

New Mobility Requires a New Network Strategy



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The Bottom Line

Virtualization, advancements in wireless, cloud computing and an influx of consumer technology in the workplace are redefining the very nature of mobility. Companies that wish to capitalize on new mobility must shed conventional thinking and embrace a more mobile-oriented approach to the architecture and operations of the corporate network.

Mobility Evolves the Network

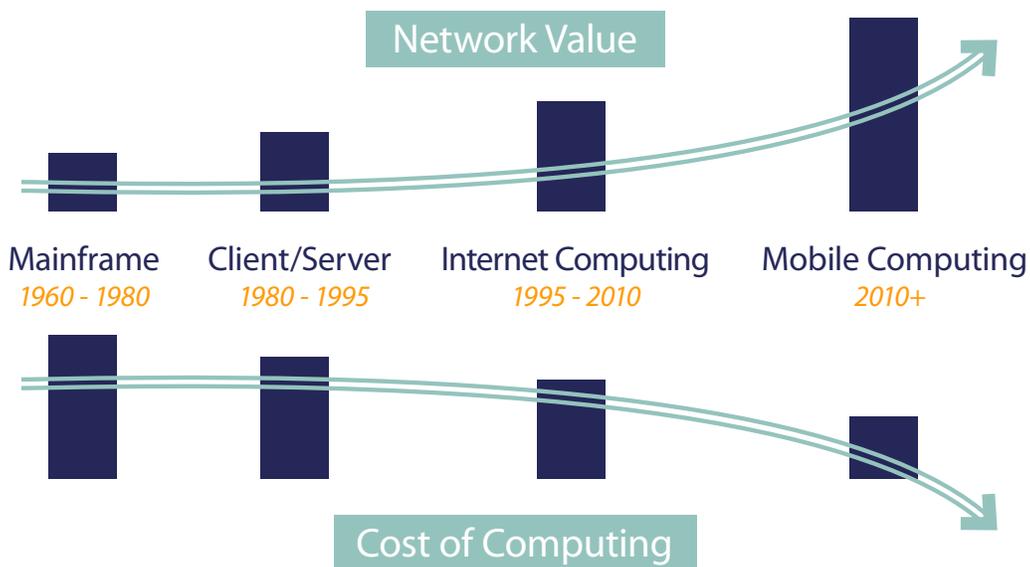
Computing has gone through several major transitions through the ages, each of which raised the value of the network and dramatically lowered the cost of computing (see Exhibit I). In the years after its birth in the mainframe era, the computing industry shifted to client/server and then Internet computing. Today, we are beginning yet another major computing revolution: the shift to mobile computing. This revolution already allows us to carry mini computers, called “smartphones,” in our pockets. This shift will drive down the cost of computing even further and drive up the value of the network, forever changing its role in organizations.

The network can no longer be considered “dumb pipes” or “plumbing.” It will be a strategic point of differentiation, and organizations that understand this will gain a competitive advantage in their market. However, the evolving role of the network also brings with it new management and operation challenges. Specifically, these challenges include:

- **Consumerization of the enterprise.** Workers are bringing their own devices to work at a faster pace than ever before. Yankee Group’s April 2011 [US Enterprise Mobility: Employee Survey, Wave I](#) indicates that 46 percent of workers currently use or would like to use consumer technologies for business purposes. When the endpoint is owned by the user, the device is no longer a strategic point of control for IT management and security. This means the network will now need to provide that functionality.

Exhibit I: Mobility Through the Ages

Source: Yankee Group, 2011



- **The expanding reach of the corporate network.**

Historically, the enterprise network was used to connect PCs, printers, laptops and other IT devices to the corporate network. Today, companies are attaching surveillance cameras, badge readers, environmental systems and other devices that may have been connected before, but on a network separate from the data. Now companies are converging all these networks onto a single IP network to create more efficient and smarter systems. The expanded role of the network means smaller maintenance windows and increased reliability is an IT mandate.

