

# SigmaUptime

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## The Next Wave of IT Consumerization

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The rise of employee-owned devices, consumer apps and cloud services is changing the role of the IT department.



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## **Sigma Uptime**

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# The Next Wave of IT Consumerization

The rise of employee-owned devices, consumer apps and cloud services is changing the role of the IT department.



Bring your own device. Rogue clouds. Shadow IT.

These are the trends that are vexing IT departments everywhere as they struggle to manage, support and secure an array of technologies outside of their aegis. End-users are increasingly IT-savvy and are taking matters into their own hands when it comes to buying technology for business use.

Collectively, these phenomena are known as the “consumerization of IT,” reflecting the natural influx of employee-purchased devices, applications and services into the workplace. Gone are the days when the organization issued corporate-owned assets completely controlled by IT. Today’s mobile workforce wants to use familiar devices and applications — and expects them to be supported by the IT department.

The consumerization of IT began several years ago and shows no signs of abating. Experts say we’re now in the midst of the next wave of IT consumerization, and it is fundamentally changing the role of IT within the business.

“Today, choosing the right application can make all the difference to an organization’s productivity. Applications that are consumer friendly require less training and will be welcomed and accepted by users. Most users don’t want to go rogue — they just want to get their jobs done.”

“IT departments were traditionally based on a ‘command-and-control’ model — IT dictated what technology would be used in the organization. Now, IT departments must have a change of mindset if they are going to be successful. They must be willing to relinquish a measure of control in order to take advantage of the very real benefits of IT consumerization,” said John Flores, Vice President, Marketing & Business Development, Sigma Solutions.

“IT departments are being transformed into customer-driven organizations that strive to constantly improve the services they provide to end-users. Instead of focusing on technology, IT must work to understand user needs and ensure that policies, processes and tools meet those needs while also protecting sensitive data and intellectual property.”

### **Rethinking the Desktop**

The consumerization of IT is at the heart of several key technology trends. Experts say that organizational IT models are shifting from a monolithic, hardware-dependent infrastructure to a more app-centric framework that better enables productivity and customer service. Anytime, anywhere access and self-service provisioning of resources are key components of this model.

“The three hot topics at VMworld 2014 — desktop virtualization, hybrid cloud and mobility — are inherently related to the consumerization of IT,” Flores said. “These technologies enhance productivity and end-user satisfaction by enabling fast, easy access to applications, data and other resources.”

Desktop virtualization in particular plays an important role as organizations transition from a PC-focused environment to one that is more flexible and mobile. Virtual desktop infrastructure (VDI) allows IT to centrally manage the entire desktop environment and deliver it to users as a service. Instead of being tied to their desks, users can access the desktop environment from anywhere.

Given the complexity of desktop virtualization there is a tendency for IT to force users into standardized desktop configurations. IT departments should resist this

temptation and provide the highly personalized experience users have come to expect from their desktop environments.

“As we enter the post-PC era, in which non-PC devices far outnumber PCs, it is important to have a solid desktop strategy. Desktop virtualization enables organizations to deliver an end-to-end desktop experience and allow users to self-provision approved applications,” said Flores. “It can relieve a number of management and access challenges and be highly successful as long as the end-user’s needs are kept at the forefront.”

### **The Mobility Factor**

Mobile technology is probably most responsible for the acceleration of IT consumerization. Smartphones, tablets and other devices have radically blurred the line between personal and business life — and data.

“The influx of mobile devices in the enterprise is exploding, and more enterprise data is leaking onto them,” Flores said. “It is imperative to have a solution in place that can adequately address the security challenges that arise whenever personal and business data come together on the same device.”

Many security issues can be avoided if the devices are simply configured appropriately. Default system and application settings on smartphones emphasize features, functions and ease of use — at the expense of security. IT should ensure that devices are configured in accordance with the organization’s requirements. Users should also sign off on usage policies, such as requiring email encryption or remote wipe of data in case the device is lost.

Balance is critical, however. Users will balk at policies that are overly restrictive or that put their personal data and privacy at risk.

“Organizations must establish an effective system of governance and policies for data security, and ensure that employees understand and implement those policies,” said Flores. “By focusing on sensitive data and the risks to that data, organizations can establish a policy framework that is compatible with a user-centric IT model.”

