year

As of now, our main focus is to increase our distribution channel once that is in place, we will surely come up with ATL/BTL plan. But currently we are only leveraging digital/ PR and retail visibility as a medium of communication.

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BEHAVIORAL ANALYTICS UNCOVERS THREATS

A fast-changing threat landscape has changed the cybersecurity priorities of the CISOs across all organisations. Organisations today are facing security threats not only from outsiders, but dealing with a considerable amount of insider threats as well. Preventive measures are no longer enough for organisations to fight these attacks. They need advanced solutions with dynamic protect and response mechanisms. An adaptive Security approach can help organisations assess the risks on a continuous basis and automatically implements security measures to counter the threats. In order to extend this kind of automated and risk-adaptive protection to the organisations, Forcepoint has launched a dedicated research division called X-Labs which aims to augment traditional cybersecurity solutions with behavioral analytics. Alvin Rodriguez, Senior Director, Security Strategist, APAC, Forcepoint, talks more in detail

Soma Tah
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Is there any emerging threat vector that is extremely difficult for the organisations to deal with?

In order to understand the changing threat landscape, we must look at the evolution of data. Initially, the goal of an attack was to disrupt and challenge the service that a company would give to their customers. But now, with digital transformation underway and data being the new oil, we find that the sort of threats that are coming in right now is very much focused on data exploits, data destruction, and data modification.

Although there has been a shift of focus from the assets standpoint, the tools to exploit vulnerabilities remain the same. Social engineering remains a commonly used form of attack, carried out through email, websites, downloads, spear phishing, and identity compromise. However, there is a new trend emerging that is more pervasive. The threat strategy focuses on exfiltrating data. Malicious individuals find employees who for various reasons,

become accomplices. The insider threat can be caused unintentionally also, as the employees may be completely unaware that they have been compromised and have carried out activities to infiltrate into their organisation.

How should organisations prepare themselves to protect themselves against these new threats?

We need to move away from the reactive mindset of cybersecurity. What we advocate for our customers is to adopt a behavior-centric analysis of their employees, to identify abnormalities in the way they carry out their day-to-day tasks. Once we identify these abnormalities, we can apply them to machine learning tools to automatically deploy the right policy to address the solution.

There is a lot of concerns about behavioral tracking. How do you help organisations deal with that problem?

The benefit of behavioral analytics is that it is

able to identify abnormal behaviors across the entire business landscape, be it on-premise, or on the cloud. To understand the individual's behavior, we ingest vast amounts of information. The concerns raised here are – how much of resources do I need to collect this data, and am I invading the individual's privacy while doing so?

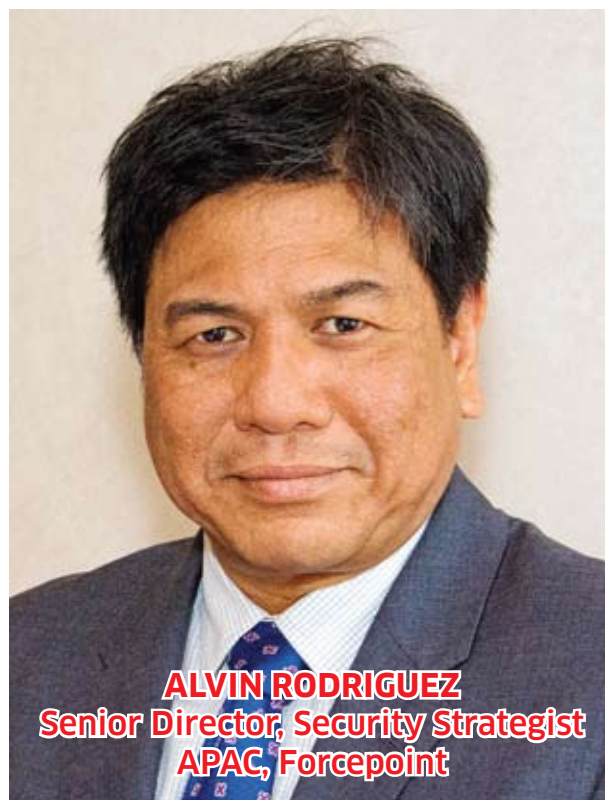
What we offer is several out-of-the-box kinds of solutions that identify the precursor of a potentially risky action that will take place. But at the same time, we give the company the latitude and flexibility to adhere to their corporate compliance and company culture.

