

For: CIOs

# The Enterprise Network Enables Business Innovation

by Dan Bieler and Andre Kindness, July 8, 2014

## KEY TAKEAWAYS

### **The Enterprise Network Enables Business Success In The Age Of The Customer**

Customer engagement, internal collaboration, and the emergence of digital products and services all rely on a quality network infrastructure. Moreover, network data and business intelligence turn the network into an asset for monetization. As a result, the enterprise network no longer functions as a commodity but becomes a key function for success in the age of the customer.

### **Leading CIOs See Their Network As A Business Platform**

Historically, networks did little more than connect employees to mainframes or shared services like printers. However, in a connected world of mobile devices and Internet of Things, CIOs from organizations like BMW, the NFL, and Philips are transforming their business using the network.

### **Network Performance Will Link To Business Outcomes**

The enterprise network is no longer about service-level agreements like uptime or downtime. In the age of the customer, the way to measure network performance will have to link much more explicitly to business outcomes like service consumption, customer satisfaction, or orders completed. CIOs will have to work closely with the business in order to determine the correct metrics for success.

# The Enterprise Network Enables Business Innovation

Business And Network Strategies Will Become More Integrated

by [Dan Bieler](#) and [Andre Kindness](#)

with [Glenn O'Donnell](#), [Pascal Matzke](#), Enza Iannopolo, and Andrew Hewitt

## WHY READ THIS REPORT

The enterprise network is the ugly duckling of enterprise technology landscape, looked at disparagingly by CIOs and often ignored by the business. The enterprise network is much less exciting than all the fancy projects like cloud, mobility, and big data. Yet the enterprise network represents the vital underpinning for all these projects and increasingly evolves into a business-critical asset for companies looking to succeed in the age of the customer. It becomes the nervous system of the digital business. It facilitates deeper customer engagement by connecting manufacturers, sellers, and buyers of products in new ways, and it helps drive more operational efficiencies as it supports closer collaboration and connects previously disjointed assets. Yet, for most business leaders, the network infrastructure isn't much more than a utility, such as electricity or plumbing, while most CIOs don't know how to monetize it. In this report, Forrester explores the business value of enterprise networks and outlines how business leaders and CIOs should define a network strategy that will help them succeed in the age of the customer.

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## Notes & Resources

Forrester interviewed 24 vendor and user companies.

## Related Research Documents

[The Collaborative Economy Will Drive Business Innovation And Growth](#)

May 19, 2014

[Connected Business: A New Style Of Doing Business](#)

February 4, 2014

[A Tsunami Of Empowerment Will Hit Your Network With The Internet Of Things](#)

October 15, 2013

[Prepare I&O For The "Internet Of Things"](#)

