



SIX TRENDS TO BOOST VIDEO TECHNOLOGY p. 22



TRANSFORMING THE BANKING ECOSYSTEM p. 34



BETTING BIG ON TECH-LED INNOVATIONS p. 51

₹100

VOL XXXVII No 11 | NOVEMBER, 2020

www.dqindia.com

# DATAQUEST

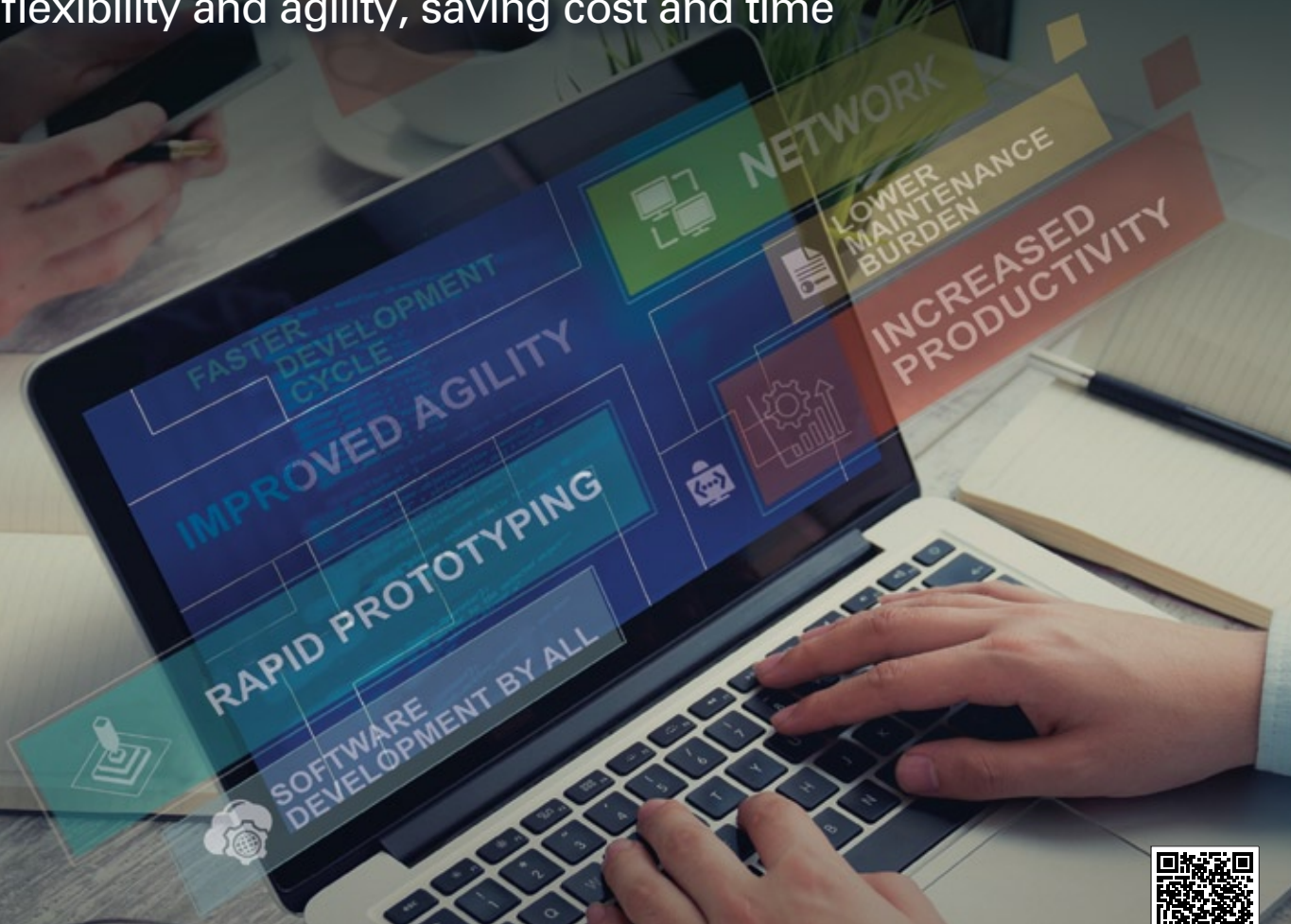
CyberMedia

THE BUSINESS OF INFOTECH

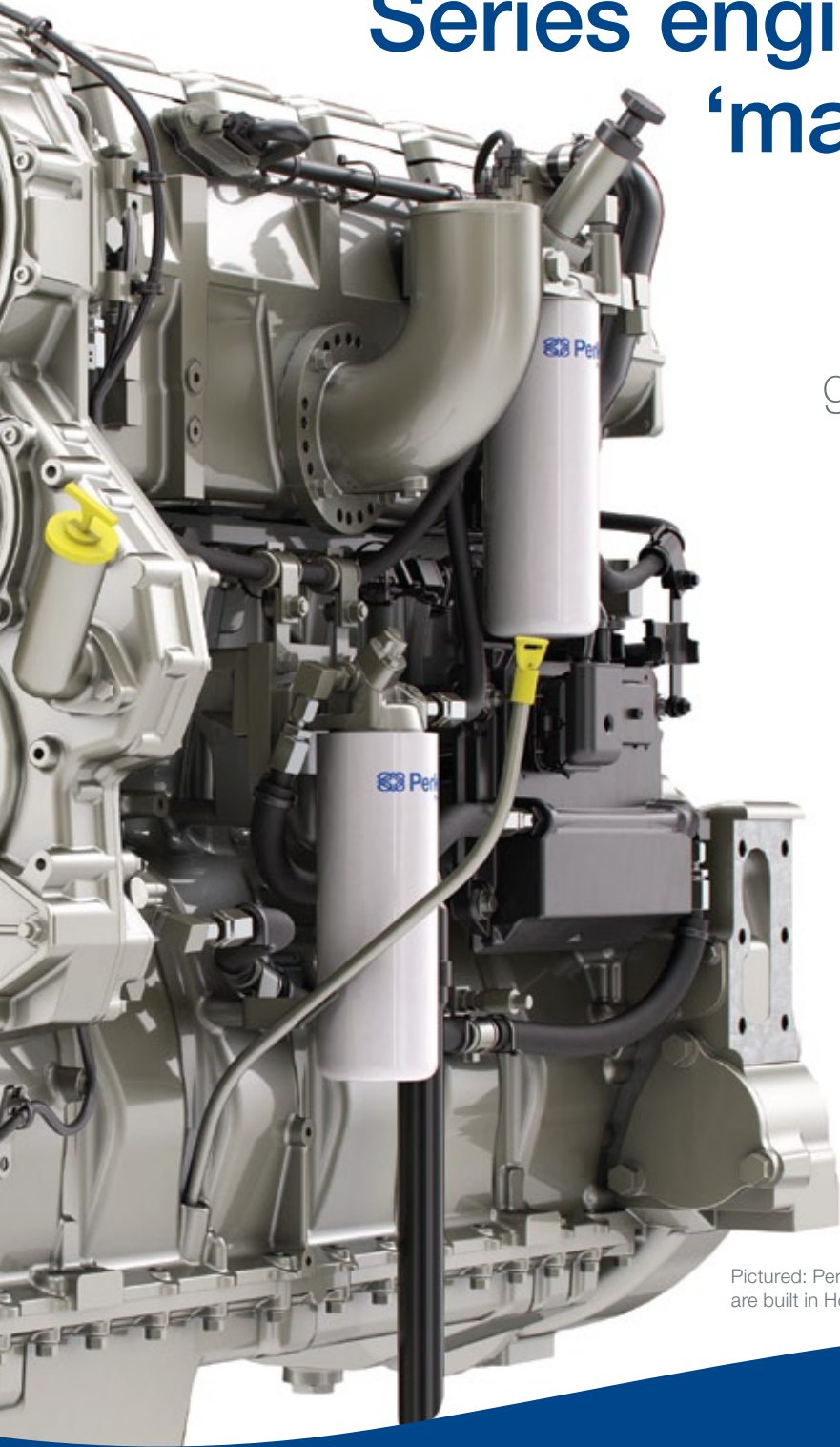
DQ 37 YEARS

## LOW CODE, HIGH IMPACT

Here's a business solution maturing just when it's needed most. It lets non-techies do coding, and thus brings great flexibility and agility, saving cost and time



# Perkins® 2000 and 4000 Series engines are now 'made in India'



**Local production** is giving customers **easy access** to Perkins **robust** and **proven engines**, which have powered the world since 1932

Today, Perkins is the engine of choice for the global power generation market, with a production range from 400-2500 kVA

Pictured: Perkins® 2000 Series engines are built in Hosur, India



[www.perkins.com/india](http://www.perkins.com/india)

email: [IPSD\\_India@perkins.com](mailto:IPSD_India@perkins.com)

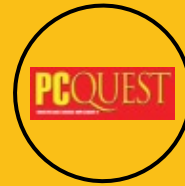


Perkins Engines  
Subscribe, Like, and Share

 **Perkins®**

THE HEART OF EVERY GREAT MACHINE

# Focused Digital Campaigns...



**"IN THE MIDDLE OF DIFFICULTY LIES OPPORTUNITY"**

Enable your business in this challenging time with  **CyberMedia** digital offering...



**We ENGAGE with your AUDIENCE**

Large Enterprise / Medium Enterprise / Small And Medium / Channel Eco-System / Start-up / Developer / End Cosumers / Gaming Community

## HOW TO BETTER A DIGITAL BRAND STRATEGY



Branding



Response Generation



Webinar



Virtual Round Table



Custom Program



Virtual Event

Create a successful brand focused campaigns with :

**Harminder Singh**, Associate Vice President - Online Expert, [harminders@cybermedia.co.in](mailto:harminders@cybermedia.co.in)



# CONTENTS

## COVER STORY



“IT IS A DARK HORSE IN THE ENTERPRISE TECHNOLOGY DOMAIN”

14

**MEGHASHYAM SIMHA**  
Global Head – Digital, 3i Infotech



“USE OF LOW-CODE PLATFORMS IS LIMITED ONLY BY IMAGINATION”

16

**ASHISH VARERKAR**  
Head – Cloud Practice, L&T Infotech



“LOW CODE ENABLES DEMOCRATISATION OF APPLICATION DEVELOPMENT”

18

**SUNDAR RAMASWAMY**  
Senior VP and Head of CoE, Digital Process Automation, Happiest Minds Technologies



“LOW CODE MAKES THE ORGANISATION MORE NIMBLE AND AGILE”

20

**VIRENDER JEET**  
Senior Vice President - Sales & Marketing/ Products, Newgen Software



“LOW CODE IS A SILVER BULLET TO ADDRESS MYRIAD OF CHALLENGES”

21

**SUMAN REDDY**  
MD, Pegasystems, India

## 08 | COVER STORY

# LOW CODE, HIGH IMPACT

Here’s a business solution maturing just when it’s needed most. It lets non-techies do coding, and thus brings great flexibility and agility, saving cost and time



## INDUSTRY

- 22** Six trends to boost video technology adoption in coming year



- 26** Enterprises aim to 'Save-to-Thrive' to flourish after COVID
- 28** Making sense of the infinite data about us, around us
- 30** Adding punch to business communication



- 32** Five hallmarks of a great managed services provide

## SMART TECH

- 34** Heralding multifold transformation of banking ecosystem
- 36** Smartwatches getting smarter, may flag infection alert soon



## DIGITAL ENTERPRISE

- 38** Get future ready with just the right technology
- 40** With RGM upgrade, CPG firms can balance growth and efficiency
- 43** The power-packed combo
- 45** Mobility in the age of social distancing, courtesy technology
- 47** It's time to move up the technology ladder
- 49** Managing the digital-era threats

## DEEP TECH

- 51** Betting big on tech-led innovations

## TALKING POINT



### INSURANCE PURCHASE WILL ALSO MOVE ONLINE IN A BIG WAY

53

**GOUTAM DATTA**  
Chief Information and Digital Officer,  
Bajaj Allianz Life



### FOCUS IS ON DIGITISING CURRENT BUSINESS PROCESSES

56

**BABU THIAGARAJAN**  
Country General Manager and Head of Technology,  
India at Fidelity International

## REPORT

- 59** How eager parents to let 'robot nanny' take care of kids

## REGULAR

- 06** DQ Team
- 07** First Page
- 64** News

# DATAQUEST

THE BUSINESS OF INFOTECH

## EDITORIAL

CONSULTING GROUP EDITOR: **Ibrahim Ahmad**  
MANAGING EDITOR: **Thomas George**  
EDITOR: **Shubhendu Parth**  
EDITORIAL SUPPORT: **Dr Archana Verma**  
ASSISTANT EDITOR: **Supriya Rao**  
CONTRIBUTING EDITOR: **Pratima Harigunani**  
VICE PRESIDENT RESEARCH: **Anil Chopra**  
ASSISTANT EDITOR (SPECIAL PROJECTS): **Ankit Parashar**  
CONSULTING EDITOR: **Anusha Ashwin**  
CORRESPONDENT: **Aanchal Ghatak**  
MANAGER DESIGN & COVER DESIGN: **Vijay Chand**

## BUSINESS OPERATIONS

SENIOR VICE PRESIDENT: **Rachna Garga**

ASSOCIATE VICE PRESIDENT: **Harminder Singh**

## SALES

### NORTH

SENIOR MANAGER: **Sudhir Arora**

MANAGER: **Shoeb Khan**

### WEST & SOUTH

MANAGER: **Subhadeep Sen**

### EAST

SENIOR MANAGER: **Sudhir Arora**

## CYBER MEDIA LABS

MANAGER: **Ashok K Pandey**

## MARKETING & ALLIANCES

MANAGER MARKETING: **Rajiv Pathak**

## EVENTS, OPERATIONS & COMMERCIALS

GENERAL MANAGER: **CP Kalra**

MANAGER MIS & DATABASE: **Ravi Kant Kumar**

MANAGER COMMERCIALS & ADMIN: **Ashok Kumar**

SENIOR PRESS COORDINATOR: **Harak Singh Ramola**

## CIRCULATION & SUBSCRIPTION

SENIOR MANAGER: **Sarita Shridhar**

SENIOR MANAGER: **C Ramachandran**

ASST. MANAGER - AUDIENCE SERVICES: **Alok Saxena**

EXECUTIVE - AUDIENCE SERVICES: **Kusum**

## ONLINE COMMUNITIES & PROGRAMMES

SENIOR MANAGER: **Debabrata T Joshi**

ASST. MANAGER: **Shiv Kumar**

MARKETING & ONLINE OPERATIONS: **Suneetha Daivajna**

DESIGNER: **Sunali**

## OFFICES

### GURUGRAM (Corporate Office)

Cyber House

B-35 Sector-32,

Gurugram,

Haryana – 122 001

Tel: 0124 - 4822222

Fax: 0124 – 2380694

### BENGALURU

205-207, Sree Complex

(Opposite RBANMS Ground)

#73, St John's Road,

Bangalore – 560 042

Tel: +91 (80) 4341 2000,

Fax: +91 (80) 2350 7971

### MUMBAI

404, Trade Square,

Mehra Industries

Compound Safed Pool,

Sakinaka, Andheri East,

Mumbai – 400072

Mobile: +91 9969424024

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

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

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

Dataquest does not claim any responsibility to return unsolicited articles or photographs unless accompanied by adequate return postage. All rights reserved. No part of this publication may be reproduced by any means without prior written permission from the publishers.



Shubhendu Parth

# COVID, disruptions, and trends

The STEEP – social, technological, economic, environmental and political – factors have always fuelled the forces that shape trends and strategic objectives. COVID-19, the lockdown and its impact on the global economy are ushering in massive socio-cultural changes, from the emergence of work-from-home to everything as a service, digital transformation and the evolving mobile-centric economy.

A recent International Data Corporation (IDC) FutureScape report indicates that in the days to come, enterprise IT investments will be shaped by the organisation's need to recover from economic disruptions and adjust to long-lasting changes.

According to the IDC worldwide IT industry predictions for 2021 and beyond, CIOs and digitally-driven C-suites need to focus on three areas over the next five years. One, they need to remediate any shortcomings in existing IT environments that were introduced during the initial emergency response. Two, they need to identify where the crisis and their organisation's response have accelerated IT transformation trends and lock in these advances. Three, they need to identify opportunities to leverage new technologies to take advantage of disruptions and extend capabilities for the "next normal".

The report also foresees several future trends; prominent among them is the shift towards cloud infrastructure, edge infrastructure, autonomous IT operations and penetration of artificial intelligence in product and service offerings. According to IDC, while 80% of enterprises will put a mechanism in place to shift to cloud-centric infrastructure and applications twice as fast as before the pandemic by the end of 2021, edge-driven investments and business model changes will become a top priority across industries by 2023.

IDC also predicts that by 2023, the emerging cloud ecosystem for extending resource control and real-time analytics will be the underlying platform for all IT and business automation initiatives anywhere and everywhere. "Achieving these objectives will require aggressive integration of proactive AI and machine learning powered analytics, adoption of policy driven automation, and greater use of low code, serverless workflows to enable consistent self-driving infrastructure."

What this means is that business honchos, particularly those driving the IT and digital infrastructure, have their work cut out for them. While there is an immediate need to bridge short-term technology gaps and ensure seamless customer experience in the post-COVID normal, they also need to quickly draft strategies to enable an organisation deal with market disruptions, emerging business models, changing workforce dynamics, and evolving customer needs.

shubhendup@cybermedia.co.in



# Low code, high impact

Here's a business solution maturing just when it's needed most. It lets non-techies do coding, and thus brings great flexibility and agility, saving cost and time





**T**he COVID-19 pandemic has forced distancing and mobility restrictions, pushing everything online. This has led to a spurt in digitisation. A typical organisation faces a curious situation: Just as IT teams are under immense pressure of increasing workloads and decreasing timelines, some of the non-technical employees with analogue specialisations have little work left to do.

What if there was a way such members of the organisation, the ones without any clue about coding, could join hands with the tech people? It would not only solve an HR problem, but would also lead to better solutions as the developers would get insights from the business side. As it happens, such a possibility has been developing over the past few years, and with the pandemic push, it is finally enjoying its moment under the sun.

Called ‘low-code development platform’, it is a user-friendly way to do coding, create software applications – without any skill requirements, because its user interface is graphical. This means, a non-technical person – any citizen, actually – can develop customised applications easily, thanks to low code. Within an organisation, various non-tech teams can easily develop their own solutions using low-code platforms (or its cousin, ‘no code’), leaving the tech team free to do more complex, traditional, ‘hand coding’. Low code thus imparts flexibility and can spur creativity – apart from saving time and money.

Such solutions have been around since 2011 in rudimentary forms, and in recent years the market for it is picking up. (It also means this technology is nascent, and evolving, and thus not without its glitches.) Low code is already at the forefront of many critical areas, like COVID-19 testing, PPP loan processing, remote meal delivery and workplace safety. The pandemic-induced conditions are

already making it popular in business organisations, and its demand can only go up in future.

Low-code application platform (LCAP) supports rapid development and greater technical agility to adapt to market needs with reduced human error at a decreased cost. In its most recent low-code Magic Quadrant, Gartner has predicted that more than half of development over the next few years would be done using low-code solutions.