To ensure privacy, we set governing rules that mandate all information is anonymised at the outset so that even if an employee uses the corporate assets for some personal activities, such as internet banking or transfer of data that is not related to the organisation, the company does not track and monitor that, and respects the individual's privacy. We have also encountered situations where our technology has protected the welfare of employees. For example, we had a situation in the US where an employee's behavior raised certain red flags, and when the security rushed to the office, they found the employee on the verge of suicide. They were just in time to save that life.

You have recently launched the X-Labs division. How does it help in dealing with these new threat vectors?

Cybersecurity can be a constant game of catch-up, where as soon as you have a solution, a new threat will arise. X-Labs are specialised research arm focused on behavioral intelligence, where we understand the behavior of users and entities. We have researchers, engineers, data scientists, psychologists and security geeks who look at the elements of human behavior so that we can identify the different characteristics of the individuals' cyber behavior patterns.

All human beings are creatures of habit and anything that will deviate from that becomes abnormal. So, if we profile the activities of a person, we will be able to monitor the out of ordinary situations and identify the intention behind certain actions. For example, if an individual is planning an unlawful activity, their actions would lead up to the activities that are suspicious. These are the things that we can easily pick up through machine learning and then put them into a behavior pattern that raises a red flag. That is what X-Labs actually do. This helps to reinforce the organisations' ability to track



ALVIN RODRIGUEZ
Senior Director, Security Strategist
APAC, Forcepoint

and mitigate the risks in real-time, minimise false positives, and drive the security posture that they need in today's dynamic open environment.

What kind of organisations is using this kind of solutions currently?

The biggest segment of customers is from IT/ITes, who are far ahead in terms of using this technology, followed by banking and financial services and healthcare. An increasing number of internet frauds are being reported out of India. Public sector, as well as private sector banks, are having discussions on how they can enhance their security posture by using user and entity behavior analytics (UEBA).

Government is also becoming a big part of our business for the accelerated speed of digitisation in governance and citizen services. Whether you take Digital India, Aadhar, UPI, or Bharatnet- all these are efforts from the government to digitise their services, which require them to secure their infrastructure and most importantly the data. The present government is a big proponent of cloud initiative within the country which means the data is also moving to cloud and hence, it requires security at multiple levels. We find both enterprises and government agencies are using our smart cybersecurity solutions in various smart city projects.

INCREASING THE SPEED OF COMPUTING

Western Digital has come up with high performance HDD and SSDs, which reduce the working time and are quite efficient for gaming. Jagannath Chelliah, Director, India Marketing, Western Digital, gives us insights into these products

Dr. Archana Verma
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What portfolio of products is working well for you in the Indian market?

Western Digital has transformed itself into data technology solutions company and has a very strong and broad product portfolio for consumer, commercial and enterprise customers. On the consumer side we have 2 strong brands- Sandisk and WD. With SanDisk, we are delivering products to solve data storage needs of our consumers who are using mobile phones and computers. With WD External storage portfolio, we offer ideal data backup solutions for based on both HDD and SSDs. Hence, we have a very good portfolio to ensure the consumers have the best experience of our brands.

On the commercial side, surveillance is an important market which is growing significantly as far as the India market is concerned. WD Purple, our surveillance HDD, gives consumers the best experience when it comes to CCTV based surveillance solutions.

Our WD SSD portfolio enhances the overall experience of PC users depending on their needs. WD BLACK SN750 NVMe SSD delivered Top-level NVMe Performance for Gaming. The WD Blue SN500 NVMe SSD allows resellers, system builders and consumers to take advantage of a reliable NVMe storage solution when creating their next PCs

Can you tell us the USPs of these devices? And how are they unique in terms of competition?

Healthy competition is good for both the industry as well as consumers. The way we see is to provide the best possible solution for the customers based on their needs. To give you an example, today a very popular solution we have is a pen drive for a mobile phone, which is doing well because consumers want



to transfer and back up large chunks of their data from phones. Since India is primarily a mobile first device when it comes to digital consumption, the SanDisk Dual USB Drive allows the consumers to freely transfer and back up large amount data from their smartphones.

The other example is the complete SSD Portfolio. If you see in the PC client space, the consumer needs is evolving. Consumers are using their computers for performance hungry applications. Be it a gamer, graphic designer or content creator, these are emerging use cases that require very strong performance.

The single biggest gap in the traditional storage

solutions is the performance of the hard drive vs the performance of other component present in the computers. On one side you have GBs for performance, and on the storage side the data transfer is only MBs. Western Digital today has a complete portfolio of solid-state drives (SSD) which allows the consumers and resellers to create high performance and reliable PCs depending on the different use cases.