An enterprise mobility management (EMM) platform can help IT enforce security policies across the organization. These solutions contain tools that streamline device onboarding, push updates and applications, segregate personal and business data, and prevent users from downloading and using prohibited unauthorized applications.

### An App for That

IT consumerization has had the greatest impact on applications. Many users complain that traditional enterprise software doesn't meet their needs, and are downloading consumer apps and using cloud-based services such as Dropbox, Google Docs and JoinMe.

These "shadow IT" solutions increase costs and security risks and create a fragmented environment. Simply banning them won't work, however. IT should carefully choose acceptable applications that fill the void.

"Historically, IT departments acquired the applications they deemed suitable with no regard to user perception or ease of usability and acceptance. Today, choosing the right application can make all the difference to an organization's

productivity," Flores said. "Applications that are consumer friendly require less training and will be welcomed and accepted by users. Most users don't want to go rogue — they just want to get their jobs done."

IT innovation today is frequently driven inward from consumers rather than outward from the IT department. Smartphones, social media and instant messaging are just a few examples of grassroots technologies that eventually took hold within the mainstream IT infrastructure. The key to successfully navigating the consumerization of IT is to accept the rise of user-owned technology and develop policies and programs that ensure a high-quality user experience while keeping organizational resources secure.

"As the workforce becomes more tech-savvy, employees will continue to introduce consumer tools and services into the enterprise — with or without the blessing of IT departments," said Executive. "While this trend clearly poses challenges, organizations that focus on the processes, policies and infrastructure to support user-owned technology will reap a wide range of benefits, including employee satisfaction, reduced management costs and greater productivity."

The advertisement features a background image of a server room with blue lighting and server racks. The VMware logo is in the top left. The main headline reads "Accelerate Your Transition to the Software-Defined Data Center". Below this, the Sigma Solutions logo is shown, along with the text "A PIVOT COMPANY", the website "www.sigmasol.com", and the phone number "888.895.0495". A quote from VMware describes the Software-Defined Data Center as a platform for agility, speed, security, and control. The ad concludes with a call to action: "Contact Sigma to learn more."

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Why Technology Needs to Be

# INVISIBLE



By CHRIS REED

*Mobility and EUC Practice Manager*

*Sigma Solutions*

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**R**ecently I was able to spend some time with Fred Haise, Apollo 13 astronaut and recipient of the Presidential Medal of Freedom — a living, walking piece of American history. Being able to talk with Mr. Haise about his experiences has been one of the highlights of my year!

Hearing him describe the mission control room and the computing power available to him and his crew on the Apollo 13 mission was eye-opening. Here are few facts: The computers that projected telemetry for the module and all flight logistical information had 1MB of storage. NASA had five of them in mission control, each performing a different task. In other words, the whole mission launched into space and successful brought this hero back to Earth on 5MB of storage. To put that into perspective, the selfie I took of Mr. Haise and me consumed almost 2MB of storage.

Standing in that NASA server room would have been amazing. As I listened to Mr. Haise describe it, I could hear the clicks and whirs of the tapes spinning back and forth and feel the buzz of electricity causing the hair on the back of my neck to stand on end.

There's no question that computing technology has advanced far beyond what NASA used to conduct the Apollo 13 mission. What's more subtle is that the goal of technology has changed dramatically since 1970.

When I speak to a technical audience, I often ask them to raise their hands if they hold a VCP, CCIE, MCSA or any other technical certification. Generally the hands go flying up because we are proud technologists. And as technologists we are very interested in the details of how things work. Knowing how to

adjust the PCoIP protocol in a VMware View environment to account for high latency connections is a personal point of pride for many of us.

While those sorts of things are important, here is what we all must understand: Technology is best when it is invisible!

Picture an opera singer standing in the spotlight with music sweeping softly across the stage. The sound of the singer's lamenting voice causes emotion to stir in your chest and a tear to fill your eye. Now consider the technology behind that voice — an orchestra crammed into a 10-foot-deep hole in front of the stage, stage hands scampering behind the stage getting ready to roll the scenery for the next act, and lighting directors knowing when and where to point those spotlights and which lenses to use. It is all necessary if the show is to go on but it is invisible to the audience.

The goal of any technology — and especially mobility and end-user computing — is to become invisible. We want the applications, data and desktop experiences of our customers to be like the orchestra and stage hands. The technologies we use in our daily lives are amazing, but not because they are center stage. They are amazing because they take a back seat to us, the star of the show.

