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How to Bridge the Gap Between Infrastructure and Applications

Lower costs and improved application performance result when IT teams work together in an integrated service-delivery strategy.

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Lower costs and improved application performance result when IT teams work together in an integrated service-delivery strategy.

With business competition at a fever pitch and IT budgets constantly being squeezed, CIOs can't help but wonder what more they can do to reduce costs while simultaneously speeding the rollout and performance of critical business applications.

The problem isn't that IT organizations aren't already working flat out. Infrastructure specialists need proven tools like server and storage virtualization to squeeze out higher utilization rates—and to slash costs. On the application-development side, the mantra of "faster, faster, faster" is driving teams to develop, test, and launch solutions at a furious pace to keep their company at the top of its competitive game.

The harsh reality is that these two groups aren't only battling the performance and deadline demands that have long been a fact of business life. All too frequently they also find themselves butting heads with each other. Conventional wisdom holds that the best way to guarantee high performance for mission-critical applications is with stovepiped, application-specific IT resources. The rub is that infrastructure people blame those very things for unnecessarily driving up costs, sending utilization rates plummeting, and keeping budget managers up at night.

Such conflicts are especially painful for organizations that, having only recently begun the journey toward data-center consolidation and server virtualization, still must manage an entire infrastructure of siloed servers and storage systems.

But what if these two important groups could bridge their differences and adopt all of the benefits of consolidation and higher utilization while actually improving the responsiveness, security, and continuity of core applications? In short,

Data Center Transformation

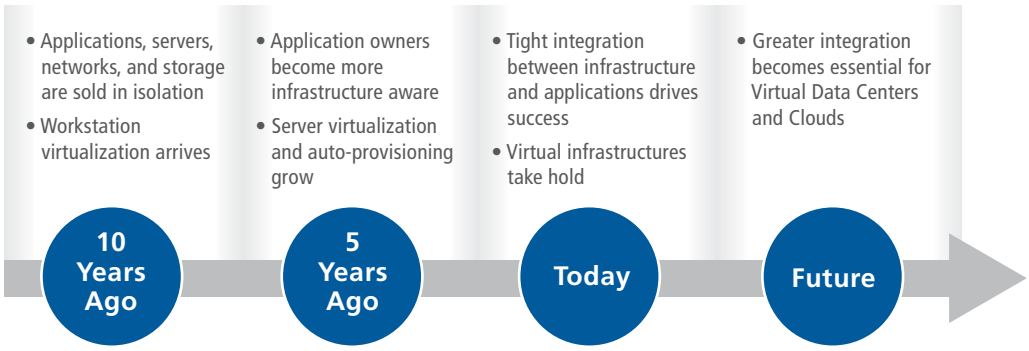

Figure 1. As data centers evolve, IT managers are striving for end-to-end business services and closer synchronization of application and infrastructure teams as organizations start their journeys to the private cloud.

what if infrastructure and application teams joined forces for the ultimate benefit of their business counterparts?

The answer is they could achieve a new way of delivering better IT services for less money today and build a foundation for private cloud computing for the near future. Cloud computing creates central storehouses of storage and processing services using the latest architectural and technical best practices, including virtualization and auto-provisioning technologies. This strategy, which uses a service-delivery model as a foundation, assures that the right amount of IT resources flows to the applications and departments whenever they need them.

As companies move along this path, their IT infrastructure loses its artificial silos and instead becomes a critical component of each application's overall business value. And rather than managing infrastructure and application teams as two groups with competing interests, organizations create blended teams of experts from both departments who work together to deliver the services needed by the lines of business.

"We're seeing infrastructure experts now being asked to understand the nuances of upgrading an application or providing backup and recovery resources for a specific solution," notes Todd Pavone, EMC's vice president of Global Solutions. "At the same time, we're seeing application teams develop a greater understanding of infrastructure issues. What had been two separate groups with two different sets of requirements are now converging."

No one has to tell senior executives that their traditional IT operations aren't fully optimized or that past belt tightening often came at the expense of longer lead times for application deployments. The benefits of this brave new world are obvious. Top managers have been starved for help in making this journey, and transformation has remained uncharted territory for most organizations.

Until now. A growing number of innovative companies are turning to a trusted leader—EMC—for its expertise in information infrastructure and application solutions that enable the alignment of data center operations.