The newly introduced product WD Black SN750 NVMe SSD is a high performance SSD based on NVMe technology. So, this is going to give a significant performance boost to gamers, graphic designers etc. What's unique in this is that, we have introduced a heatsink with the SSD which normally you would find in a CPU. We have added that to an SSD to get the maximum performance out of the SSD solution

In this context, we are trying to deliver what a customer wants and to meet his needs.

What is the role of R&D Centre in the evolution of your SSD portfolio?

India R&D centre is very strategic from a global perspective. We started off this unit in 2005. And we have grown from strength to strength. In the last 3 years the number of engineers working has increased from 1000 to more than 3000 now. They play a role in almost all our product portfolio across client solutions, Commercial and Enterprise.

You talked about the consumers demand and how you meet those demands and how you change your strategy according to consumers demand. Can you elaborate about how the consumer trends have been influencing strategies of Western digital and how it has influenced the market?

There is a pattern in every segment that we operate in terms of how consumers are evolving. If we look at the B2C space, storage used to be passive devices. Overtime, consumers have become tech savvy and new app based use cases and wireless have emerged. We have been able to add those features into our products to make the solutions more intelligent. To give an example, we have a product called WD My CloudHome. It offers capacity to save everything in one place, and the ability to upload, access and share from anywhere you have an internet connection.

Is it a hybrid cloud or personal?

WD My Cloud Home is your own personal cloud storage at your home.. People are more comfortable to use apps to control their storage and

At the high end of the spectrum, we have a good data storage solutions portfolio even for our enterprise customers. Our Active Scale cloud object storage systems designed to handle petabytes of unstructured data is the right solution for archival of data in smart cities and media & entertainment sectors. We see a market for all these products in India

to manage their memory needs. We have introduced an application called SanDisk Memory Zone which allows people to manage their data on the smartphones, to their micro SD card, to their dual USB drives and to their cloud storage.

If you look at the enterprise side, we have our platform's portfolio which are tuned to address the needs of the software defined storage solutions that the market is actually deploying today.

5 years ago, wireless was a premium use case, but now it has become mainstream. So, we have adapted our portfolio and we have a wireless based external storage solution called WD My Passport Wireless which anybody can carry with them and transfer the data while they are on a go from their PC or any other device. We develop our solutions based on how consumer behaviour and trends are changing.

Has the demand for SSD influenced the demand for computers and laptops in any way? And what are the unique features which influenced demands due to SSD?

SSD's have influenced Desktop & laptops use cases in multiple ways. It has improved the overall performance of laptops with faster read/write capability and IOPs. For Gamers and performance hungry users, WD Black SSD 750 provides a read speed of 3470 MB/S and best in class performance. According to IDC Report the gaming laptops have grown by 123% Y-O-Y. There SSD's play an important role by improving the overall experience of game.

For mainstream users who do not use heavy duty applications. If they use a laptop with WD Blue SSD, their boot time becomes very fast, and they don't have to wait for the applications to load. SSDs by nature have non-movable parts, which means that the power they consume is lower. So, SSD help in increasing the battery life in your laptops.

MEGATRENDS FOR FUTURE WORKSPACE

In a candid interaction with us, Indrajit Belgundi, Senior Director, Client Solutions Group, Dell India shared the deep insights on coming trends of Modern workplace and how Dell India is coming up with different solutions of the future workplace.

Ankit Parashar
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What are the megatrends and constituents of future workspace?

Nowadays, work is not about nine to five or just going to the office. It has become more of an activity. We are seeing this trend within India and globally as well. It's more about the fact that data is mobile and people want to work only on those devices which they like to use. While there are lots of challenges coming up from an IT perspective, at Dell, we have identified 5 personas and that's how we are building solutions based on user needs. It's not about hardware but about giving a solution to the particular user as per their personas.

For professionals who travel a lot, it's not just about having a notebook, some of these users would prefer a convertible notebook or a device which has

better battery life. We have been working on better battery life and an end to end solution for a particular user. For a remote worker, we have an offering called factory image. Through this, whenever a new device, whether it's a desktop or an All-in-One, or a notebook reaches that particular user, the moment the user powers on the notebook, all the company images are already pre-installed at the factory itself.

We also actually offer lots of security solutions which are a part of our complete CSG offering. It can be theft protection, malware, and data protection encryption as well. Based on their environment, we offer rugged notebooks as well as rugged tablets. Ultimately, it's about different certifications, which we offer.

We have one of the best end-to-end product

portfolios, starting from thin clients, desktops, All-in-ones, notebooks, a rugged portfolio, and workstations. In India, we provide onsite support to 50,000+ pin codes, and we pioneered on-site warranty for notebooks, many years ago.

