# CEO LOUNGE

# The Anatomy of Rebuilding & Recovery

A CEO LOUNGE INITIATIVE

## Serendipity or Best Laid Plans?

Digital transformation through network automation

*In conversation with*

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# Serendipity or Best Laid Plans?



*In the evolution of enterprise infotech, automation tools and IoT (internet of things) have become more commonplace than we could have imagined. While automation is as old as industry itself, it has now forayed into network management and configuration as also organisational functions — human resource management, marketing, vendor management and consumer interactions. This slew of automation spilling into other functions has resulted in a semblance of a harmonised automated network and has given rise to tools that even automate the automation! Some of the top technology leaders from across industries analyse the path network automation is taking to spearhead digital transformation.*

Words by **Divya Sista**

As businesses expand their footprint, they need to look beyond the basics. Running operations and managing activities efficiently, while not losing sight of quality, may not be enough. Technology is shaping the future. The need is to innovate with speed and at scale to stay ahead of the curve. Automation has moved from factories and industries to homes and offices, announcing its arrival in the form of Alexa, Apple Home and Google Nest. Network automation, which allows managing, deploying, operating, resolving issues, optimising and orchestrating networks using software, has matured at a brisk pace and is key to unleashing the promise of digital transformation. Networks

today are a complex, complicated web with infrastructure spanning thousands of elements (computers, devices, sensors etc), resembling the Tokyo rail network. It is simply impossible to manually manage them any longer. Perhaps this is a natural progression. Self-correcting networks, optimising existing processes, and hardware remediation have all marched into the fray with the internet opening global avenues and organisations' attempts at a grand orchestration of the world.

## READY, SET, GO — FORMING NETWORKS FOR TRANSFORMATION

With the pandemic having played a disruptor, pushing organisations towards digital transformation, the number of devices connected to networks shot up dramatically. The figures in Cisco's Annual Internet Report are mind boggling. It predicts the number of networked devices by 2023 will be close to 30 billion, which roughly translates to four devices per person. This massive

prediction alone springs the question — to what extent will network capabilities be required to support these devices? The infrastructure required to keep all of these devices running and secure is currently unfathomable.

"Networks have been impacted globally and have turned more distributed. There is an urgent digital disruption, and we have witnessed an overnight change from monolithic applications to cloud computing. While this has given users the freedom to login from anywhere, and stay connected on the go, networks are struggling to keep up. Security, infrastructure transformation and employee experience have all turned into moot points," informs Hemant Chadha, Head - Technology & UC, Velocis Systems.

The speed at which these devices are hopping onto the network is overwhelming for network engineers and administrators alike. There seems to be no slowing down as organisations gear up for a pivot-or-perish approach to digital transformation. The connections

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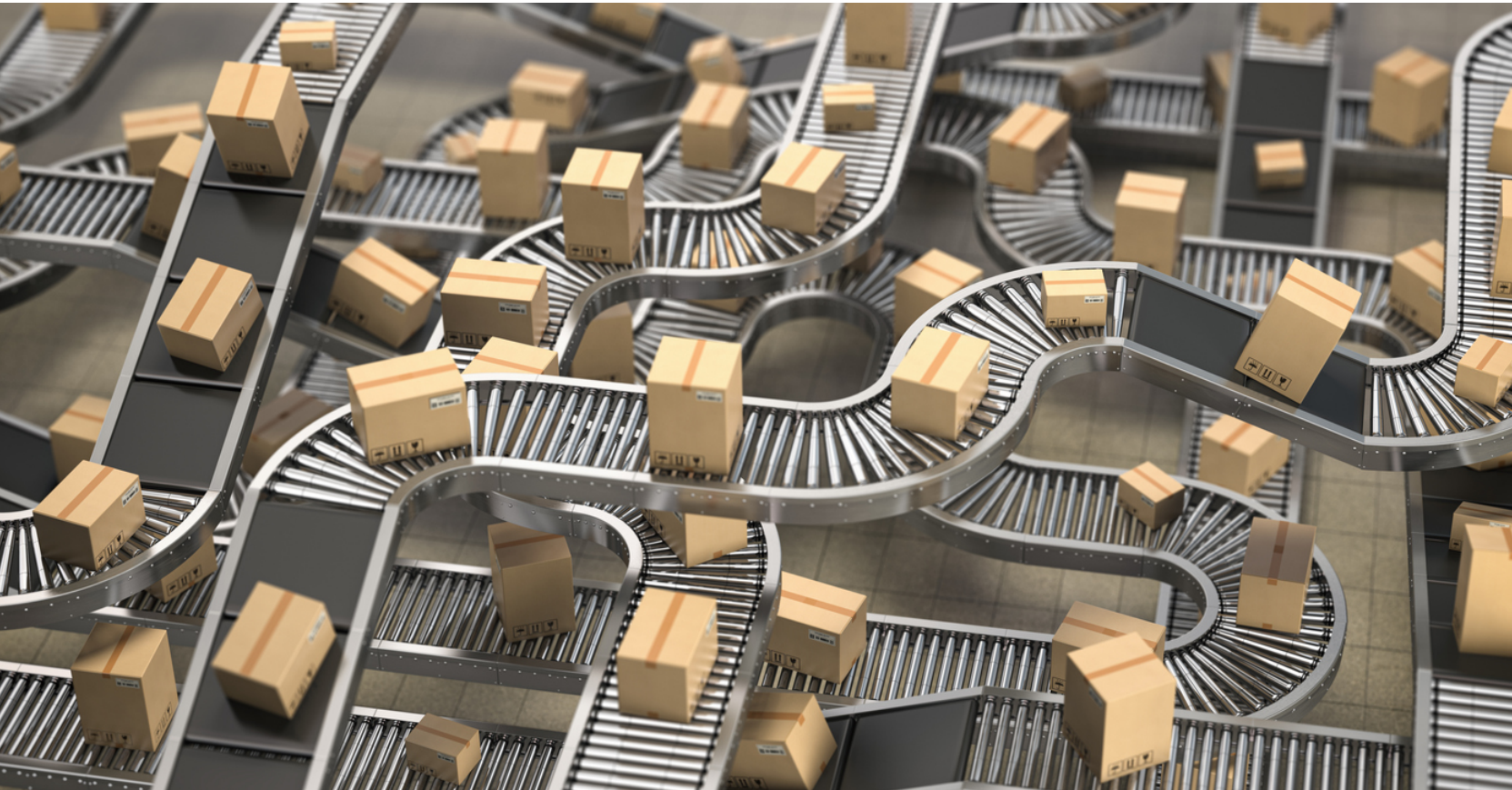
"While we had a fair level of automation in our manufacturing control for quite some time, we have now broken silos and created a transferrable, interoperative space where automation extends to an integrated supply chain"