The enterprise LCAP supports enterprise-class applications that offer high performance, scalability, high availability, disaster recovery, security, SLAs, resource use tracking, technical support from the provider, and API access to and from local and cloud services. Low code helps not only with coding but also with the quick setup and deployment.

“Simply put, low code helps customers build applications more quickly. Based on Forrester Research, investment in the low-code market segment is expected to reach USD 21.2 billion by 2022, exhibiting a compound annual growth rate of approximately 40%. This demonstrates the growing imperative for IT leaders to find better solutions for tackling their backlogs and meeting the changing demands of the business. IT is overwhelmed with the demand for digitisation and low-code shows promise for helping solve those problems,” says Mark Weaser, Vice President APAC, OutSystems.

Suman Reddy, MD, Pegasystems, India, adds: “The COVID-19 pandemic created an urgent requirement for digital services across the public and private sectors. We have witnessed multiple sectors digitally transform to survive and sustain the drastic market shift. Given the benefits of rapid development and deployment – lower costs, faster delivery, and greater accessibility, low code is a silver bullet to address a myriad of challenges.”



**SIMPLY PUT, LOW CODE HELPS CUSTOMERS BUILD APPLICATIONS MORE QUICKLY. BASED ON FORRESTER RESEARCH, INVESTMENT IN THE LOW-CODE MARKET SEGMENT IS EXPECTED TO REACH USD 21.2 BILLION BY 2022.**

— Mark Weaser, Vice President APAC, OutSystems



GIVEN THE BENEFITS OF RAPID DEVELOPMENT AND DEPLOYMENT – LOWER COSTS, FASTER DELIVERY, AND GREATER ACCESSIBILITY, LOW CODE ADDRESSES A MYRIAD OF CHALLENGES.

– Suman Reddy, MD, Pegasystems, India

### TRADITIONAL PROGRAMMING VS LOW-CODE DEVELOPMENT ENVIRONMENT

Traditional programming involves designing and coding using software languages such as .Net, Java or Python; and for each aspect such as experience, backend, services, specific coding is required, explains Ashish Varerkar, Head – Cloud Practice, L&T Infotech. “Compare this with the major shift being offered by low-code platforms in form of a visual way of development thereby simplifying the entire coding value chain – it is virtually drag-and-drop of relevant elements of coding. APIs have made seamless integration of multiple components as easy as plug-and-play. Thus, one need not have even technical/coding skills to write a code or develop a programme.”

Meghashyam Simha, Global Head – Digital, 3i Infotech, agrees: “Traditional or bespoke application development is much easier when the requirements are simpler. But today’s requirements are generally complex and involve multiple streams of development. This approach requires a lot of resources working on different technologies and ends up with different codebases depending on the chosen technologies. All these make it an expensive proposition, and further, time-to-market is dependent on various factors like estimation issues, coding errors, and testing challenges.”

“On the contrary, in a low-code scenario, all the above-mentioned development can be done within the same development environment, with a smaller number of resources and it takes at least 50% less effort to develop the same set of applications,” he adds.

However, traditional development leverages existing technology frameworks and does not attract recurring costs like in the case of low-code platforms, Simha points out, adding, “Essentially, a low-code platform is

more effective for an organisation that takes a strategic approach to rationalise its existing application portfolio with defined business case.”

A similar calibrated approach is advocated by Sundar Ramaswamy, Senior VP and Head of CoE, Digital Process Automation, Happiest Minds Technologies, who says low code programming “is still a new technology that is far from reaching the maturity and scale that the traditional programming applications have achieved”.

According to Ramaswamy, low-code programming is preferred for use cases that need rapid deployment at small scale with medium complexity and risk within the organisation where traditional programming development efforts would not be considered on account of low priority and inability to deliver on time. “Traditional programming and development approach will still be the first choice at the moment for enterprise wide, high complex and risk applications. While this may be the current situation, it is expected that low-code programming will in a few years’ time catch up and possibly overtake traditional programming for all application development scenarios.”

### WHO CAN BUILD WITH LOW-CODE?

Being digital-first or pure-play is no longer a niche and innovative thing. It’s a prerequisite for businesses, public services, and governments. Low-code models that were traditionally designed for lay consumers are now being fashioned with enterprise needs. To automate the redundant and most boring tasks in the work pipeline: auto-machine learning solutions are the best-case study because they offer to take the dumb data processing, basic feature engineering, and even model deploying off of the hands.

Raghunandan Dixit, Senior Director of Business Development and Strategy, Business Automation,



APIs HAVE MADE SEAMLESS INTEGRATION OF MULTIPLE COMPONENTS AS EASY AS PLUG-AND-PLAY. ONE NEED NOT HAVE CODING SKILLS TO WRITE A CODE OR DEVELOP A PROGRAMME.

– Ashish Varkerkar, Head – Cloud Practice, L&T Infotech

Persistent Systems, says, “Low-code platforms are making it much easier to design and develop new solutions. Business leaders, sales professionals and application users can develop quick business solutions using low-code platforms. The Low-Code No-Code Movement is to reduce the dependency on certified or highly skilled individuals.”

The beauty of low-code platforms, as Reddy points out, is that anybody with an idea or vision can build applications. “It democratises application development and allows business users, developers, and IT users to build and change, despite having little to no coding knowledge. They are able to collaborate, innovate, and deliver critical applications from one inclusive environment. These enable organisations to build apps faster and smarter.”

#### USE CASES OF LOW-CODE PLATFORMS

Low code initially benefits business professionals who want to build apps without the complexities of traditional software development. Its positive impact reaches all

members of the organisation. Low code is also gaining ground due to the investment and backing of some of the biggest names in the game. Google and Amazon now offer various low-code tools. They were recently joined in the space by AWS with its launch of Honeycode, a managed service that allows users to build mobile and web apps.

An example of low code usage at a scale is Schneider Electric, a European multinational company providing energy and automation digital solutions for efficiency and sustainability. “To continue innovating for customers, Schneider needed to boost agility and efficiency in its business processes, capabilities, and operations. By deploying low-code platform, the company transformed its IT landscape by setting up a ‘Low-Code Digital Factory’, which doubled its development speed, producing more than 60 new apps in about 40% of the time than previously would have been needed,” Weaser says.

Another example Weaser offers is of Edelweiss Group, an investment and financial services company based



IN A LOW-CODE SCENARIO, ALL THE WORK CAN BE DONE WITHIN THE SAME DEVELOPMENT ENVIRONMENT, WITH LESS RESOURCE AND IT TAKES AT LEAST 50% LESS EFFORT.

– Meghashyam Simha, Global Head – Digital, 3i Infotech





**LOW-CODE PROGRAMMING IS PREFERRED FOR USE CASES THAT NEED RAPID DEPLOYMENT AT SMALL SCALE WITH MEDIUM COMPLEXITY AND RISK WITHIN THE ORGANISATION.**

— Sundar Ramaswamy, Senior VP and Head of CoE, Digital Process Automation, Happiest Minds Technologies

in Mumbai. “Like others, the company was faced with the challenge of too many different applications and technologies used for loan processing – making its whole process and system complicated. To better manage its large number of customers (over 1,400,000), it was vital for Edelweiss to increase its scalability quickly across various products, continue to innovate and launch new products with shorter time to market.”

“By deploying low-code platform, the group was able to launch ‘Business Loan’ in eight weeks by leveraging readily available modules from OutSystems Forge, which enables easy customisation and shortens delivery time – the development cycle of app is complicated and usually takes up to 40-50% of the project time.”

**LOW-CODE MAKES AUTOMATION MORE AGILE**

Businesses are increasingly adopting various digital transformation initiatives to solve the unique challenges of the “new normal”. Utilising low-code automation, businesses can automate the repetitive tasks related to designing simple application without high-end coding.

Virender Jeet, Senior Vice President (Sales and Marketing/Products), NewgenSoftware, adds: “Low-code platforms support anything from simple, departmental to complex, mission-critical application requirements of an organisation and help develop solutions that are scalable, agile, and resilient. It can enable developers across teams to configure applications that can handle large volumes of data and perform complex operations with high reliability.”

“Take banking, for example. It can enable banks to rapidly build and deploy an online solution for account opening that can improve employee productivity and enhance customer experience while adhering to security standards and regulatory compliances.”

Low-code platforms will certainly make a mark in programming or application engineering landscape, believes Varerkar. “There is a thrust even now particularly in the integration space from automation point of view. Also, with dependency on infrastructure to build software on such platforms being as low as access to a browser only, the reach of low-code platforms is likely to grow. It



**LOW-CODE PLATFORMS MAKE IT MUCH EASIER FOR BUSINESS LEADERS, SALES PROFESSIONALS AND APPLICATION USERS TO DEVELOP QUICK BUSINESS SOLUTIONS.**

— Raghunandan Dixit, Senior Director of Business Development & Strategy, Business Automation, Persistent Systems



**LOW CODE CAN ENABLE BANKS TO RAPIDLY BUILD AND DEPLOY ONLINE SOLUTION FOR ACCOUNT OPENING THAT CAN IMPROVE EMPLOYEE PRODUCTIVITY AND ENHANCE CUSTOMER EXPERIENCE.**

— Virender Jeet, Senior Vice President  
(Sales & Marketing / Products), Newgen Software

looks likely that about 25-30% of work can easily migrate to such platforms in coming future.”

Dixit also highlights the fact that with drag-and-drop features and the ability to build apps 10X faster, enterprise-grade applications can be deployed in weeks, which give businesses great agility and a platform to experiment and evolve.

**WILL LOW-CODE AFFECT THE PROGRAMMERS?**

Low code is meant to supplement the efforts of good, old, traditional programming, not to take its place. On the contrary, as more and more non-technical team members are empowered to create and edit websites themselves, developers can concentrate their time and effort on doing more complex, value-add tasks. After all, it's these kinds of problem-solving tasks (as opposed to updating content and design work) that drew many to coding roles in the first place.

Due to the traditional ways of working with developer bottlenecks, larger companies often deliver at the speed of their technology infrastructure. Adopting enterprise-grade platforms that democratise tasks means that even larger companies can move at the speed of their customers. This is crucial in situations like COVID-19 when customer behaviour and expectations are changing every day.

“Some developers have viewed low-code as a threat to their role or to software quality,” admits Weaser. “But as low-code platforms have matured, several direct benefits to developers have emerged. Our latest research report highlights the importance of ingenuity and adaptability in the current dynamic environment. Yet the data reveals that the bulk of survey respondents indicated that their average application delivery time is about three to six months, which is considered an eternity these days. Given

the speed of the COVID-19 spread, it is more crucial than ever that those organisations act fast.”

It is clear that in this New Normal, digital-first and cloud-first transformation has become even more urgent, he says. “While COVID-19 has caused many disruptions, it also presents opportunities for digital innovation and differentiation initiatives. As a result, demand for applications is increasing. Four percent of respondents from IT organisations in Southeast Asia have 25 or more applications scheduled for delivery in 2020, and 27% of respondents said that they have plans to deliver 100 or more applications during 2020.”

According to a research by IDC on low-code landscape in Asia-Pacific, 28% of enterprise leaders in India list faster integration of customer feedback to speed software releases as the main business goal, notes Weaser. “Addressing these challenges and enabling Indian developers to successfully shift their priorities is where modern, visually-driven, AI-supported platforms excel. By utilising the technology, it speeds up innovation, boosts agility, while providing benefits for both IT and business users alike. This new technology will not replace developers. Instead, it will help be more productive and will help them work more closely with the business to meet its changing needs and challenges.”

While the business potential of the low-code platform is rich, now as well as in the post-COVID world, equally significant is the fact that it opens up the coding to all. It lets non-specialists too have a taste of the fun and excitement of programming applications and turning their vision into reality. It has the potential to become a citizen-led movement and radically alter the landscape of programming.

*With inputs from Shubhendu Parth*

# “IT IS A DARK HORSE IN THE ENTERPRISE TECHNOLOGY DOMAIN”



**MEGHASHYAM SIMHA**  
Global Head – Digital, 3i Infotech

**Early this year, we saw Google acquire AppSheet, bringing no-code development to the Google cloud. Does this mean low code and no code is emerging as a mainstream software development solution?**

It is clearly established that low code is a strategic move for all organisations, with the intent of making their applications to be more development – and support-friendly, by moving away from coding and instead to make it a more function-oriented, low-skill activity. From private enterprises to government entities embracing low-code development, it is undoubtedly entering the mainstream, which is evident in some of the recent acquisitions. In essence, it is a clarion call for organisations to embrace a low-code platform before their competition does so, and be ready to face the post-COVID scenario with confidence.

**So, can we expect the enterprises to adopt it in a big way?**

There used to be a time when customer requirements were revolving around typical portal development or an application development for backend or a stand-alone application development for desktop use. It would have then translated into development of these individual applications using specific technologies either based on the customer's preferences or the vendor's suggestions.

As technologies evolved, usability of information got diversified demanding organisations to make content available across multiple platforms like smartphones, tablets, wearables, smart speakers, and chatbots, and web-based technologies became dominant as the best way to develop applications to satisfy the ever-growing list of platforms. Organisations will have to build multiple applications to cater to all the platforms to reach out to all types of customers – from baby boomers to Gen Z. This led to the question of how to provide an omni-channel approach to information access, while developing, deploying and maintaining all the related applications –

customer-facing, middleware, back-end, integrations – in a faster, easier and secure way.

And the industry found its answer in low-code development. With digitalisation, the number of applications in organisations is multiplying fast and low-code development is offering an approach that enables full-stack development in a single platform, one that can integrate with internal and external systems and provide automated software lifecycle. Organisations have started seeing the benefits of this centralised approach to manage their portfolio of applications, to better manage innovations, to better connect with other digital initiatives like RPA and chatbots, and to ultimately beat competition in the process, thereby increasing the demand for low-code development.

**So, how would you compare traditional programming with a low-code development environment?**

Traditional or bespoke application development is much easier when the requirements are simpler. But today's requirements are generally complex and involve multiple streams of development. Let us take an example of developing a new portal and a mobile app. Traditionally, portal development will go in one stream, and the app, assuming a hybrid approach for Android and iOS mobile app, will go in another stream. In case the mobile app needs to be developed with native technologies, it will again be in two separate streams. The back-end development will be another stream to enable the workflows, business logic, integrations, analytics and so on, as well as API development. This approach requires a lot of resources working on different technologies and ends up with different codebases depending on the chosen technologies. All these make it an expensive proposition, and further, time-to-market is dependent on various factors like estimation issues, coding errors, and testing challenges.

On the contrary, in a low-code scenario, all the above-mentioned development can be done within the same





## A LOW-CODE PLATFORM IS MORE EFFECTIVE FOR AN ORGANISATION THAT TAKES STRATEGIC APPROACH TO RATIONALISE EXISTING APPLICATION PORTFOLIO WITH DEFINED BUSINESS CASE.

development environment, with a smaller number of resources and it takes at least 50% less effort to develop the same set of applications.

At the same time, traditional development leverages existing technology frameworks and does not attract recurring costs like in the case of low-code platforms. Essentially, a low-code platform is more effective for an organisation that takes a strategic approach to rationalise its existing application portfolio with defined business case.

### **But is it easy or difficult to manage a low-code platform, particularly since there might be different versions of the software and applications that may be developed using varied platforms?**

Collaboration among the development team members is especially important for low-code platforms to offer full-stack development and full-lifecycle agile approaches. Low-code platforms offer built-in features for different developers to work on different modules at the same time, with a shared deployment plan. Various features are available to developers to compare and merge, and to resolve conflicts. Version control is core to any low-code platform where all versions are centrally managed within the platform's repository, so that downloading or rolling back is possible at any time. As different types of applications are all developed within the same environment while using built-in features for agile execution and version control, it becomes easier to manage releases in low-code platforms.

### **What about development, test, and production? How do we test the application or software?**

A true low-code platform allows full-lifecycle development and deployment, which involves agile execution, continuous integration and continuous delivery/deployment, monitoring and user feedback. Such DevOps-led system offers automated staging across environments for development,

testing and production, with full dependency analysis, with no downtime and automated rollback capabilities. Advanced platforms also offer APIs to manage deployments and to govern users.

### **With the pandemic increasing the thrust on digital transformation, will low code platforms have a bigger role to play in automation?**

The pandemic has forced millions to learn and work from home, and this has forced organisations to look at a solution that can quickly and efficiently provide the ability to seamlessly enable work from home without compromising on security. In these times, the low-code platform is turning out to be a dark horse in the enterprise technology domain, as it provides ways to overcome operational challenges and at the same time to be future-ready for any similar pandemics. The demand for such platforms is evident in the fact that the demand for the low-code development platform is surging across the globe, with the low-code market size being valued at USD 83.5 billion by 2028 according to a recent research report.

### **It is said that low code will do to application development what social media did to traditional media by enabling the users. What are your views?**

Citizen development is certainly a movement that will trigger the next wave of application development. However, it is still in its early stages, as organisations are yet to adopt and standardise low-code platforms for org-wide use. Organisations need to define the policies around wider usage, and provide guidelines for adoption and train employees; thereby leveraging low-code platforms to the best extent. The best outcome that can be expected out of this movement is to see innovations in the organisations getting accelerated. At the same time, this is limited to comparatively simpler applications, as citizen developers cannot be expected to develop complex applications.

# “USE OF LOW-CODE PLATFORMS IS LIMITED ONLY BY IMAGINATION”



**ASHISH VARERKAR**

Head – Cloud Practice, L&T Infotech

## How do you compare traditional programming with a low-code development environment?

Traditional programming involves designing and coding using traditional software languages such as .Net, Java or Python. Also, for each aspect such as experience, backend, services, specific coding is required.

Compare this with the major shift being offered by low-code platforms in the form of a visual way of development, thereby simplifying the entire coding value chain – it is virtually drag-and-drop of relevant elements of coding. APIs have made seamless integration of multiple components as easy as plug-and-play. Thus, one need not have even technical/coding skills to write a code or develop a programme.

Low-code platforms enable ease in functional roles and related objectives as well. For example, a business analyst who would generally require numerous reports to be generated but would find Excel a bit tedious, a low-code platform can come in handy since these reports can now be generated easily in a visual drag-and-drop format.

Also, low-code platforms are now available that are customised to specific industries which take care of typical requirements of key components from an SDLC perspective. Hence, specific use cases relevant to a particular industry can be addressed more closely and comprehensively by the use of low-code platforms.

## What about project management? Can one easily manage different versions of software and applications developed using a low-code platform?

Low-code platforms come with an in-built versioning depending on requirement and situation at hand such as vanilla version or pre-production version. Adequate collaboration mechanisms are also enabled by low-code platforms. However, there are situations where low-code

platforms offer limited scope for customisation or may pose challenge in compatibility with existing systems.

Thus, while they are shaping up in the right direction, low-code platforms aren't there yet and need more time to comprehensively address all the aspects.

## And what about multiple project environments like development, test, and production? Also, can one deploy artifacts from one environment to another?

Since the low-code platform as a concept is still in the evolving phase, there is no single standard format or approach that developers can follow as a thumb rule. Hence, working on multiple environments using low code is still considered subjective. There are platforms that allow moving from low environment to higher environment while certain low-code platforms do have DevOps, test and production built-in. There are some platforms which allow users to build in their own environments and then move to another environment.

## The pandemic has created a sudden need for the digitisation of organisations and the service delivery mechanism. Do you see low-code platforms playing a bigger role in driving automation?