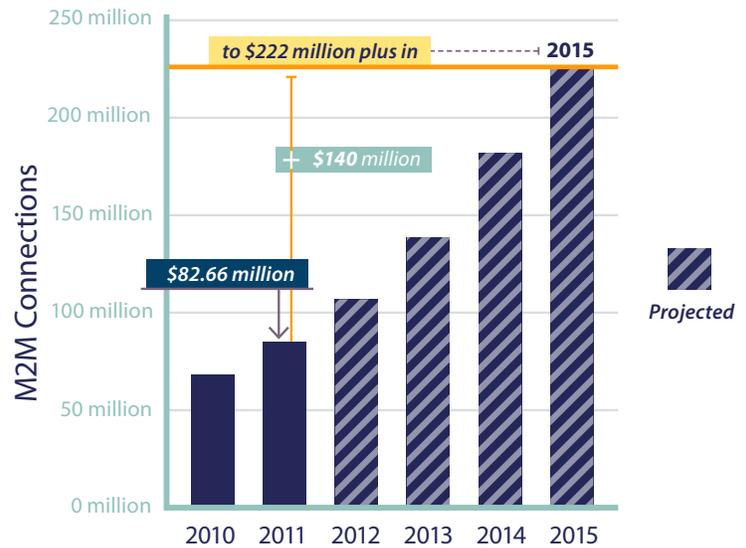
- **Explosion in the number of endpoints.** Consumerization isn't the only force driving up the number of endpoints. More types of devices have migrated onto the corporate network. Five years ago, a user would have had one device (laptop or desktop) on the corporate network. Today, a user could have a laptop, an IP phone, a tablet, a smartphone, a netbook and more. This means the number of devices per user could easily have increased by 400 percent or more in many organizations, and many of these additional devices are mobile. This creates a significantly more challenging environment for network managers.

- **Growth of machine-to-machine (M2M) communications.** M2M has been a market in the making for years now, but the growth of wireless connectivity combined with the availability of vertically driven solutions will create an inflection point for M2M connections. Yankee Group forecasts that M2M connections globally will grow from 82.66 million in 2011 to over 222 million in 2015 (see Exhibit 2). The growth in M2M connections will add to the complexity of running a corporate network.

- **Virtualization of servers and other IT infrastructure.** To date, virtualization has been used as a tool to consolidate IT infrastructure, particularly servers. Virtual servers can be moved between physical servers in real time for business continuity or performance purposes. Additionally, many organizations are deploying desktop virtualization to meet the challenges of consumerization. Many of the new uses of virtualization are highly dependent on the network, and that is causing many organizations to rethink their data center networking strategies.

Exhibit 2: M2M Growth Explodes

Source: Yankee Group's Global ConnectedView Forecast, March 2011



- **Consumer demand for a better user experience.** The consumer influence is driving higher IT expectations from workers. Our employee survey reveals that 47 percent of workers use consumer applications because of their familiarity and 25 percent of workers feel that the company does not offer applications that are as good as the corresponding consumer apps. It's imperative that IT managers create a consistent, high-quality experience that is pervasive across devices and location no matter if the device is wired or wireless. The network plays a key role in the creation and delivery of this world.

Consumerization in conjunction with wireless and virtualization technology has redefined almost every part of IT. Now it's time for the network to transform to allow organizations to maximize productivity and ROI while minimizing TCO.

Mobility Redefined

One of the main forces behind the current drive to transform the network is mobility. However, the very definition of mobility has evolved. Historically “mobile” and “wireless” have been used interchangeably, but wireless users were not truly mobile. Workers had “portable” devices, meaning the devices were wireless but were preloaded with all the content and applications a user would require. This allowed the user to work in any location, but he or she was tied to the device. Using multiple devices required constant data synchronization to ensure the latest versions of applications and content were maintained across multiple devices.

