



The Value-Focused CIO: Building the Intelligent Infrastructure

IT is falling behind the curve at a time when the workforce is not only highly mobile; it is highly dependent on mobile devices and mobile connectivity. Bring Your Own Device (BYOD) is seen as less of a threat and more of an accepted part of the productivity solution; however, innovation has been inhibited by IT departments that are responsible for critical security and access control. Consumerization has come at a cost. User pain points, including security, storage limitations and slow tools, proliferate. IT not only needs to catch up to this transformation by embracing technologies like solid-state technology that employees want to use to increase productivity, it needs to get out ahead of the next wave (including the internet of things), as an agile service broker.

Introduction

The modern workforce is mobile, and it is quickly leaving IT behind. Innovation in the field has been inhibited by the demands of IT departments – who, understandably, are more concerned with security and access control than usability and portability since that has been their mandate. (1)

Cutting-edge technology now appears first in the consumer market. Once exposed to new tech, people will want to use it at work as soon as possible to help give them an edge over their competition. If officially denied, they'll probably use it surreptitiously, with potentially serious security consequences. (2) The impact of BYOD is far reaching: "With BYOD adoption came growing pains—straining archaic enterprise infrastructure, services and policies as companies struggled to accommodate the new demands and dangers of managing an increasingly mobile workforce." (3)

The good news? There's a new role for IT. IT departments will face rising demands during the next three years as firms race to adapt to digitally empowered customers, employees and competitors, Forrester Research Inc. said in a new report on technology trends. "Enterprise architects face an onslaught of technology choices, implementation options, and delivery approaches," write the authors of Forrester's Top Technology Trends to Watch: 2014 to 2016. "And this new pace of business demands more of IT to help firms plan for and influence what might happen, detect what is happening, make sense of it, and adapt." (4)

Consumerization will force CIOs to be more strategic, even as the inherent challenges appear to be tactical in nature. Forrester's Frank Gillett suggests that "CIOs should take notice now, at the beginning of this phenomenon, rather than be caught by surprise later. It won't just be a tug of war over which consumer-style file sync and share solution to use for corporate files." (5) However, technologies currently exist that can help IT departments solve some these issues in a cost-effective way, including deployment of solid-state drive technology.

The Benefits of BYOD

We're starting to see a more balanced view of our personal devices used in the workplace. Consumerization, BYOD and the increasing mobility of business computing create serious headaches for IT managers. But these trends also create opportunities for more flexible working patterns, leading to greater employee productivity and job satisfaction — and ultimately a better return on investment in IT for the business. (6)

Britt Cooper in Mobile Data Trends observes: "Organizations reap the benefits of BYOD in two ways. The company saves money because it doesn't have to shell out for the device. It also sees enhanced productivity because staff will always have their work devices with them, including off-hours and weekends. A study by Aberdeen Group has shown that BYOD employees are more likely to keep their device with them outside of work. It makes them more accessible and integrated into the corporate IT ecosystem, which can include CRM, enterprise content management or internal communications tools like Yammer; in addition to standard functions like email and messaging." (7)



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Forrester Research Inc.

Think about the last corporate application you used or deployed. Was it produced on time and did it meet the original budget? What was the adoption rate among corporate users? Consumer apps cause extreme anxiety for large companies with sensitive data, but are so readily available and intuitive to the average worker that employees often can't resist. (8)



The devices we bring to the workplace continue to evolve, with mobile devices in ascendancy, and wearable and other devices on the horizon. Martin Varsavsky notes that "‘smartphone only’ experiences are on the rise. Path, Foursquare, Uber, Instagram and Whatsapp are but some examples of these. When smartphones started, people used to say that they fell short of what was available on the Web. Now the opposite is true. People using laptops have to have smartphones handy as well." (9)

Many employees choose to bring their own devices because the standard corporate laptop is just not powerful enough to handle certain applications, especially in developer arena. Some companies, such as Lending Tree, recently used the SanDisk® STAR program to migrate their employees laptops from hard drives to solid state drives.

BYOD Works Because of How We Work

End users have more clout. They're now asked to do more and they have higher expectations. In their view, the top-down approach takes too long and doesn't keep up with the demands of our new mobile workplace.