Absolutely! Low-code platforms will certainly make a mark in programming or application engineering landscape. There is a thrust even now particularly in the integration space from the automation point of view. Also, with dependency on infrastructure to build software on such platforms being as low as access to a browser only, the reach of low-code platforms is likely to grow. It looks likely that about 25-30% of work can easily migrate to such platforms in coming future.

## Experts point out that low code will lead to the democratisation of application development by



WHILE THEY ARE SHAPING UP IN THE RIGHT DIRECTION, LOW-CODE PLATFORMS AREN'T THERE YET AND NEED MORE TIME TO COMPREHENSIVELY ADDRESS ALL THE ASPECTS.



**extending the development capability to 'citizen developers'. How do you look at it?**

Low-code platforms are developed and designed to enable citizen developers on a large scale. Yes, there would be occasions where technical expertise or intervention is required while developing programs using low code, however, a considerable part is still easily manageable by any user. As mentioned earlier, it allows a business user to develop programs as per specific needs and thus giving them greater control of the process.

**It that the reason why we are seeing a sudden spurt in demand for low-code platforms among enterprises?**

With ecosystem dynamics shifting towards quicker go-to-market, go-live or time-to-value scenarios, low-code platforms can address these asks perfectly, as they not only simplify the overall process but also accelerate the final outcome expected from software development. Additionally, in situations where existing core platforms such as ERP are deployed, an evolving need will be to also integrate multiple satellite functionalities as per business demand. Since low-code platforms allow business users to develop programs as per their specific needs, I would say that its influence is certainly on a rise.

**But do we have enough use cases for low-code automation?**

There are many use cases that call for perfect fit of low-code platforms. For instance, one may want to integrate data from the CRM system to a line of businesses – this can easily be turned around using a low-code platform. Thus, the use of these platforms is limited only by imagination and in coming times one will witness its increased penetration and use in the overall scheme of things.

**Do you also see low-code and no-code platforms changing the way programming is done and the way programmers work in the days to come?**

Low-code and no-code platforms will coexist with existing software-based coding platforms. Also, from the quality and design perspective, it will increase the maintainable quotient. Other complementing aspects include standardisation and interoperability.

Thus, overall, low-code and no-code platforms will positively impact the future of programming by ushering the best of end-user experiences and driving new standards of software development excellence and at the same time giving rise to democratisation of the entire value chain with business users taking centrestage in development.



# “LOW CODE ENABLES DEMOCRATISATION OF APPLICATION DEVELOPMENT”



## SUNDAR RAMASWAMY

Senior VP and Head of CoE, Digital Process Automation,  
Happiest Minds Technologies

### Why is there a sudden spurt in demand for low-code platforms among enterprises? Does it mean they are more inclined to keep application development in-house?

In the last few years, companies were increasingly embracing digital transformation initiatives to stay competitive. COVID-19 has only pushed these initiatives higher on CXOs' agenda as companies needed to have a strong digital presence for business continuity and growth. A company's traditional IT organisation and their partner ecosystem are not equipped to manage the speed and agility required for these transformations to occur. New tools like low-code platforms enable that agility by increasing the pool of developers that can engage in this transformation, by enhancing the productivity of the current IT organisation and ecosystem of partners and by enabling complex and difficult processes to be automated and digitised.

### It is often said that low-code platforms are enabling organisations to swiftly address the rising customer demand. How does that happen?

Democratisation of the application development process is enabled by low-code platforms. Business teams

can now take part even more closely in the application development process. For example, teams that deal with customers directly can now efficiently translate the functional requirements of a customer need into an IT application leveraging low-code platforms with limited or no IT team involvement. Closer collaborations of business and IT teams using low-code platforms enable accelerated application development, enhanced functionality in existing and new applications and increased automation within and between applications.

### On the development front, how easy or difficult is it to manage different versions of software and applications developed using low-code platforms?

Low-code platforms are increasingly getting matured and integrating tools and functionalities that enable for enterprise-wide large scale development and deployment. With proliferation of these platforms in a company and increasing use of developers with little or no formal programming experience, there is a risk of application build-outs that are hard to test and change as they may not conform to programming best-practices, are security risks that increase threat vulnerabilities in the organisation and are hard to manage as they are built with minimal governance and standards. Organisations would need to tread a fine balance of democratising the application build-out for greater agility with the governance controls for better manageability and serviceability.

### From a developer's perspective, do low-code platforms allow working on multiple environments like development, test, and production?

Low-code platforms are becoming mature and providing the features and functionalities that traditional programming platforms provide for easier development and deployment. For example, mature low-code platforms provide drag-and-drop and point-to-click tools for rapid





## LOW-CODE PLATFORMS ARE BECOMING MATURE AND PROVIDING FEATURES AND FUNCTIONALITIES THAT TRADITIONAL PLATFORMS PROVIDE FOR EASIER DEVELOPMENT AND DEPLOYMENT.

development, reusable components across apps and pre-built UIs for standard use cases to help rapid builds, build once and deploy everywhere on web, mobile and desktops across various OS – iOS, Windows, Android – as well as provide continuous development and integration for application versioning and change management as well as for deployment across environments.

### How can one decide when to use a low-code platform and when to go for a traditional development approach?

Low-code programming is a new technology that is still far from reaching the maturity and scale that the traditional programming applications have achieved. Low-code programming is preferred for use cases that need rapid deployment at small scale with medium complexity and risk within the organisation where traditional programming development efforts would not be considered on account of low priority and inability to deliver on time. Traditional programming and development approach will still be the first choice at the moment for enterprise wide, high complex and risk applications. While this may be the current situation, it is expected that low-code programming will in a few years' time catch up and possibly overtake traditional programming for all application development scenarios.

### Can you share some low-code automation use cases?

Low-code automation tools provide visual modelling environments that create representations of application behaviour in XML or other formats. The low-code platform in turn can directly interpret these representations as working applications in production. Using this companies have automated various processes of their back-office enterprise functions – like invoice processing under finance and accounting or employee on-boarding by the

HR team – as well as core business processes like claims processing in the insurance sector and returns processing in the consumer packaged goods sector.

### There is lot of noise about 'citizen developers' disrupting the market by democratising application development. What are your views, particularly on the quality aspect?

The intent of low-code development is indeed for democratisation of application development and the rise of 'citizen developers' to make application build-outs rapid and pervasive across the organisation. However, realising the full potential of this intent is very difficult and not likely to be realisable in the short to medium term.

IT applications are increasingly at the core of any digital transformation of businesses and critical for ensuring competitiveness in the industry. Having citizen developers to build and deploy applications, even for a localised requirement, will be seen to be risky and sub-optimal. Strong governance rules and guidelines will be needed to ensure well-meaning citizen developers can develop and deploy applications that can be leveraged enterprise wide. This is far different from the way social media is managed and been able to grow at the cost of traditional media.

### So, how will low-code and no-code platforms impact the future of programming?

Low-code and no-code platforms will impact programming in fundamentally three ways: Firstly they ensure a larger proportion of the organisation will participate, directly or indirectly, in the development of enterprise applications. Secondly, they give rise to new development methodologies and frameworks, and traditional development methodologies like waterfall development methodologies will no longer be used. And thirdly, they will lead to faster and more pervasive leverage of technologies and applications across all business process.

# “LOW CODE MAKES THE ORGANISATION MORE NIMBLE AND AGILE”



**VIRENDER JEET**

Senior Vice President - Sales & Marketing/Products,  
Newgen Software

## What role do you see a low-code application development platform playing in the digital journey of organisations?

Today, there is a sense of urgency in addressing the needs of a rapidly evolving market. To deliver speed, we need a paradigm shift from ‘code-build-compile-integrate-deploy-maintain’ to ‘deliver-through-composition’. Low code facilitates this transformative approach that does not rely on heavy coding. Instead, it employs visual tools to create and configure applications and provides a high-level programming abstraction. More importantly, it allows non-IT staff to develop and deploy applications, making the organisation more nimble and agile.

Newgen’s low-code digital automation platform can help organisations in the rapid development and delivery of applications while saving a considerable amount of time for both IT and business developers. Organisations across industries can rapidly digitise, develop, and deploy applications and respond to dynamic business needs with speed and agility.

## Do you think a low-code application development platform is helping organisations solve complex mission-critical processes? If yes, what are the advantages of using low-code application development platforms for this?

Low-code platforms support anything from simple, departmental to complex, mission-critical application requirements of an organisation and help develop solutions that are scalable, agile, and resilient. It can enable developers across teams to configure applications that can handle large volumes of data and perform complex operations with high reliability. Take banking, for example. A low-code platform can enable banks to rapidly build and deploy an online solution for account opening that can improve employee productivity and enhance customer experience while adhering to security standards and regulatory compliances.

Low-code platforms are modelled for building secure

applications. Additionally, a low-code application development platform provides tools for developing user interfaces, data models, and integrations while ensuring end-to-end process automation and support for digital document processing.

## How does low code facilitate citizen and business developers? Can it completely replace traditional coding?

A low-code platform reduces application translation efforts through a model-driven, point-and-click application development environment, facilitating citizen/business developers. Using the development guidelines and framework set by the IT team, it promotes the democratisation of application creation, enabling business-user application development and allowing IT programmers to spend more time on complex, mission-critical tasks.

Instead of replacing traditional coding, businesses can utilise the benefits of low code methodology along with traditional programming. Organisations can leverage low code to rapidly build applications, establish the core functionality, and continue to develop more complex processes depending on their evolving requirements.

## And how is low code different from no code? Does an organisation require people with specific skillsets?

No code is primarily focussed for citizen development modes, with pre-built templates, ready-to-use codes, and a drag-and-drop interface. Similar to low code, it requires little to minimal IT dependency. However, low code is better equipped to handle more complex applications (including mission-critical applications), offers more control to both citizen and pro-code developers, and supports the building of customised applications that cater to specific functionalities. The configurability and integration capabilities of a low-code application platform make it a more suitable choice for an organisation in the long run.



# “LOW CODE IS A SILVER BULLET TO ADDRESS MYRIAD OF CHALLENGES”



**SUMAN REDDY**  
MD, Pegasystems, India

## What's the importance of low code to enterprises and addressing rising customer demand?

The pandemic has got enterprises scrambling to adjust to an extraordinary level of disruption while scurrying for solutions that will not only ensure business continuity but provide customer satisfaction. It has become critical for enterprises to come up with quick and robust solutions.

The COVID-19 pandemic created an urgent requirement for digital services across the public and private sectors. We have witnessed multiple sectors digitally transform to survive and sustain the drastic market shift. Given the benefits of rapid development and deployment – lower costs, faster delivery, and greater accessibility – low code is a silver bullet to address a myriad of challenges. A recent Forrester report fortifies the market sentiment and states that the low-code market will double in size to USD 14 billion by 2024. Low-code platforms create citizen developers, expanding their ability to either collaborate with IT departments to develop critical apps more quickly or develop those apps on their own. Enterprises can

have production-ready apps created in hours and will not be required to wait for days or months anymore. This enhances customer experience to promote a better, more satisfactory digital experience.

## How is low code making automation more agile?

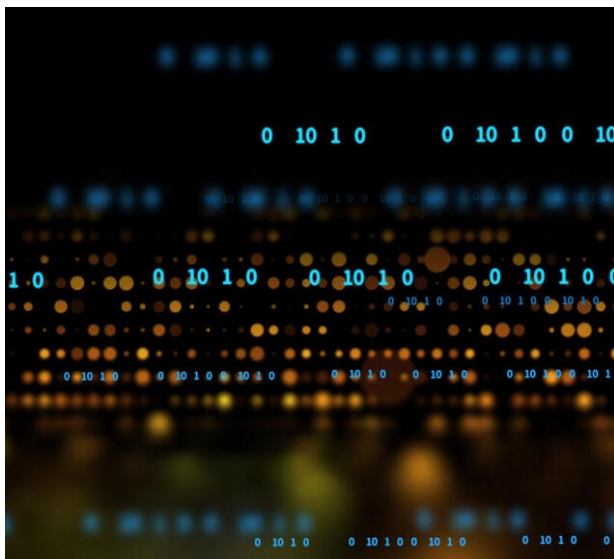
Low code optimises efficiency by giving business users, developers, and IT what they need, when and where they need it. It accelerates application development by defining core app elements quickly and easily.

Some low-code solutions handhold business users with no coding experience, while others offer complex capabilities that cater to professional developers. These solutions preserve the exact siloed approach to development that low code was intended to eliminate and further complicate the management of the entire application.

Pega's low-code solution reconciles these siloed tasks and brings users together in one inclusive, intuitive authoring environment that serves all skill levels, making automation agile in function. Business users become active participants in the development process, reacting in real time to evolving business needs. Developers, freed from legacy code maintenance, have the tools and time they need to focus on more complex, high-value tasks. All work is done within organisational guardrails set by the IT team to protect against future upgrade and compliance issues.

## So, who can build on low-code?

Anybody with an idea or vision can build applications on low-code technology. It democratises application development that allows business users, developers, and IT users to build and change, despite having little to no coding knowledge. They are able to collaborate, innovate, and deliver critical applications from one inclusive environment. These enable organisations to build apps faster and smarter.



# Six trends to boost video technology adoption in coming year

With exponential growth in surveillance and security market, there is rise in industry-specific solutions too. Here are the developments to expect in 2021



**T**he global video surveillance market size is expected to grow to USD 74.6 billion by 2025, at a CAGR of 10.4%, according to a Markets & Markets report. The ever-increasing requirement of safety, coupled with a boom in smart cities, has led to a rise of the security market in the country. Notwithstanding the current pandemic, here are six trends to boost video technology adoption in the coming year.

## #1 NEED FOR SMARTER, SAFER CITIES

By 2030, India is expected to have 155 tier-I cities, 104 tier-II cities and 331 tier-III and IV cities, as per Anarock Research. This burgeoning urban sprawl is expected to further raise the demand for video technology solutions as one of the measures to ensure public safety.

In February 2019, the government of India teamed up with state governments for a pilot Safe City project to be run in eight metropolitan cities – Delhi, Mumbai,



WHILE THE ZEAL TO USE ADVANCED VIDEO TECHNOLOGY FOR PUBLIC SAFETY IS APPRECIABLE, THE GOVERNMENT MUST ENSURE THAT IT IS BALANCED WITH CITIZENS' RIGHT TO PRIVACY.

Bengaluru, Chennai, Kolkata, Hyderabad, Lucknow and Ahmedabad – at a total cost of Rs 2,919.55 crore.

With funding from the central government's NirbhayaFund, there will be a high emphasis on women's safety in this project. Cameras will be installed in public places, intersections, buses, and other critical areas. A centralised control room will be setup in each city; security vehicles will be equipped with dashboards for live streaming, GPS tracking and other advanced features will be implemented.

While the zeal to use advanced video technology to ensure public safety is appreciable, the government must ensure that it is balanced with citizens' right to privacy. There is a need for more transparency on how the visual data collected by these cameras will be used, and the opinions of digital rights groups and experts must be considered before implementation.

## #2 DEMAND FOR INDUSTRY-SPECIFIC SOLUTIONS WILL INCREASE

The demand for customised video technology solutions is growing across industry verticals including financial services, retail, healthcare and manufacturing. The availability of IP-based cameras and open platform VMS has enabled a lot of new functionalities which are being exploited for industry-specific uses across sectors. Retail outlets, for instance, use video technology for stock verification, crowd management, trend analysis, POS integration and personalised service to customers. In the financial services sector, video analytics is being used to identify suspicious activity in ATMs and get real-time alerts about the same to reduce the incidence of theft.

In the healthcare sector where theft of expensive surgical equipment and drugs remain a concern today, video technology is seen to be increasingly employed to tackle the problem. Likewise, in manufacturing, where

fully automated plants are replacing manual activity, motion detection functionality in IP cameras immediately identifies any stoppage of crucial machines like conveyors, thus eliminating loss of time in problem identification.

Going forward, the ability to customise solutions for industry verticals will be a key differentiator for video technology solution vendors and will benefit end users looking for better functionality from their video solutions.

## #3 OPEN PLATFORM SOFTWARE ADOPTION WILL SOAR

Thanks to the growing awareness of its capabilities and declining prices, the adoption of IP-based surveillance systems is expected to increase manifold in the coming years. IP cameras can leverage IoT and AI technologies to provide additional capabilities beyond mere security. They can enhance operational efficiency, aid in real-time responses and provide valuable business intelligence, which could prove instrumental in enhancing customer experience and in boosting the overall profitability. An important principle underpinning all these capabilities is the interconnectivity of systems, which is enabled by an open platform VMS. As IP cameras go mainstream, end-users can look to take advantage of technologies such as IoT, AI and smart devices. Open platforms that support multiple technologies and avoid vendor lock-in will be in high demand. Open platform video management software (VMS) promises flexibility, choice and possibilities that future-proof your solutions. We expect end-users to opt for resellers or solution providers who can support them with a flexible and customisable platform and communicate the right value and benefits of the open VMS.

## #4 CYBERSECURITY CONCERNS MAY INCREASE

As video cameras become more connected to diverse systems because of increased IoT adoption, cybersecurity



WITH SMART SEARCH, ORGANISATIONS CAN IMPROVE THE SPEED AND EFFICIENCY OF THEIR SECURITY REVIEWS, STRENGTHENING THEIR OVERALL SECURITY INFRASTRUCTURE.

concerns are likely to increase. Hackers gaining access to cameras to record videos, selling camera access to third parties, or even using cameras to spy on shops or steal credit card information could become a common occurrence. Customers will need to be aware of and seek out sophisticated security protocols in video solutions, such as high-level encryption of web and mobile user access, authentication and authorisation of third-party applications, physical separation of camera and client networks, and vulnerability scoring systems. Customers must increasingly evaluate video management solution vendors on these criteria to ensure that their advanced, feature-rich video solutions are secure and stable.

#### #5 DEMAND FOR CLOUD-BASED VIDEO SURVEILLANCE SOLUTIONS WILL GO UP

Cloud-based video solutions are gaining in popularity due to their efficiency, flexibility, cost-effectiveness, and security. Small and medium-sized businesses are mainly enthusiastic about video as a service (VSaaS). VSaaS



enables hosting of hardware and software of security operations in the cloud so that users can access their IP cameras and IoT devices and check video footage or alarm linkage from anywhere. With no on-site server installation and system configuration required, it is often more convenient than traditional video solutions.

Cloud also enables metered use, so users can distribute costs over a contract term and pay only for the services that are used. Popular cloud services providers like Amazon offer flexible and scalable VSaaS solutions with elastic compute, storage and networking capabilities. VMS solutions that integrate well with AWS VSaaS will witness increasing traction.

#### #6 SMART SEARCH WILL BECOME INCREASINGLY POPULAR IN VIDEO SOLUTIONS

Smart Search is an advanced feature based on motion detection that helps users review videos in sizeable numbers or huge file sizes. Users can search for a specific activity based on pre-described smart search settings. Combined with metadata search and indexing, this feature can make searching and reviewing relevant video content much faster. With smart search, organisations can improve the speed and efficiency of their security reviews, strengthening their overall security infrastructure.

Video technology solution poised for growth

This growth can be expected to be exponential, alongside increased penetration in smaller cities. The advent of new technologies also means that we can expect increased sophistication of use and integration. Our future will hinge on not just new uses and applications, but also enhancing the security, operational efficiencies, and ROI of existing solutions.

