

Why Network Architecture Matters in a Mobile-First World

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Where, when and how people work has changed dramatically, with more upheaval to come. That means IT and network professionals need to pay close attention to their options for network architecture in an era where enterprise mobility and digital workplaces now are the rule, rather than the exception.

Three of the most ubiquitous and powerful trends shaping the much-discussed digital transformation of global workplaces are enterprise mobility, cloud computing and the Internet of Things (IoT). While each represents a fundamental change in how, where and when work is done, all three are increasingly feeding one another to form an important synergy that is reshaping the very nature of the workplace.

Consider that in just the past few years:

- Cloud computing has been adopted by the vast majority of global enterprises, to the point where the majority of strategic, tier-one workloads will be developed, deployed and managed in the cloud by 2020.
- The typical worker, at any given time, now has an average of three mobile devices at their beck and call to use for work—in the office, on the road or at home. The bring your own device (BYOD) movement has now been cemented into most organizations' critical workflows and business processes to the point where work no longer is confined to traditional office environments or typical business hours.
- Industrial and consumer products have increasingly been connected to each other over the Internet, with upwards of 100 billion newly connected “things” expected to be part of the digital landscape before the middle of the next decade.

These and other technological, environmental and social trends are combining to facilitate an eye-opening re-engineering of the workplace. In fact, the often-discussed smart digital workplace represents an innovative way for organizations to empower, embolden and liberate their workforces in ways thought unimaginable not long ago.

For networking and IT professionals, there are both opportunities and challenges in this brave new world of digital transformation and the smart digital workforce. For instance, the flexibility, agility and productivity enabled by enterprise mobility, cloud computing and IoT represent exciting and innovative ways to develop and deliver new products and services, as well as create stronger customer relationships. But these positive aspects must be weighed against such sobering realities as heightened cybersecurity risks, more complex management and businesses' desire to tighten IT budgets and reduce Capex.

In any event, the selection of the right network architecture is a vital and game-changing decision. The right network architecture can unshackle an organization's workforce and enable new levels of productivity, while the wrong choice can open up a Pandora's box of risk and complexity.

How do you decide?

Identifying customer opportunities and challenges—and their implications

For enterprises looking to harness technology to improve business outcomes, create more efficient workflows and better engage customers, this is an incredibly exciting time. Nonstop technology advances—particularly those supporting mobile-centric work processes—combined with the realization that organization need to harness all the new data being created has spawned powerful, new business opportunities.

Whether you're talking about cloud computing, IoT, digital transformation, BYOD or personalized web-based applications and services, organizations are using technology in ways that seemed unimaginable just a few short years ago. But with those exciting opportunities also come challenges that must be acknowledged, planned for and overcome. Issues such as security, management complexity, the need to control Capex and the ability to make sense of a relentless tidal wave of new data has put substantial pressure on IT and network resources—from manpower and budgets to the actual technology underpinnings.

Leveraging all this potentially transformative technology requires not only a commitment to a modernized view of the integration of technology and business needs, but also an understanding of the importance of an overarching plan that marries technical and business activities. Organizations that make it a priority to plan for a new, digitally infused work environment have a powerful opportunity to drive sales and profits, build a longer term competitive edge and forge stronger ties with both customers and their workforce.

Those that don't—won't.

Creating a smart digital workplace

One of the most important transformations in the concept of work in recent years has been the actual physical work environment itself. It's not just that employees are working in many locations other than the traditional office setting using a desktop or, more recently, a notebook computer.

It's that enterprises have taken great pains to create a more collaborative, inviting and productive physical environment with the personalized integration of technology and seamless integration with a worker's "space."

Not only do organizations routinely support work-at-home employees (either on a full-time or as-needed basis), but physical workspace has become increasingly digitized. Use of personal devices, smart whiteboards, collaboration tools, pervasive mobility, wearable technology, "connected things" and unified communications has revolutionized the physical work environment.

Now, add in digitally oriented office furniture, IoT-aware buildings and ubiquitous wireless networking and it's clear to see how enterprises are creating work environments that promote creativity, personalization, innovation, collaboration and greater employee engagement. In fact, these smart digital workplaces are becoming important points of differentiation that are helping organizations recruit and retain digitally savvy workers.

And it's not just traditional multistore office buildings. This trend is showing up in other work environments, from college campuses and hospitals to factories, shopping malls and sporting arenas.

Whether it's promoting cross-functional collaboration on product development or allowing employees to monitor and adjust environmental settings in their area, the smart digital workplace is an exciting new capability—one facilitated by important innovations in network architecture.

Why network architecture matters

One reason why network architecture matters—now more than ever in an increasingly digital business environment—is that all this exciting new technology and its integration into mobile-centric workflows has added complexity to everything from security and network performance to scalability and application integration.

Defining and deploying the right network architecture is as much about aligning with business goals and changing work patterns as it is about supporting new networking technologies. Network architects have increasingly focused on issues such as how, when and where IT services are accessed over the network, and they have necessarily sought to align their technology decisions with the business realities of their organization.

Reducing complexity, in particular, has become a major goal for next-generation network architecture. Enterprise networks have evolved into a hodgepodge of technologies, topologies and protocols, catalyzed in large part by the growing adoption of wireless networking, consumer-grade device usage, personal cloud services used for business, and virtualized infrastructure. This has made everything from security and network monitoring to capacity planning harder than ever.

As a result, selecting the right network architecture plays a central role in supporting digital transformation efforts and the move toward the smart digital workplace.