A new way of thinking from IT is required, and it goes far beyond generating new ideas and creating an environment conducive to innovation. Larry Socher from Accenture terms this "intelligent infrastructure." He advises CIO's: "Recognize that IT can no longer dictate how systems are delivered. Users now expect to be able to get their work done wherever they are, on any type of device – from smartphones and tablets to traditional desktop computers." (10) Socher adds: "IT must enable work in any and every manner that best suits this new – and very productive – type of end user, while also protecting company data." (11)

Some of it is generational and based on the increasing number of digital natives in the workforce. We expect other services to provide similar integration. If IT blocks these services for the digital self, they will impair productivity and annoy workers, who will find ways around any restrictions as they bring their in own devices and services anyway. Shell's enterprise information security architect explains why it has embraced "buy your own device:" "because young staff don't want to come into a locked corporate environment." (12)

Where the mobile workforce may be reaching limitations is in the productivity of individuals, versus group productivity. True business value from worker mobility can't rely solely on individual workers and there are still major barriers preventing team-wide mobile collaboration and productivity. (13)

Many of the companies that build the technology that enables mobility offer solutions that can help IT teams right now. One new way of thinking is to partner with these companies to leverage powerful solutions and best practices, such as hardware upgrades and prolonging the life of laptops. IT teams can gracefully utilize the new infrastructure to its fullest, rather than hobbling it.

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Forrester Research Inc.

Don't Forget Cloud and SaaS

Forrester Research Inc. surveys show that individuals all over the world are using personal cloud technologies to store their personal and work stuff—files, contacts, photos, music, and videos—in online services. In the U.S., 77% of online adults use one or more of these services, while 61% do so in Europe. (14) Remember, there is convenience in cloud storage and local storage. They're not mutually exclusive.

Even highly regulated companies are allowing employees to use Dropbox for certain purposes because it's easier for CIOs to adopt it than try to choke it off. Rob Koplowitz, an analyst with Forrester Research Inc., tells CIO Journal "shutting it down is very difficult for the CIO to justify" because "sharing is a very compelling business functionality." (15)

Alex Teu at Oxygen Cloud observes, "For larger businesses with existing data centers and lots of existing data, the shift will be slower and take a different path. Most will start with less sensitive data sets. As reflexive concerns like data sovereignty and regulatory compliance give way to convenience and common sense, the transformation will be complete. Within five years, I believe that a majority of enterprises will have at least 50 percent of their data in the cloud." (16)

For a mobile workforce, it's no longer a question of choosing cloud access or local storage. BYOD that integrates all forms of access and storage as part of the productivity solution. We now expect digital, smart and connected in every IT environment. Fast, reliable and secure has moved beyond expectation; it's the standard.

Pain Point: Security

Tensions rise at the intersection of corporate exposure and user exuberance.

"The High Cost of Mobile Business Users' Rogue IT Practices" found that 41% of workers have used an unauthorized cloud service despite the fact that upwards of 87% were well aware that their company had a policy strictly forbidding their actions. (17)

The financial services industry, however, is starting to figure it out. Don Callahan, who runs operations and technology for Citigroup Inc., says he tries to use cloud technologies like Dropbox in areas of the bank's operations that aren't regulated. Mr. Callahan noted that the bank has no plans to put customer data in a cloud service such as Dropbox. (18)

Marty Lippert, executive vice president of global technology and operations at insurance firm Metlife Inc., says employees have to request authorization to use Dropbox for work purposes, and that permission is granted "on an exception basis." Before even considering granting permission, Mr. Lippert says Metlife puts cloud services through strict reviews. "When we use these types of services from an enterprise perspective, we do fairly extensive security reviews from the perspective of how the vendor is operating the service, and often times look for SAS70-type reviews by a third party that can go in and do an assessment of the security infrastructure that was built around the service." (19) Interestingly, Metlife also looks at how the cloud service is designed to manage peaks in demand.