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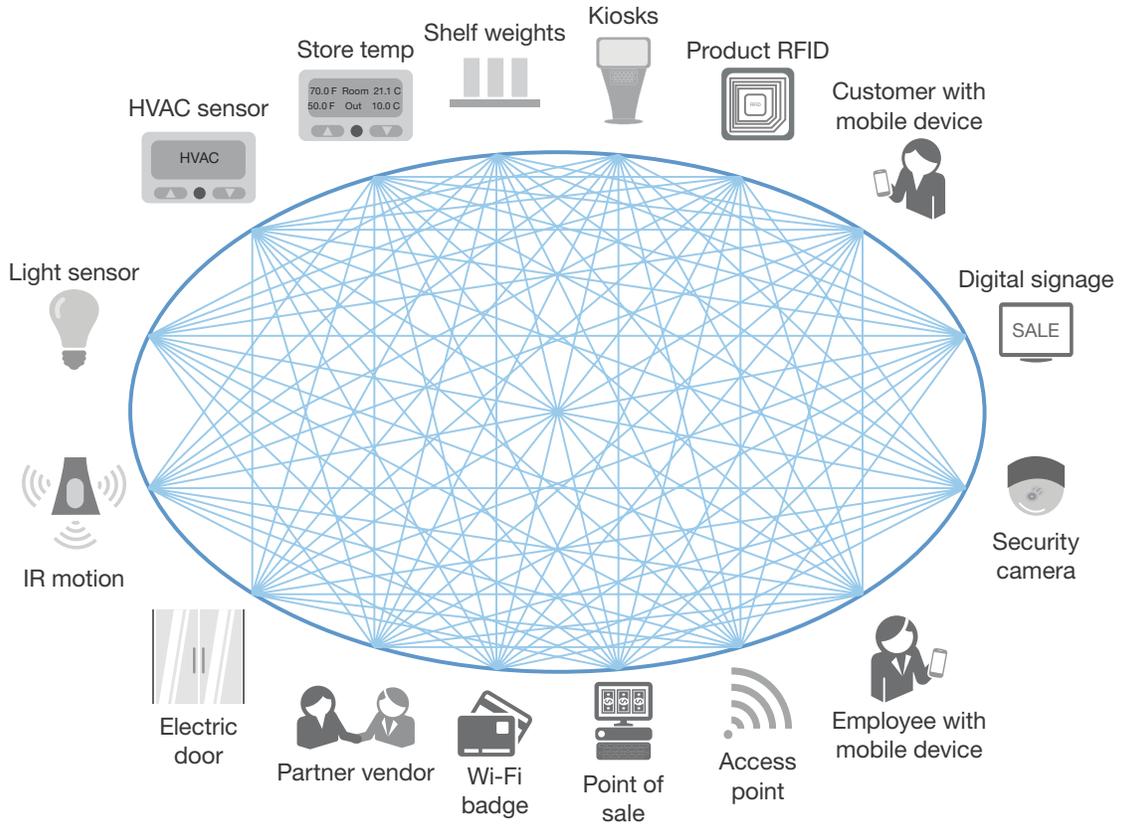
## THE ENTERPRISE NETWORK IS THE NERVOUS SYSTEM OF YOUR BUSINESS

While no single user cares about the enterprise network per se, the enterprise network infrastructure is the vital underpinning for the connected business.<sup>1</sup> In the past, the enterprise network resembled veins that delivered the necessary energy to the relevant part of the organization. But the increased dependence on cloud solutions, the higher degree of collaboration, and the growth of big data through new technologies like the Internet of Things (IoT) have transformed the enterprise network into the nervous system of your business. Like the nervous system for the human body, the enterprise network represents the gateway to everything outside the enterprise, providing it with a “smart touch” (see Figure 1).

While many tech management leaders look at the enterprise network as a commodity, CIOs need to realize that the enterprise network is a key asset to:

- **Elevate and strengthen your organization’s market position.** The enterprise network forms part of the competitive advantage of the connected business against its peers. For instance, retail firms increasingly look to offer their customers differentiated in-store experiences, which rely on fast and reliable enterprise networks to fulfill the experience promise. Yet business leaders in retail generally have no idea what megabits mean. But they understand the benefits of enhanced customer satisfaction and better customer intelligence that result from the use of connected in-store technologies. Such usage scenarios that link to business outcomes help to emphasize the value of the enterprise network to the business (see Figure 2).
- **Run applications more efficiently and reliably and thus boost user experience.** Latency is one of the most underestimated network infrastructure challenges. Increased app usage drives traffic. Traffic growth on networks averages 30% to 40% per year.<sup>2</sup> Poor network quality of service translates into poor user experience. This is particularly detrimental for user behavior on multiple screens, both for customers and employees. CIOs need to address the discrepancy between this traffic growth and the benefits and costs that are associated with traffic growth because any additional investments in network capacity must at least keep the relationship between benefits and costs stable.