What is Dell India's current market share in India?

We are number 1 in large enterprise and very large enterprise. In Q1, we had a 39.8% market share in the medium businesses and leveraged our strength through the channel. And last few years we are actively working along with the partners doing a various set of

How is Dell's security solution different from your peers?

We offer Dell data protection and encryption as software. For instance, if a notebook gets lost and the data is still encrypted, it will be difficult for someone to use that data. If someone removes that hard disc drives and puts on other notebooks, he/she will still not be able to work on it.

What are the recent developments in Dell?

We have recently launched the world's smallest 14 inch commercial 2-in-1, the Latitude 7400 2-in-1 notebook. We have packed a 14-inch display in a 13-inch chassis and the device has received lots of great reviews at the CES 2019. It has a lot of features such as 24 hours plus battery life, the ExpressCharge, which charges 80% of the battery in an hour.

The second feature is ExpressSign-in, an industry-first feature that we are offering. The Latitude 7400 2-in-1 has a proximity sensor, and when the user walks towards his or her desk, the proximity sensor senses that and enables Windows Hello, which helps sign-in to the laptop. When the user steps away from the desk, the proximity sensor senses it and automatically locks the notebook. We sometimes inevitably tend to forget to lock our notebooks and this ExpressSignin feature will be very helpful and impactful. In this laptop, we have leveraged the XPS design.

We will also be coming up with the new Precision workstations and the workstations will be focused on verticals such as manufacturing, oil and gas banking and finance and education vertical with our newly launched mobile and fixed workstations.

How the government is adopting technology and how Dell is focusing on the government need?

We have seen an increase in the adoption of

According to the latest IDC report of Q1 CY2019, in the commercial segment, we had a market share of 27.8% and a 4% year on year gain. In Q1 CY18, our market share was 23.8%. We are number one in displays and our market share in displays is close to 30%

technology by the government. We have seen an increase in the adoption of all-in-one format in the government. It is still more about the different desktop offerings, and a lot of trends are shifting towards all-in-ones, whether it's a 21.5-inch all-in-one or a 24-inch all-in-one.

How is the Automobile sector looking towards this modern work or the future workforce?

We are seeing an increase in the adoption of AR and VR in the automobile sector. We also have seen strong growth for workstations because of our vertical-specific approach.

What is your future roadmap for the next 12 months?

Dell India will continue to come up with innovative products and solutions. When the Dell and EMC merger happened two years back, there were lots of murmurs on whether Dell will continue to focus on client solutions or not, but Dell Client Solutions Group still contributes to around 50% of Dell Technology's revenue and we continue to be one of the largest business units from a Dell perspective.

We are innovating with new products. We have had 25 consecutive quarters of YoY share gain, that wouldn't have been possible if we were not focusing on products & services and solutions. The overall PC market is alive and kicking.

Again, the trends have shifted a lot with VR and AR but we are confident that we will continue with our winning trajectory in the coming years. We will continue to invest in innovation, whether it's a new form factor on desktop, or notebooks or 2-in-1 and the highly acclaimed workstations.

WE'RE PREDICTING FAILURE BEFORE IT HAPPENS

Micro Focus is a management software and consultancy firm and into enterprise application and integration. Here, Stephen McNulty, Asia Pacific Japan President and Saurabh Saxena, India country Director talk about the latest developments

Thomas George
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SAURABH SAXENA
India country Director
Micro Focus

