



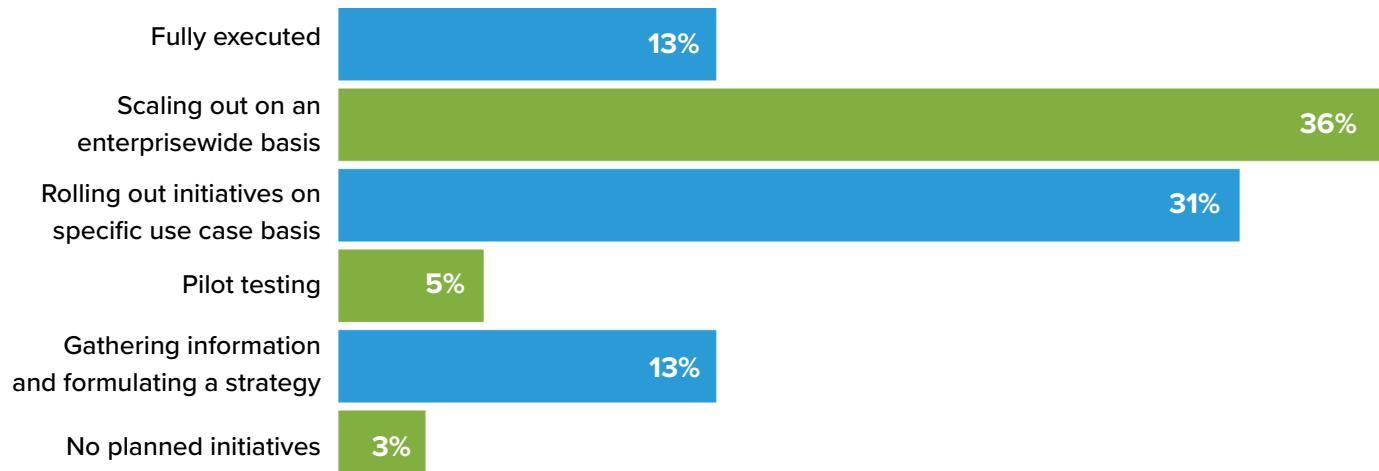
DIGITAL TRANSFORMATION:

Making Network Infrastructure a Strategic Component

Transformation is no longer a concept that just occupies the minds of visionaries. It has become an actual goal that boots-on-the-ground healthcare IT professionals are daily addressing. In fact, 80% of the 118 healthcare IT professionals who participated in the survey Modernizing IT to Transform the Healthcare Enterprise, conducted by HIMSS Media in February 2019, indicate that their organizations are in the throes of digital transformation (Figure 1).

"There's an expectation now that the delivery of both healthcare and of the communications between healthcare providers and payers is going to be digital," said Janet King, Senior Director of Market Insights at HIMSS Media. In fact, healthcare organizations need to pursue digital transformation to "compete and have competitive advantage, keep up with security and prevent data breaches, stay in compliance with various regulations, and assure that they are documenting the

Figure 1: State of digital transformation initiatives





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Matt Roberts | Practice Leader of Healthcare | Juniper Networks

value of care being delivered to receive optimal reimbursements under value-based models. None of this can be done the old-fashioned way. It all requires digital transformation.”

The good news is that healthcare organizations are moving toward these benefits, as 69% of the healthcare IT professionals participating in the survey say they are extremely or very confident in the value of digital transformation.

In fact, if digital transformation plays out in healthcare as it did in other industries, it could help move healthcare organizations closer to their customers, according to John Orbe, Senior Director of Strategic Verticals at Juniper Networks. “Digital transformation made other industries such as airlines and retail very customer-centric. And digital transformation is now doing the same thing in healthcare,” he said. “With digital tools in place, the customers — the patients — now have so many more ways they can connect to providers and access information about different issues, remedies, and procedures.”

Practical matters

To experience digital transformation, however, organizations must address practical concerns such as infrastructure, said Matt Roberts, Practice Leader of Healthcare at Juniper Networks. Nearly half of the survey respondents acknowledged that the network is a strategic, vital asset that supports digital transformation. “The healthcare organization’s network infrastructure is like the circulatory system of the human body,” he said. “Much like veins, arteries, and blood vessels transporting blood to and from the heart, the network is the lifeblood of the healthcare enterprise. There are vast numbers of devices connected at any given time – from servers to laptops to phones to asset tags to infusion pumps to MRIs – all these devices and systems rely on the network to be available 24/7/365. The moment it is not available is the moment people realize truly how important it is.”

