

**Removing organizational barriers for leveraging technology convergence**

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**Background and Issues**

Convergence is a current theme in Information Technology (IT), and you're involved, though you're probably not even aware of it. Technology convergence includes cell phones, personal digital assistants (PDAs), and tablets that combine voice, data, video, messaging and access to various other applications. Other examples include storage and networks (Figure 1) that have converged over the past decade into storage area networks (SANs and unified or multi-protocol storage solutions such as those employing cloud and virtualization technologies.

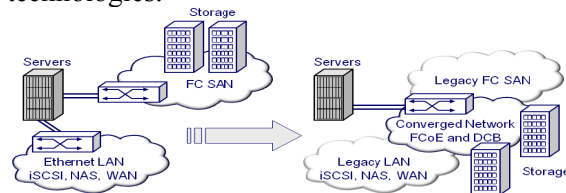


Figure 1 - I/O and networking convergence

Beyond the idea of combining multiple functions into a single product, the business objective and value proposition of converged technology includes reducing complexity resulting in lower costs while, hopefully, boosting productivity and thus profitability.

In some cases convergence can address ease of acquisition or product selection while in others it's doing more with less, stretching budgets, consolidating or enabling new functionality. Another consideration before a convergence technology is deployed is how organizational processes, best practices and staffing are aligned to support a given technology.

For some organizations the journey to convergence is well underway while for others the technology may be in motion but leveraging it to its full potential still a distance goal. For example a converged network switch is installed but is still being used as either a LAN or SAN box managed by either the network or storage group.

**From technology to people and processes**

Building from the example of a network core switch, there are two things to consider. First, the switch is being managed as a box as opposed to a resource. Second, that box is being managed as either a LAN device by the networking group or as a SAN device by the server or storage group. Some organizations have taken an intermediate step of having combined groups managing connectivity devices; however, they are often still approached from either a LAN or SAN perspective or philosophy.

The barrier to leveraging converged technologies is not necessarily the people, rather organizational boundaries, processes, procedures and policies. Certainly staff personal preferences and experiences are a factor to consider. For example, someone who has always worked with networking or LAN would be expected to see things differently than someone with server or storage background. Similarly, someone with an open systems server and storage background might see and approach things differently than a mainframe experienced person.

While these discussions or, in some cases, conflicts can often revolve around physical cables, boxes, management tools, configurations or other tangible items, the real issue can be control. Another contributor to barriers is the organizational structure or politics of technology as a result of who reports to whom or whose budget is used.

The net result is that a converged device, a network switch, converged network adapter (CNA), management tools, server, storage and other resources to support cloud and virtual environments are deployed as vertical or function specific technology. For example a switch or adapter might be used for LAN or SAN but not both.

## **Business and technology benefits of converged I/O networking infrastructures**

### **What can be done?**

It's necessary to look beyond the cable or box and identify what organizational processes as well as technology culture barriers can be changed to realize benefits of converged technology. While it's important to know about the tools and technologies, it's also important to understand what to use when, where and why and the associated best practices or policies so that they do not become barriers.

In addition to preparing from a technology standpoint, it is important to consider how organizational structure, workflow, best practices and processes are prepared to leverage the next step in convergence networking technologies. This means getting LAN and SAN as well as server people together to generate awareness of each other's respective wants and requirements while identifying common ground or objectives and areas that require remediation.

Leveraging converged technology means managing resources differently. Instead of managing the physical box, cable or adapter, move to managing the processes, protocols, procedures and policies that support respective technology domain areas as well as those that are converged. Moving to a converged infrastructure for cloud, virtual or physical environments means converged or unified management. Hybrid teams made up of professionals with server, storage, networking hardware and software experiences working together can identify existing process or procedural bottlenecks.

Bottlenecks may be the result of a "that's how is been done in the past" mindset with a particular technology area. SAN personnel have traditionally had a focus on low latency, deterministic performance and service delivery. LAN pros have had interoperability and ubiquity as common tenants. SAN people think in terms of block or files while LAN people thing in terms of TCP/IP and associated technologies.

Instead of debating about who owns the cable or what the best cable is, converged management groups need to move beyond the physical to the logical and abstracted view. Who owns the protocols and associated processes as well as how are common technologies managed for effective service delivery? Think in terms of how workflows can be streamlined by leveraging the best of and experiences of different technology groups.

### **Strategies and Recommendations**

The initial deployment of converged networking solutions may initially be in a coexistent mode where, essentially, it is used for traditional LAN or SAN box type functionality. The next step would be to leverage the converged capabilities, moving beyond the box with the technology as well as from an organization management approach. Break down organizational barriers to enable cross technology domain and end to end (E2E) management by establishing virtual teams. Over time, different groups should learn why their counterparts think and do things a certain way. By working as virtual teams in support of cloud, virtual and physical technologies, new processes and providers as well as best practices can be developed and deployed.

### **Closing comment, where to learn more**

True convergence combines people, processes, products and policies with best practices to realize the business and technology benefits. Read more in the various Industry Trends and Perspective solution briefs and white paper reports at [www.storageio.com/brief](http://www.storageio.com/brief). Learn more about converged I/O networking along with associated Cisco related technology tools at [cisco.com/go/unifiedfabric](http://cisco.com/go/unifiedfabric).

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