What to look for in a network architecture for the smart digital workplace

One of the most critical requirements of a modernized network architecture is openness. Today, that's a term most vendors claim ownership to in describing their architecture, but too many suppliers use it as a proxy for simply supporting industry standards—which is not nearly enough to be truly open for today's smart digital workplace.

Consider the many requirements of the ever-evolving smart digital workplace:

- Support for mobile-centric workflows and business processes
- Ability to customize and personalize Preservation of legacy investments where appropriate and necessary
- Rapid deployment and easy upgradability
- Simplified management
- Reduced demands on IT and network personnel
- User self-service for an increasingly sophisticated and demanding workforce
- Greater customer engagement

Against the backdrop of these and other requirements in the smart digital workplace, having an open architecture is essential. In this context, you should define “open” as supporting robust, widely applicable application programming interfaces (APIs) that enable easy integration of essential applications, tools and services into a comprehensive network framework. This should apply to not only third-party apps, tools and services, but also in-house-developed solutions.

A truly open network architecture also allows enterprises to use existing network components where it makes sense to do so, rather than forcing a wholesale rip-and-replace mentality in order to take advantage of the network architecture's full span of functionality. The vast majority of enterprises have used a multivendor approach to network and endpoint infrastructure for years, so the underlying architecture must be designed with multivendor as a core requirement.

This allows organizations to innovate at their own pace—whether driven by business needs or budget limitations—rather than being tied to the proprietary technology refresh cycles of specific vendors.

Additionally, be sure to look for a network architecture that:

- Puts enterprise mobility at the hub of your network design and operations, while also supporting integration with legacy wired infrastructure where and when it makes sense.
- Provides the most resilient and robust security framework, including signed code, secure boot and cryptographic hardware protection, as well as flexible policy management.
- Uses automation tools such as artificial intelligence (AI) and machine learning to analyze mountains of data to identify and remediate network behavior anomalies before they stifle network performance and inhibit availability of applications and services—regardless of whether those are on premises or in the cloud.

The Aruba Mobile First Architecture

Aruba, a pioneer in the development of enterprise mobility for rapidly evolving workplace requirements, offers customers a mobile-centric approach to networking—one engineered from the start for performance, security, scalability and customization.

The Aruba Mobile First Architecture is a software-defined networking solution for the era of user self-service, whether users are employees, trading partners, suppliers or customers. Built upon the principle that mobility offers organizations the greatest opportunity for workforce empowerment and quantum leaps in productivity, it also enables a more digitized environment through improved security, autonomous operations and open standards for richer, more robust application integration.

Aruba recently provided even higher levels of functionality and greater long-term economic value by augmenting the Mobile First Architecture with two important upgrades: AI-powered analytics and a Smart Digital Workplace solution.

AI-Powered Analytics. Today's stunning and relentless growth and diversity of data represents both an exciting opportunity and a daunting challenge for enterprises. Without an easy yet powerful way to make sense of all the data, organizations will be overwhelmed by complexity and miss a golden opportunity to use that data to make smarter, faster decisions. This is especially true with the proliferation of connected things, the hallmark of IoT, requiring carrier-grade wireless networking connectivity and adaptive intelligence.

Aruba NetInsight is an AI-powered analytics and assurance platform that uses machine learning algorithms to proactively identify and, as necessary, pre-empt issues before organizations can be negatively impacted. It also frees up overworked and badly stretched IT staff, enabling them to put aside repetitive, manual tasks that are easily automated with expert input and direction and focus instead on developing and delivering transformative solutions in collaboration with business stakeholders. The platform also acts as a reliable, real-time network monitoring and analysis engine to see—and learn—how mobility is affecting users and their many connected things.

Smart Digital Workplace. Today's work environments have been radically transformed by technology that is faster, smarter, more mobile and more adaptive. This requires an ecosystem of partners that work together to create and leverage a truly digital workplace that enables an improved user experience and greater work productivity.

Aruba has brought together a team of companies in such disciplines as software development, real estate, office furniture, unified communications, security and safety, building IoT and IT infrastructure. These organizations and their individual solutions are knitted together into a Smart Digital Workplace solution through rich APIs; AI-driven tools; application-level services such as locationing, asset detection and identity authentication; and a single, cohesive architecture for high-capacity wireless/wired networks in a worker-centric environment.

The combination of Aruba NetInsight and the Smart Digital Workplace solution offers a more flexible, customized, future-proof and engaging environment, driven by a mobile-first architecture designed to leverage the best of mobility hardware and a solution for long-term economic value.

Conclusion

Business sections of libraries and book stores are packed with volumes devoted to the importance of strategy because, well, all successful business endeavors start there. The same can be said for an open, flexible and modernized network architecture, which is necessary to support critical business initiatives from mobility and cloud to IoT, digital transformation and the smart digital workplace.

Architecture counts. A lot.

That's why organizations should take a user-centric approach to planning, developing, deploying and managing their enterprise networks, with the goal of facilitating interactive environments with maximum workplace flexibility. Decisions on network architecture—particularly an open, mobile-first approach—are key to a more collaborative, creative and innovative path to business success.

The Aruba Mobile First Architecture, with its new AI-powered analytics and smart digital workplace features, represents a modernized, agile and personalized framework for working anywhere the network takes users—data center, business units, remote offices or the cloud.

For more information on Aruba's Mobile First Architecture, please visit <http://www.arubanetworks.com/solutions/mobile-first-architecture/>.