*Deokar is Country Manager,  
Milestone Systems India*





# DIGITAL INDEX: RANKING OF INDIA'S TOP ENGINEERING COLLEGES

Digital indexing will evaluate the Engineering Colleges for overall **“DIGITAL INFRASTRUCTURE, DIGITAL TEACHING & LEARNING PRACTICES, ADOPTING DIGITAL TECHNOLOGIES, DIGITAL SKILL DEVELOPMENT, ATTRIBUTING NEW DIGITAL CULTURE”**.

The biggest question of the decade. Are these colleges providing quality education equipped with the new age infrastructure and how are they coping with the situation in Pandemic?

Does your Institute meet the **DIGITAL INFRASTRUCTURE** demand for New age learners?

Is your Institute **FUTURE READY?**

**T-SCHOOL SURVEY & RANKING | DIGITAL INDEX | EMPLOYABILITY INDEX**

## Key Highlights

- Survey of **1000+** Engineering Colleges
- **10,000+** students
- Digital Skill Development and many more

To be a part of this Programme, Contact  
Rajiv Pathak  
Manager: Marketing  
[rajivp@cybermedia.co.in](mailto:rajivp@cybermedia.co.in)  
+91 8010757100

# Enterprises aim to ‘Save-to-Thrive’ to flourish after COVID

The COVID-19 pandemic has completely transformed business operations across the world. Organisations are searching for new strategies and solutions to reduce costs and thrive in the post-COVID world



**A**ctions to address the COVID-19 crisis can be divided into three major stages: Respond (immediate actions to respond to the crisis), Recover (stabilise operations), and Thrive (defined strategy with structural changes to thrive). These stages culminate into a long-term operating environment we call the ‘Next Normal’, which represents new business conditions established as a result of the societal, commercial and technological changes caused by public and private reactions to COVID-19.

Organisations in India today are mostly in the ‘respond’ or ‘respond to recover’ phase/s as they respond to the

immediate crisis and turn to recovery actions to stabilise their operations. Indian organisations expect to pursue automation as the top transformation action to reduce dependency on the labour and increase operational efficiencies. They also expect to work on transforming supply chain as well as business processes so as to address supply chain and distribution challenges and satisfy increased sales opportunities. As organisations move through these phases, the expectations for revenue growth, although down from pre-COVID-19 levels, remain highest in India – going by the response of 66 percent of the respondents in the ‘Save-to-Thrive’ survey done by



## INDIAN ORGANISATIONS EXPECT TO PURSUE AUTOMATION AS THE TOP TRANSFORMATION ACTION TO REDUCE DEPENDENCY ON THE LABOUR AND INCREASE OPERATIONAL EFFICIENCIES.

Deloitte titled 'Enterprise Transformation and Performance Improvement Strategies amidst the Pandemic'.

Relative to the pre-COVID-19 levels, the likelihood of undertaking cost reduction initiatives for Indian respondents increased from 57 percent to 73 percent, which is among the top four surveyed countries globally. Additionally, four out of five companies in India now have cost reduction targets that exceed 10 percent. By using cost reduction strategically to transform the enterprise and improve competitiveness – which includes investing in key capabilities such as automation and remote work that align with new realities of a post-crisis business environment – companies can leverage their cost saving efforts to not only transform how they operate but to position themselves to thrive in the 'Next Normal'.

Decisions that companies make today to cope with COVID-19 can help or hinder their positioning for the future. As per the survey, organisations are evolving into a "Save-to-Thrive" mindset in the 'Next Normal' in which they are accelerating strategic transformation actions to make shifts to their operating models, products and services and customer engagement capabilities in the five ways.

### **#1 Revenue sources will be fundamentally different:**

The fastest growing revenue sources will be digital channels (vs. physical channels) and domestic operations (vs. international operations). In order to 'Thrive' in the 'Next Normal', organisations are also taking up digitisation to gain business transparency for sales operations and to make processes more efficient and resilient.

### **#2 IT infrastructure, remote working, and digital channels will be the top operating model priorities:**

Top operating priorities will be enhancing IT infrastructure, enabling remote work, and enabling pre-sale, sale and post-sale activities through digital channels. In the 'Next Normal' companies are expected to focus on enhancing the IT infrastructure in management and operations by

creating control towers for sales, logistics, operations, maintenance, etc. for better visibility and control.

### **#3 Top product strategies for the next normal focus on innovation, customisation and portfolio rationalisation:**

In the next normal, respondents' focus will remain on core products with rationalised portfolio to maximise core competitive advantage and prioritise products in the lower priced segments to retain their loyal customers.

### **#4 'Next Normal' customer engagement strategies will be driven by flexible customer experiences, cross selling and digital channels:**

As a way forward into the 'Next Normal' stage, organisations will stay focused on their existing customer base by maintaining high customer engagement through empathetic purpose-driven digital content, improved after sales services, fortify distribution in stronger markets and gain an edge over competition.

### **#5 IoT and AI will be key technologies:**

In the 'Next Normal', respondents are not only looking at effectively utilising the IoT and machine learning capabilities to improve operating efficiency but also at building AI and cloud capabilities for creating predictive models to prepare for the future.

The survey clearly shows how organisations that strategically pursue cost reduction in the wake of COVID-19, while concurrently reimagining the enterprise and transforming work and business models, can be more successful in the next normal. At the same time, how investing in critical technology capabilities such as cloud and digital can increase business agility, improve competitiveness and better prepare organisations to persevere, and position them well for the post-COVID environment.

*Kamath is Partner and Kakad is Manager,  
Deloitte India*



# Making sense of the infinite data about us, around us

Every click generates data, which can be analysed to tell us things about ourselves that even we didn't know. As life moves online, data becomes precious commodity



The internet comprises computers, connectivity between computers using cables to transfer data in bits and bytes, and the network protocol called TCP/IP that helps organise communications between computers. This arrangement of computers connecting and communicating with each other goes back to the 1960s and to the adoption of ARPANET by the US Defense Department in the 1970s. India too had

some early versions of this mechanism in place for limited educational and research purposes.

The launch of the internet for the public 25 years ago was a watershed moment for India—not because it was fast, affordable, easy to procure or use, but because we knew very little about what it could do for us at that time. The expectation of internet users in India during the days of Hotmail, Netscape Browser, and Windows 2





## CUMULATIVE DATA QUICKLY PROVIDES INSIGHTS ON WHAT WE PURCHASE, WHAT WE EAT, WHERE WE GO, WHAT WE READ, WHAT WE WATCH, AND MANY OTHER ASPECTS OF OUR LIFESTYLES.

and 3 versions were easily met or exceeded with simple tasks like email and online news. The chat and messenger service followed a bit later.

Our Millennial and Gen-Z readers may not know but there was a time when Google search did not exist. Social media interaction involved a trip to a cybercafe to send an email and a return trip a few days later to retrieve a response. Yahoo and AOL were the primary early internet portals providing services like search and classifieds.

Indian software service firms started engaging in business software development in the mid-1990s. Most of the services performed needed connections to the internet for communication, research, access to associated backend resources hosted in another country, and delivering/transferring the final software product to the customers.

In 2020, India's internet revolution has leapfrogged to ISPs providing connectivity over wireless high-speed cellular technologies using 3G and 4G, and high-speed optical fibre fixed-lines used by the software services and development firms. According to Statista.com, overall there are 56 crore internet users in India today. This number is expected to touch 65 crore by 2023.

### THE ERA OF DIGITAL FOOTPRINTS

Internet use, along with smartphones and applications, generates a lot of data, touching almost everything we do. We create data. Cumulative data makes trends and quickly provides insights on what we purchase, what we eat, where we go, what we read, what we watch, and many other aspects of our lifestyles.

There have been many debates on data being a precious commodity like oil. Some others argue that while oil is finite, data is infinite. Irrespective of what side of the argument you are on, it's evident that data is valuable and precious.

Data or knowledge about us, our activities, and behavioural patterns have always existed. But with the internet and smartphones, we share these data with internet service providers like Airtel, Jio, Vodafone-Idea and software and app service providers like Google, Apple, Facebook, Amazon, and Ola in real-time. The collection of this data itself in crude form is not very useful. Like crude oil, it needs to go through refining. That is what the service and product providers do with the data we produce. They accumulate and analyse our data to find trends and insights.

Here are a few examples to illustrate the power of the data that we generate and how it applies to our lives: e-Retailers often remember our purchase history and serve useful recommendations for additional purchases; while using various map applications on smartphones, traffic data generated by us are used to alert others about traffic and road conditions; and not to forget the social media platforms that accumulate and develop attributes about our political and social positions based on our activities on these platforms.

The quest to collect more data, analyse, and develop predictions will continue. Technology allows that, and we embrace and enable that journey, as every piece of interaction generates a lot of data. Service and product providers with expertise to mine data can use these to predict our behaviour and know more about us than we ourselves do. There are fine examples of useful applications of data collection and data mining, as are bad examples of data weaponised for wrong reasons and, in many cases, without our knowledge.

So, next time you pick up your smart devices and start using an app, consider the data you create and how it impacts you now and in the future.

*Pati is Head, ICE India*



# Adding punch to business communication

In this anywhere, anytime workplace era, collaboration tools and solutions complement email and enhance synergy; allowing to get more work done – at record speed



**T**he history of the web has its origin within the efforts to create and interconnect computer networks that transpired from research and development. Now that the internet has completed 25 years of its existence in India it is very difficult to even imagine life without it. The accessibility of the internet has brought in oodles of changes in our daily lifestyle which is almost impossible to be undone. Today technology has transformed drastically from what it was a few years ago owing to the increased access of the internet.

A major gift of the internet has been emails and email solutions also fine-tuned as collaborative solutions. The internet replaced the traditional mode of communication with the onset of emails. The first email was an experiment to see if two computers could exchange a message. The

two computers were stationed side by side maintaining a physical connection through the ARPANET, which belongs to one of the first computer networks of the world. As the internet communication developed, basic emailing that began with Hotmail later continued on numerous applications. From handwritten letters to sending multiple emails, systems and solutions have metamorphosed the written communication.

Email communication has become the king of business communications lately, leaving behind desk phones and calling between colleagues. With the introduction of email communication, dissemination of information occurs at a better speed and at a considerably convenient time. Email offers a single platform/place wherein one can track all the necessary information pertaining to that very organisation,



## WITH PROGRESS OF TECHNOLOGY, PEOPLE'S SKILL SETS ARE GETTING INCREASINGLY SPECIALISED, AND COLLABORATION AS A PRACTICE HAS BECOME MORE IMPORTANT THAN EVER.

for example, contacts, incoming and outgoing messages, chats, calendar, etc., while keeping everything synced and organised.

Today we have a 360-degree solution which allows us to communicate officially with people via team chat and video calling and also do real-time collaboration editing and book appointments via email calendar and so on. With the progress of technology, people's skill sets are getting increasingly specialised, and collaboration as a practice has become more important today than ever. Collaboration in workplace helps in carrying out teamwork successfully.

The introduction of 'Team Collaboration solutions' has been a major shift. In today's world numerous collaboration solutions are making waves in the market. Drifting the focus away from email, these team collaboration solutions permit individuals to be more productive, get more work done, and at record speed. Mostly based on the cloud, these solutions keep files intact at a designated destination where one needs them, while also allowing persistence in the messages.

Since the collaborative solutions are here to stay, let us understand how it can be beneficial for an individual and the business.

### MORE THAN JUST COMMUNICATION

Team collaboration solutions plan out communication in an efficient way. It focuses majorly on the content rather than the message. Equipped with free-flowing chat, collaboration solutions allow every member to interact directly, instead of answering one question at a time.

The structure of these solutions further allows employees to join in at a convenient time and catch up on everything missed, and pitch in or actively get involved when something significant comes up.

Team collaboration solutions provide persistence, it helps you connect to every client – be it a desktop client, a mobile client or an online web browser client. With its

chat and file hosting, one can access any information on the go and get the required work done.

These solutions also help an individual or the organisation in staying organised by categorising their teams and projects into specific rooms or conversations. This in turn cuts down time wasted in looking for files between different emails, thus making one much more productive and proactive.

Organisations often lose out on their data. However, with team collaboration solutions, data never leaves the room. Data is vital to the task at hand, and when shared via collaboration solutions, the file lives directly in the room. This way one can act, react and keep making any necessary changes in the file without losing any crucial data.

### GET CUSTOMISED SOLUTION

Collaboration solutions are highly customisable as they are tailor-made for an organisation keeping in mind the needs and demands. One can fully customise their solutions to withstand a truly unique experience, bridging the gap between tools. Various simple additions like chatbots allow users to keep ongoing task lists right in their collaboration room. Additional features including reminders and easier methods of file sharing make these solutions highly desirable.

With time the workplaces have undergone major changes, from their working to the use of tools. Once the leader of communication, the email has now been replaced to an extent by collaboration tools and solutions. It is appropriate to say that they have brought in a paradigm shift in how businesses operate today. While they may never completely replace email communication, these solutions will certainly work to complement the flow of emails.

*Sharda is CEO India and Middle East, IceWarp*



# Five hallmarks of a great managed services provider

They monitor and maintain your IT environment, helping you increase your competency and save costs. Keep a few points in mind in choosing the right partner



It is imperative to contemplate and consider all angles while choosing a managed services provider (MSP). It isn't as simple as buying groceries. Choosing a B2B vendor requires a lot of thought, more gestation, elongated management-level talks, and a good enough market knowhow.

MSPs are specialised IT Services companies hired to monitor and maintain a company's IT environment that constitutes infrastructure, applications, and security. Managed services enable organisations to augment competencies that they lack or to replace functions or processes that incur huge recurring costs. These services

optimise in-house IT costs, transform IT systems, and automate business processes; thus, enabling enterprises to attain their business objectives.

And like all other businesses, a number of MSPs have proliferated over the years. And if you are on the lookout for an MSP for your organisation, it's a swarm out there. Hence, it is important for you to know how to differentiate a great MSP from the rest. Here are five hallmarks of a great MSP:

## #1 ALIGNED WITH YOUR BUSINESS OBJECTIVES

A great MSP will treat every customer exclusively. They





A GREAT MSP WILL TAKE TIME AND EFFORT TO UNDERSTAND YOUR BUSINESS, ITS OBJECTIVES, OPERATIONS, TECHNOLOGY LANDSCAPE; AND WILL CREATE A PLAN THAT SUITS YOUR NEEDS.

won't consider your business as another hot lead that closed. They will take time and effort to understand your business, its objectives, operations, technology landscape; and will create a plan that best suits your needs. A great MSP will always treat each customer differently.

## #2 PROMPT RESPONSE

Another hallmark of a great MSP is faster response time. The reason organisations engage with an MSP is to ensure seamless business continuity. MSPs are responsible for continuous monitoring and ensuring uptime at all times. But if due to some unforeseen events, the business faces a downtime, the MSP should be quick enough to respond and troubleshoot the issue. Great MSPs will always have a strong commitment to fix issues with minimum downtime possible. Also, if there is a need for emergency on-site support or audits, the MSP should always be proactive enough to respond quickly and be there for you.

## #3 DATA AND SYSTEM SECURITY

With the recent work-from-home (WFH) mandate, data breaches and cyber threats have only multiplied. It is now imperative for organisations to have a robust data security system in place to predict and prevent cyber-attacks which might, at times, lead to irreversible reputational damage. A great MSP is incomplete without security provisioning.

Always look for an MSP that can offer security services for your IT environment. A great MSP will always provide you the best-of-breed data and system security products and services that will suit your needs. It is beneficial for an organisation to leverage such capabilities of MSPs to secure their data, perform rigorous tests, and create a robust and resilient security ecosystem. A true MSP will help an organisation to build

cloud security rules of engagement and design a secure and compliant environment that protects services and data seamlessly.

## #4 ROUND-THE-CLOCK SUPPORT

You should be their only focus. A great MSP is available 24x7. Always look out for a provider which can provide round-the-clock support for your business-critical applications, and its databases, a vendor that can support your business in unprecedented events such as system failure. Always choose a vendor that can deploy on-site support whenever your business needs.

## #5 MODERNISATION AND AUTOMATION

A great MSP will possess strong experience and expertise in terms of understanding the current landscape of applications and technology, and charting a path for modernising it and the underlying infrastructure. They must recommend the applications and infrastructure elements that can be migrated to the cloud. The MSP must also modernise processes and embed automation technologies to make it more seamless and less human dependent. They must also leverage concepts such as server-less computing, containerisation, and micro-services wherever applicable to create a robust and efficient technology landscape for the organisations that they serve.

In conclusion, a great MSP will always serve as an extension to your existing business, and will help you realise benefits across cash flows, revenues, bottom line, and also factors such as customer loyalty and brand recall.

*Kripalani is Senior VP and Head-Center of Excellence – Clover Infotech*



# Heralding multifold transformation of banking ecosystem

It cuts costs and saves time while also complying with regulatory regime and ensuring fraud checks. Video KYC will be on sure footing in post-pandemic future too



The financial services industry has undergone significant transformations in the last decade, with the digitisation bandwagon picking speed. From the onset of the COVID-19 pandemic, people limited their movements and actively sought ways to carry out their daily activities from the comfort and safety of their houses.

With social distancing norms in place globally, companies have been compelled to adapt to this shift, and thus innovative solutions were put in place to ensure smooth functioning of their business operations. This sudden transformation left institutions in a tricky situation, to adapt to the changing times, or risk their survivals. All of this, with regulatory support, has led us to the future of banking.

The pre-digitisation approach to processes at banks and fintechs has faced several challenges, given that they were largely manual efforts. This resulted in a significant number of applicants taking advantage of the largely non-automated system and indulging in identity theft, impersonation, money laundering, and other fraudulent activities. The Reserve Bank of India's decision in January 2020 to revise the know your customer (KYC) guidelines offered a much-needed relief to banks, lending institutions and fintech companies in facilitating the onboarding and verification of potential clients.

Earlier, banks, insurance companies, and several fintechs had to deploy additional resources to assign agents to conduct in-person verification to onboard potential clients. Moreover, millions of Indians remained outside the



## LEVERAGING STATE-OF-THE-ART TECHNOLOGIES, WebRTC BASED VIDEO KYC CAN SHORTEN TURNAROUND TIMES DRASTICALLY, WHILE ADHERING TO SECURITY AND COMPLIANCE REQUIREMENTS.

financial system, without any access to credit, owing to a lack of credible documentation, identity credentials, or credit history. With digitisation and innovation by fintech players, institutions can now onboard individuals swiftly.

### TECHNOLOGY BEHIND VIDEO KYC

Leveraging state-of-the-art technologies, WebRTC-based Video KYC can shorten turnaround times drastically, while adhering to the information security and compliance requirements. For Video KYC solutions to be capable of analysing authenticity, the product/journey needs to be powered by deep learning models and information retrieval algorithms that few companies have perfected in the Indian context. A seamless system should ideally have human-level performance in matching names and addresses across submitted documents and application form data. This is just one level of the technology required to ensure a product that runs smoothly.

Today, companies are offering Video KYC solutions that have been augmented by straight through onboarding: OCR and real-time KYC authentication APIs, passive liveness detection and automated matching of names, addresses and faces. To achieve high levels of accuracy and seamless scalability, service providers leverage on technologies like WebRTC, AWS Lambdas and Container Orchestration Services, and distributed data stores like Amazon SQS, MongoDB, Elastic Search and Redis.