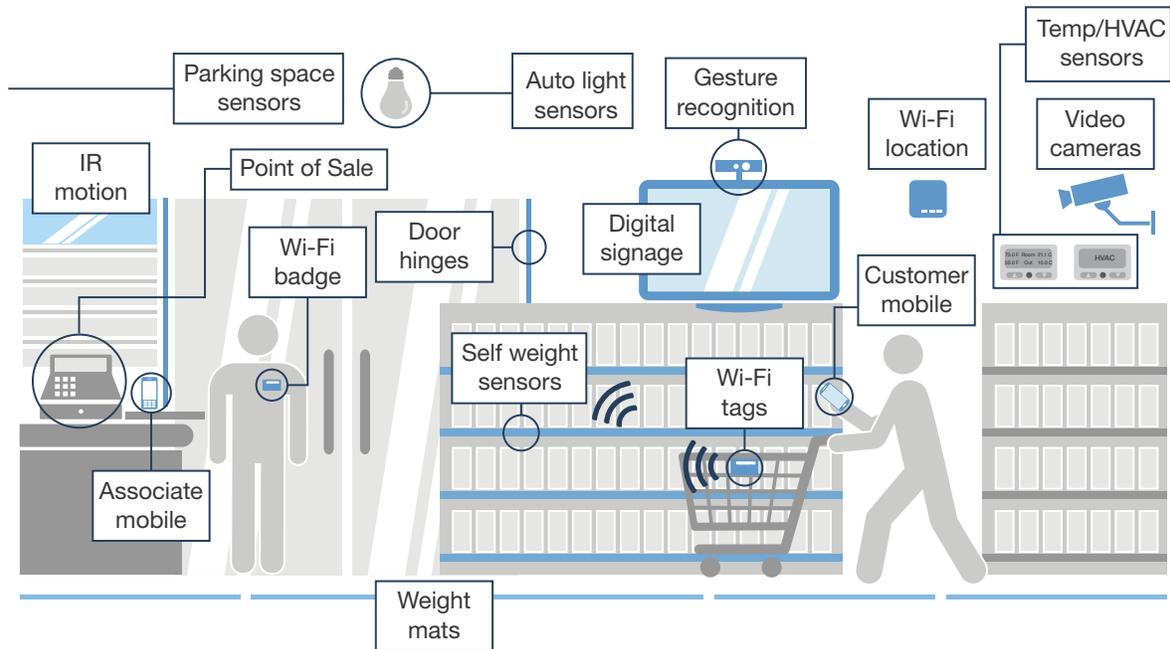
**Figure 1** The Enterprise Network Is The Nervous System Of The Connected Business



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Source: Forrester Research, Inc.

**Figure 2** Connected In-Store Technologies Drive Competitive Differentiation In Retail



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Source: Forrester Research, Inc.

### High-Quality Enterprise Networks Help Drive Business Success

Of course, the enterprise network needs to run efficiently, but this is just a basic requirement. More often than not, CIOs focus on consolidation and rationalization of the enterprise network as their main network strategy objective. Not enough CIOs view network projects as driving true business value, yet business users and consumers will embrace more services that depend on a modern enterprise network infrastructure. Successful CIOs will ensure that their enterprise networks are up to the task of meeting and exceeding these expectations as enterprise networks:

- **Boost innovation through a better collaborative environment.** Value creation is shifting from transaction to interaction models. The “old Internet” effectively was a 1-way transaction platform where online shops simply offered goods or media houses posted content in a fairly traditional and asynchronous manner. The modern enterprise network is the basis for the collaborative economy, which differs from the old-school Internet in that it is now about sharing, feedback loops, outside-in communications, and synchronous information exchange as well. We believe the old-style Internet is gradually complemented by multiple layers of collaborative platforms, which are based on a modern enterprise network.<sup>3</sup>

- **Support customer engagement through interactive communication channels.** In the age of the customer, the only sustainable competitive advantage is knowledge of and engagement with customers. The nature of customer engagement has dramatically changed across all sectors — with new technologies playing a pivotal role. Perhaps the largest impact has been in the newfound ability to access information and people. Mobile devices like smartphones and tablets have put computing power into the hands and pockets of over a billion consumers and business users worldwide. This mobility offers countless new opportunities for closer customer engagement.
- **Stimulate participation of customers and employees.** The growing use of social media and the explosion in smartphone adoption heightens expectations among customers. Forrester data suggests that businesses increasingly have to be “customer-obsessed” in order to be successful.<sup>4</sup> But to best serve customers, businesses must first engage and empower their employees. Employees are the eyes, ears, and ultimately the face of your company. Employees who have the tools and management support to do their jobs efficiently will in turn help to make customers happy. Hence, closer customer engagement helps reduce churn rates and thus customer retention costs.
- **Gather additional insights from network traffic.** The network is part of any big data strategy. More connected devices mean more endpoints that business can use to collect data about customer behavior. The enterprise network offers a tool to make the connected business more aware of contextual behavior. It has the potential to record, analyze, and store data that is being transmitted across the system of connected things. To meet privacy regulations such as the EU Data Protection Directive, such data is often anonymized. Ultimately, the enterprise network is the basis for systemic intelligence that offers value creation in the form of better business intelligence.