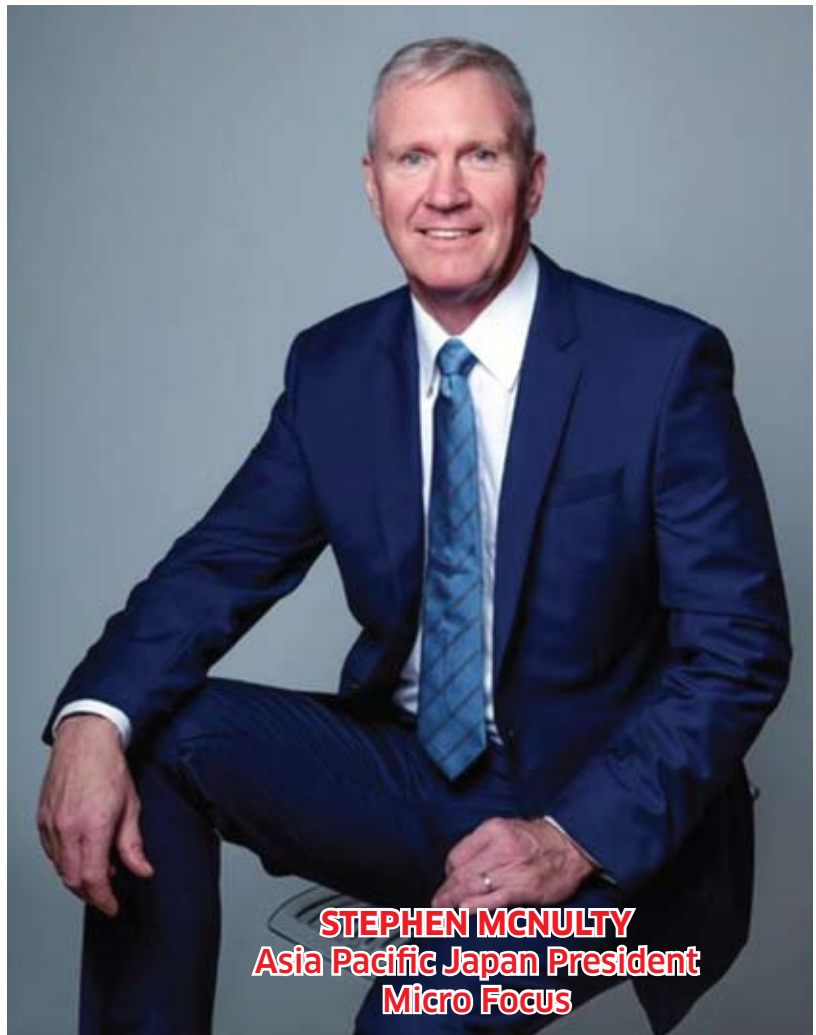
Could you please talk about your Data Centre Automation tool. How is it better than your competitors?

Saurabh Saxena: There's one unique thing that we do in Data Centre Automation: It is built to cover end-to-end. For example, we recognize the fact that any organization will have servers, storage, networks, endpoints and typically an application as well. Our DCA solution covers the entire spectrum, where we cover the entire port and that's unique. Not many organizations can do it across portfolios. Additionally, we actually have people that can call on customers who can help you to do R&D on products. The key again is that, network, a key, doing change in configuration management or compliance as well, we cover everything – both in terms of spectrum cutting across the infrastructure ecosystem and also in terms of going down. It's just change in configuration or you are able to automate compliance as well. We do the entire ecosystem, and hence, if you look at the functionality, it's the matrix which is pretty comprehensive and that's something that has a unique advantage.

What are some of the innovations you are fuelling in Micro Focus?

Stephen McNulty: We have done a lot. We are using AI in our security. We have many solutions and we have a standalone Big Data product called Vertica. So, for now, we are using Big Data and have embedded it into core application functionality areas. In the Hybrid IT Operations, we are now doing Predictive Analytics, AIOps. We are predicting failure before it happens. We are using tools like RPA to automatically remediate without human intervention.

That's helpful obviously in IT Operations - as it is mission critical - and security. You need automation and containerization to move workloads that can run wherever you want. With mainframes, people can convert DevOps on mainframe codes, set on data usage - right from credit cards to DevOps in hours on public cloud and put it back into mainframe



STEPHEN MCNULTY
Asia Pacific Japan President
Micro Focus

Agile with Octane – we have Octane solutions, Application Lifecycle Management solutions, Mobile Testing – that's the innovations we have. Infact, we have got more than 500 releases done last one year, which is phenomenal. Hence, it's a vibrant ecosystem

We don't have solutions to code, source code management solutions but what we do is, we help build a better software faster and hence, we power the entire DevOps lifecycle – moving from waterfall to agile – automating

right now and I think one of the changes that you have seen is the agility.

We just don't say customer-centric innovation, we actually do it. Customers who are users give their feedback in terms of their experiences and what they expect from us going forward; trying to understand our roadmap and see if it marries well with what their roadmaps are, and if they want some changes. We take fair feedback through crowdsourcing as well. We have a portal where people and customers can go and say what they expect tool to deliver. We also do a poll for top feature requirement that the customers are asking for. It's a pretty agile, vibrant ecosystem which is a refreshing change from those 3-4 years back which was fixated. That's important and we are doing innovations across portfolios in all our four focus areas – Enterprise DevOps, Hybrid IT Management, Risk Security & Governance and Predictive Analytics.

Stephen McNulty: For Predictive Analytics, in Vertica, we charge by data price. The more terabytes, petabytes, the more expensive it could be. We have innovated to segregate them with their compute storage. So, if you want to store your data at a cheap cost, then you just pay for compute. It's a way of enticing more people to use.

