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Device Convergence: The Hunt for an IT Singularity

by Pam Baker, Author, ITExpertVoice

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If you thought device convergence ended when a Blackberry, PDA and a dumb phone squeezed into a single smartphone device, think again. Convergence is a never-ending story for enterprises and consumers alike. Indeed, several chapters of the story blend consumer and enterprise uses into a single device. You could think of it as the black hole of communications and computing, wherein a powerful singularity appears to be the obvious conclusion as more and more devices and applications are sucked in from the event horizon.

“Cloud services and social networking further blurs the line between corporate and personal communications, as does the advent of new machine-to-machine developments in Smart Home Energy Management and Auto Infotainment,” says Shrikant Latkar, assistant vice president, Worldwide Products and Solutions Marketing at Aricent, a global communications technology and consultancy firm. “All this is driving tremendous amount of innovation on the physical design of the device, UI and interaction design of the applications, and finally innovation in the overall back end processes and systems.”

These mashups come with mixed emotions. On the one hand, it’s good to track only one or two mobile devices per employee. On the other, those devices are likely to belong to the employee rather than the company, making compliance and internal security issues all the trickier.

In the copy room and datacenter the advantages are starker; it’s great to buy fewer devices and reduce cooling, energy and hardware expenses in the process. Fewer devices also help curtail maintenance expenses and the number of IT staff needed to maintain them – an important plus in this age of strained budgets and over-worked personnel.

Convergence is reducing the datacenter to a powerful miniature of its former gargantuan self. There is movement afoot to move multiprotocol on one board, fully integrate stacks and deploy datacenter operating system and infrastructure as a service (aka the Cloud). Many new technologies are aiding the shift, including powerful new processors such as Intel’s Xeon Processor 7500 series, which is optimized for large-scale flexible virtualization and has a broad ecosystem of support from virtualization providers. These types of technologies reduce the number of devices needed while increasing the capability beyond older datacenters twice or more in size.

Still, converged devices bring their own problems to the table. In some cases, the technology gets hinky and suddenly several key functions are waylaid. Think of the fax/printer/copier that goes kaput simply because it’s short on one color of ink. Pity the soul who needs to fax, and can’t, even though no ink is needed for an outgoing fax. Ditto with a paper jam. Of course your company can use an online fax application instead, but then what does that do to the rationale for buying a converged device in the first place?

The problem with that line of thinking is that convergence isn’t about device costs, really. Certainly there are ample savings to be had, but the main objective is to make things simpler.

“Typically, when a new IT-related technology becomes available, it is commonly provided to the market as a standalone product,” explains Chris Simmons, director of product strategy at Fortinet, a network security firm. “But an interesting thing happens as the technology matures — complementary technologies expand the market and mature the more general device category.”

Eventually, this process crushes the simplicity of the original single product as complexity builds from the multiple devices, applications and sheer Houdini tricks and fixes needed to run the thing in new ways as defined by the evolving nature of the business that the device serves. With this complexity come added costs in hardware, software, energy, real estate, and payroll.

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"Energy usage is often the most expensive element of a large datacenter over the long haul," says Simmons. "So reducing the footprint of IT, both in physical space required and carbon footprint, has graduated from an afterthought to a major purchasing criterion."

Complexity in the world of IT is therefore bad (at least in terms of the budget) and the drive for simplicity is thus reignited. "That's where device convergence comes in, it's through consolidation of multiple point products that value can be restored and sometimes even exceed that of the separate devices previously offered," says Simmons.

From the desktop to the copy room and datacenter, devices and applications are mashing up in new and unexpected ways. Certainly lower costs and increased efficiencies are drivers, but so are security concerns. Converged devices typically have better security measures built in. But it is also easier to manage and protect fewer devices.

"Businesses and organizations of all sizes tell us that they are now looking for ways to improve their overall security posture, while reducing the total cost of ownership of their security infrastructure," says Simmons.

However, the newer converged devices do not replace the need for steadily enhanced security policies and protocols. Neither do they eliminate the need for a solid business case behind the buying decision.

Once the business case has been established, there are a number of ways to smartly compute the costs of converged devices for planning purposes. Jeff Muscarella, executive vice president of IT Division at NPI, a financial consultancy firm that aids large companies with their transportation and technology purchases, offers the following guidelines:

- Companies should be aware of the costs that accompany device convergence. There will obviously be a decrease in certain costs, but some areas of IT spending may see an increase (e.g. data center equipment).
- The obvious cost reduction will be in device purchases, as more personal devices and fewer company-owned devices enter the network. Many companies are already moving to a BYOD (bring your own device) strategy where employees can use their personal devices. In other cases, companies are offering a stipend to employees to purchase a device of their own preference, or are given basic devices, such as a netbook and email-enabled phone, when they come on board. In both cases, fewer devices are being purchased. The days of purchasing a desktop, laptop, and company Blackberry for each employee will be coming to an end for many organizations. This could cut the device purchase line item in the IT budget by half or more. Also, IT administration costs will decrease as companies shift to a virtualized environment.
- Companies can expect an increase in help desk and support costs as device convergence proliferates across the enterprise environment. In the past, IT departments were required to support just a handful of company-owned devices. But, the knowledge required to support employees using the personal device of their choice will expand.
- Companies should also consider the virtual infrastructure costs required to support different devices. Examples include data center space, sophisticated virtualization software and equipment, and the personnel to support them. This, however, will be more than offset by the reduced equipment and support needed out in the field.

The hunt for a singularity in IT may never end. Such a powerful device may be beyond our present means. However, continuous convergence certainly is within our grasp. You can expect the future to bring your enterprise greater capabilities in increasingly tinier packages.

Jeff Muscarella is executive vice president, IT division for NPI (www.npifinancial.com), a technology and management consultancy serving supply chain organizations across the globe.