### In The Age Of The Customer Network Usage Will Only Increase

It is unlikely that we will reach the point where we have “enough” broadband. History shows that application complexity grows in line with broadband capacity.<sup>5</sup> Google Fiber’s 1 gigabit may seem like overkill today to most CIOs. But we believe that use cases will arise in the coming years that rely on such hyper-bandwidth. By themselves, broadband networks have no intrinsic value. Broadband is the foundation for advanced data centers and for usage scenarios like telemedicine or long-distance education. This way, broadband contributes to economic growth.<sup>6</sup> Broadband networks are about the ability to support the applications that allow businesses and communities to thrive. Not being able to connect to broadband connectivity at a reasonable cost, as is the case in many emerging markets like South Africa, is a serious detriment to business. Providing sufficient broadband helps to deliver tangible value to the business because:

- **Cloud computing will dramatically increase the demand for network capacity.** The network is an integral part of delivering on the promise of cloud computing. For the cloud model, elasticity, as well as a scalable, secure, and reliant enterprise network infrastructure are key. Data centers are the brains for the ICT network infrastructure. However, most data center networks today are single-tenant, have a rigid and complex architecture, and are cumbersome

provisioning models. Hence, enterprise network infrastructure will need to be optimized for data centers. A critical question for any CIO is whether the growing number of connected devices and machines will overwhelm the corporate network.

- **Data centers experience a high degree of virtualization.** The main challenges when designing, implementing, and running data centers relate to the growing complexities of data center design, such as the blurring lines between storage, compute, and networks. Broadband helps to address the growing need to quickly provide network and storage resources for virtual servers and the advent of multiple hops between servers. Broadband is critical to overcome the latency challenges when moving traffic between servers and provides reliability and performance.
- **Growing multimedia usage is the ultimate traffic generator.** Enterprise networks will experience dramatic growth of data traffic as video-based collaboration and services take off. Unified communications, video-based customer support, and IPTV and on-demand movies require high network capacity. We see a role for prioritized traffic that is paid for by businesses to network managers, in particular in the case of content providers. The deals between Netflix and Comcast or Sky and Telecom Italia highlight how network infrastructure providers and content firms can cooperate in the future.<sup>7</sup>
- **All IP networks transform one-to-one connections into the Internet of Things.** In recent years, we have seen a significant uptake in machines that talk to and learn from each other. And almost all electronic devices have a microprocessor, which allows these devices to be connected. We believe that eventually anything that can compute will be connected. The Internet of Things will in time connect nearly every device on the planet and automate communication between them. Ecosystems of connected things will emerge, including connected cars, smart buildings, pipeline monitors, and smart traffic lights.

## **BUSINESS REQUIREMENTS FRAME THE DESIGN OF THE ENTERPRISE NETWORK**

The connected business is using network technology to drive different outcomes from how the network was managed in the past (see Figure 3). Previously, network strategies were merely reflecting the latest IT strategies; basically, network upgrades were based on the network being earmarked to IT projects. Going forward, network technologies will be implemented to support specific use cases and business requirements. Any end-to-end application needs to cover the entire spectrum from the device to the software stack that a solution is developed on.

- **The business solution and the network design need to be integrated.** For example, a CIO at a large pharmaceutical company has turned the corner and requires the teams to put together a holistic network strategy that integrates the business requirements. They say that the discrete approach with IT initiatives driving network designs can't work with the fluidity of data, applications, and users across WANs, LANs, WLANs, and metropolitan area networks (MANs).