We know that Micro Focus has taken care of the infrastructure layer pretty well. What about the application layer? What is the AI & ML play there?

Saurabh Saxena: There is in fact a huge play there. For any organization, Infrastructure, Applications and Information are the fundamental building blocks. In terms of managing the complex Hybrid IT ecosystem – applications, in fact is also a very large piece of our business and we started initially with testing. We obviously don't have solutions to code, source code management solutions but what we do is, we help build a better software faster and hence, we power the entire DevOps lifecycle – moving from waterfall to agile – automating.

Bringing AI & ML there in terms of Octane solutions, for example, looking for virtualisation and in fact again, you would be surprised we are one of

the early adopters and scale adopters is Government. The reason why we have figured out is because the scale of the government facing application, citizen facing applications is huge. This means they cannot risk the application of scaling up or applications not living the functionality or application is not delivering the features, once being delivered through various channels.

Airtel 4G vs Vodafone 3G, or BSNL 2E, the application still needs to be viewed and consumed and experienced across ports. So, we have a very comprehensive Enterprise DevOps portfolio. That's the pretty large piece for business. We now work with lots of service providers in the country. Further, we're seeing a trend where most of the organisations

are kind on insourcing COEs, because they are now focusing on DevOps.

As a consequence, we have a huge play there as well. So, applications are big play for us and to add to that, we have Security. We have added the security piece in DevOps lifecycle and made it DevSecOps. We also have the fortify solution to perform

application security. That's one of our growth areas in the country. Most of the organisations have woken up with the fact that they need to secure right from the build and that's where we kind of use fortify to secure the applications.

Stephen McNulty – In the testing, we are using ML. We have got case studies from top companies that have drastically added the number of testers or the speed of testing, just by using ML. We are also using RPA coding process co-ordination using AI to help understand what's happening around organizations and what can be automated.

We are using that today in some banks around the region to automate processes. We help 400 FTEs for a year in terms of removing the no. of people needed to automate. We are investing in R&D and some topical areas. We have spent a year and a half to reach where we are, and we have got big plans for the future. We have got our customers who tell us what they actually want - either featured to R&D or potential acquisitions that we might make as well.

You need automation and containerization to move workloads that can run wherever you want. With mainframes, people can convert DevOps on mainframe codes, set on data usage - right from credit cards to DevOps in hours on public cloud and put it back into mainframe

DESIGN THINKING FOR INNOVATION

Design thinking is more than aesthetics; it's essential for humanising technology solutions. Accelerated digital transformation will be made possible by offering data services that can simplify management of enterprise applications and enable data mobility with consistent capabilities across a choice of endpoints

Cheryl George



Hard disks used to be small, expensive and slow. Storage meant hard disk drives (HDD), which then manifested into faster solid-state drives (SSDs). The conversation now is about terabytes of storage for enterprise applications, virtualized on-premise or in the cloud, with emphasis on flexibility and the ability to work with this data from any end point.

IT Role Transformation

With such rapid advancements in technology and at scales never seen before, every organisation is undergoing the 'IT Role Transformation' with change in how they manage and consume resources:



"Simplicity is the mantra: the easier something is to understand and use, the more likely it is to be adopted. Visual perception wields the largest power in influencing the human brain - up to 80% of our brain is influenced by sight! Incorporating this power of visual influence, design is a powerful tool to render desirable and interactive solutions for complex problems."

**– Cheryl George,
Technical Marketing Engineer with NetApp**

have breadth of expertise as opposed to depth. This requires products to appeal to IT generalists instead of IT specialists - with product or service offerings

being effectively, efficiently, and accurately used and consumed, without deep domain expertise.

Accelerated digital transformation will be made possible by offering data services that can simplify management of enterprise applications and enable data mobility with consistent capabilities across a choice of endpoints, spanning on-premises and multiple cloud environments. If you're seeing through this plot - really solving customer pain point of vendor lock-in of their business-critical data - you may ask how all this came together. Design Thinking is for the win.

Design for Work

But design is not only about aesthetics, it is about applying the principles of design to the way people work. And design thinking - a mindful process with a progressive mindset to problem solving - utilises empathy, creativity, and analytical skills. This creates a way for a user-oriented process of innovation that serves through creation of innovative prototypes. Design thinking is an essential tool for simplifying and humanising technology solutions. It utilizes empathy to innovate and is based on instincts as opposed to relying only on historical data or evidence. The key here is simplicity in visualization that cements the relationship between function and design.