The car we drive just drives. The air conditioner just cools. We don't spend much time thinking about these technologies but we do appreciate them. The goal of technology is to become invisible.

Mr. Haise carries a ruggedized smartphone in his pocket. To him it is his lifeline to his lovely wife and family. This American hero knows what it means to be the star of the show but he also knows how to be a supporting actor.

We technologists could learn the same lessons. One of the problems with any mobility or end-user computing initiative is that we love the technology so much we want it to be center stage. We need to understand is that it is only powerful, emotional and life-enabling when it is invisible.

# Avoiding VDI Bottlenecks

What to look for in a storage solution for a virtual desktop environment.



**V**irtual desktop infrastructure (VDI) is a mature technology with proven benefits, but many organizations have hesitated to deploy it due to the perceived total cost of ownership. There is little question that VDI is more expensive than a traditional PC environment in terms of upfront investments. Some organizations have come away with a sense that these upfront costs outweigh the operational and strategic advantages of VDI.

Storage continues to be a major challenge in designing and optimizing a VDI environment. Because all virtual desktop environments are centrally stored on servers, and images and data from virtual desktops are constantly being updated and backed up, the cost to meet initial and ongoing VDI storage requirements can be significant.

In addition to the raw storage capacity needed to handle the virtual desktops, organizations must ensure that the storage environment can handle the VDI workload. Without careful planning, I/O bottlenecks can occur when a large number of virtual desktops attempt to access storage at the same time. A VDI environment has a high risk of performance degradation and downtime due to boot and login storms and write bursts.

Because users are sharing the same physical infrastructure, any performance problems or outages have a significant

impact on operations. Organizations must give careful consideration to the capacity, performance and availability of the VDI storage infrastructure.

## Understanding Capacity Requirements

A typical virtual desktop can require anywhere from 10GB to 20GB or more, depending upon the applications installed. As a result, large VDI deployments must be able to expand to several terabytes or more. To keep costs in line, VDI storage arrays should allow for expansion, with incremental capacity and upgradeable components.

The good news is that VDI is well suited to data reduction techniques such as de-duplication. Because most VDI data is a copy of the master operating system image, VDI de-duplication rates can reach 90 percent. As a result, organizations should look for VDI storage solutions with integrated de-duplication capabilities.

Sizing a VDI storage environment depends upon whether the organization plans to deploy persistent or non-persistent VDI. Persistent VDI means each desktop will have its own disk image, with user settings that are saved and appear every time the user logs in. Persistent desktops are customizable, making it easier to switch from a physical desktop to VDI. However, more storage capacity is required and image management is more complex.

With non-persistent VDI, no user settings or data are saved and the image reverts to a standard master image every time the user logs off. Non-persistent desktops are simpler to manage, offer more security and require less storage, but allow for little application and personalization flexibility.

Because most pre-VDI environments use persistent images, it often makes sense to continue this approach with VDI instead of re-configuring desktops and trying to develop a universally acceptable image. Non-persistent VDI is more likely to waste time, complicate the shift to VDI, and upset users who enjoyed the customization of a persistent desktop.

### The Performance Challenge

Capacity and performance are tightly linked. VDI storage arrays should be able to handle I/O bursts even when nearing capacity — costs will explode if capacity has to be over-provisioned to keep up with performance demands. Additionally, VDI workloads are highly random so most read requests must come from physical storage rather than cache. Virtual desktops are also heavily oriented toward write requests, unlike the typical enterprise application.

Some organizations struggle with VDI because they simply choose the same vendor that deployed their server storage environment. This is a flawed approach because VDI storage requirements are very different from server storage requirements. Traditional enterprise storage arrays can't cope with the read/write demands of VDI.

There are a number of VDI-specific storage solutions available today, with more and more storage vendors jumping on the bandwagon. Several vendors take a hybrid approach with a mix of hard disk and flash storage technologies: Flash arrays are used to accommodate boot storms and other peaks in I/O intensity while lower-cost hard drives are used for user profiles. However, those commodity hard drives often become the weak link in the chain.

A VDI environment requires a different way of thinking, and storage is no exception. It's important to understand the differences between VDI and traditional server storage and choose a solution that delivers the capacity and performance that VDI demands.

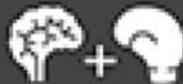


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