Video-KYC-based solutions are additionally capable of analysing authenticity through facial recognition, geo-tagging, timestamps, and liveness checks, which ascertains location, face match, and other fraud checks. Geo-tagging is an apt solution to determine the authenticity and precise location of the customer in a matter of seconds, while matching it to the user's address on an officially valid document such as Aadhaar.

### THE FUTURE OF VIDEO KYC

Fintech companies are riding high on the current wave of

digitisation and automation, which is most likely to alter consumer behaviour and banking processes for good. Smartphone adoption, coupled with easily accessible data plans, has allowed people from tier III, IV towns and villages to explore a plethora of digital services remotely, eliminating the need to travel to urban centres for registrations and submitting documents. Moreover, streamlining of lending is possible, wherein foolproof Video KYC procedures will ensure proper due diligence that will enable quicker onboarding, with lower costs, making smaller ticket-sized loans a reality and making loan approvals faster and seamless for NBFCs and banks.

Video KYC will bring down expenses, save time, and reduce reliance on personalised verifications. Additionally, institutions will not be required to spend crores of rupees in establishing physical branches and assigning employees to remote locations to onboard new customers. Players in the sector – particularly those with end-to-end financial intelligence solutions and full KYC suite – are showcasing how data analytics, AI, and machine learning-based technologies can smoothly execute Video KYC while being completely RBI, SEBI and IRDAI compliant.

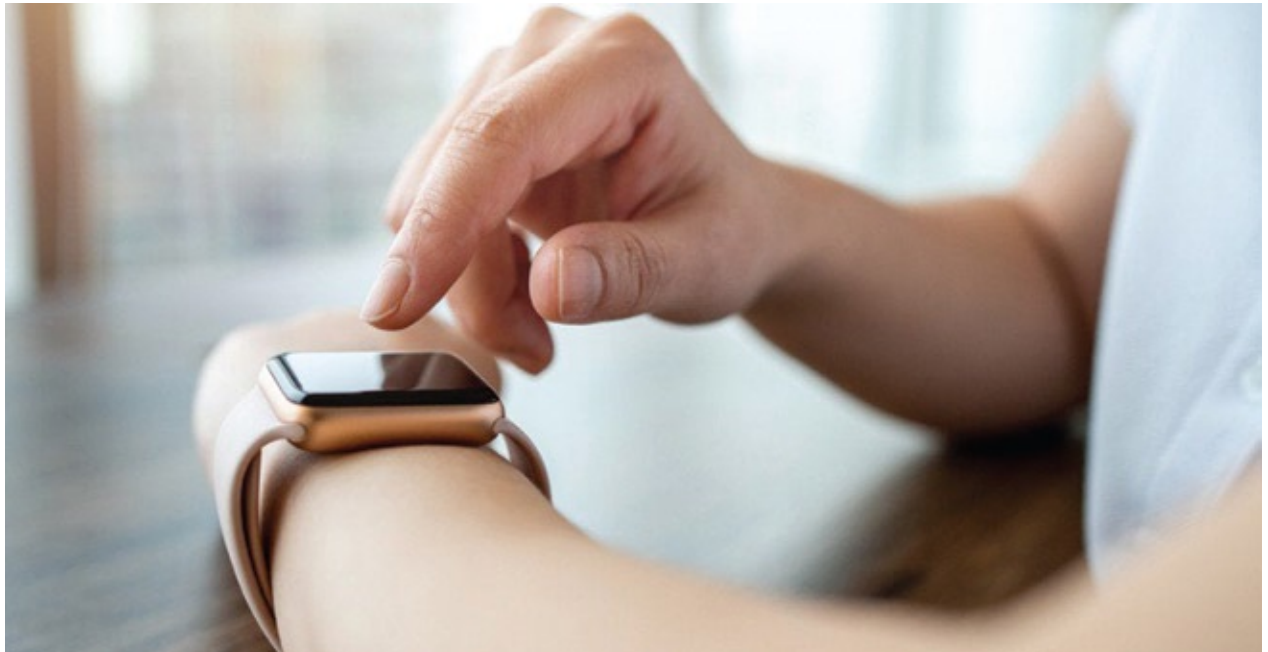
The technology is proving to be one of the fastest and most significant shifts in the banking ecosystem, which is not only intuitive for customers, but also ensures risk mitigation and fraud checks for institutions. As the designs and user experiences get leaner and seamless, it is bound to become a mainstream alternative rather than a place holder during the pandemic. Real-time, tech-driven KYC procedures will become the norm and not an exception in the coming months, and businesses that seek out Video KYC providers will have an edge in expanding into uncharted territories.

*Kumar is Co-Founder and CTO,  
Karza Technologies Pvt. Ltd.*



# Smartwatches getting smarter, may flag infection alert soon

Studies promise a future in which the trendy gadget would flag COVID-like symptoms in advance. That would make it an essential accessory, like smartphones



**C**an your smartwatch make an early detection about a possible Coronavirus infection? As we all know, smart wearables collect a lot of your health data every day. Just the way the heart-rate monitor in your smartwatches can alert you about possible warning signs of sleep apnea or atrial fibrillation, they can also smudge warning signs that might signal that your body is fighting a flu-like infection.

## FITNESS TRACKERS BECOMING SICKNESS TRACKERS

Smartwatches and other wearables make several measurements per day – at least 250,000, which is what makes them such powerful monitoring devices.

The promising and logical progression of wearables in the past few years has highly blurred the margin between wellness tech and medical devices. Smartwatches can

now practise electrocardiograms – an experiment or a test that can measure the electrical activity of your heartbeat – straight from the wrist. But wearables have mostly emphasised on things like reproductive health, sleep and heart disease. Detecting infectious diseases is now a newer territory where smartwatches are doing wonders.

Doesn't it actually seem a foreseen future where your smartwatch warns you before you get sick? It might sound like science fiction, but there's reason to believe wearables could be useful in detecting infections.

## RESEARCH AND FINDINGS

The primary results and data from two academic studies on wearable devices prove to be a small step to combat coronavirus. Also, they prove to be a giant leap for wearable tech. Let's have a look at them.





## THE LATEST RESEARCH HIGHLIGHTS HOW SMARTWATCHES – DEVELOPED INITIALLY FOR RECREATION AND FITNESS USES – MAY BE ADAPTED FOR VITAL MEDICAL RESEARCH.

The research team at Rockefeller Neuroscience Institute in West Virginia reported that Oura ring data and an app (to evaluate cognition and other symptoms) could foreshadow up to three days in advance when people will register cough, fever or shortness of breath. Also, it can predict the exact temperature, like a weather forecast for the body. This combination of the smart ring and app is called a kind of digital PPE (personal protective equipment).

Meanwhile, researchers at Stanford University studying changes in heart rate from Fitbits have also reported that they have been able to identify the coronavirus before or at the time of diagnosis in 11 of 14 confirmed patients they have examined. In this study, they witnessed one patient's heart rate jump nine days before the person actually reported symptoms whereas in other cases, they only saw evidence of infection in the data when patients observed symptoms themselves.

As per the Stanford Medicine, wearable devices can measure skin temperature and heart rate, which usually rises when the body is struggling with an infection. Stanford's researchers use the data to train a series of algorithms that can detect early symptoms of infectious diseases like COVID-19. These algorithms are smart enough to spot things that humans usually don't notice about their own bodies.

Such signals include slightly elevated resting heart rate, subtle fluctuations in temperature, heart rate variability and sleep patterns. Such changes can allow the software to give early warning about coronavirus symptoms, days before people could realise that they have been infected. This early warning can be beneficial in getting people to isolate themselves, in order to avoid the infection spread further.

The latest research highlights how smartwatches – developed initially for recreation and fitness uses – may be adapted for vital medical research. Apple has started to study on how its smartwatch can detect heart problems, and Fitbit has been working with some 500 diversified

projects for research on diabetes, cancer, respiratory and other health issues.

### AI TO MAKE THE TASK EASY

With artificial intelligence and machine learning coupled with negative thermal coefficient (NTC) thermistors, tomorrow's smartwatches could deliver continuous body temperature readings and alert you to flu-like fluctuations. Companies are coming up with smartwatches with installed smart thermometer data to visualise infections. Combined with the heart rate data, SpO2 readings and future body temperature sensors, it could give health providers invaluable data on a day-to-day basis for battling future pandemics.

### FROM LIFESTYLE PRODUCT TO A NECESSITY

As the world grapples with the rising cases of COVID-19, smartwatches are finding ways to track early symptoms, minimise contact with infected patients, and ensure adherence with social distancing norms. Hence, it can be said that from tracking activity to tracing virus, smartwatches could become our early detectors.

To slow down the spread, we need devices that help us to quickly and precisely identify the possible infected people. Also, it can give critical information of disease efficiently. This has the potential of making smartwatches a necessity. It can become an essential accessory one will carry everywhere.

Since we don't have many options to get tested for COVID-19 infection, people are more worried. Fitness smartwatches will not only help users monitor their heart rate, BP, calories, footsteps and other health parameters which can help them to have a record of the fitness and health level, but it can also provide an early alert of COVID or other infection symptoms.



*Nandwani is COO, Hammer Audio*

# Get future ready with just the right technology

Employees working from home may inadvertently resort to using unauthorised tools, which can create trouble for the tech team. Here's the solution for Shadow IT



**A** recent Gartner study discovered that somewhere between 30% and 40% of IT spending in large enterprises goes to Shadow IT. Employees are taking matters into their own hands. Imagine an HR employee in today's work-from-home scenario. She is trying to pull up the attendance and timesheet information submitted by the employees to make her end-of-the-month reports and payroll. Exporting timesheet details to the payroll every time just won't cut it!

The HR manager heads over to the IT department and asks what her options are and sure enough, the IT team can whip up an automation tool but they already have projects up to their necks. So, this HR manager will find herself going to the internet to look for ready- or easy-to-use solutions. While we all want to use IT approved tools and technology to avoid any mishaps, today's technology-savvy employee is more likely to take matters into their own hands than wait around for the IT.

Another reason Shadow IT finds its way into businesses is that employees prefer tools that resemble consumer applications they are fond of. This is why we see the likes of WhatsApp, Slack, Team, and Workplace picking up rapidly in the workspace.

## WHY IS IT CALLED SHADOW IT?

Employees using applications without the official consent, verification or knowledge of the company's IT teams is commonly called Shadow IT.

It is a fulltime job to be aware of the regulations, requirements, and constraints. Keeping the organisational information safe and secure from data breaches is a key responsibility of the IT department. So, whether you are a large enterprise or a smaller business, your IT team needs to keep a stringent check on every application or digital service that finds its way into the organisation.

But Shadow IT may not be the only cause for data breach or hacks. It is, in fact, often the result of the negligence or the inability of the IT team to meet the employee's need due to low bandwidth. This leaves Shadow IT vulnerable to exploitation.

## CONTROLLING SHADOW IT

The employees may or may not understand the price Shadow IT comes with. All they want is to get the job done as opposed to waiting for the IT to do it for them. The reasons can be many: the organisation may not have enough developers or the IT team does not have enough



## EMPLOYEES MAY OR MAY NOT UNDERSTAND THE PRICE SHADOW IT COMES WITH. ALL THEY WANT IS TO GET THE JOB DONE AS OPPOSED TO WAITING FOR THE IT TO DO IT FOR THEM.

time; there is an easy access to data and ready tools, or there may be DIY, tech-savvy workforce that is ready to do it themselves rather than wait.

An ideal scenario would be to have an IT team that meets each and every requirement of the business. But that would still not guarantee satisfaction or the desired functionality. In reality, it is too late to get into the depths of Shadow IT and kill it off. However, managed Shadow IT allows room for innovation and regulatory control to take place simultaneously.

### EMBRACE LOW CODE, EMBRACE SHADOW IT

Forrester, in its report on 'The Future of IT', stated that how an organisation utilises technology speaks a lot about its success. To bring about this utilisation to its highest potential, success-driven organisations are bound to fade out the business-it gap. The increasing or evolving needs of customers and employees demand IT to "take a larger role in the business and ensure that technology creates new capabilities that shape and guide a firm's strategy and operations".

Low code is just the technology that gets you future-ready. It is something that the IT teams can readily vet for the organisations and both the business users and developers can then use to ramp up solution development. By giving some power to the business users who need tools that are right for their line of business (LOB) operations, as a CIO you open the floor for more creative execution.

An enterprise-class low code platform brings app development and deployment process from six months down to less than a week. By allowing the developers to quickly build trusted apps for the business, the chances of the employees looking for solutions outside can be brought down.

As the workplace copes with the uncertainties brought on by the pandemic, options like low code given into the hands of the Line of Business/business users, like our HR managers in the story above, can help organisations

set up new processes quickly. By embracing low code, the agile practices supported by the platforms can help off-load the IT as well. As for the developers, low code shortens the development time from months to weeks.

Along with battle-tested security features, granular access control and permission, user management and ease of deployment, a no code solution also allows for scalable and economical management of applications. So, as the organisation grows, your apps can be scaled without adding to the plate of the IT teams.

### MANAGED SHADOW IT WITH NO CODE

A well-vetted low code technology platform can take you months ahead into your project timelines by giving these tools into the hands of citizen developers.

With a well-defined scope and room for iterative development, you are giving citizen developers the freedom to get hands-on, build, test, iterate before putting anything into production.

A low code platform, which can be used by professional developers as well as citizen or business developers, gives you that exponential increase in productivity.

What cannot be tackled by force can be resolved by hiring more developers or by judiciously adopting accelerating low code tools. The business developers can make their own tools now if they do not get the tools from IT. The business teams will have the required tools and the IT will be able to maintain security standards and avoid discrepancies.

Turn Shadow IT into an opportunity for your organisation by handing the reins to the best fit maker, letting them build the solution they need with clearly defined guidelines and thorough testing. You will soon begin to realise innovative solution development picking up pace in your organisation.

*Kharade is Co-founder and CEO, DronaHQ*



# With RGM upgrade, CPG firms can balance growth and efficiency

When revenue growth management is led by AI, consumer packaged goods companies can balance growth and efficiency, and stay ahead of the curve



**C**ompanies operating in the consumer packaged goods (CPG) – fast-moving consumer goods – segment work under a unique ecosystem. They have to strike a balance between maintaining top-line revenue growth and managing sustainable profit margins. The task becomes difficult because they have to do so while managing a dynamic set of operations. Moreover, a shift in consumer preferences, advances in data and analytics, channel shifts, and pandemic-led disruptions have created new challenges for retail and CPG companies.

However, in the current market scenario, they also have the opportunity to upgrade revenue growth management (RGM), thereby creating equilibrium between growth and efficiency. They can increase the use of complex and action-oriented analytics across the product catalogue, optimise value capture approaches, use automated

technology, and partner with retailers for shared value creation.

## WHY UPGRADING RGM IS IMPORTANT FOR CPG COMPANIES

Competitiveness has considerably intensified within the CPG industry. Today, there are limited avenues in terms of customer touchpoints vis-a-vis the year-ago period. The demand pockets have also changed dramatically and so has supply chain management in the New Normal. CPG businesses today need to unlock as much efficiency from as many avenues as possible.

For those who cannot determine whether they should upgrade their RGM or not, there are a few questions that will help them overcome this quandary. Is your inflation getting outpaced by net revenue realisation? Are your capabilities increasing faster than your competitors and





## A MODULE WITHIN RGM CAN HELP IDENTIFY AND RECOMMEND PRICE TIERS, BETTER TRADE INVESTMENTS, ETC. IT CAN ALSO PREDICT OUT-OF-STOCK INCIDENCES MORE ACCURATELY.

retailers? Is the RGM beyond silo and addresses online business as well? Has it been integrated to your overall business strategy and at scale? Are you sufficiently leveraging data and analytics to grow revenue?

If the answer to a majority of these questions is 'Yes', then you don't need to upgrade your RGM. If it is 'No', then it is time to think otherwise. Depending on the answers, companies must commit one or more paths towards RGM differentiation today to help their business triumph in the market. Leading data analytics solution providers help you to lay out and execute RGM roadmap for both strategic RGM and tactical implementations seamlessly.

### ROLE OF AI IN REVENUE GROWTH

Over the last decade, a lot of CPG companies have implemented or tried to bring in new data and technologies for revenue growth management. This has enabled them to gain knowledge on what, how, and why shoppers buy and consume. Organisations are further bringing in macro data and other studies like segmentation into the toolkit. While RGM is important to operate effectively in the market, companies no longer have a competitive edge.

For sustainable revenues and growth, CPG companies must adopt AI. Its importance in terms of advanced capabilities in pricing, promotions, assortments, and trade investment will only increase as the competition intensifies within the CPG industry.

AI and ML provide companies with the scalable capability to utilise the power of data and navigate complexity. AI lets CPGs and retailers access customer insights and predict future actions based on the past behaviours. AI uses predictive analysis to help understand the desires, motivations, and actions across physical and digital channels. It allows retailers and suppliers to improve functions such as executing hyper-personalised campaigns and trade promotions efforts.

In fact AI brings in key aspects such as the ability to add in a variety of data sources and enables quick feedback

loop. It creates a learning mechanism to update the model and recommendations on the basis of the ever-changing market dynamics such as consumer preferences.

AI also helps improve the speed to market. For instance, one of the modules within RGM can help identify and recommend price tiers, better trade investments, and so forth. It can also predict future out-of-stock incidences more accurately, thereby helping to optimise supply chains.

Such solutions provide swift and actionable insights that lead to better conversion and engagement rates with customers. It further leverages predictive algorithms for guided decision-making, scenario planning, and simulation to drive prepared outcomes.

### HOW AI SUPPORTS RGM

The most critical function of AI in RGM is that it converts plain data into the famous "so what", that is, the relevant implication or suggestion. It helps in shifting the output from 'insights' to recommendations. These are some of its other advantages:

**Unified data view:** AI helps leaders understand the consumer and drive efficacy with a unified data view. It reveals how actions impact key performance indicators (KPIs) across the business, and not only within each function. The algorithmic recommendations enable one to look beyond interim improvements and suggest actions that achieve end-goals.

AI unifies data scattered across multiple channels and sources (both structured and unstructured). It can detect and classify relevant information on consumers relating to individual household information, scan cart-level data at point-of-sale, social sentiment, purchase behaviour across channels, travel patterns and dwell time in various venues to gain deep insights of the consumer path to purchase. AI technology enables teams to comb through massive data, analyse, and decode customer shopping behaviour on micro parameters. This also helps CPG companies create a 360-degree customer view.



## THE MOST CRITICAL FUNCTION OF AI IN RGM IS THAT IT CONVERTS PLAIN DATA INTO THE FAMOUS “SO WHAT”, THAT IS, THE RELEVANT IMPLICATION OR SUGGESTION.

**Granular predictive models:** Predictive AI models built on unified data are very granular and micro-segmented. This makes them capable of large-scale analysis with tailored objectives and limitations at all levels. They can learn from history and can also predict probable future outcomes. Such models can also estimate baseline and raise forecasts combining a diverse set of influencing factors. They leverage deep learning to recognise shopping patterns and complex interactions, for instance, switching between brands within a category, or switching between channels, or even between shopping occasions. They can identify interrelated patterns between trade and other actions in the market.