The specifications for any one part of the network must take into account the characteristics of the other sections. In an indoor environment, small cells like Wi-Fi, picocells, and femtocells will play an important role for creating quality end-to-end solutions.

■ **Enterprise networks must shift from linear transactions to enabling continuous interactions.**

The traditional enterprise network focused on linear transactions with internal stakeholders. The future enterprise network, meanwhile, is an asset that enables continuous interactions with both internal and external stakeholders. To meet these changing business requirements, the successful CIO will design the enterprise network with specific business requirements in mind. Network design philosophy will evolve from fairly passive networks to very interactive ones. For instance, different employees require different levels of network quality — depending on their role, which applications they use, and where they are working from. And real-time communication only works if carrier-class metrics and service-level agreements are ensured.

**Figure 3** The Changing Focus Of The Enterprise Network

	<b>Old-school enterprise network success metrics</b>	<b>Future enterprise network infrastructure success metrics</b>
Purpose	Providing connectivity between desktops and for voice communications	Providing connectivity for myriad mobile devices and sensors; enhancing customer, employee, and partner engagement and participation
Target group	Mostly internal (employees)	Both internal (employees) and external (customers, partners)
Strategic vision	“Communicate safely behind enterprise firewall.”	“Collaborate interactively beyond the enterprise firewall with external audience.”
Main technology metrics	Uptime; jitter	Uptime; interoperability

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Source: Forrester Research, Inc.

**Leading Companies Embrace Networking To Transform Their Business**

The rise of the connected business is starting to change the way companies in, for example, retail, automotive, or healthcare industries operate. Elevating the network to more than a technology component is opening doors to new customers and revenue streams. Consequently, leading companies have started to embrace networking as a vehicle to transform their business.

- **Google and Facebook want the direct link to the customer.** For these big social media powerhouses, using a carrier to provide the connectivity isn’t good enough anymore. The business models of these firms are hinging on the extensive tracking and monitoring of customer movements and activities, which require reliable network connectivity across the entire planet. Google continues to invest billions in building out its own networks, including what could be

an investment of up to \$4 billion into the satellite business and in fiber-to-the-home solutions.<sup>8</sup> Similarly, Facebook bought a solar-powered drone company to support its connectivity lab. Besides both companies wanting to reach the unconnected in third-world countries, Google and Facebook want a clear and direct link to customers to serve them better and more quickly.<sup>9</sup>

- **Home Depot leverages network technologies to compete against online stores.** The company hit hurdles in trying to compete against online stores when it came to providing same-day service. Unlike online stores that have only a few major hubs, Home Depot has stores (theoretically distribution warehouses) less than an hour away from most of its customers; the company saw this as an opportunity to offer same-day and within-the-hour delivery for online orders. But Home Depot has been dealing with fragmentation of processes across multiple channels and devices, which kept the company from meeting its business goal. Most assumed that this was down to technology, but the reality fell into the business side: The company ran into inventory disconnects. Either the store's inventory was inaccurate or personnel spent more time looking for the inventory than an employee working for an online retailer would. To improve accuracy and speed, Home Depot is investing in IoT technologies to connect inventory, location, and quantity together for faster retrieval of inventory. The company wants reduce the amount of time associates spend on non-customer-related activities by one-third.<sup>10</sup>
- **BMW uses industrial Ethernet networking to enhance the customer experience.** Ethernet networks increase the agility of manufacturing lines. As industrial Ethernet becomes more prevalent on the manufacturing floor, the technology is increasingly being considered as a universal networking solution. A prime benefit of Ethernet in distributed measurement and control systems is the standardization of equipment and tools by the PC industry, which drives rapid improvements in performance, features, and ease of use while decreasing costs. BMW is looking to further embed itself into the customer's business. The standardized tools built on Ethernet allow systems to be connected together for an instantaneous transfer of information from the car lot or website to the manufacturing line. Not only can BMW now send multiple models down the same manufacturing line, but customers can keep track of their car as it is being built and make changes in options.<sup>11</sup>
- **Philips ensures better asset leverage in healthcare using networking technologies.** While most healthcare CIOs focus on improving the service from health professionals with mobile devices, few think about the millions of dollars of medical equipment and the power that sits in rooms isolated from the healthcare system. Philips realized that by connecting medical devices to the hospital network, it could improve workflow on both the clinical path and the financial path, enabling the hospital to deliver better care to more patients while billing those patients, and their insurance companies, quickly and accurately. This would also position the company as a healthcare partner instead of component vendor. Philips could approach healthcare facilities from a solution standpoint and offer a complete healthcare system. In addition, Philips embarked on a new revenue stream with Philips Customer Care remote services, which ensure that its products are running optimally. Hospitals won't need to keep expensive maintenance staff on hand.<sup>12</sup>

