Project Management Helps Virtualization Deliver

Public and private organizations find project management helps ensure virtualization projects mesh organizational strategy, address stakeholder needs, and deliver cost savings and energy efficiency

No longer the nebulous hype of the high-tech fringe, virtualization is officially reality. According to the *2010 State of Virtualization Security Survey*, 85 percent of all organizations have adopted virtualization to some degree.[i]

Drawn in by the promise of less hardware, lower energy costs and fewer resources focused on infrastructure maintenance, executives around the globe are launching a flurry of virtualization projects and programs. So sweeping is the shift that a survey by research giant Gartner shows that **virtualization now ranks as the top technology priority among global CIOs.**[ii]

But if virtualization is to truly help organizations achieve those lofty strategic goals, project management must play an integral role.

Without the structure, processes and people to help deliver the projects on time, on budget and to stakeholder expectations, virtualization risks being dismissed as just another overly complicated layer of technology that never quite lived up to the buzz.

Project leaders must establish clear goals for every virtualization project—setting measurable outcomes, identifying risks, and communicating the value to stake-holders and end-users, says Robin Russ, PMP, Unix and storage manager at global media powerhouse The Tribune Co., Chicago, Illinois, USA.

"You need to set your priorities, coordinate resources and know how you will meet the needs of users," says Ms. Russ. "Otherwise there are a lot of pitfalls that can drive these projects off track."

It turns out one of the biggest glitches in the grand virtualization vision has nothing to do with technology, but rather with buy-in. They may have heard of it, but not everyone outside the IT team may be quite sure exactly what virtualization entails—or what value it will bring to the organization.

At its most basic level, virtualization is the creation of a virtual version of an IT operating system, server, storage device or network resource. Instead of additional actual equipment, a single framework hosts multiple resources within one physical environment. For example, one server is partitioned to create two or more separate environments by eliminating data duplications, and running the virtual environments more efficiently to maximize the storage capacity and energy use of the physical equipment.

The most popular form of virtualization is cloud computing, in which companies purchase access to applications managed and hosted by third-party vendors, rather than buying or building them in-house.

But if project leaders want virtualization projects to be embraced, they've must communicate the business case to end-users, says Kshitiz Verma, group leader, cloud computing at Tata Consultancy Services, Mumbai, India.

"**Everyone is talking about cloud computing, but few people know what it is**," says Mr. Verma.

To build understanding and quell any fears, project leaders should:

- Hold sessions to educate employees about the benefits and security of cloud computing
- Meet with department leaders to identify tasks that could be eliminated through cloud computing, such as software upgrades and maintenance
- Be on hand to answer questions

A True Transformation
To deliver true ROI, virtualization requires nothing short of a financial, technological and project management transformation. And

that can be achieved only with supportive executives and authoritative project leaders.

When companies pursue virtualization, they change the way they select, prioritize, manage and benchmark IT projects. Gone are the old processes of developing specifications for hardware and software investments, ordering technology, building and maintaining servers, or rolling out applications.

In a virtual environment, project management issues are more strategic—from rethinking how budgets are allocated to identifying new categories of risks around data management, security and vendor longevity.

Before embarking on virtualization projects, companies need to define how the technology will be rolled out, managed and tracked, says the Tribune's Ms. Russ. Decisions about project procedures and processes should be made up-front by the project manager.

Without that due diligence, virtualization projects can often fail as servers become over-burdened and conflicting demands lead to system crashes.

Going in armed the right talent on the team can make the difference.

"Having a Project Management Professional (PMP)® certification holder on the team really helps," Ms. Russ says. "A good project manager will uncover these risks. They know how to manage resources more efficiently and they can set priorities to address the competing needs of users."

Virtualization in Action
The Company: The Knot Inc., Austin, Texas, USA
The Sector: Online wedding planning
The ROI: Increased server capacity without buying additional hardware

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For The Knot Inc., the decision to pursue virtualization was simple: The online wedding conglomerate's existing servers were over-powered and underused.

After exploring virtualization solutions for two years, it launched its first server virtualization project in 2010, says Mark García, director of IT infrastructure at The Knot.

"We needed more machines, but we didn't have the budget," he says. "So we decided to make better use of our existing hardware."

The transition began with a small project to virtualize the existing servers in the quality-assurance development environment. The decision enabled Mr. García and his team to avoid the substantial cost of buying, integrating and operating additional servers, while still meeting the company's IT infrastructure needs.