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Chief Digital Officer, Vedanta

between routers and switches while getting the applications on devices to get running, and not compromising on firewalls and security, is tough because of the sheer volume. Network automation is therefore not a buzzword. It is a necessity, a solution that forms a neural network for the whole digital ecosystem, simplifying workflows, increasing efficiency, and improving reliability and scalability.

"While handling digital transformation is one side of the coin, managing network automation is the other. Our approach towards digital transformation underscores our network capabilities. It is applying a plethora of tech — be it artificial intelligence (AI) and machine learning (ML), IoT or big data — in solving our business problems. While we had a fair level of automation in our manufacturing control for quite some time, we have now broken silos and created a transferrable, interoperative space where automation extends to an integrated supply chain. Today, we understand processes better and we tune and calibrate them to the marketing side — where real-time data insights are

valuable in e-commerce for metal and the B2B space, efficiency and energy management. This helps us move towards our goal of net-zero carbon faster, and also in enterprise processes like human resources. All these big plans will fall flat without foundational network and tech in spaces. Wireless network in plants is relevant only if you have devices and elements that are certified for specific geographies and so on," explains Anand Laxshmivarahan, Chief Digital Officer, Vedanta.

Network delivery automation is an emerging approach that assists the three pillars of any tech infrastructure — DevOps, SecOps and NetOps through a simple yet agile process. With the use of technology to complete repetitive and simple tasks, human resources can be utilised for higher-order workflows and application development.

"Digitalisation, digitisation and digital transformation are three very different terms used interchangeably. Digitisation is converting information or the physical format to paperless form. Digital transformation seeks business answers to challenges through opportunities

digital technologies bring to the business. Digitalisation is leveraging technology to existing processes, making them more efficient through digital means. When the pandemic accelerated digital transformation, there was a sense of urgency to make use of all available technology to keep things functional. When things get back to pre-pandemic ways, will all this no longer be relevant? This is an opportunity, a catalyst in our transformation journey. And in it, network automation has never been more critical. We need to leverage this and make it a permanent change — where operations won't be affected offline or online," asserts Jimit Dattani, Chief Technology Officer, MIT World Peace University.

## NETWORKS THAT LISTEN, NOT JUST HEAR

Sensors and control systems, an integral part of automation, are what truly enable the network to hear — identifying new nodes, running automatic security scans and other validations. Network automation 2.0 is a step towards self-healing and intuitive networks, where the

closed-loop performs corrective actions in addition to analytics and assurance. This maturity is key in unleashing the promise of digital transformation.

"We must address business needs by functionality at times. Integrating IT into OT (operational technology) enables a data-driven decision-making culture. We must be able to look at data in real-time and make decisions while also being able to have historical data at our disposal for predictive analysis. This data historian that stores time-series data acts as a bridge between the OT and IT, and is helping convergence between the two," says Laxshmivarahan.