For instance, the corporate laptop gave workers portable access to information: Workers were able to bring their work laptop on the road and reach the corporate information and applications they needed. But even the basic process of accessing e-mail was often a multiple-step event requiring client software on the device, a connection to the Internet, a VPN session and, finally, a connection to the corporate mail server. This made e-mail portable but not truly mobile, as the user could only access it from that particular device. So, while the laptop may have been mobile, the application was not.

True mobility requires the device, the user and the application to be untethered. Cloud-based e-mail is a good example of mobility juxtaposed with portability. It allows users to access e-mail from a browser running on a smartphone, tablet or any device regardless of location and OS. The analogy holds true for cloud-based ERP/CRM applications such as Salesforce.com and SAP Online. Not only is the user mobile, but so are the content and applications. The removal of a dependency on a client OS and the growing popularity of personal devices means that delivering resources from and through the network is the only way for IT to deliver redefined mobility at scale.

The redefined mobility fulfills on the “any” vision—that is, being able to use any application or accessing any information from any location with any device. Exhibit 3 shows the characteristics of legacy mobility versus redefined mobility. Redefined mobility is more than just wireless access. It allows for fluidity of content and applications across the organization, from the data center to the end-user device. Much of this, of course, is the wired network, but both wired and wireless need to work together to create seamless mobility.

Exhibit 3: Mobility Redefined

Source: Yankee Group, 2011

| <i>Traditional Mobility</i> | <i>Redefined Mobility</i> |
|----------------------------------|--|
| Portable experience | Pervasive experience |
| Wireless edge | Mobile edge, core and data center |
| Static applications | Mobile, cloud and virtual applications |
| IT-determined and -owned devices | Consumer devices |
| Dependent on connectivity | Ubiquitous connectivity |

The redefinition of mobility requires a shift in network strategies. Current network architecture was designed for fixed users and static resources. That’s hardly the environment we have now. Today’s mobility is not just about the movement of devices but about the seamless movement of applications, content and the security required to protect the organization. Seamless connectivity and experience must be maintained from the virtualized corporate data center (private cloud) to the public cloud, across the wired and wireless campus, through to the converged edge, and then onto the emerging 3G/4G/LTE cellular wide area network.

The workforce is changing, and so is the way we work. To support this, companies need to shed conventional thinking when it comes to the term “mobility.” The redefinition of mobility, or “new mobility,” will allow workers to accomplish more tasks and communicate with more people from more places over any device. New mobility is here, and companies that are willing to change will gain many benefits.

The Business Benefits of New Mobility

The value proposition of new mobility is multifaceted. The benefits will vary by constituency, but new mobility will drive value across the organization. Workers, corporate executives and solution providers will all recognize clear benefits, and new mobility will create a rising tide that establishes new economic models and allows organizations to leap over their competition. Effects include:

- **End-users** will finally have a consistent, intuitive experience across devices, networks and location. Removing the traditional corporate shackles will allow users to be more productive, empowered and efficient. Additionally, since users will be free to use the device of their own choice, satisfaction levels with IT support will increase and companies will be able to establish more of a partnership model between IT and their lines of business.

- **IT leaders and CIOs** will finally have a company-wide IT delivery platform to optimize and even personalize each user connection from anywhere access to the private or public cloud-based data center. This platform will remove the traditional obstacles from corporate IT, allowing it to respond to user requests faster. The new mobility will allow IT to say “yes” where it may have found itself having to say “no” before.
- **CEOs and corporate leaders** will have the assurance that even though more workers are accessing information from more diverse locations, the security, compliance and marketing risks from lost or stolen devices will no longer be an issue.
- **Hosting companies, cloud providers and mobile operators** will have a flexible, customizable environment to offer corporations more feature-rich, differentiated premium services. New mobility means the network does matter—although it was once of thought of as a commodity, it will now shift to being a strategic asset. Additionally, because the impact of new mobility will reach orders of magnitude more devices than traditional portability (see Exhibit 4), solution providers will have a greater market opportunity on which to grow their own businesses.

