Automation is Essential

By: Tim Young

This issue is focused on network transformation, which is inevitably a discussion of business transformation and digital transformation. It is not and cannot be a conversation limited to network infrastructure. The days of compartmentalization are over.

And as I combed through the various end-of-year industry thinkpieces that are a hallmark of the slow news winter months, there was a unanimous sentiment that automation will play a central role in the network—and in the overall business model of CSPs and vendors—moving forward.

That's not an altogether novel assertion, I know, but there does seem to be a sense that 2018 will be a year of unprecedented automation, as well a sense that 2019 and every other year for the foreseeable future will see an expansion of automation. The low-hanging fruit has been plucked, and automation is gradually working its way up the tree.

Just a few weeks ago, Bell Canada became the first carrier in the world to deploy the open source version of the Open Network Automation Platform (ONAP) in a production environment. The ONAP project has been driven by member companies such as AT&T, Verizon, Vodafone, Orange, China Telecom, Turk Telekom, Amdocs, Ericsson, IBM, and others. This deployment represents a considerable leap forward of the project, and according to the Linux Foundation's announcement, it is part of Bell's larger efforts to institute a widespread multi-partner DevOps model.

"We're very proud to be the first member of the ONAP Project to demonstrate the viability of the platform live on our network," said Petri Lyytikainen, Bell's Vice President, Network Strategy, Services and Management, on the Linux blog. "The evolution of our advanced software-defined networks will enable us to respond even faster to the unique needs of our customers."

Just days ago, AT&T trialed its 10 Gbps XGS-PON virtualized network using Open Source Access Manager Hardware Abstraction (OSAM-HA) software, which is part of its plan to virtualize all access functions in the last mile. OSAM-HA will play a role in the larger ONAP efforts.

"Our network is constantly evolving. We'll continue to execute our software-based network strategy to technologies like 5G, virtualized RAN, and G.FAST over time," said Eddy Barker, assistant vice president, Access Architecture and Design, in a statement. "Ultimately, instead of deploying islands of technology that have SDN control, we want to orchestrate the entire end-to-end network through

ONAP."

And ONAP isn't the only example of a concentrated cooperative effort to move network automation forward. In mid-December, ETSI announced the formation of the Zero touch network and Service Management Industry Specification Group (ZSM ISG). The group will initially focus on service management and the 5G end-to-end environment with an ultimate goal of making all operational processes and tasks—configuration, optimization, deployment, delivery, assurance—entirely automated.

"There are many issues that are currently hindering the automation of operations and Network and Service Management functionalities that need to be addressed at an industry level," said Deutsche Telekom's Klaus Martiny, convenor of the ETSI ZSM ISG, in a statement. "A primary goal of the ZSM ISG is to identify requirements on the necessary management architecture and interfaces to support the end-to-end zero touch network and service management in a multi-vendor environment. It is important as well that existing solutions will be considered."

The ZSM ISG's kickoff meeting took place the second week of January, and NTT and Sprint have taken prominent roles in the continued development of the working group with DOCOMO's Ashiq Khan and Sprint's Serge Manning being selected of chair and co-chair of the Network Operators Council (NOC) for the effort.

Meanwhile, the idea of Intent-Based Networking (IBN) continues to gain traction. (See: Intent-Based Networking Surges Forward in last month's issue.) Cisco, in particular, has thrown its considerable weight behind IBN, which is really a more intelligent iteration of SDN. It contains the promise of engineers being able to focus on desired outcome with automated processes handling the configuration and execution of all of the network details.

There are countless reasons to automate, which have been discussed at length as automation has become more of a reality. It can reduce time-to-market, increase visibility, rescue stranded assets, and generally reduce the errors made and shortcuts taken by messy humans like you and me.

But it's tough to see the central motivation as anything other than cost savings, and it would be disingenuous to imply that those cost savings wouldn't largely be a product of reduced headcount.

I only bring this up because I've seen a number of pieces out there discounting the notion that network automation will render a sizable portion of the workforce obsolete. Methinks they doth protest too much.

It's not always an easy conversation to have, but it's not remotely unique to telecom. I'm sure most of you at least glanced at Claire Cain Miller's New York Times piece from a year ago noting that automation *is*, despite protests to the contrary, a job killer. She uses the steel industry as an example, noting that between 1962 and 2005, the workforce in U.S. steel factories declined by 75 percent, the loss of some 400,000 jobs. But contrary to the popular narrative of foreign competition being behind these losses, U.S. steel shipments remained steady across that period. New technology—the minimill—meant that steel could be produced with far fewer workers.

This can be seen across every industry: self-service kiosks in restaurants and grocery stores, automated distribution centers, manufacturing robots, etc.

If you dig a little deeper, you can even see it in your own home.

According to the 1870 US census, 52% of working women were employed in 'domestic and personal service." Even middle-class households in the United States and Western Europe had full- or at least part-time help to handle chores such as cooking, laundry, childcare, or transportation.

But now the average modest home comes equipped with better technology for cooking and cleaning and laundry than was available to Queen Victoria herself. Our cars are easy to drive and there are no horses to shoe or barns to clean. And frankly, we're expected to raise our own kids. We simply don't need full-time staffs to accomplish the tasks of our daily lives.

My job isn't safe either.

[In the first year after it launched](#) an automated article-writing program called Heliograf, the *Washington Post* published more than 850 automated articles. And as a big college sports fan, I've read my share of automated game recaps through the ESPN app. Mark Cuban [famously feuded with ESPN](#) over their use of automated game reports back in 2016, but Cuban's fighting a losing battle on that one.

So of course there will be job losses. We can't pretend it won't. That's certainly part of what's driving the 33% cost savings [that IDC reports Juniper customers achieved](#) through automation. [And Cisco claims an OPEX savings](#) of 50-70% through its Orchestrator technology. That represents a 5-year savings of more than $65 million for a tier one operator.

But that doesn't mean that the central promise of IBN and other automation technologies—that it frees up creative humans to tackle more complex problems—isn't true. There will doubtless be growing pains along the way, but as 2018 continues, I expect we'll start seeing an even clearer idea of what the future of network automation will look like.