While the aim of deploying automation to networks was initially centred around easing structured, predictable workflows and batch processes within a functional set — where typically a tool was used to automate a set of job flows in operations or marketing, there was little scope for automating operations involving multiple domains.

"At a time when most organisations are crediting technology for customer success and its role in being a

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Velocis Systems

mammoth enabler, we must also note that applications too, are continuously changing. The need to be automated is natural since the network has become so vast that it is beyond the human scale. In sectors like technology and media, the ability of the network to transform goes beyond just providing robust connectivity. Only with the help of technology can technology grow," says Chadha.

## THE WHY AND WHAT OF NETWORK AUTOMATION

The growth of network devices and users have mandated network automation pushing more organisations towards the cloud and self-servicing capabilities, rather than having a centralised data centre. This automation and orchestration might seem tedious, but the trade-off is worth the time, effort and investment. A fully automated network solution can bring in more RoI (return on investment), reduce the time-to-market for products and applications, and improve overall organisational productivity.

"In this extremely competitive business world, as new products come in, they may require significant changes to existing applications. This is where

tech steps in and helps us address them faster. The CTO and CSO are not show stoppers but show enablers. There are always challenges during our quest of simplifying things. But we must always remember that a solid policy must be formulated and technology must be an enabler around the policy to make business rules possible," propounds Babitha BP, Chief Information Security Officer, CSB Bank.

From lesser times to respond to server updates, and network speed, the benefits of network automation are many but despite that automating the entire network still comes with its share of pitfalls. The whole process of network automation must be handled like a well laid out plan, tailored to suit specific organisational needs. This explains why we do not have a generalised network automation standard or tool that is widely applied across industries.

Citing the example of how they tailored network automation, Dattani explains, "We formulated a maturity matrix. Network infrastructure evaluation was the foundation level, over which we built digital transformation on six pillars: Core IT must run on secure connectivity; sense smart — use AI and ML to create value

chains; connect partnerships — build digital ecosystems where everything talks to one another; improve competitiveness — through digital means; create a digital mindset — align things on the people training and expertise side; and engage — provide a digital experience to all stakeholders. We are considering use cases such as Wi-Fi for auto attendance and network data analytics — logs that provide a user-centric approach — leveraging network automation like never before."

## THE GAME-CHANGER — MAKE YOUR OWN NETWORK

Automation in networks has been fragmented — tools in bits and pieces or automating that lone application. This approach worked fine in the past, but with today's increasing nodes, and demands, this is a threat — not just to network availability, but also to security.

"With the convergence of IT and OT come challenges in the OT space — how we handle exceptions and protocols, the issues with legacy ways of communications and serial interfaces, and then moving them to the OT layer. Industry leaders have been coming together and sharing their ideas on tech

deployments and standardisation at an industry level so that there is seamless interoperability through web services, middle web, enterprise applications and so on. For instance, the OT layer, which has been traditionally a proprietary application, has not fully been able to leverage the advantage cloud offers because it works on low latency, high-frequency data. We also need to pay attention to security and build it so that the product is secure by design rather than adding firewalls or reinforcements. The point is no one size fits all in network automation," explains Laxshmivarahan.

With every industry consumed with the idea of automation doing wonders for its organisations, SOAR (security orchestration, automation and response), AI and ML in network security and IoT have taken the forefront. But does this translate into a distraction from basic automation of infrastructure and vital network security?

"In India, regulators have come up with statistical and security frameworks and these are areas of zero tolerance. We are way ahead of the rest of the world when it comes to network security in the banking and finance sector. Digitisation

has been fuelled by various factors. More often than not, frauds exploit vulnerabilities in people's ignorance but do not breach security. Security is in itself a costly solution. Since it is a non-fungible reputation at stake, once we invest, we cannot move from one vendor to another despite advancements in technology. There is a surge in technology usage. But we must weigh every option carefully and adopt only what is palatable to our organisation," says Babitha.

The network automation space is fragmented but advancing at a swift pace. The bottom line is to build a network that is compliant, responsive and resilient at the same time. In due course, when network capabilities match business process rules, the user can avail self-service. Automation solutions need to be intuitive, and a truly smart network automation solution would be one where the network functions as a conductor orchestrating the whole network in place, with tools, API wrappers and reuses workflows automatically. Every organisation must embark on the path of organic development, because networks and devices at the end of the day are only there to support applications and organisational goals.

## TAKEAWAYS

- Digital transformation cannot be fully achieved without a robust network — there is no new way to work with old technology, and therefore network automation is key.

- Networks and network automation are only tools to support functionalities and applications. It is a massive orchestration engine that keeps everything running smoothly.

- As devices grow in number by the day, manual infrastructure management is no longer possible, nor a viable option.

- There is no one-size-fits-all package in network automation. It is a combination of greenfield and brownfield technologies that optimise organisational workflows and automate the network.

- Intuitive, self-healing and self-correcting networks are the future.

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