



ALIGNING INFRASTRUCTURE TO SUPPORT HEALTHCARE VALUE-BASED INITIATIVES

A value-based, accountable care model demands a network that is resilient, automated, secure—and simpler

Challenge

Network infrastructure is a critical, but often overlooked, aspect of healthcare transformation. Largely invisible until it goes down, the network is the foundation of a modern integrated health system.

Solution

By focusing on solutions that remove complexity, Juniper Networks is committed to building the most resilient, automated, and secure networks for handling mission-critical transactions, applications, and services.

Benefits

- Enable healthcare IT staff to be more agile and respond quickly to changing business requirements
- Support a dynamic healthcare environment, including the Internet of Healthcare Things and digital services for the patient-centered medical home
- Reduce capital costs by 30 to 40 percent by introducing more than one vendor to promote competition

As the healthcare industry shifts to a value-based, accountable care model and away from traditional fee-for-service, the reverberations are changing the foundation of the industry. Moving to at-risk reimbursement models, such as bundled payments and accountable care organizations (ACOs), is driving the need to manage the health of populations, especially those with chronic disease. The Centers for Disease Control and Prevention (CDC) estimates that 86 percent of all recent healthcare spending was for people with one or more chronic medical conditions¹

Population health is driving new care models emphasizing the continuum of care over a person's lifetime. Coordinated, patient-centered, team-based care follows patients wherever they go. After investing millions of dollars in electronic health records (EHRs) over the past two decades, health systems are seeing consumerism, the Internet, mobile technology, and virtual care change the IT paradigm seemingly overnight.

In this post-EHR era, cloud computing, analytics, big data, and demand for interoperability are creating a complex new environment against a backdrop of accelerating industry consolidation that demands clinical, operational, and IT integration across hugely diverse enterprises. The Deloitte Center for Health Solutions estimates that only about half of current healthcare providers will remain after consolidation runs its course in the next five to 10 years.² Innovation has become a watchword of value-based healthcare for everything from care delivery to financing and IT infrastructure.

The Challenge: The New Value-Based Network

What's often missing in the discussion of healthcare transformation is the critical aspect of network infrastructure. Because networks are largely invisible until they go down, even senior leadership may overlook this foundation for the 21st century integrated health system. However, like the circulatory system of the body, networks are the lifeblood of the healthcare enterprise.

All healthcare applications and solutions are accessed via the network, but traditional network architectures have fallen behind the applications and services they deliver. With varying software systems, data analytics engines, cloud computing, and mobile devices supporting the emerging value-based healthcare model, a more open, ecosystem-friendly innovation platform is required.

¹ "Chronic Disease Overview," The Centers for Disease Control and Prevention <https://www.cdc.gov/chronicdisease/overview/>

² "The Great Consolidation," Deloitte, <https://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/great-consolidation-health-systems.html>

By reducing vendor lock-in, standards-based technologies enable new choices that increase flexibility while reducing cost and complexity. These benefits help accelerate the rate of healthcare service delivery, while encouraging innovation that may result in new revenue streams for offsetting climbing healthcare costs. It's the ideal environment for deploying revolutionary business and care delivery models that allow health systems to navigate change and proactively adopt new technology.

By focusing on solutions that remove complexity, Juniper Networks is committed to building the most resilient, automated, and secure networks for handling mission-critical transactions, applications, and services. In times where it is necessary for healthcare IT staff to be agile, Juniper believes infrastructure should be simplified and automated, allowing administrators and engineers to respond quickly to the changing business requirements of an uncertain healthcare landscape. The network also must be carrier-grade, making it ideal for large data clusters that may involve clinical research, medical imaging, and analytics for population health, and to protect the privacy and confidentiality of patient information.

Without doubt, networks must change to more actively support the ever-changing dynamic healthcare environment, where systems, devices, and workflows supporting care delivery are vital. The network must seamlessly support the growing Internet of Healthcare Things (IoHT) market, as well as evolving digital and cloud-based services for end users within the context of the patient-centered medical home. The network should allow the organization to evolve based on business priorities, whether by overlaying new software services on top of existing IT infrastructure or evolving to fabric-oriented architecture. This evolution also means applications can be deployed faster while cutting operational expenses in half. Meanwhile the entire infrastructure can be secured appropriately to avoid man-in-the-middle or distributed denial of service (DDoS) network attacks. In the new era of value-based networking, security should be built-in, instead of bolted on, to quickly identify and automatically respond to threats throughout the healthcare enterprise infrastructure.

Who Dictates Your Direction?

Applying the theory that not all networks are created equal, how are healthcare decision makers easily able to discern which vendor is best for the organization? Is it simply by choosing who has the largest market share? Breadth of product offerings? Comprehensive training and support? Overall cost savings?

Each characteristic is completely relevant and should funnel into the decision process for the "most ideal" situation for a healthcare organization. What many IT decision makers tend to overlook is the notion that a single-vendor strategy may not always result in a positive experience for IT staff, administration,

and end users. Vendors that have owned a dominant position within the market over many years can often take customers for granted and the level of attention can drop off over time. These vendors also rely on long-standing relationships and older contracts which can result in noncompetitive pricing. Throw in proprietary protocols and single-vendor-focused features, and your organization may become locked in to a network platform—when value-based care calls for just the opposite.

Introducing a second vendor to promote competition can help cash-constrained health systems reduce capital costs by 30 to 40 percent. The stakes are high. As healthcare transforms to value-based accountable care, health systems run the risk of modernizing on antiquated, proprietary network infrastructure that restricts technology and financial innovation.

The Juniper Networks Solution: Maximizing Investment and Innovation

Many of today's networks are built on old, proprietary standards and protocols. They look more or less the same as they did 10 years ago (mobile phone customers would be irate if they still had the same kind of phone today as they did 10 years ago). Just about every element of the technology stack has witnessed significant innovation over the past 10 years: applications have virtualized; storage has virtualized and is flash-enabled; server and client operating systems have virtualized; physical servers can now reside in the cloud; and even databases have embraced open standards and protocols. Yet, much networking technology has remained virtually the same as it did 20 years ago.

Networking manufacturers focused on bringing value are a logical choice for hospitals and healthcare providers transitioning to value-based, accountable care and population health. Newer technologies and architectures are scalable, flexible, dynamic, and, perhaps most important, allow for fast innovation.

But innovation doesn't have to stop with hi-tech performance; it also can extend to financing as well. A pay-as-you-go offering allows you innovative flexibility to network acquisition. Whether you are a community hospital or a multi-state health system, you have to do more with less in an often uncertain healthcare landscape. Acquiring your network and security components via subscription can help you define the future as your landscape changes.

Summary—Now Is the Time for Change

As the healthcare industry stands at the precipice of becoming a truly digital industry that delivers better care at a reduced cost, we need to break away from traditional network architectures and build networks based on open standards, simplicity, and affordability. Now is the time to explore the possibilities, making the change to vendors that have your best future in mind.

Next Steps

To learn more about Juniper healthcare network solutions, please visit www.juniper.net/us/en/solutions/healthcare/ or contact your Juniper Networks representative.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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