Now let's try and understand design thinking with an example. We all remember those days when hiring a cab meant calling a familiar cab driver from the locality several hours before the ride, to move from point A to point B. Digital cab platforms such as Uber and Ola have disrupted the market with their cab aggregator service focused on user-centered design thinking.

Design thinking is key to such innovations - it maximizes both usability (functionality, effective presentation of information and efficiency) and aesthetics (presentation, animations, and graphics) and communicates what the Data Fabric vision is all about.

The author is a
Technical Marketing Engineer with NetApp

Measure based on industry-standard dimensions of usability such as:

- **Effectiveness:** Can users accomplish their objective?
- **Efficiency:** How long do tasks take users to complete?
- **Satisfaction:** How happy are users with their experience?

Design Thinking can be broken down into five stages:

Stage 1: Empathise

Listen to your customers. It is critical to understand the problem they are trying to solve, how are they doing it and what are their pain points. That's exactly how Uber founders knew that they were onto something. They met with the consumers to understand their needs while trying to rent a cab and how they went about it.

Stage 2: Define

From customer interviews, take inventory of their needs to be fulfilled, highlight the verbs or activities they use while talking about the problem. In the context of data storage, it was also about data protection, security, transformation and even mobility. This helps formulate the problem statement called the point of view (POV). A data-centric organization to create value. For Uber, make commute simple!

Stage 3: Ideate

Now focus on the POV and ideate to solve that problem. The point is to come up with many ideas. It's important in this stage to vote and identify the top three ideas for the innovation pipeline.

Stage 4: Prototype

Take a moment to reflect on different ideas and how they fit in the context of the user's actual life. Sketch your idea, share them with the users to get their direct feedback and then go about building the prototype. Prototype early and as often with the aim to identify the best possible solution for the problem by gathering useful feedback from users; this is critical to keep innovation alive. The constraints that are apparent of the prototype will also begin to appear. Uber started with the ability to book a cab through a message and has transformed into the brilliant app that it is today.

Stage 5: Test

It's important to test your prototype with the actual users. Ask for feedback and listen to what they say or how they experience it or how they feel. Learn about what works and what doesn't. In the case of Uber, the UX designers rode with real drivers to test their prototypes in real-world scenarios.

You can always choose to return to previous stages in the process to make further iterations by applying learnings, alterations and refinements to ensure what customers asked were addressed.

THE SPEEDIEST QUANTUM OPERATION YET

A group of physicists at UNSW Sydney have built a super-fast version of the central building block of a quantum computer. The research is the milestone result of a vision first outlined by scientists 20 years ago.

PCQ Bureau

A group of scientists led by 2018 Australian of the Year Professor Michelle Simmons have achieved the first two-qubit gate between atom qubits in silicon – a major milestone on the team’s quest to build an atom-scale quantum computer. The pivotal piece of research was published today in world-renowned journal Nature.

A two-qubit gate is the central building block of any quantum computer – and the UNSW team’s version of it is the fastest that’s ever been demonstrated in silicon, completing an operation in 0.8 nanoseconds, which is ~200 times faster than other existing spin-based two-qubit gates.

In the Simmons’ group approach, a two-qubit gate is an operation between two electron spins – comparable to the role that classical logic gates play in conventional electronics. For the first time, the team was able to build a two-qubit gate by placing two atom qubits closer together than ever before, and then – in real-time – controllably observing and measuring their spin states. The team’s unique approach to

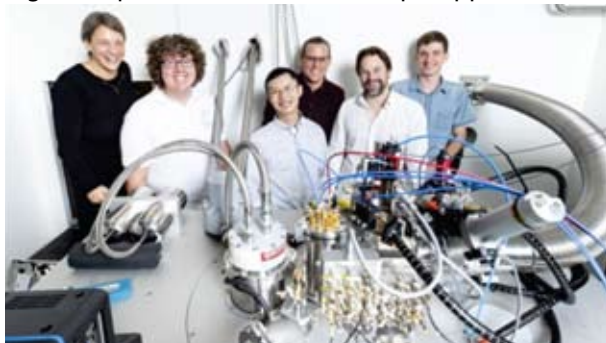


“Optimising every aspect of the device design with atomic precision has now allowed us to build a really fast, highly accurate two-qubit gate, which is the fundamental building block of a scalable, silicon-based quantum computer. We’ve really shown that it is possible to control the world at the atomic scale – and that the benefits of the approach are

transformational, including the remarkable speed at which our system operates.”