AI provides minutest insights to understand each customer by sifting through massive structured and unstructured datasets from the first- and third-party sources. It helps spot micro-segments and emerging demand spaces (e.g., new occasions, sub-segments, servicing opportunities) to build new business models, optimise the product, pricing, promotion, and marketing activities.

**Forestall and recommend actions:** AI assistants can scan all channels, markets, competitor actions, retailer actions, and self-assess to find opportunities and threats. Next, predictive models can evaluate complex interactions to explore numerous possibilities and suggest the best action to people based on their roles, owing to each market and the account relationship.

AI also helps to redefine businesses by automating manual, repetitive, and high-volume processes. Its learning capabilities allow it to self-optimize over time and reduce the work volume of employees. The technology's deployment not only boosts employee productivity but also unlocks greater ROI for businesses.

**Growth hacking through quick test and learn:** AI systems evolve themselves by learning from experiences. Event analysis in RGM takes a futuristic approach towards learning about consumer behaviour. AI models

bridge the gap between plan, execution, and results with the process of continuous learning using 'recommend', 'act', 'measure' and 'learn' methodology. RGM or related teams can conduct well-designed experiments in choicest markets, analyse the outcome, and roll out smart strategies across the business.

**Ongoing feedback:** It creates a loop mechanism for continuous learning model and recommendation improvements. The feedback loop ensures that the model keeps on updating itself without much human intervention.

It also helps in creating hyper-curated experiences. Because AI analyses massive unstructured data such as photos, audio and video, this helps in creating most relevant and personalised messaging and offers, and value-added services. This is while basing on consumer preferences in real-time.

### AI-LED RGM FOSTERS SUSTAINABLE SUCCESS

Leveraging AI to thoroughly understand the consumer and reinvent relevance, CPG companies can develop a powerful capability. It can help them retain and expand their user-base, reduce costs, stand-out competitively, and drive new opportunities. Also, AI can improve their ever-evolving standards of performance by optimising interactions and transactions – paving the way for never-ending growth.

Pricing and trade spend within revenue growth management are some of the most powerful yet complex functions. If done well, they can help organisations win over not just their customers, but the market as well. So, prefer a solution provider that has a proven track record of RGM toolkit deployment and its subsequent scaling.

Saeed is Director, Analytics,  
Absolutdata



# The power-packed combo

High-performance computing, coupled with AI and ML, enhances manufacturing operations – right from the design process to supply chain and delivery of products



**T**oday, enterprises are leveraging the self-learning power of artificial intelligence (AI) and parallel process systems of a high-performance computing (HPC) architecture to customise business processes and get more done in less time. In the current unprecedented scenario, industries across verticals had to fast-track digitisation and are testing HPC-enabled AI to synchronise data and build new products and services.

MarketWatch predicts that HPC-based AI revenues will grow 29.5% annually as enterprises continue to integrate AI in their operations. Moreover, with the growth of AI and Big Data as well as the need for larger-scale traditional modelling and simulation jobs, the HPC user base is getting expanded to include high-growth sectors like automotive, manufacturing, healthcare, and BFSI among others. These verticals are adopting HPC technology to manage large data sets and scale out their current applications.

The manufacturing companies, especially, can reap the

benefits of HPC as they strive to enhance their operations – right from the design process to supply chain and delivery of products. A study by Hyperion Research indicates that for each USD 1 invested in HPC in manufacturing, USD 83 in revenue is generated with USD 20 of profit.

Similarly, they are leveraging AI and machine learning (ML) to accelerate innovation, gain market insights and develop new products and services. Manufacturing organisations have been able to introduce AI into three aspects of their business, including operational procedures, production stage, and post-production. According to a report by McKinsey's Global Institute, the manufacturing industry investing in AI is expected to make an 18% estimated annual revenue growth than all other industries analysed.

## OPTIMISING PROCESSES TOGETHER WITH HPC AND AI

As manufacturers aim to achieve optimal performance and quality output, their focus is to implement HPC-



## MARKETWATCH PREDICTS THAT HPC-BASED AI REVENUES WILL GROW 29.5% ANNUALLY AS ENTERPRISES CONTINUE TO INTEGRATE AI IN THEIR OPERATIONS.

fuelled AI applications to proactively identify issues and enhance the entire product development process, thereby improving end-to-end supply chain management.

At the same time, M2M communication and telematics solutions in the manufacturing sector have increased the number of data points in the value chain. The usage of HPC drives sophisticated and fast data analyses to ensure accurate insights are derived from large data sets. Combining HPC with AI applications allows network systems to automate real-time adjustments in the value chain and reduce the breakdown time. This also results in enhanced product quality, accelerate time-to-market, and make the production process more agile.

Substantial use of computer vision cameras in the inspection of machineries, adoption of the industrial internet of things (IIoT), and use of big data in the manufacturing industry are some of the factors adding to the growth of the AI in the manufacturing market for predictive maintenance and machinery inspection application.

Enterprises in the manufacturing industry can use the power of AI with HPC capabilities to deploy predictive analytics. This will not only help them optimise their supply chain performance but also help design demand forecast models and use deep learning techniques to enhance product development. There will, thus, be a need of high-speed networking architecture and systems storage to roll out and power the AI-based programs.

On the other hand, the manufacturing companies are increasingly leveraging HPC systems with computer-aided engineering (CAE) software for performing high-level modelling and simulation. And there is a significant inter-dependability between HPC-powered CAE and AI, where simulations generate huge sets of data and AI models apply data analytics repetitively for even higher quality simulations. By now it is evident that the integration of CAE and AI will accelerate product development and improve quality; however, the scalability required to address the

Big Data and compute challenges can only be managed by an HPC infrastructure.

### CLOUD-ENABLED APPROACH TO HPC

More data means more modelling, and, therefore, a more intensive machine learning solution. It is also important to invest in an HPC-Cloud for faster delivery of results by AI/ML models. A cloud-enabled HPC will help companies scale up their computing capabilities, as many AI workloads run in the cloud today. HPC applications built on cloud, allows companies to innovate by incorporating AI and enhance operations. AI workflows require continuous access to data for training; however, it can be a task to do so on-premise.

Today, manufacturing companies can choose from hybrid and multi-cloud options to provide a continuous and smooth computing HPC environment for on-premise hardware and cloud resources.

### THE POWER OF ONE

The manufacturing industry stands to benefit most from the convergence of HPC and AI technologies. Instead of using AI and HPC as different technologies, the organisations in this sector are unifying the two clusters to reduce OPEX cost and optimise resources. Just to reiterate, the powerful combination of HPC and AI tools is helping manufacturing companies in high-quality product development, improvement of supply chain management capabilities, analysis of growing datasets, reduction in forecasting errors, and optimal IT performance.

By combining AI and HPC capabilities, the manufacturing sector has found multiple ways to deliver the right products and services, accelerate time to market, and drive efficiencies at each stage of development.

*Israni is Executive Vice President and CIO, Yotta Infrastructure*





# Mobility in the age of social distancing, courtesy technology

Amid the pandemic, demand for rental cars is unprecedented as more and more people realise the advantages of technology-driven, shared mobility solution



**T**he future is already here, as far as mobility is concerned. Massive milestones have been achieved within a short time, and the mobility landscape is already grown remarkably from what it was a decade ago.

The global pandemic has thrown in a catalyst that generates changes in the mobility ecosystem, more rapid than ever before. The changes in question are emerging as part of the effort to cope with mobility challenges presented by the pandemic that requires human contact and social interaction to be reduced to the bare minimum. Amidst all this, technology continues to be the driving force and is reshaping the future of mobility. Here's how.

## SUBSCRIPTION MODEL: A GAME-CHANGER IN THE MOBILITY LANDSCAPE

As things stand, subscription models are the trend of tomorrow. Subscription models are offering the perfect solution to the pandemic-induced challenges in the mobility segment. When the benefits of it are duly evaluated, it is clear that its relevance will not diminish even post the pandemic.

It has every sign of a sustainable, long-term mobility solution. For people who envision car ownership without the hassles of congested parking spaces, heavy maintenance costs, and insurance premiums, subscription models are dream come true. In contrast to traditional car



## SUBSCRIPTION MODELS OFFER THE PERFECT SOLUTION TO THE PANDEMIC-INDUCED CHALLENGES IN THE MOBILITY SEGMENT. THEIR RELEVANCE WILL NOT DIMINISH POST THE PANDEMIC.

ownership, subscription models are the best-suited for the busy and fast-paced modern lifestyles, particularly that of millennials.

### AI INTEGRATION

AI has been vital to revolutionising the future of the mobility sector, much like it has done for several other industries. With AI integration, rental cars are now equipped with real-time monitoring. The distance traversed by the rental car to the pre-set rates is a primary factor that decides revenue. Furthermore, it optimises the routes and provides accurate monitoring. To that end, even a mere speck of data has the potential of increasing the profit margin substantially.

In addition to these, real-time monitoring is a huge bonus for service providers as they can monitor the automobile irrespective of locations. The silver lining of it all is that the condition of the rented car can be monitored and appropriate measures can be taken when the situation demands. For instance, the system can pinpoint the gradual wear and tear of the rental car being used, which cannot be spotted by the naked eye. This puts a check on customers who might take to rash driving while using a rental. As such, the integration of AI brings to light such instances, and brands can evaluate the damage sustained by the vehicle, and initiate reparative measures accordingly.

### USER-FRIENDLY EXPERIENCES

In any given place and space, when customer-oriented services are concerned, user experience is everything as it defines the service. To that end, technology is poised to help deliver top-notch service and give customers a memorable and frictionless experience. For instance, cutting-edge innovations such as AI, ML, and RPA are in place to redefine user experience. In retrospect, no one would have conceived the idea of chatbots and virtual

assistance tools that are the standards of the present days, thanks to technology.

That is to say that even though the pandemic may seem like an all-encompassing quandary, it is not the case due to technology-driven solutions. Technology has emerged on top time and again and the still makes it possible for us to navigate through these challenging times smoothly with features such as real-time updates for customer queries and keyless entry systems.

### CATERING TO LOCATION-BASED DEMAND

Technology enables brands in the rental car industry to cater to location-based demand. Leveraging this new possibility are various establishments such as airports, amongst others. That said, major airports are now incorporating rental services that are mostly availed by users familiar with a city and only require a mobility solution to traverse through it. Besides airports, even hotels and popular tourist spots are adopting rental car services to deliver the ultimate convenience to customers. This is a total liberation for tourists as they can now navigate a landscape in an unbridled manner.

The demand for rental cars is unprecedented as more and more people are becoming aware of the advantages that come attached to a shared mobility solution that is eco-friendly. Major brands in the industry are even experimenting with electric vehicles (EVs) to reduce the strain inflicted on the environment. As such, electric-powered rental cars are set to go a long way in redefining mobility solutions as they offer scope for carpooling, thereby reducing the production of hazardous emissions. All in all, technology is a force of change that sets the dynamics of the day and will continue to shape the future of mobility.

*Moran is CEO and Co-Founder,  
Zoomcar*



# It's time to move up the technology ladder

On top of ever-increasing risk and volatility, they also face regulatory constraints in adopting new technology. Yet, they can't help but welcome innovation



In recent years, banks in general, have taken major strides to take advantage of various innovations, emerging technologies and data science tools. In several cases, this has been greatly accelerated by various technology labs and startups. On the flip side, because banks have always been heavily regulated, this has also meant large-scale testing and validation processes have been necessary which has delayed even more assertive digital system advances.

Examples of innovation success stories include application programming interfaces (APIs) which define and facilitate interactions between multiple software intermediaries, enabling banks to make real-time payments. Banks have made good usage of APIs and have seen success in adoption by their partners and clients.

Yet, for other innovation-led initiatives which involve multiple sides, technology is still nascent, and the business may lack regulatory clarity. In these circumstances, the journey has not been straight-forward. The adoption of distributed ledger technology, used as the foundation for blockchain, for example, has remained at the stage of proof of concept (PoC), trials and limited launches.

## INVEST MANAGEMENT FIRMS ARE PLAYING CATCH-UP

Investment management firms are on a similar transformation path today, currently seeking to take advantage of various emerging technologies that can improve their operations and simultaneously provide cost-effective strategies, while allowing for the extraction of incredibly valuable business-leading insights.

An example of an area which certainly needs innovation is know-your-customer (KYC) in account opening. Large payers have started to apply technology, such as AI and other innovative technology of start-up firms, in this area. Most banks have been out front, already implementing mainstream KYC provisions.

Asset management and investment management firms are recognising the critical importance of data and systems availability on cloud to enable seamless data access for their counterparties, clients and partners.

## WHY DO ASSET MANAGEMENT FIRMS NEED TO EMBRACE INNOVATION?

The investment world is facing multiple challenges as it prepares for not only the current environment but for the



## ASSET AND INVESTMENT MANAGEMENT FIRMS RECOGNISE CRITICAL IMPORTANCE OF DATA AND SYSTEMS AVAILABILITY ON CLOUD TO ENABLE SEAMLESS DATA ACCESS FOR ALL STAKEHOLDERS.

world of the future. These are not the usual challenges that regulations have posed over the last several years. They are facing unprecedented risk and volatility. Several thematic investment themes have emerged, such as environmental, social and governance (ESG). All of this is being tested against the goal of generating returns, while minimising the risks arising out of market volatility. In addition, investors are demanding access to more frequent and more granular data when it comes to analysing investment decisions and returns.

Along with the many real-life pressures on the investment management industry comes the additional need to conduct even more frequent analysis of various investments. That very often requires these firms to collect, secure, analyse and best utilise vast datasets. This often leads to the tangible need for scalable and cloud-based operating platforms.

In addition, the increased appetite for ESG investments, including assessing how climate change can affect different investments, has led to the necessity for firms to access and leverage new datasets and appropriate models for continuously assessing the impact. Moreover, in light of changing market conditions, real estate securities and assembled portfolios could greatly benefit from more granular and more frequent analysis.

### WHAT ARE THE CONSTRAINTS?

Investment management firms are typically several years behind when it comes to refreshing their own systems, platforms, and operating technologies. In fact, in many cases, their systems are decades old and are often black boxes. Their journey to the cloud, in general, is lagging in the sell-side. There is a pervasive lack of firm-wide data which could allow for the handling of newer data sources. Also, data science-based workbenches are not advanced or have not yet been implemented.

### HOW CAN INVESTMENT MANAGEMENT FIRMS TAKE ADVANTAGE OF APPLIED INNOVATION?

There are many critical elements for firms to tackle when

they necessarily undertake and progress their innovation journey. Some of them are:

Ensure proper data management through managed access, APIs, data lakes, and tools like Neo4J which can provide graph-based resolution of cross-referencing entities, and other key data elements.

Allow cloud enablement through Confidential Compute, Azure and other cloud operating platforms, assessed to meet the firm's unique needs.

Implement the right data science tools, which will become necessary for model development, and an array of other investment and process-related methodologies. There are a host of data science platforms which are now capable of providing end-to-end model lifecycle management.

Facilitate and streamline inputs from various data providers as new-generation data providers can now enable the ability to process unstructured data. A number of NLP based tools have now been put into production by large data vendors as well as promising new entrants.

Assess and accommodate varied data privacy aspects with differential privacy standards and policies, as needed. Leap year is emerging as a great option when it comes to differential privacy among participants, be it a consortium or inter-firm transactions needing a common view.

### THE OPPORTUNITY FOR INNOVATION IS HERE

Leaders within investment management companies have the opportunity to provide an advanced toolkit for their business and help them grow, while managing multiple risks given the advances in emerging tech and data. They need to be able to quickly utilise, test and deploy newer data sources, tools, and systems, all with an eye toward their operational needs and capabilities that will ensure their readiness for the future.

*Kumar is Managing Director and Head of InvestTech Accelerator Program, Synechron*





# Managing the digital-era threats

A connected organisation requires business-aligned CISOs to manage and reduce cyber risk



Over the past 25 years, the internet has drawn India closer to the rest of the world by giving people and organisations the ability to connect and share information. For businesses, the internet has unlocked a deluge of data to drive success. This has paved the way for modern, global digital transformation.

Organisations of all sizes in India have embraced digital technologies as a means of competitive differentiation. This transformation is increasingly occurring for providers of critical infrastructure through operational technology as well. They are creating new business models and customer ecosystems, delivering new products and services, and operating more efficiently in the digital economy. Various government-led initiatives such as Digital India and the Smart Cities Mission are a testament that India is well into its digital transformation journey.

Along with the new opportunities that come from digital transformation, there are significant new vulnerabilities and cybersecurity challenges that organisations need to

manage. The convergence of traditional IT networks with the internet of things (IoT), operational technology (OT), mobile, and cloud platforms creates an expanded attack surface. Enterprise security teams are now challenged to defend this vast threat landscape.

A recent study by Forrester Consulting reveals that 97% of organisations in India suffered a business-impacting cyber attack in the past 12 months. This figure is a grim reminder that digital progress is outpacing the speed of security. Cybercriminals are always trying to test the strength of corporate cyber defences and OT is becoming an increasing target as it may be a blind spot for security teams who tend to focus on traditional IT devices.

A joint alert in May 2020 from the US National Security Agency (NSA) and the US Cybersecurity and Infrastructure Security Agency (CISA) recommended that all US critical infrastructure facilities take immediate action to secure their OT assets. The advice comes in light of the greater use of internet-accessible OT assets to help enable organisations to operate remotely, a phenomenon



## A STUDY BY FORRESTER CONSULTING REVEALS THAT 97% OF ORGANISATIONS IN INDIA SUFFERED A BUSINESS-IMPACTING CYBER ATTACK IN THE PAST 12 MONTHS.

accelerated by the COVID-19 pandemic. This alert should be an early alert to all countries, including India, to strengthen critical infrastructure security because internet-accessible OT devices are significantly exposed to attackers.

Securing OT and critical infrastructure may seem like a no brainer. However, the Forrester study also revealed that only four out of 10 security leaders in India are able to answer the question, “How secure, or at risk are we?” These findings suggest that CISOs are ill-equipped to provide a clear picture of their organisation’s cybersecurity posture in a way business leaders understand. This prevents meaningful dialogue between security and business leaders.

### CLOSING THE GAP BETWEEN BUSINESS, SECURITY LEADERS

Security leaders can’t align with and support business needs by working in a vacuum. Strong security requires strategic alignment between business and cybersecurity leaders that is lacking in many organisations. The Forrester study shows that only four out of 10 business executives rarely – if ever – consult with security leaders when developing their organisations’ business strategies. The report also indicated the lack of effective communication occurs on both the security and business leadership sides of the table.

Business and security leaders should be in lockstep when it comes to ensuring the security of their digital and physical assets. However, this can be challenging if both are disconnected and not speaking the same language. Cybersecurity leaders can begin remedying this problem by ensuring their initiatives are reframed as business priorities. This can be done by communicating business value and ensuring that objectives align with business needs.

It’s also important for security organisations to work with business stakeholders to align cost, performance, and risk reduction objectives with the business. One of the key ways that security leaders can bridge this gap is

through metrics that speak to business risk. Eighty-five percent of business-aligned security leaders have stated they have metrics to track cybersecurity value while only 25% of their less aligned and reactive peers are able to show business value.

Another way to show business value is through internal and external benchmarking. Just as any company leader will evaluate financial performance versus their competitors, security leaders can become more aligned to business-aligned if they can clearly articulate expectations and demonstrate improvements compared to industry peers.