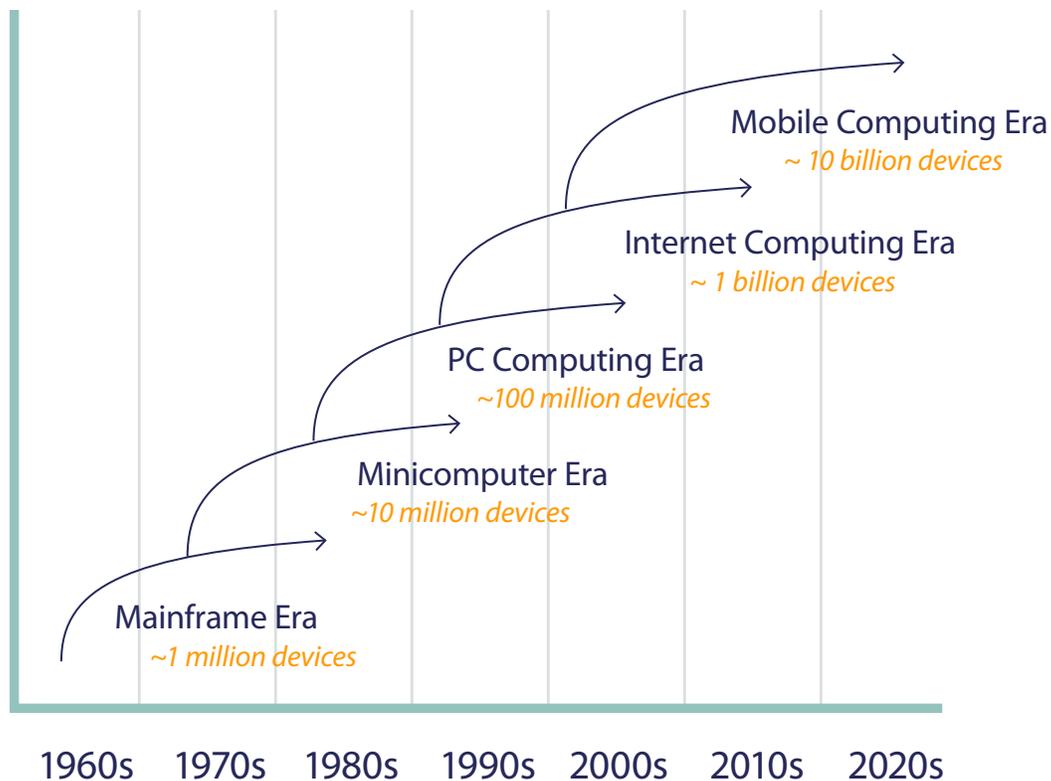
Network Requirements to Enable the New Mobility

New mobility requires a network that can adapt and change as the business requires. Today’s workforce will be as efficient as the underlying network that supports it. Conversely, a network that degrades a user’s experience by either limiting access to information or blocking it all together can significantly hamper the workforce. To create an optimized mobile experience, the network must provide the following:

- **Policy-driven security integrated into the network.** In a consumerized mobile world, security is critical. However, security often creates a conundrum for IT managers. Too much security limits productivity and not enough puts the company at risk. A policy-driven security approach would allow users to access the information they need from wherever they are within the confines of what the business will allow. For example, the security policy might allow a CFO to have full access to a company’s financials when in the office but only top-line information when accessing the information from a public hotspot.

