



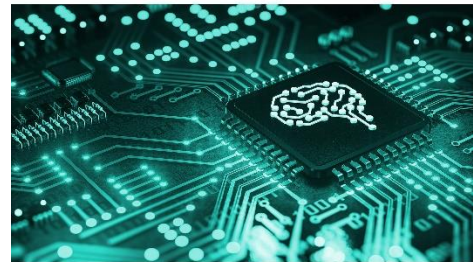
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AI, ML and the Next-Generation Network Reinvention

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Modern telcos have allowed themselves to build a complicated web of back-end systems designed to monitor and maintain their infrastructure. It was an age-old trap in which they believed that they could better manage these new network components by just adding another system. Instead, they just built even more complexity, limited decision-making, and made incremental work for themselves in the customer experience department.



Now, a complete shift is needed at the network operations layer to both evolve the network system architecture and modernize it while also improving monitoring and performance functions. However, it will require businesses to make bold decisions in the adoption of technologies like artificial intelligence (AI) and machine learning (ML) to get to an end state that is a fully automated workflow. But to get there we need to step back and understand how we landed here in the first place.

The current state of affairs

What operators are sitting with today is a patchwork of systems that have been stitched together creating a siloed systems environment where these systems don't—or are unable to—communicate with one another. Each part of this quilted systems environment has been customized to address the specific need of each process flow. To streamline this sprawl, telcos adopted robotic process automation (RPA) to mimic the actions of humans and automate these previously manual processes.

To this end, RPAs and automation were used principally to reduce costs and, to a lesser extent, improve customer service. But unfortunately, we have reached the limits of these automation capabilities.

What do I mean when I say these processes have reached their limits? The systems in use today are all between five to 10 years old or older. Remember, if your system is 10 years old, your processes are probably 10 years old. This translates to them not being flexible enough to adapt to the needs of changing technologies. While to date, RPAs have been used to compensate for the fact that system stacks are not fit for purpose, they have inadvertently introduced too much complexity—making it difficult, if not near impossible, to scale and evolve.

The march to automated workflows

The end and primary goal for any network operator is to get to a point where they can rely on fully automated workflows. Sure, traditional systems were good at performing linear functions, but scale and growth unraveled this. What is now needed is a system or systems that can consume an enormous amount of unstructured but related data so that they can understand details and events and then navigate multiple pathways to resolve these events in the most effective manner.

This is exactly where AI and ML fit into the equation, as both bring intelligence to this process by providing predictive capability and insights. But before we can leverage the true automation power they will unleash, your systems need vast amounts of data, sufficient granularity, and broad systems coverage for the ML and AI to draw their insights from and build a complete picture. These requirements mean that you must think critically about the architecture required to achieve this.

Enter open architecture. With an open architecture, your tools can speak to as many systems as possible and are required to reach the appropriate and accurate insights and decisions needed. Where RPAs ran out of steam by being wholly overwhelmed, AI and ML have the capacity to consume more and more data to help better influence their actions.

Be bold – get rid of it

The only way you will get to this point of business reinvention is by ripping and replacing your systems. This will seem incredibly unpopular on the surface, until the longer-term costs of managing legacy patchworks are included in the plan. However, this step is critically required to make way for a new system stack that can deliver immediate value to your processes and automate your workflows.

Is it easy? No. But it's necessary. A business needs a minimum of three years to replace the average system, and after that, the real journey begins. It's also important to note you aren't

entering a cycle of replacing systems every three years; these systems are future-proofed, and your investment should carry you for at least 10 to 15 years.

This is also why it's critical to select the right partners for the network transformation journey. In Colt's case, we're on the long road ahead with Ciena Blue Planet and Accedian, who share our vision of the future network and are working closely with us as we move forward.

Once you have taken these steps, your new open architecture will allow systems to communicate freely with everything. This means you can leverage the concept of templating and using resource adapters for all vendor and manufacturer platforms, which speeds up the process of onboarding new equipment and improving customer service. You can leverage closed-loop automation to track and monitor every event in a customer's journey or on the network's journey. By following the entire lifecycle of events, you start to understand the decision trees and cumulative infrastructure effects in your environment and which ones you should be giving decision-making power to.

Shift the focus to customer experience

Customer experience centricity is a process we are currently busy with internally at Colt and are replacing all underlying monitoring and performance systems with solutions that have AI and ML at their core. Client experience is lost in a matter of microseconds in the service provider world. Our goal is to focus on delivering value to customers by improving their experience, which can only be achieved with a system that supports speed to resolution and in which workflows are optimized.

It's important to remember that because modern networks are so incredibly complex, with layers of services built on multiple global platforms, your services will always need to run through multiple technology stacks over numerous geographies. However, with an open architecture shrink-wrapped with AI and ML, where we used to be able to rely on human intelligence to interrogate and understand dependencies, which is time-consuming, these technologies can now access your entire data universe and automatically understand the impact events have across all systems.

The role that AI and ML play in improving customer experience and automating workflows is immense, but again, you can't overlay these technologies on broken systems and processes. They also need data from multiple perspectives. Just like the human brain draws on five senses, AI and ML draw from your data to create a neural network, which, if it isn't fed the right data, will be ill-equipped to perform even routine decision-making.

For Colt, we have selected a future that is centered on the replacement of complex systems, redesigning our processes, and embracing an open architecture that frees us up to build on the digital experience, push automation and orchestration to its limits, and leverage AI and ML to automate our workflows. We believe that starting fresh allows us the flexibility needed when

onboarding new processes and technologies, designing the organization around the system and leaving the unwieldy web of complexity behind.

Our goal going into this has never been cost reduction. We know we must invest money to achieve the results we need. We are doing it because by being more efficient, we will be able to achieve our goal of heightening customer experience.

A human-centered digital patchwork

As much as we are developing and nurturing the AI and ML brain, we need to remember how critical people are to this process. A technician has a view of your operations no machine will ever have, but with the help of machines, they can access, extrapolate, and expand on this view faster than they could without them. Machines only do what they're told to do, based on the data and perspectives they're fed. With AI and ML in place, your highly specialized people are free to focus on further automation, get the actual training they need, ensure end-to-end workflows operate optimally, and concentrate on problems that need solving.

Further, by freeing your resources to fine-tune their own skills, you now have a team of highly skilled technical engineers who can shift their focus to more complex issues at hand and can offer real value to customer support. With the automation taking care of the repetitive and predictable events, your people are also free to tap into their creativity and ingenuity. This allows them to work more closely with customers to get to the bottom of their pain points and build solutions that map to their unique business needs. Ultimately, your people can play an essential role in building value-centric solutions that elevate the customer experience you deliver.

In summary, when you have a new foundation that leverages AI and ML and embraces automated workflows, you can answer the question: what is the future of network monitoring and network automation? It is looking beyond just spinning up a product or service and instead looking to how you automate the entire network workflow—and doing all of this with speed and precision to resolution.