Business leaders also need to provide their security experts with the right combination of technology, data, processes, and people to succeed. One of the most important ways to achieve this is by giving the CISO visibility of the entire company’s operations. This often requires elevating the CISO role within the company, to ensure that security is baked into every business decision from the start. With complete visibility, security experts can take a holistic view of the company’s most critical assets, and make risk-based decisions to prioritise security efforts.

### KEEPING UP WITH CYBERSECURITY NEEDS

The threat landscape has changed significantly over the years. In today’s digital era, every organisation, no matter how large or small, must be able to answer a few foundational questions about their security posture.

Where are we exposed? Where should we prioritise based on risk? Are we reducing exposure over time? And, how do we compare to our peers? By connecting the language and metrics of security and business leaders, and by empowering cyber leaders with complete visibility over assets, organisations can take an important first step to close this gap.

*Palmer is Chief Cybersecurity Strategist, Tenable*



# Betting big on tech-led innovations

AI, blockchain, RPA and chatbots are among the new tools that are delivering competitive edge and helping insurance companies in expanding markets



**T**echnology has transformed every facet of the world we live in and is arguably the single largest force changing human needs and the nature of business. Needless to say, the insurance industry is no exception here.

Of late, technology is driving innovation in the insurance sector leading to several milestones. Giant insurance leaders have started shifting towards the latest innovative technologies that will help them become more customer-centric and create operational excellence.

Entering new markets and expanding in existing ones is an area of major interest for the insurance industry globally. Successful business strategies for insurers entering or

growing in emerging markets involves a high growth rate, increased size and more emphasis on life insurance and now it can be easily done with the help of technology. Let us take a look at some of the major technology-based innovations in the insurance industry.

**AI and IoT:** Advances in artificial intelligence (AI) are allowing incumbents to automate increasingly complicated tasks, including addressing all forms of customer queries. The development of AI in insurance is not only speeding up the time it takes for a customer to buy a policy or settle a claim, but it is also taking historical and behavioural data such as the driving record and creating more personalised packages. Also, for insurers with more mature technology





**BLOCKCHAIN TECHNOLOGY CAN GIVE VISIBILITY TO DATA, THUS MAKING THE PROCESS TRANSPARENT AND SECURE. IT CAN EASILY REMOVE SUSPICIOUS AND DUPLICATE TRANSACTIONS.**

capabilities, a suite of internet of things (IoT) technologies can help reduce manual interventions in claims and pricing.

**Blockchain:** The technology is capable to drive radical change in the insurance industry while increasing transparency and outcomes across the entire value chain.

There are several challenges in an insurance industry such as complex compliance issues, limited growth in mature markets, third-party payment transactions, fraudulent claims activity and handling huge amounts of data. Leveraging the blockchain technology can give visibility to the data, thus making the process transparent and secure. It can easily remove suspicious and duplicate transactions by logging each transaction. Also, it can properly manage, share and monetise large amounts of data, in turn, saving a significant amount of time.

#### **CUSTOMER EXPECTATION**

Customers have more advanced and complex needs and are more aware of their choices than ever before. They want personalised service and tailored communications. That's the reason insurers must digitise services and optimise all interactions. According to the Global Consumer Insurance Survey, 80% customers are willing to use digital and remote channel options for different tasks and transactions.

**RPA:** Robotic process automation (RPA) automates the mundane routine workflow of the insurance industry. Therefore, it reduces the workload and cost of operations, and improves customer satisfaction. It also reduces the claims processes by automating the data collection process. Also, manual data collection and entry is a difficult task and could lead to inconsistencies and errors in data management. RPA simplifies the data management process at great speed.

Some more technologies such as cloud computing, advanced analytics, global positioning system (GPS), telematics, digital platforms, and drones are providing

new ways to measure and control the risk, connect with consumers, and broaden insurability. They are also enabling the production of new insurance services, products, and business models. Technology can also aid in smoothening several processes and functions in the sector.

**Internal workflow automation:** Insurers are leveraging technology to automate repetitive tasks generally associated with getting data from a back-end system or putting data into a back-end system. With its help, software robots that can be invoked at various points within the overall business process to eliminate repetitive work performed by people. The result is massive automation and enhanced visibility into the overall business procedure.

**Hassle-free insurance:** From buying a policy to raising a claim, the procedure is time-consuming and paper-intensive. Addressing these concerns, one can leverage technology to make the customer experience very smooth and hassle-free. Thus, it will reduce the liability of the insurer and the benefit can be passed on to the customers through lower premiums.

**Telematics insurance:** Telematics is one of the digital innovations bound to have a drastic impact on the insurance industry. With its assistance, insurers can increase their frequency of customer interaction to provide extra services, and strengthen their profitability through specialisation. Assessing risk and calculating renewal premium costs can also be done through telematics.

**Chatbots for insurance:** Cognitive computing and chatbots are being increasingly used for insurance. They can be incredibly powerful, augmenting human interaction and decreasing turnaround time on processes. Most chatbots are used to answer frequently-asked-questions and to solve the customer's queries instantly.



*Chauhan is CEO and MD,  
EPOCH Insurance Brokers*



**Pratima Harigunani**  
maildqindia@cybermedia.co.in



**GOUTAM DATTA**

Chief Information and Digital Officer,  
Bajaj Allianz Life

*Rolling out chatbots, smart assistance, fraud-control and predictive analytics in insurance can be as much of a game-changer as a tough bet. **Goutam Datta**, Chief Information and Digital Officer, Bajaj Allianz Life, tells us why he is hopeful about elevating personalization but also watchful about managing intrusion and confusion when it comes to investing in new-age technology.*

**W**hat is the flip side, if any, to using predictive analytics and AI in insurance? How do you ensure that tech use is not intrusive and invasive but respects privacy and aligns with the spirit of 'insurance is a subject matter of solicitation'?

Life insurance business collects data, and has access to customers' life



**INSURANCE PURCHASE WILL ALSO  
MOVE ONLINE IN A BIG WAY**

cycle for at least a period of 10-15 years. Our business is about managing this data with complete privacy and security. With predictive analytics and data analytics, the idea is to leverage this data to keep up the engagement with the customers and encourage them to be on track with their life goals. In addition to managing customers' experience, data analysis also helps the organization manage frauds and thereby benefit the end customer. Take another example: we use AI with BOING – our chatbots, and the WhatsApp service we offer. The benefit is real-time query resolution, of over 20-odd types of queries, without human intervention. This helps consumers to self-serve their policies from anywhere, anytime.

The purpose of leveraging AI or predictive analysis is to combine the insights generated through various digital assets to predict future behaviour and we ensure it is all done keeping customer privacy as our top priority.

**Can technology abet risks like financial fraud, data crimes and espionage apart from playing a positive role?**

Yes, and we use it extensively at Bajaj Allianz Life. The use of digital applications is crucial to address issues related to financial fraud and data crimes. We use AI and Machine learning (ML) technologies to prevent fraud as well as protect data. The fraud detection systems today are progressing from being rules-based towards pattern recognition, and adding AI to the mix gives ML the much-needed advantage to move beyond algorithm-based fraud detection.

**What has been the progress with BOING, i-SERV and Life Assist? What are you planning next to invest in or build up?**

The digital journey at Bajaj Allianz started well before COVID-19. Our focus has been to provide smart services to evolving business environment and customers. There has been an 86% increase in usage across all our digital assets, which includes channels such as Life Assist – web Customer portal + Life Assist App and BOING. We introduced WhatsApp service in February 2020, and a total of 5.86 lakh transactions happened in the first eight months of the launch. The most recent launch, Smart Assist, is also seeing a very positive up-tick across our sales force, partners and customers.

In the months ahead, we will focus on strengthening our digital assets usage amongst customers and employees, while continuously investing towards enhancing customer delight as well as building efficiencies for the company.

**What is the idea behind launching Smart Assist? How distinct and ahead-of-the-curve is it in the industry?**

The recently launched revolutionary technology service Smart Assist is first of its kind not only in India's insurance sector but globally as well. It is a co-browsing service that enables personalised engagement with customers in a completely secure environment, with end-to-end encryption. The idea behind the digital intervention is to ensure that both our customers and employees continue to stay on track with their goals, while being safe and managing the protocols required in these times.

**How?**

What Smart Assist does is that it enables engagement between our sales force and the customer without meeting. Typically, the sale of life insurance happens over a few meetings where the need analysis, product discussion etc. are done. With Smart Assist all this happens via a screen-to-screen interaction. The service enables customers to connect with the company sales force through a secure screen sharing feature, to avail real-time assistance during their purchase journey – anytime, anywhere. I believe this safe and secure innovation has created a new level of customer delight, and will chart out the way for the industry.

**Is there anything specific that you have learnt from the new breed of insurtech innovators?**

Insurtech is fast-tracking the innovation within the industry. They are working closely with us to offer new-age solutions to resolving customer-related issues as well benefiting the company. Insurtech is reimagining the selling and servicing of insurance products, and taking benefit of expansive technology trends such as AI, big data and ML, amongst others. It's a co-benefit environment, which is benefitting all the stakeholders involved.

**How different would be insurance in 2025?**

The insurance industry has witnessed massive digital transformation over the recent years. We are experiencing service move online, and with the journey we are currently



IN ADDITION TO MANAGING CUSTOMERS' EXPERIENCE, DATA ANALYSIS ALSO HELPS THE ORGANIZATION MANAGE FRAUDS AND THEREBY BENEFIT THE END CUSTOMER.



on, we are confident that purchase will also move online in a big way. The pandemic has had a huge role to play in transforming how we live, work, engage with each other, and so on. These transformations have brought in some permanent changes in businesses as well, and we will see these changes become a part of our industry as well.

The products will continue to be more life goals-based. Perhaps by leveraging data analytics, insurers will be able to make interventions at the right time, with the right kind of product. With Saral Jeevan Beema, I'm sure life insurance benefits will reach many more individuals, thereby paving the way for many more. While all distribution channels will see massive digital intervention, to build efficiencies, and effectiveness, I believe the online sales channel will move ahead in a big way. Technology intervention, along with digital disruptions for the benefit of customers and stakeholders alike, will be done on the back of data analytics, ML and AI.

**What has been the impact of the pandemic on the tech investments by the industry, particularly since**

**there is a big shift in health awareness and life choices of people?**

The pandemic has fast-tracked digitisation across the industry, while meeting the changing demands of the customers. Companies are now investing in digital innovation that will enable customers to keep their life goals on track, irrespective of where they are. This means investments are happening across board – both at the back-end as well in customer-facing processes – be it within sales channels, partners or for offering innovative and safe tech-enabled services for customers.

**Are there any specific categories of insurance where technology will show a more pronounced impact? Would it be high on back-end or customer-facing processes and services?**

As I said, tech investments will happen across the board – to make business more efficient, customers more empowered to purchase and service their policies, in a seamless manner.



**BABU THIAGARAJAN**

Country General Manager and Head of Technology,  
India at Fidelity International

*Can IT priorities shift from business continuity to revenue and cost dimensions, especially in the tough months that 2020 slapped on many businesses? Can retrofitted or sloppily designed IT ever compete with players who have invested in digitisation way before the pandemic made it a must have factor? Why is AI a good bet and blockchain on the wait-and-watch list and a finance-major deepening AI investment in NLP, data, and governance tracks in particular?*

**Babu Thiagarajan**,  
Country General Manager  
and Head of Technology,  
India at Fidelity  
International, tells us about  
these and a lot more as he  
shares the risk-and-return  
horizon of a very peculiar  
asset called 'technology'.  
Excerpts:



# FOCUS IS ON DIGITISING CURRENT BUSINESS PROCESSES



**Let us start with something about the post-COVID world. Do you have any specific game-plan for investing in new areas or building existing areas for using technology as we move towards the near future?**

Fidelity International is constantly looking at a handful of new technologies and their relevance for the industry we are in. We categorise our approach based on the time horizon in which we feel those technologies can be applied in our context. The current focus is on digitising as much of our current business processes as possible. Given our prior investment in these areas, this is about focusing on accelerating our execution on these plans.

One such technology with near-term application, which we are currently focussing on, is artificial intelligence (AI). It is maturing at a great pace and we have seen favourable development in associated, but necessary, aspects like governance. This will help with its adoption in mainstream areas. We are looking at deepening its adoption in areas which benefit from machine learning and natural language processing, in combination with robust governance of those areas. Combining AI tools and techniques with traditional analysis techniques opens the opportunity to find very valuable insights. But let's not forget, these technologies are only as good as the quality of the data. So, we are investing heavily in our data strategy.

Another emerging technology with similar time horizon applicability is Mixed Reality, which leverages multiple approaches such as Augmented Reality (AR) and Virtual reality (VR) to create a hybrid application, especially in this hyper-distributed world. We continue to investigate and stay engaged with far horizon or beyond horizon technologies like the blockchain/crypto, advances in cryptography etc.

**What is it like to start something in the industry first, like the first mainframe, the Pebble smartwatch app, the first Bitcoin experiment? Also, can you share something about offerings like Fidelity Spire, the digital store – Wealthscape Integration Xchange – and crypto mining investments?**

Well, we are certainly proud [of those initiatives]. But our sense of accomplishment comes from finding meaningful applications for these technologies in a way that helps our customers reach their investment

goals. This includes recognising that investing habits of customers will change with time and we need to be continuously prepared to serve those changing habits. That is the reason why we recently launched Fidelity Wealth Expert, a digital asset management platform, to meet the changing needs of digital-savvy savers and investors.

In addition, Fidelity International makes strategic venture investments into the most promising early-stage fintech globally and super-charges their growth through the capital, operational support and industry expertise, including companies such as the Indian online investing platform Kuvera, or SteelEye, the regulatory technology company.

**Can technology help in solving issues like fee compression, money laundering, and risk in wealth management, passive investing and negative interest rates?**

Technology already plays a role in helping in these areas. All the above processes are data-intensive, and technology already underpins the volumes that are being processed in a timely, and reliable, manner. However, targeted improvements in operational processes using technologies like AI, RPA will help optimise costs even further. We are also leveraging technology in unique ways in our investment management process, that we call Systematic Investing, to build highly customised, alpha-generating solutions across a range of asset classes to offer our clients the benefit of variety and value.

**Is it too early to bet big on blockchain, fintech, robo-advisors and AI in this space? Is there anything that you have been learning from Nutmeg, Moneyfarm, Vanguard and Hargreaves Lansdown – especially from incidents like the Nutmeg-Unbiased error?**

The bets are going to be varied for the different areas being referred to. You bet on fintech not only for its immediate applicability, perhaps to manage a gap you have in your capabilities, but also for the future potential. A bet that is balanced across those dimensions remains a good one. AI, as mentioned earlier, is maturing very well and is a good bet for most enterprises. The governance frameworks have also caught on very well to provide the essential guardrails. However, you have areas like blockchain, which have found some applications but not



COVID-19 AND LOCKDOWNS OF ENTIRE ECONOMIES  
HAVE SHARPENED THE FOCUS ON COMPANIES' SOCIETAL  
RESPONSIBILITIES: TO THEIR EMPLOYEES, CUSTOMERS  
AND EVEN SUPPLIERS.

at the scale and the ease anticipated. This is one area where we require a consortium to come together around a proper use case for it to gain mass adoption. We learn all the time from the challenges that are faced within the industry. The governance and controls being introduced in areas such as AI help in managing the potential for unintended consequences.

**Can high-touch and automated wealth advisory ever replace the personalised texture that high-bracket customers need from wealth management and advisory firms? Does technology cannibalise anything here?**

We don't see these as competing propositions. In fact, we see one making the other better. There is also a change we need to recognise: always available, easy to use, self-service options are, and will be, increasingly preferred by so-called high-bracket customers as well. Technology also adds many new dimensions to digital engagement and experience. But it needs to be directed by well trained and experienced advisors on how that tech can be tailored to deliver a better experience for customers.

So, our approach is to make sure that we provide superlative experience to our customers in whatever mechanism they chose to engage through. From another angle, technology has a differentiating role to offer in its ability to process ever-increasing volumes of data that underpin much of the advisory inputs to customers – whether in person or through a digital mechanism.

**What are the headaches and priorities of CIOs and CTOs in the pandemic phase? How much help is coming from technology and exactly where?**

In these unprecedented times, clearly, ensuring business

continuity was the first priority. However, very soon our priority shifted to enabling revenue and cost objectives.

Interestingly, two categories of companies have emerged from this pandemic. One, the companies where CIOs/CTOs had already embarked on a digitisation journey across their businesses – not just in ERP platforms, but for collaboration, for protecting customer data and to meet regulatory requirements. They were able to scale the operating model for their businesses much faster without incurring significant unplanned costs. The other category of companies where the CIOs/CTOs had not planned for this digitisation journey and had to go through a costly two-step process – first to implement poorly-designed tactical solutions to get the business up and running, and second to retrofit that tech infrastructure with sustainable longer-term capabilities. I think the second category of companies is still struggling as their restricted investment ability will make it more difficult for them to operate. If they survive, they will concede market share to competitors as and when things return to normal.

Technology is the secret sauce for the success of a business, so it is not a question of how much support technology is providing – it is the only way to succeed. CIOs/CTOs need to work with their management teams and boards to have a robust conversation on the share of investment dollars with immediate effect. There must be an underpinning technology strategy and investment for every aspect of any business. A great example: a simple aspect of signing paperwork was relegated to the depths of technology investment backlog. Many CIOs didn't even think about that, but companies that had digital tools to process such paperwork were much better placed in responding very effectively to the very dynamic regulatory environment now.

# How eager parents to let ‘robot nanny’ take care of kids

As COVID-19 adds stress to domestic life, a global survey shows higher degree of trust parents have in variety of AI-based solutions to take care of children



**A**s work from home becomes the norm amid the mobility restrictions due to the pandemic, life at home is not what is used to be, because WFH comes along with remote learning and usually the absence of the domestic help. Since children too are at home, as schools remained closed, their parents have to not only do the office work but also attend to them, apart from cooking, shopping and taking care of the household without a maid or help – all that without the fixed office hours.

The pandemic has created stressful challenges for families, with parents working, managing their children’s online learning and daily household needs. Meanwhile, AI is giving life to physically moving, walking and talking robots becoming more adept at conveying affection and compassion.

What if there was a ‘robot nanny’ who’d take much of this load away from you? Not surprisingly, more than three-quarters (79%) of parents in India agree that if they had the means, they would adopt a robot “nanny” to help



## AS MANY AS 81% OF PARENTS IN INDIA AGREE THAT A ‘ROBOT NANNY’ TO HELP KIDS IN HOMEWORK WOULD ALLEVIATE A SIGNIFICANT AMOUNT OF THEIR PANDEMIC-RELATED STRESS.

take care of their children while working remotely from home, running errands or when otherwise occupied, according to a new survey. A majority (66%) of parents globally agree they would adopt a robot “nanny” to help care for their children.

IEEE, the world’s largest technical professional organisation dedicated to advancing technology for humanity, released the survey, titled ‘Generation AI 2020: Health, Wellness and Technology in a Post-COVID World’, in Bengaluru, early in November. This global study shows the degree of confidence Millennial parents with Generation Alpha children (under 11 years) may have in AI and emerging technologies for the health and wellness of their families. The survey spoke with 2,000 parents, aged 24–39 years-old, with at least one child under 11 years old – 400 each in Brazil, China, India, the UK and USA. The survey was conducted between September 25 and October 6.