What we're seeing is either a deliberate tug-of-war around security, or an attempt by savvy organizations at finding a delicate balance that creates a competitive advantage. Forrester suggests that online trust and identity will be rethought, with IT moving to implement new architectures for identity and access management: "This will be a very deep, very slow, and potentially expensive change driven by both engagement potential and the un-ignorable cost of data breaches." (20) Existing technologies, such as security embedded on the memory in laptops mobile devices, can be a starting point for IT teams.

Although there are benefits to the company of BYOD (such as employees being more inclined to bring their devices and the resulting boost in productivity) there is still the security risk here that IT managers need to worry about. All organizations operate differently when it comes to these risks and have different policies in place. For those concerned with information falling into the wrong hands, they might want to consider settling on a compromise with employees by allowing them to bring their own devices, as long as the company equips each laptop with a self-encrypting SSD. Everyone wins in this scenario—the employee gets a better performing machine and is more productive and the company saves money by not having to purchase a new laptop.

Pain Point: User Experience

Consumers are now used to always-on devices featuring simple, intuitive applications. IT-led projects often deliver their intended functionality, but stumble or fail because they do not allocate enough resources to ensure a good user experience. (21) It used to be that your workplace had the better technology and your personal computing fell short. Now, that's been reversed.

"Not only are laptops reaching the end of their lifecycles, but there are bigger issues at stake such as a decrease in overall productivity and frustrations from employees due to lack of responsiveness from their hardware. From a corporate level, companies are concerned about the transition and everything involved in moving to new hardware. It's quite simple—we made it easy for them by taking care of the entire migration process from beginning to end."

Ravi Annavajhala

Senior Director of Business
Development, Client Storage
Division, SanDisk

Employees don't understand why their work experience and applications can't be as easy to use and "always on" like their consumer devices and apps. It's not only limited to the user experience of the content creator who needs a fast computer to do graphics. Demand planners, product managers, executive assistants, tech support reps and sales reps, all need access to files at the moment.

We've conditioned our workforce to have everything happen instantly in a fast-paced world. A poor user experience equates to diminishing results for business.



Pain Point: Reliable Access

A mobile workforce moves in and out of mobile signal coverage, whether on the road or crossing the corporate campus. Inconsistent wireless can instantly make cloud storage and business apps unreliable. "Trying to Connect" is the message you will see at the top of your Google doc when you are unable to access the file.

Lack of reliable access to the Internet slows personal productivity, but doesn't necessarily impair overall progress. Mobile workers who can't access an online spreadsheet or presentation deck can always shift to an offline task, or IM their way forward on an always-on smart phone.

However, think of what the impact of downtime for team productivity. Collaboration becomes a very expensive when everyone is waiting on a presenter who is even momentarily offline. Think of the working groups and tele-conference meetings, where five to ten participants, or even twenty-five, are on the call. Those who hesitate are lost; the next meeting is at the top of the hour.

Conclusion

Consumerization of IT is clearly not going away, so enterprise IT managers cannot simply bury their heads in the sand. The challenge is to accommodate the 'work anywhere, anytime' productivity and user satisfaction benefits that consumerization and BYOD can bring, while retaining enough control to keep company data secure and compliance requirements satisfied.

The personal cloud still has far to go and the forward-looking CIO will look far beyond personal productivity to the potential for team productivity. The value-creating CIO will be opportunistic and make BYOD more about revenue gains and less about cost efficiency. Infrastructure matters when you're thinking about how to prepare for the Internet of things.

BYOD and the Cloud have forced IT to confront opportunities it did not realize existed. Not just cost savings but revenue growth. Not just individual productivity, but breakthrough team productivity and external collaboration with partners. Some CIOs will attempt to repair the gap and defend the fortress, security and control at all costs. Others will incorporate these new tools to help prepare for even greater opportunities for value creation by working directly with the companies that build the technology fueling these opportunities.

Personal device capabilities are evolving rapidly and represent a minimal investment to the organization, while laptops are no longer evolving at the same pace and they represent a more expensive investment. Laptops will continue to outweigh personal devices such as phones and tablets for personal productivity and group collaboration. IT can produce the ideal mobile workplace set-up by understanding the convenience needs of users and the corporate requirements for performance, productivity and security. SanDisk has a leading role in creating this new mobile infrastructure, and can be an ideal partner for forward-thinking IT teams.

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