Exhibit 4: Mobile Computing Is the Largest Computing Shift Ever

Source: Yankee Group, 2011



- **Personalized experience for the user.** No two users are the same, so the policies used to dictate where a user can access information and what they can access need to be established on a per-user basis. Additionally, the network should be able to automatically tune itself to optimize applications such as video that require higher levels of performance.
- **Open and standards-based architecture that can adapt and allow for the fast integration of other compute or application resources.** The network is more than the pipes of an organization. It needs to interact with compute and application resources to provide the levels of automation required to fulfill on the vision of redefined mobility. Because of this, closed and proprietary networks will significantly hamper a company's ability to build a robust ecosystem that interacts with the network.
- **Consistent policies across wired, wireless LAN and cellular access.** Organizations need to retire the conventional thought process of how applications perform and are secured with wired or wireless or remote access, and instead just think of access. A consistent experience is required across all these types of access to deliver on the definition of new mobility.
- **Open and standards-based solutions.** Historically, the fastest way for a solution provider to deliver new features was to build closed, proprietary solutions. This was sufficient when IT operated in several silos that never interacted with each other. Delivering new mobility requires the infrastructure to act as a single delivery platform. Open, standards-based solutions allow for faster integration across traditional silos, ensuring faster time to market for new services and applications.
- **Multivendor interoperability.** While one-stop technology vendors have served companies well to integrate network services, they are often slow to meet the unique and dynamic needs of today's new mobility. By contrast, inherent network interoperability between vendors allows enterprises to select those technologies and vendors that are best suited to their industry and the way they work.
- **Security built into the network.** IT no longer has control of the endpoint and, in many cases with cloud applications, has little control of the system or application that delivers functionality to the organization. Pushing security control into the network is the only scalable way of meeting the multi-OS, multi-location and multi-platform challenges of new mobility.

Evaluation Criteria for a Network Solution Provider in the Era of New Mobility

The mobile computing revolution requires a significantly different type of network than we had with traditional computing. As a result, the choice of network vendor shouldn't just fall to the market leader or current incumbent because its solution is good enough. However, the decision regarding which solution provider to use is not obvious. The following are some of the key criteria to consider when evaluating vendors for a network architecture and solution:

- **Networking as the main focus of the business.** As the network infrastructure market has grown, more solution providers have appeared on the landscape. Today, server vendors, telephony providers and application companies all offer network infrastructure. To meet the challenges of new mobility, decision-makers should seek out a solution provider that is "network first" and does not use network infrastructure as a means of selling other IT infrastructure.
- **Application interfaces to the network.** New mobility means the network needs to be more application-aware and, to some degree, the applications need to be more network-aware in return. Solution providers that have open APIs to allow software developers and compute providers to access, engage and control network resources will allow for higher degrees of automation and deliver better predictability of application performance.
- **A history of network innovation.** Seek out a vendor that has a history of open, standards-based hardware and software innovation—one that is known for sophisticated Ethernet solutions that meet the toughest challenges of network connectivity and IP-based communications.

Conclusion and Recommendations

Consumerization, mobility and virtualization are redefining the way we work. Users are demanding a high-quality experience in parallel with the need to access what they want, when they want from wherever they are. This trend is here to stay and these changes are redefining mobility. Portable work processes are no longer sufficient to maximize corporate productivity. What's required is an infrastructure that can deliver new mobility—that is, the ability to mobilize the user, device, content and applications.

This places new demands on the network, from the data center through the campus core and out to the converged wired/wireless edge. Addressing these demands from within the context of our current environment will require breaking away from traditional thinking with regard to architecture and solution providers. To get started, we recommend enterprises:

- **Simplify the architecture of the network.** In the data center, move away from a multi-tier design to a flatter, fabric-like architecture. Create a road map to converged services in the data center and at the edge of the network, and at the edge, plan to have an integrated wired and wireless environment instead of a discrete wired network with wireless overlays.
- **Shift security and management control into the network.** Moving control from the client device to the network will allow for faster provisioning of services and greater control for IT without user disruption. This will enable a higher level of personalization and a seamless quality of experience for the user.
- **Embrace consumerization instead of fighting it.** Consumerization is here to stay. IT operations has spent many years fighting this trend to little avail. IT decision-makers should accept that it's here and shift the role of IT from maintaining end-to-end control to being more of a facilitator. Using the network as a cost-effective, scalable delivery platform will enable IT to take on this facilitation role. Consumerization can be embraced if the right network architecture is in place.

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