The problem is a gap exists between what should be and what is. While healthcare IT professionals acknowledge the importance of a strong network, only 38% say their

organizations have the network and security infrastructure in place to connect and secure applications that are hosted both on- and off-premises and in many different clouds, while just 25% note their organizations are investing an appropriate amount of time and resources toward rearchitecting IT and network infrastructure for the future. And just 21% say their organizations have made significant progress toward reviewing, reducing, and improving IT infrastructure to ensure maximum operational capabilities at the lowest cost.

Roberts continued: “I’m surprised that more healthcare organizations are not already making investments in networking technology but feel that they will increasingly see the importance of these investments as their digital transformations continue to progress. Healthcare organizations need to plan for everything to be completely digitized. Unfortunately, the truth is that paper has not completely been eliminated, but organizations are increasingly relying on all kinds of technology solutions and connected devices to get diagnostic answers. With the emergence of more affordable genomics data, IoT, artificial intelligence, and virtual reality, healthcare organizations will soon have the opportunity to prevent illnesses and offer treatments of greater precision.”

Complicating factors

As digital transformation initiatives continue to evolve, IT complexity is growing. In fact, more than half of survey participants say their organizations are using or planning to use a multicloud approach, and 7 out of 10 expect to use more than one type of delivery method for computing services in the future. More specifically, among organizations that plan to embrace this multi-solution approach, 78% expect to use their own data centers, 61% expect to use co-location data centers, and 50% expect to use public cloud providers.

This multivendor, multicloud approach is recognized as a valuable strategy that can empower organizations to exploit best-of-breed technology and keep costs down. “Certain vendors have specific strengths and subject matter experts for certain specialty clinical or financial areas,” King said. “One might be strong in blockchain, whereas the other might be extremely strong in clinical APIs. So, going a la carte becomes more valuable because healthcare organizations then can



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shift resources. In addition, because of data capacity and workload issues, the ability to shift from one to the other to get economic efficiencies becomes increasingly important. Risk mitigation also comes into play. If you put all your eggs in one basket, when one thing goes down, then the whole thing goes down.”

Multicloud environments, however, bring challenges. Survey participants specifically pointed to cost-control issues related to cloud sprawl (48%), data governance and compliance (47%), and increased complexity around application development and delivery (46%) as pressing concerns (Figure 2).

More modern, more challenges

The IT professionals surveyed identify a variety of pressing concerns associated with modernizing the IT and network infrastructure such as standardization and rationalization of the IT environment (54%), meeting regulatory compliance (53%), and identification/remediation of cybersecurity risks/threats (50%) (Figure 3).

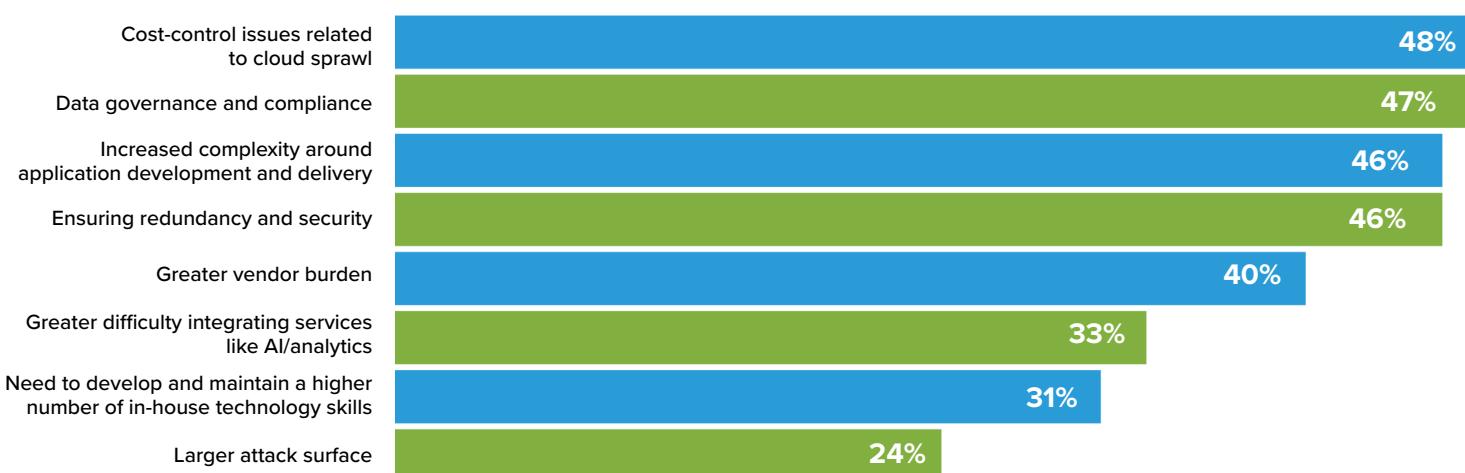
“When you start examining the data at a deeper level, hacking was directly involved in 11 million of the 15 million records that were compromised in 2018,” Roberts said. “That’s why it’s important for healthcare organizations to protect their users, their apps, and their infrastructure. In the