## Don't Control The Technical Performance — Manage Toward The Business Outcome

For nearly all businesses, the network is business-critical, but the network ought to be a core focus area for hardly any business. A classic mistake by CIOs would be to think that they have to build out the enterprise network by themselves. Instead, we believe leading CIOs will use managed network solutions that help to:

- **Boost network flexibility and quality.** Cost reduction should not be the main focus of your enterprise network strategy. There are no clear indications to date that software-defined networking (SDN) radically reduces costs, although there obviously will be a shift in how network spending is allocated, with a surge in software spending.<sup>13</sup> The main benefit of SDN will come in the form of greater flexibility and user experience of network-reliant services, such as faster and better-quality connectivity and more secure connections.
- **Share network resources more efficiently.** Today's network business case essentially is based on underutilization of capacity. Average network utilization is usually far below top use-case scenarios. Virtualized networks push the server and compute capacity in data centers from utilization rates of 10% to 20% toward 70% to 80%. Such converged infrastructures and shared network services are at the core of efficient cloud computing. Some vendors are offering network-as-a-service (NaaS) to simplify the network architecture through virtualization and bring disparate software solutions onto common hardware.
- **Reuse network resources to free up wireless spectrum.** Due to the limitations and scarcity of available spectrum, spectrum efficiency is a central focus area for network infrastructure managers and CIOs. Spectrum inefficiency is a headache for the CIO, as it undermines the enterprise network business case. Technologies such as femtocells, picocells, smart antenna technology, distributed antenna systems, and cognitive radio help to get the wireless signal as quickly as possible to a fiber-optic or another wireline connection. Once freed up, the wireless spectrum can be used again.
- **Integrate legacy network resources.** With a limited budget, it is impossible for the CIO to develop a completely new enterprise network from scratch. CIOs will have to use existing network infrastructure while developing new infrastructure at the same time. Systems integration, therefore, plays an important role for enterprise networks as well — not just for legacy software.

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## RECOMMENDATIONS

### CIOS NEED TO DEVELOP A BUSINESS-FOCUSED NETWORK STRATEGY

Awareness, availability, and affordability of broadband connectivity are the key drivers that have an impact on the future of the enterprise network. All businesses want to run services in a secure, scalable, interoperable, and reliable fashion. The future enterprise network will be efficient and more sustainable. Leading CIOs will ensure an enterprise network strategy that targets several focus areas:

- **Mesh together network professionals with business professionals.** As much as networking professionals try to think about the business, few understand the business and what its goals are. This means networks will ultimately be designed under the wrong assumptions. For example, WLAN architects will do a much better job deploying the access points in the positions with the greatest wireless requirements at a manufacturing site if they can see how and where people actually use their wireless tools. Every network project should have business perspective and representative, especially from departments or business units affected by the network.
- **Mirror business processes.** Forrester has found during client inquiries that less than 5% of networking organizations have a strategy. Since the network touches every part of the business, every network should have strategy that is in sync with business. For example, if the business is focused on a few strategic business partnerships instead of many, the networking sourcing team should follow the same pattern and leverage the same metrics on the business suppliers.
- **Inject business metrics into the networking organization.** It's not a revolutionary thought to incentivize employees to get the correct response, but networking organizations continue down the same path they've been following. They give too many accolades to networking engineers who jump into a network fire and bring the network up. Typically network metrics center on network uptime. Networking organizations should be measured on macro and micro metrics that reflect customer demands and measure organizational performance — such as custom sales growth through new services, lead-time reductions, on-time delivery percentage, sales per employee, etc.
- **Force business retrospectives on network investments.** Every industry holds their organizations responsible for investments. Networking organizations should be no different; they should examine what went right and what went wrong on a project and pursue agile retrospectives that are iterative and incremental. You need to accurately find and fix problems to help the team today.
- **Embrace open standards to build an open network ecosystem.** The main challenge is to ensure interoperable systems and that all the network bits and pieces work together seamlessly. Standard APIs and open standards, such as those backed by the Open Networking Foundation, are critical for success.