–Professor Michelle Simmons, Director, the Centre of Excellence for Quantum Computation and Communication Technology (CQC2T) & Founder, Silicon Quantum Computing

quantum computing requires not only the placement of individual atom qubits in silicon but all the associated circuitry to initialise, control and read-out the qubits at the nanoscale – a concept that requires such exquisite precision it was long thought to be impos-



From left to right: Professor Michelle Simmons, Dr. Sam Gorman, Postdoc Research Associate, Dr. Yu He, Postdoc Research Associate, LudwikKranz, PhD student, Dr.Joris Keizer, Senior Research Fellow, Daniel Keith, PhD student



Joris Keizer, Michelle Simmons, and Yu He at CQC2T.

sible. But with this major milestone, the team is now positioned to translate their technology into scalable processors.

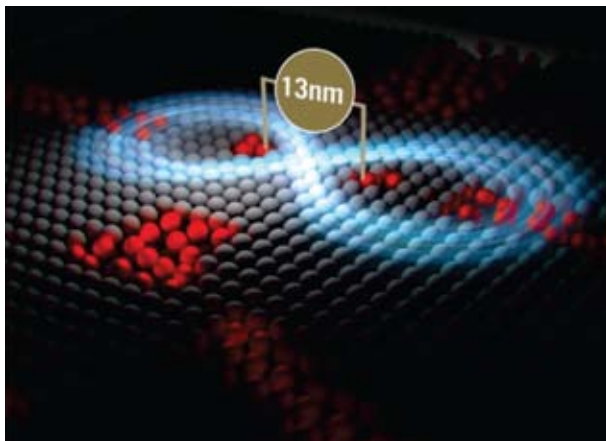
Professor Michelle Simmons, Director, the Centre of Excellence for Quantum Computation and Communication Technology (CQC2T) & Founder, Silicon Quantum Computing, says the past decade of previous results perfectly set the team up to shift the boundaries of what's thought to be "humanly possible".

"Atom qubits hold the world record for the longest coherence times of a qubit in silicon with the highest fidelities," she says. "Using our unique fabrication technologies, we have already demonstrated the ability to read and initialise single electron spins on atom qubits in silicon with very high accuracy. We've also demonstrated that our atomic-scale circuitry has the lowest electrical noise of any system yet devised to connect to a semiconductor qubit."

Dean, UNSW Science, Professor Emma Johnston AO, says this key paper further shows just how ground-breaking Professor Simmons' research is.

Getting Up and Close with Qubits

Using a scanning tunnelling microscope to precision-place and encapsulate phosphorus atoms in silicon, the team first had to work out the optimal distance between two qubits to enable the crucial operation. "Our fabrication technique allows us to place the qubits exactly where we want them. This allows us to engineer our two-qubit gate to be as fast as possible," says study lead co-author Sam Gorman



The world's first atomically engineered two-qubit gate. The researchers not only brought the qubits closer together since their last breakthrough – just 13 nanometres apart – but engineered all the control circuitry with sub nanometer precision. Their fabrication technique allows them to place the qubits extremely close for strong interactions and very fast gate times.



"This was one of Michelle's team's final milestones to demonstrate that they can actually make a quantum computer using atom qubits. Their next major goal is building a 10-qubit quantum integrated circuit – and we hope they reach that within 3-4 years."
–Professor Emma Johnston AO, Dean, UNSW Science

from CQC2T.

"Not only have we brought the qubits closer together since our last breakthrough, but we have learnt to control every aspect of the device design with sub-nanometer precision to maintain the high fidelities."

Observing and Controlling Qubit Interactions in Real-Time

The team was then able to measure how the qubits states evolved in real-time. And, most excitingly, the researchers showed how to control the interaction strength between two electrons on the nano-second timescale.

"Importantly, we were able to bring the qubit's electrons closer or further apart, effectively turning on and off the interaction between them, a prerequisite for a quantum gate," says other lead co-author Yu He.

"The tight confinement of the qubit's electrons, unique to our approach, and the inherently low noise in our system enabled us to demonstrate the fastest two qubit gate in silicon to date. The quantum gate we demonstrated, the so-called SWAP gate, is also ideally suited to shuttle quantum information between qubits – and, when combined with a single qubit gate, allows you to run any quantum algorithm."

No More a Thing of Physical Impossibility

Professor Simmons says that this is the culmination of two decades' worth of work.

"This is a massive advance: to be able to control nature at its very smallest level so that we can create interactions between two atoms but also individually talk to each one without disturbing the other is incredible. A lot of people thought this would not be possible," she says.

"The promise has always been that if we could control the qubit world at this scale, they would be fast, and they sure are!"

Source: UNSW, Sydney



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