More than three-quarters (81%) of parents in India agree that having a robot nanny to help their children do their homework would alleviate a significant amount of their pandemic-related stress. For the USA, the UK, Brazil and China, the respective figures are 54%, 68%, 73% and 81%.

Would parents be willing to leave their children home alone with a robot nanny? More than three-quarters of parents in India (76%) surveyed agree they would trust a fulltime nanny robot to help take care of their children even if they are not home, while 51% parents in Brazil and 54% in the UK agree. While only 37% American parents surveyed agree, while in China 80% said yes.

Over two-thirds parents in India (64%) agree they would be comfortable using a robot nanny to take care of their infant or toddler child less than two years of age. More than half of parents in the UK (55%) agree, while in Brazil 48% would do so. Only 37% of American parents surveyed agree, while 69% in China agreed.

### ROBOT SURGERY FOR CHILDREN AND CHATBOT DIAGNOSES

Surgical robots powered by AI are bringing new innovations and accuracy to the operating room. Globally, a majority of Millennial parents are extremely (29%) or very (31%) likely to allow robots powered by AI to conduct surgery on their child. Parents in India are extremely likely (39%) and very likely (25%) to allow robotic surgery on their child.

Though parents in China are very (63%) and extremely (26%) likely, 41% of American parents say they are not likely at all to allow it. In addition, 64% of those surveyed globally say they would be extremely or very likely to chat online with an AI and speech recognition-powered chatbot to diagnose their sick child.

### TELEHEALTH AND AI-POWERED NURSES FOR KIDS

Telehealth, AI and remote monitoring tools are helping nursing expand care beyond in-person bedside monitoring creating a practically virtual nurse. About half of parents globally in 2020 (54%) are extremely or very comfortable leaving their child in the care of an AI-powered virtual nurse during a hospital stay.

Parents’ sentiment regarding leaving their child with an AI virtual nurse varies across countries: 69% of parents in India are extremely or very comfortable; 71% of parents in China are extremely or very comfortable; 52% of parents in the UK are extremely or very comfortable; 50% of parents in Brazil are extremely or very comfortable, while just 29% of American parents are extremely or very comfortable.

### 3D PRINTED HEART IMPLANTS FOR CHILDREN

During the pandemic, 3D printing has been used to innovatively create personal protective equipment, medical devices and testing. Researchers are also using 3D printing technologies to develop organs, including hearts that use human cells, collagen and biological





## PARENTS' SENTIMENT REGARDING LEAVING THE CHILD WITH AN AI VIRTUAL NURSE VARIES ACROSS COUNTRIES; IN INDIA 69% ARE EXTREMELY OR VERY COMFORTABLE WITH IT.

molecules, since human donor organ availability can mean the difference between life and death.

Nearly two in three (63%) Millennial parents globally are at least very comfortable with allowing a properly tested/fully functional 3D printed heart to be implanted in their child, if needed, though 11% are not comfortable at all. More than a quarter of the parents in India (38%) surveyed are extremely comfortable and 36% very comfortable with allowing a 3D printed heart to be implanted in their child.

### ROBOTS, DISINFECTING, SOCIAL DISTANCING AND DINING

Self-driving cleaning robots have also been deployed during the pandemic for various tasks, from disinfecting areas using ultraviolet lights and scrubbing floors, helping to maintain safe environments for essential workers and the public. A large majority of those surveyed globally (89%) have at least some trust in robots to clean or sanitise public spaces such as a transportation centre, movie

theatre, restaurant or school, before entering to ensure it is safe, with 44% having complete trust. In India, more than half (58%) of those surveyed say they have complete trust in robots for cleaning and sanitisation purposes in a public space.

Across countries, 71% agree they would not visit venues such as theatres until there is a wide distribution of an effective vaccine. Those in India are most likely to agree (83%) that they will not visit venues such as theatres until there is wide distribution of an effective vaccine. Those in the US are least likely to agree (63%).

To foster health and safety, talking autonomous robots working alongside human wait-staff are being used in some restaurants to detect and monitor how far apart guests are and when needed, telling them to maintain social distance and stay six feet apart. Notably, 48% of those surveyed globally say they strongly agree that they are likely to listen to a human restaurant worker who tells them to socially distance, and 41% strongly agree that they are likely to listen to a robot.

### VIRTUAL REALITY VISITATION – TODAY AND TOMORROW

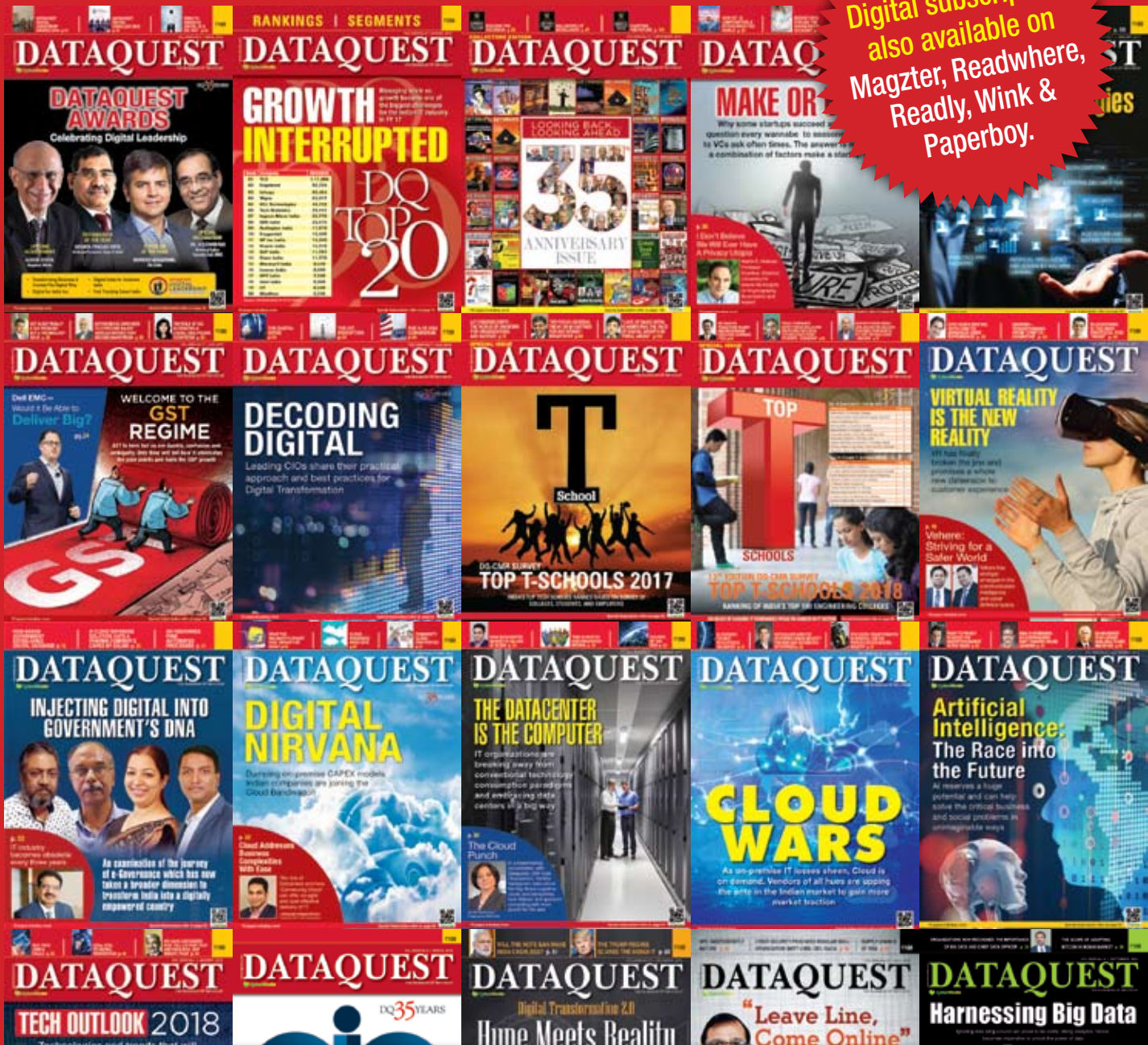
Around the world, COVID-19 has suspended many person-to-person interactions, though Virtual Reality (VR) technology visiting systems that create photographic and realistic real-time simulations of meeting in-person have been used in COVID-19 isolation wards, allowing people to virtually visit sick family members.

Knowing VR visitation technology may be more widely used in many ways in the future, such as nursing homes and intensive care units, a majority of those surveyed globally (85%) say they would use a VR visiting system while 8% would only visit in person. More than three-quarters of people surveyed in India (81%) say they would use a VR visiting system while 14% would only visit in person.



## Giving Readers The Most Influential Technology News Over 3 Decades!

Digital subscription  
also available on  
Magzter, Readwhere,  
Readly, Wink &  
Paperboy.



Dataquest is available now for free download during Corona Virus Lockdown. Please go to our website [dqindia.com](http://dqindia.com) and download the digital copy of the latest issue of Dataquest.

Web: [subscriptions.cybermedia.co.in/DataQuest](http://subscriptions.cybermedia.co.in/DataQuest), Email: [rsevoicendata@cybermedia.co.in](mailto:rsevoicendata@cybermedia.co.in)

Call: 0124-4822222, 91-9810499208





## AppDynamics announces SaaS offering in Asia

**S**an Francisco-based application performance management (APM) and IT operations analytics company AppDynamics has announced the availability of its APM solution via a local cloud location. “Situated in India and built on the Amazon Web Services (AWS) Mumbai region, the offering is available to AppDynamics customers in India and throughout Asia,” a company press release said, adding that enterprises can now accelerate their digital transformations through faster access to the latest AppDynamics innovations and industry-leading AIOps solutions.

This is the fourth software-as-a-service (SaaS) offering location offered by AppDynamics. Its other existing regions include Asia Pacific (Australia), the European Union (Germany), and North America (US). “This newest addition confirms AppDynamics’ focus and continued investments in India and the wider region,” the company stated.

“The SaaS offering in Asia opens up a whole new market – particularly in India – and creates a real and differentiated value proposition for our existing and prospective customers. Enterprises can now choose our industry leading, business centric observability platform via a local SaaS offering and deploy AppDynamics solutions more rapidly and drive faster outcomes for



their businesses. AppDynamics is committed to the region and helping enterprises deliver flawless digital experiences to customers and employees,” said Abhilash Purushothaman, AppDynamics’ Managing Director for India and SAARC.

“We are seeing greater adoption of application performance and AIOps technologies, so the availability of a SaaS offering for customers in Asia, in particular India, is timely and much needed,” said Maneesh Jhawar, Founder and CEO, QualityKiosk Technologies, an AppDynamics ‘Titan Partner’ based in Mumbai. “As an AppDynamics partner in the region, we are particularly excited about the opportunities this brings to accelerate adoption of APM across industry segments, as well as drive significant incremental value to existing and new customers.”

## Honeywell, Vertiv join hands to improve data center solutions

**H**oneywell and Vertiv have announced that they will work together to create integrated solutions to optimise data center sustainability, resiliency and operational performance. These solutions are expected to be available in 2020. The companies plan to leverage building-operations data to drive optimisation of operations, reducing energy use and costs while improving data center performance and sustainability.

The first offering from the collaboration will be an intelligent power management solution that features an energy resource management and supervisory control system in a single, integrated platform. “By combining

energy storage, analytics, forecasting and economic optimisation, the solution will provide data centers with intelligent and autonomous selection of energy sources and grid services to operate a data center load and reduce energy costs while maintaining uptime requirements,” the companies stated in a press release.

The solution can help data centers meet availability requirements while optimizing energy costs, meeting corporate sustainability goals and reducing overall carbon footprint. It will also allow operators to better manage sustainability targets and account for external risk factors such as weather and grid reliability.



## NetApp enhances data center offerings

Cloud-led, data-centric software company NetApp has announced enhancements to its ONTAP data management software. The company has also announced a more flexible NetApp Keystone Flex Subscription service and a new NetApp SolidFire Enterprise SDS solution. With these updates, the company promises to help organizations everywhere unlock the best of cloud.

“Organizations can now optimize performance and security, reduce costs, easily extend data management from on premises to any cloud, and consume hybrid cloud infrastructure as a service,” the company said in a press release.

“Digital transformation has accelerated to the point where projects that used to take years to accomplish now need to be completed in months or even weeks,” said NetApp President César Cernuda. “With its rich data-centric software innovation, NetApp is uniquely positioned to help organizations quickly adapt and sustainably transform in

today’s hybrid cloud world. Now, we make it easier for them to develop applications in the cloud, move applications to the cloud, or create cloudlike experiences on premises.”

According to the company the NetApp ONTAP software offer greater consolidation, deeper cloud integration and continuous data availability for improved simplicity, efficiency, and protection of business-critical enterprise applications. Similarly, the new its SolidFire Enterprise SDS solution, provides an automated foundation for private cloud with NetApp Element software as standalone software-defined storage that can be deployed on any hardware.

“Updates to NetApp Keystone Flex Subscription provide a fast, flexible path to a cloud-enabled data center with pay-as-you-grow subscriptions for a cloudlike experience on premises. It also offers public cloud integration available through the NetApp partner ecosystem,” the company stated.

## Citrix, Upwork expand solutions for workspace productivity

Citrix Systems and Upwork have announced that they are expanding their collaboration with the launch of Upwork Microapps for Citrix Workspace. It may be recalled that earlier this year, the two companies had announced the Upwork Talent Solution with Citrix Workspace to enable organisations provide consistent and secure access to all the resources workers need to do their best work, including apps, content, and key business services.

Designed to simplify and enhance the process of identifying and onboarding talent, these new microapps can be used quickly and easily, the companies stated in a press release. “Forward-thinking organizations are embracing flexible work to enhance and expand their talent pools in ways they couldn’t previously and to build and acquire the modern skills they need to not just return to where they were, but power their business forward,” said David Henshall, President and CEO, Citrix.



With Citrix Workspace, companies can give workers the resources and space they need to perform at their best and deliver a consistent, secure and reliable experience no matter where work needs to get done—at home, in the office, or in the field. Through Upwork, companies can access a global pool of proven talent, enabling them to scale their teams dynamically to meet the shifting business needs in the new world of work.

## Microsoft, Accenture to support social entrepreneurs

Aiming to amplify the societal impact of emerging technology, Microsoft and Accenture have decided to expand a joint initiative announced earlier this year to support startups that are focused on solving critical business challenges related to sustainability and skilling. The immersive, hands-on program provides technology support to help startups build scalable solutions and business models that can lead to more tangible and lasting benefits for people around the world.

Initially focused on engaging startups with solutions in the areas of agriculture, education and healthcare, the companies are now extending the program to include startups with innovative solutions that focus on sustainability and skilling, a Microsoft press release stated. The collaboration is part of the two companies' shared vision to amplify the societal impact of emerging technology with the long-term goal of reaching a million lives globally.

"Through the initiative, Microsoft Research India and Accenture Labs will help social enterprise startups test and validate proof-of-concepts, conduct design thinking



sessions to help entrepreneurs re-envision the impact of their solutions, and provide support in exploring and using Microsoft technologies," it added.

Lathika Pai, Country Head – Microsoft for Startups, MENA and SAARC, said: "Startups that are working towards social challenges are creating sustainable positive transformation through their innovative tech solutions. Accelerated by the pandemic, social enterprises are reimagining how they can widen the reach and deepen that impact through technology. Our collaboration with Accenture will help startups scale their solutions quickly and drive meaningful and measurable impact."

## Tech Mahindra acquires Momenton and Tenzing Ltd

Tech Mahindra, a digital transformation, consulting and business reengineering services and solutions company has announced strategic acquisition of Momenton, a digital enterprise technology firm, offering consultancy and implementation services, and Tenzing Limited, a technology consulting company. "Tech Mahindra has acquired 100% equity in both the organisations, and together they will enable digital capabilities, modern cloud-based architecture and transformation for customers in Australia and New Zealand, in Financial Services and other sectors.

Vivek Agarwal, Head Corporate Development and Global Head for healthcare and financial services, Tech Mahindra, said, "The acquisitions will significantly enhance our local presence in the markets, and the combination will create significant synergies and help in bringing next generation solutions to customers enabling them to run better, change faster and grow greater."

The acquisitions underline Tech Mahindra's focus on digital growth, under the TechMNxt charter, which focuses



on leveraging next generation technologies and solutions to disrupt and enable digital transformation, and to build and deliver cutting-edge technology solutions and services to address real world problems to meet the customer's evolving and dynamic needs.



**LEADING TECH MEDIA  
PLATFORM & NETWORK  
SINCE 1982**



**6**  
Brands

**3500+**  
Impact Articles

**20+**  
Webinars &  
Virtual Roundtables

**9000+**  
Attendees Across Verticals

**90,000+**  
People Influenced

**90+**  
Industry Leaders  
& Tech Experts



### COMMUNITIES

Technology Decision Makers - Enterprise and SMB, Telecom, Channel Partners, Start-ups, DeepTech, Functional Heads and many more

## MOVED THE NEEDLE DURING COVID-19 CRISIS

- From Survival to Revival
- Proactive Business Recovery
  - Changing Customer Expectation in Crisis
- Cyber-Sanitize your business
- Proactive Sales Strategies for faster business recovery
  - New IT Priorities 2020
- CXO of the Week
- CiOL Live Video Series
  - Start-Up Circle
  - CiOL Cloud Burst
  - CiOL Live Tech News



- Are There any Make in India IT Products for Us to Use?
- Cloud Adoption in Digital World
- Govt to Harness IT to Empower MSME Sector



**CREATING  
HIGH IMPACT &  
INFLUENTIAL  
CONTENT  
IN THE LAST 180 DAYS**



- **DQ TECH** SERIES
- Business Continuity Planning Series
- Dataquest Digital Indexing
- DeepTech (India's largest Virtual Conference)

- Secure Smart & Intelligent Network
- App Modernisation
- Collaboration in WFH environment
- DevOps
- **CyberMedia** Product Review

- Business After Covid
- TLF Dialogue Series
- 25 Years of Mobile Telephony India

and many more....



DQ **37** YEARS

**Coming Soon**

# THE INDUSTRY IS POISED FOR THE PERFORMERS & ACHIEVERS, ARE YOU???

Dataquest unveils the most credible, comprehensive industry ranking & analysis

## DATAQUEST

# DQ TOP 20

- Financial Performance: The Top 20 IT companies: Hardware, software and IT distribution
- Thought Leadership - CEO Interviews
- Deep dive into key IT segments

CRM

PC & Smart Devices

Printers & Barcode Scanners

Security

ERP

Cloud Service Providers

Projectors

Data Management

IOT

Analytics & Big Data

Collaboration

Surveillance

External Storage

Datacentres Equipment

Hyperconverged Infra

Datacentre Service Providers

Servers

Domestic IT Services

IT Training

**Bible of Indian ICT Industry**

**Join the leaders to be the leader**  
Write to us: [rajivp@cybermedia.co.in](mailto:rajivp@cybermedia.co.in)  
Mobile: +91 8010757100

**For the submission of  
organisation profiles Contact:**  
[maildqindia@cybermedia.co.in](mailto:maildqindia@cybermedia.co.in)