- **Integrate management of mobile network elements seamlessly.** The significance of mobile moments for customer experience and employee empowerment requires a close integration by the CIO of business internal mobile network infrastructure like campus or indoor networks with the external mobile infrastructure that is managed by the traditional mobile network operators. This integration is essential for a true end-to-end experience by the end user. This integration between mobile networks will be reflected in service-level agreements that support business-requirements.
- **Plan for higher security costs for solutions in a high-bandwidth environment.** Many enterprise customers require compliance in their hosted applications. A highly regulated business needs to protect every aspect of its network behind a firewall. It needs to do this on a geographic basis and a divisional basis. Be aware that firewalling in the gigabit age becomes a lot more expensive than for the lower-bandwidth environment. This translates into an expensive network environment with multiple firewalls. Arguably, SDN offers the potential for a more secure environment through a more consistent method to deploy security policies.
- **Ramp up integration skills for legacy network assets.** Today's core network infrastructure is not yet ready for SDN. Many elements of the legacy network are still on proprietary hardware. The challenge is that if one overlays the legacy network with SDN-capable technologies, certain functions will get lost as the underlying legacy infrastructure will not support them. We expect SDN deployment scenarios in the near term to focus primarily on private data centers and pure-play cloud service providers.
- **Combine network engineering with other engineering for full service design.** Why stop at just networking as a link to business professionals? To optimize the design and delivery of the full services consumed by your customers, you need sound but flexible engineering of all technology elements to optimize the whole service, not just the individual domains. Segregated domains (silos) are a well-known handicap to flexibility and dependability. Strive to integrate engineering toward a genuinely unified service design organization. Initially, this will be a convergence of infrastructure engineering, but it must eventually infuse software as well, including application development.

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WHAT IT MEANS

**NETWORKING IS STARTING TO EVOLVE INTO A BUSINESS FUNCTION**

Business professionals will learn to align network and business strategy, re-engineer organization processes, listen and respond to the value of connections, and manage transformation and change. Consequently, companies will notice:

- **Vendors will fragment into industry-specific vendors.** Healthcare, manufacturing, and retail have very different business models and customers. Consequently, the network will be serving up more than email or other generic software tools. A retail location will be more concerned about customer privacy and compliance with the Payment Card Industry Data Security Standard than a manufacturing site that needs ISO-certified solutions and industrial-grade equipment. Consequently, the vendors will create more industry-specific solutions to help companies be more competitive in their markets.
- **Business departments will get involved in networking decisions.** Traditionally networking equipment was specified and sourced by the networking team. Already architects, application developers, and other teams are part of the decision team now. As ABB, Rockwell, Siemens, and others include Ethernet options in their manufacturing solutions, non-IT engineers are starting to purchase the switches and routers. Healthcare, retail, and other non-IT professionals will soon follow as the doctors, nurses, and store managers input their requirements.
- **Senior business executives will set the network investments, not just networking professionals.** In reviewing financial filings by Roche and other large companies, we see that businesses have started to include the broad implications of technology as a business differentiator and fund the large-scale investments required for a successful, customer-obsessed company. While most network functions and budgets would remain under the technology management team, customer-centric departments will allocate funds toward networking as part of their budgets.
- **Companies will own and maintain some part of the network.** While applications and data can be (theoretically) shifted to the cloud, critical networking components will be assets that need to remain under the control of the business. While not all parts need to be, the sections that are directly embedded in the creating products and services or that directly touch the customer have to be managed by the business. The experience a customer feels walking into a store, climbing into a car, or walking through a hotel's front door will be determined by the network recognizing them and connecting all the pieces together to create a customized experience for that environment.

