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### The mobile-enabled enterprise data center is a moving target

What does the mobile-enabled enterprise data center of the future look like? That depends on how the word "future" is defined. The shift to mobile computing in the workplace is happening so fast that even a three-year plan might prove no match for reality, as evidenced by the fact that the [iPad](#) has only been around since 2010.

Jeff Kaplan

"Now, millions of these workers use these tablets in the enterprise every day, and the tablet market is just the tip of the mobility iceberg. Just below the surface lies a torrent of innovations that include mobile applications, social media, mobile health, cloud computing, mobile payment, interconnected machines, mobile collaboration and wireless technologies," Gartner Inc. advised technical professionals in a [report published in April](#).

That torrent of innovation will require many enterprises to make adjustments to data centers, from security upgrades to investing in [new management tools](#), to redesigning existing applications, to [optimizing wireless networks](#). Unfortunately, in Gartner's view, the employee adoption rate of mobile devices is outpacing the "enterprise adaptation rate."

Even as recently as a year ago, for many CIOs the mobile-enabled enterprise focused mainly on the management of smartphones employees used primarily for email and calendaring. The new wrinkle for IT departments, of course, was that a rapidly growing number of these smartphones were consumer grade and owned by employees, setting off a mad rush to develop [bring your own device](#) (BYOD) policies.

Think of how many people are now pinging those computing resources with mobile devices. Traditional data centers were not built for that kind of demand.

Jeff Kaplan,  
founder, THINKstrategies Inc.

As more work gets done on mobile devices -- at the moment, tablets -- enterprise mobility strategies are quickly moving beyond managing a limited number of applications on a limited number of endpoint devices to architecting an infrastructure that can integrate all traditional IT systems to all [consumer technologies](#).

That's a daunting task for CIOs, said Jeff Kaplan, founder and managing director at the Wellesley, Mass. consultancy THINKstrategies Inc. "The CIO and data center team now have to think about how to make their enterprise applications and computing power accessible to employees, executives and authorized third parties via remote devices," he said.

For many organizations, that accessibility will require readjustments on two fronts: the redesign of existing applications and investment in computing systems to ensure mobile device access, and the upgrade of [network access control](#) and identity systems to protect enterprise assets from unauthorized mobile users and other threats. Ultimately, endpoint independence must be enabled so that all applications are accessible from all devices, Kaplan said.

### Tradeoffs needed to become mobile-enabled

Navigating that two-way street -- access on the one hand and security on the other -- however, will not be easy, said Paul DeBeasi, a research vice president in the Gartner for Technical Professionals team. "Mobility solutions stir up conflict," he said. Building an enterprise mobile solution today will almost certainly involve tradeoffs, according to DeBeasi -- tradeoffs between user experience and the devices' security risks; between data ubiquity and data loss

prevention; between business expectations and the technical ability to fulfill those expectations; and between [BYOD policies](#) and the limitations of wireless networks' physical capacity.

For example, Gartner points out that mobile security issues can be mitigated by deploying such virtualization technologies as [server-hosted virtual desktops](#). The technology keeps sensitive data off the device; however, it may make the user experience worse, thereby decreasing productivity, and at the same time may increase dependency on the wireless LAN, making capital improvements necessary.

Most wireless networks were not designed for mission-critical performance and seamless mobility, said Geoff James, CEO at Ash Creek Enterprises Inc., a Stratford, Conn.-based networking and server integrator. They were put in place so that corporate workers with laptops could connect to the network, or for the out-of-town guest who needed connectivity. "It was more of a convenience tool built for low-volume connectivity, not for employees who have a desktop, laptop, smartphone and tablet they want to connect to a lot more than email. People are accessing very [rich data](#) -- video, large attachments and streaming services," he said.

### **More on the mobile-enabled enterprise**

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James advises enterprises to make an "honest assessment of the projected network usage from mobile devices" and identify the problem points, from the oversubscription of individual access points to the types of wireless technology needed. "Today's end-based [access points](#) can hold on to a much greater number of associations than the gear of a couple of years ago," he said.

Enterprises are slowly realizing they need to invest in wireless LAN and mobile cellular technologies to ensure a robust wireless foundation, the Gartner report notes. But keeping pace will be an ongoing battle. The consultancy predicts that by 2015, 80% of even newly installed wireless networks will be unable to keep up with mobile demands. In the meantime, don't be surprised if employees find a workaround in the form of mobile hotspots -- thus compromising data security and network performance.

On the application front, the problems can be just as thorny, starting with whether the app should be native to the smart device or Web-based or perhaps a [hybrid](#) that uses HTML5 coding for presentation but is wrapped with native software to allow access to native device features, Gartner said. Mobile devices' short lifecycle, immature development tools, security issues, privacy concerns and lack of mobile app expertise only add to the complexity of mobile application development.

### **Enterprise mobility and modernizing the data center**

"We've had remote workers for ages, and there have been all kinds of approaches developed for permitting remote access," THINKstrategies' Kaplan said. The consumerization of IT -- from the array of devices to the expectation that virtually every type of service, from paying a bill to renting a car can be done from a mobile device -- requires new solutions. The kind of stringent policies and systems developed by IT for a 9-to-5 workforce no longer apply for employees who need to work anytime, anywhere and from any device. "Think of how many people are now pinging those computing resources with mobile devices. Traditional data centers were not built for that kind of demand," he said. "They have to become more cloudlike -- in other words more scalable, more flexible, more resilient and more economical."

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