security world, there’s not one vendor who can do it all. A best-of-breed ecosystem and environment is what’s needed. It’s just like protecting your home. How many locks do you have on your front door? I can assure you that most people probably have more than one. In fact, most probably have at least two as well as an alarm system, maybe a Ring system, or a German shepherd that’s behind the door in case something else happens.”

With a single, unified platform such as Juniper’s Contrail Enterprise Multicloud, however, healthcare organizations can make the shift from a traditional, siloed approach to security prevalent in healthcare today, to viewing the network as a single enforcement domain. With a networked, unified cybersecurity platform, threats can be detected faster by leveraging threat intelligence from multiple sources and tapping into the power of the cloud.

“The unified platform makes it easier for healthcare organizations to automate operations and protect users, applications, and data wherever they reside,” Orbe said. “Instead of having to go through extensive training on each individual cloud provider’s tool set, our Contrail Enterprise Multicloud solution offers a single consistent, end-to-end network and security policy management wherever the workloads reside. This, in turn, dramatically simplifies operations across the IT environment.” he added.

Figure 2: Challenges of a multicloud environment



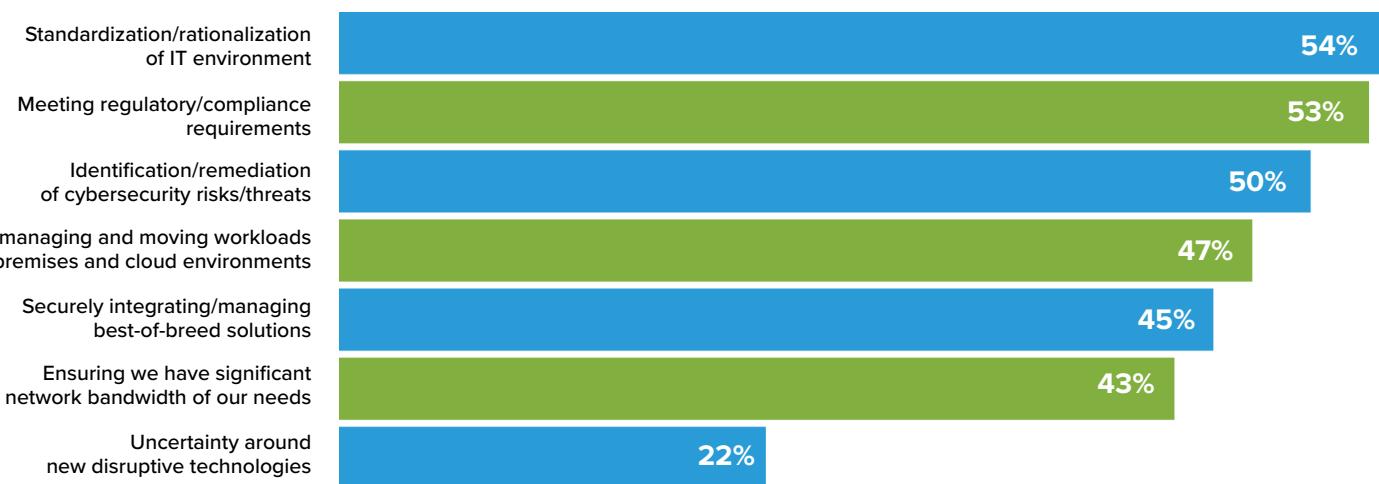


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For example, with an open, unified platform for multicloud execution, healthcare organizations can orchestrate, manage, and monitor a wide variety of networking services associated with any application across their environments. And policies can be used to provide end-to-end visibility and security across private cloud and multiple public cloud services. As such, these platforms enable organizations to put the infrastructure in place that empowers them to move digital transformation from a futuristic vision to today's reality.

Figure 3: **Concerns about modernizing IT and network infrastructure**



About Juniper Networks:

At Juniper Networks, we exist to solve the world's most difficult problems in networking technology. We bring simplicity to networking with products, solutions, and services that connect the world. We partner with healthcare organizations around the world to build carrier-grade networks designed for scalability, security, simplicity and affordability. With the right solutions, your applications, data, storage, & network can perform seamlessly, delivering the highest-quality patient experience.