Lower Costs, Higher Performance

Influential IT industry analyst Steve Duplessie, founder of the Enterprise Strategy Group, speaks regularly about the importance of bridging the gap between applications and IT infrastructure teams. "We need to facilitate more win/wins," Duplessie says. For example, the infrastructure staff is positioned to offer expertise about how the right storage array can create a Business Continuance Volume or data snapshot. When infrastructure experts then demonstrate to application developers how to leverage these resources, developers have access to much more current data that can be used for performing development and testing exercises. "At the end of the day, that could shorten test cycles and development times—all of which shortens the time it takes to deploy that application," Duplessie explains. "If these groups aren't communicating effectively, a lot of value gets lost on both sides."

Closer Collaboration Between Applications and Infrastructure Teams Yields Big Wins

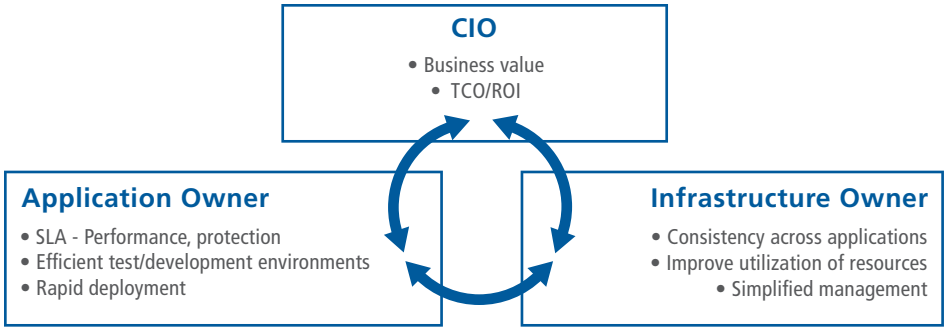

Figure 2. Organizations can cut IT costs and improve SLAs when the infrastructure and applications work together to maximize performance and availability by breaking down expensive stovepiped systems.

This is just one example of the benefits possible when organizations start down the road to a service-delivery model and private clouds. In addition data center consolidation using virtualization:

- Improves utilization and lowers costs
- Streamlines system management and maintenance
- Frees people and budgets for higher value IT functions
- Provides agility needed to support a new application or address a spike in workload
- Gives line of business staff direct control over their IT needs by provisioning resources where and when they need them.

End users are already seeing the benefits of this strategy. Nexsen Pruet, a multispecialty law firm headquartered in Columbia, S.C., needed to reconcile redundant IT systems after a merger and move from Novell Groupwise to Microsoft Exchange. The firm estimated that a traditional, stovepiped approach would require at least 50 additional midrange servers to support its seven attorney offices. Instead, the company consolidated applications and supported them with an EMC® CLARiiON® CX3-20 SAN and 50 virtualized servers running on only four high-end servers with VMware and VMotion. First-year cost savings surpassed $100,000 by avoiding additional server acquisitions and deploying VMware in a virtualized environment. The move also transformed the firm's IT infrastructure and realized a 50:4 server elimination ratio.

So why isn't every company rushing to adopt this model? The fact is it's not easy. The journey to service-delivery models and private clouds requires more than just a technology fix. Infrastructure teams must understand the details of business applications and how to maximize their performance and increase their availability with effective backup, recovery, and business-continuity services. In turn, application teams must be open to the efficiencies of on-demand services as an alternative to discrete IT resources stovepiped for each application.

Action Plan: Four Steps to Success

While the game-changing shift to integrated service-delivery solutions may be difficult, it's easier today than ever before. A growing number of vendors, services experts, and consultants are documenting best practices for successfully delivering integrated services through virtual data centers and related technologies. Transformation begins with these four steps:

- **Step 1: Develop an overarching strategy.** Because the move to integrated services, virtual data centers, and eventually cloud computing represents such a large shift in data center management, IT organizations need to clearly define their goals and develop a reliable roadmap for achieving them. The best strategies outline a multiphase strategy consisting of incremental changes rather than a "Big Bang" approach.
- **Step 2: Develop a business plan.** Focus on two main outcomes—cost reductions and improved service level agreement (SLA) performance. When scoping out these goals, establish methods for documenting the "before" and "after" results for each integrated-services solution. Because the transformation requires many steps, performance metrics should be designed to measure results over a multiyear timeframe.
- **Step 3: Implement the phased approach.** Change must be accomplished in a way that's not disruptive to the ongoing operation of the business. Some liken the transformation to the adage of trying to change a flat tire while the car is speeding along at 60 miles an hour. The answer is to address one application or line of business at a time, and then move on to the next solution. Using this approach, organizations can build on their successes and learn how to avoid mistakes that might otherwise overwhelm IT and line of business staffs.
- **Step 4: Identify the right partners.** Few vendors have the complete lineup of products, services, service-delivery expertise to guide organizations on this journey, so it's important to closely evaluate potential partners to determine which ones can help meet long-term objectives. Instead, identify vendors with track records that span dozens of integrated solutions. The best partners should also be willing to facilitate conversations between infrastructure and application teams to help each better understand the other's needs and find common ground. In many cases, this may be the first time the infrastructure and application teams have come together for such discussions.

EMC has made significant investments in integrated solutions, including the creation of the Global Solutions Group (GSG), which consists of 250 people dedicated to building integrated solutions for customers.

"We've heard three things loud and clear from our customers: They want integrated solutions to solve their business problems; they want working with partners to be easy; and the solutions better be cost effective," says EMC's Pavone. "Meeting each one of these requirements is the charter of the Global Solutions Group."

Among GSG's offerings is EMC Proven Solutions, a comprehensive set of integrated technologies for Microsoft, Oracle, and SAP applications, as well as for IT imperatives such as backup and recovery resources. Proven Solutions is built using the most effective combination of technologies, whether from EMC, its partners, or even competitors. Before releasing them to clients, GSG builds, tests, breaks, and retests the solution in its labs, all in an effort to fully understand what customers might encounter under real-world conditions. In addition, GSG documents the smallest details of its Proven Solutions and test results so customers have a record of what's needed to architect, implement, and support the implementation.

For example, GSG offers a fully integrated and extensively tested solution for running Microsoft Exchange in a virtual environment. It addresses the utilization and cost priorities of infrastructure specialists while also meeting the performance and reliability demands of the application team. In addition to achieving specific goals for the Microsoft Exchange implementation, the solution also demonstrates how the right mix of technologies and service offerings can promote the larger goals of the integrated-services strategy.

Similarly, EMC is documenting a wide range of service and cost benefits for customers that have consolidated its Symmetrix V-Max networked-storage application in a virtual infrastructure for Microsoft applications. On the services side, end users say that they're able to scale performance while maintaining consistent service levels and 100 percent uptime for applications, with an overall 40 percent improvement in application performance. Consolidation cuts IT costs by reducing management overhead and shrinking initial storage allocation requirements by 75 percent in some cases. End users also report 90 percent fewer clicks to provision additional storage, which means ongoing savings in management overhead.

FOUR STEPS TO SUCCESS

The transformation to integrate services begins with these four steps:

Step 1: Develop an overarching strategy.
More than 80 percent of the company's IT budget was spent on maintenance, which had become a black hole, with no one understanding the key drivers of spending. There were no metrics, and management could not compare labor productivity to industry benchmarks or see what drove demand for services.

Step 2: Develop a business plan.
Focus on cost reductions and improved service level agreement (SLA) performance over a multiyear timeframe.

Step 3: Implement the phased approach.
Address one application or line of business at a time. Then build on these successes and incorporate best practices into subsequent stages.

Step 4: Identify the right partners.
Work only with select vendors that have extensive track records for integrated solutions and who can facilitate conversations between infrastructure and application teams to help each better understand the other's needs and find common ground.

Begin the Journey

No one expects today's IT challenges to disappear any time soon. IT departments will still need to deliver better performance with fewer resources as their application-development counterparts scramble to launch innovative business systems that keep their companies a step ahead of the competition. In the past cultural differences between the groups complicated these efforts as battle lines emerged over whether it's better to drive down IT capital expenditures or whether companies should do whatever it takes to boost application performance and uptime.

These divisions are no longer acceptable for top-performing IT departments. Infrastructure managers must understand how they can improve applications upgrades and business continuity. Applications experts must account for infrastructure challenges when they scope out new capabilities, push for greater up times, and hone regulatory compliance procedures. Working together, these teams can achieve success by adopting the integrated service-delivery model and then begin the journey to private business cloud computing. With EMC's expertise in infrastructures and integrated solutions, forward-looking companies have a trusted leader to help them succeed in this journey. ■

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