## SUPPLEMENTAL MATERIAL

### Companies Interviewed For This Report

Accenture	HP
Alcatel-Lucent	HSVA Hamburgische Schiffbau-Versuchsanstalt
BT	Merck
Capgemini	Nokia Solutions and Networks
Cisco Systems	Ooredoo
Colt Technology Services Group	Siemens
Doha 2022 IT Planning Committee	Sky
Doppelmayr Seilbahnen	T-Systems International
Ericsson	Tech Mahindra
Good Technology	Telefonica
Google	Verizon
HCL Technologies	Volkswagen

## ENDNOTES

- <sup>1</sup> For more details about the connected business, see the February 4, 2014, "[Connected Business: A New Style Of Doing Business](#)" report.
- <sup>2</sup> Source: Cisco Visual Networking Index (VNI) Global Mobile Data Traffic Forecast Update 2013–2018, February 2014 (<http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html#~forecast>).
- <sup>3</sup> Rising customer expectations and faster product life cycles are forcing companies to adapt to a new style of business that Forrester calls "the collaborative economy." For more information, see the May 19, 2014, "[The Collaborative Economy Will Drive Business Innovation And Growth](#)" report.
- <sup>4</sup> Watermark Consulting data as shown in the October 10, 2013, "Technology Management In The Age Of The Customer" Forrester report indicates that customer experience leaders among the S&P 500 generated a stock performance of 43% as a cumulative total return between 2007 and 2012 — compared with negative 34% for customer experience laggards. Source: Watermark Consulting (<http://www.watermarkconsult.net/>).
- <sup>5</sup> Source: Telecommunications Industry Association (TIA), "Future of the Network Documentary, Part 2 — Broadband Capacity: Are We Ready?," TIA's YouTube channel, September 11, 2013 (<http://www.youtube.com/watch?v=iVR71geRYvA>).

- <sup>6</sup> Source: “Impact of Broadband on the Economy,” ITU (International Telecommunication Union), April 2012 ([http://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports\\_Impact-of-Broadband-on-the-Economy.pdf](http://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Broadband-on-the-Economy.pdf)).
- <sup>7</sup> Source: Sam Gustin, “Netflix Sees Comcast Performance Boost After Traffic Deal,” Time, March 10, 2014 (<http://time.com/19350/netflix-comcast-speed/>).
- <sup>8</sup> Source: Jeff Reeves, “Google Fiber — Good for GOOG Stock, Bad for Comcast and Verizon,” The Slant, February 20, 2014 (<http://slant.investorplace.com/2014/02/google-fiber-goog-cmcsa-vz/>).
- <sup>9</sup> Source: “Project Loon,” Google ([http://www.google.com/loon/#utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=Global\\_semBK](http://www.google.com/loon/#utm_source=google&utm_medium=cpc&utm_campaign=Global_semBK)).
- <sup>10</sup> For more information on cutting costs, improving operations, and serving customers, see the April 17, 2014, “[Brief: The Home Depot’s Age Of The Customer Transformation](#)” report.
- <sup>11</sup> Source: Roy Rubenstein, “Ethernet finds use in the automotive industry,” New Electronics, November 26, 2013 (<http://www.newelectronics.co.uk/electronics-technology/ethernet-finds-application-in-the-automotive-industry/57923/>).
- <sup>12</sup> For more information on the strategic decisions that Philips has made to transform itself into a connected business under the auspices of Jeroen Tas, see the March 24, 2014, “[Case Study: Philips’ Journey Toward Becoming A Connected Business](#)” report
- <sup>13</sup> For deeper insight on software-defined networks, see the March 5, 2014, “[Is Software-Defined Networking Ready For The Enterprise? Part1 Of 3](#)” report.

## About Forrester

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