Beyond financial benefits, virtualization freed his staff to focus more on strategic projects, such as launching new features on the site. The flexibility better aligns the IT team's output with the business goals of the company, and enables them to deliver results faster, Mr. García says.

But virtualization projects don't happen in a vacuum. "These projects have to occur while you are dealing with all the other things the business does," he says.

Scheduling must be front and center. A company can't just shut down the server farm for a few days while it virtualizes the technology. "People depend on these servers. They can't be disrupted, Mr. García explains.

Ill-planned shutdowns can have a cascade effect, throwing off deadlines and progress of other IT projects, and damaging customers' interface with the company's website.

"The hardest part of virtualization is fitting it into the schedule so there are no disruptions," he says.

Project teams must have the scheduling prowess and talent to time the technology implementations in ways that minimize the impact of server shutdowns. Mr. García and his team try to plan project implementations to occur during early mornings and weekends, for example.

The first project was completed in March 2010. Since then, The Knot has been slowly virtualizing additional servers that support internal development processes as existing hardware ages and maintenance contracts run out.

"Virtualization has become a key component to our long-term strategic vision," says Shane McWilliams, PMP, associate director of The Knot Inc. "As we grow from a small to a larger company, virtualization will be part of our strategic push to get our architecture to where it needs to be."

Ensuring an ROI of the company's virtualization investment takes a strong project management team that meets its budget goals and delivers the expected results—without frustrating downtime.

"When we deliver these projects successfully," he says, "we secure buy-in and we deliver benefit to the company."

Cloudy Forecast

Without a doubt, the mainstay of the virtualization movement is cloud computing. Moving to the cloud eliminates the need to purchase and install applications on individual computers. Instead, companies purchase software as a service (SaaS) from a vendor who hosts and manages it in its own data centers and makes it accessible to that company's employees via the Internet. This is known as the public cloud. Or, a company can opt to host an application on their intranet, which employees can access from behind a firewall. This is known as a private cloud.

A 2010 Yankee Group survey shows that **nearly 60 percent of organizations see cloud computing as a viable and important business solution**—up from just 37 percent in 2009.[iii]

And executives appear ready to back it up with cold, hard cash. By 2013, research firm IDC estimates the global revenue for cloud services will hit US$44.2 billion.[iv]

Most executives think they understand cloud computing and its value, says Daryl Plummer, managing vice president, chief of research and chief Gartner fellow at Gartner Inc., Atlanta, Georgia, USA. "It means they have to buy less stuff and someone else does the work to manage the technology, which can save them money."

This can be true, but only if executives change their mindset. When organizations move to cloud computing, IT costs move from capital expenses to operating expenses, he explains. This translates to a change in the way project managers plan budgets, measure outcomes and pitch the business case for IT projects.

"Cloud computing projects require a complete paradigm shift," Mr. Plummer says.

Rather than focusing on building and maintaining technology, project leaders must address strategic issues, such as vetting vendors, communicating with customers and developing long-term growth plans to sync solutions with the company's business objectives.

That requires project managers—with strong leadership skills who can focus on long-term goals and strategic vision as well as meeting short-term deliverables and milestones.

"With cloud computing, the IT team needs to focus more on the outcomes than the technology," Mr. Plummer says. **"If the solution doesn't satisfy the customer, the project is a failure."**

> **Virtualization in Action**
> **The Company:** Solusoft, Panama City, Panama
> **The Sector:** IT services provider
> **The ROI:** Increased focus on billable projects rather than maintenance

An early adopter of cloud computing, Solusoft has discovered that

the benefits extend well beyond lower IT costs.

Liberated from the support tasks related to hosting an on-premise application, the company's IT team can support the larger strategic business projects that align directly with the organizational goals, says Glenn Tjon, Solusoft's managing director. **"Moving to the cloud meant that we could focus our IT resources on the business instead of maintenance."**

Solusoft moved its first application into the cloud in 2005, followed by its e-mail and collaboration tools in 2007 and project management software a year later.

Although Mr. Tjon hasn't measured the specific cost benefits related to cloud-based solutions, he attributes **shorter project delivery times and a more agile IT team** to Solusoft's use of the cloud.

"We are not limited by the tools installed on the premises," he says. "That speeds up our entire process from generating leads to delivering client projects."

That flexibility gives Solusoft a competitive edge over its more hardware-heavy rivals, says Mr. Tjon. "We can stay abreast of changes in the industry and we can move quickly from project to project."

The company still maintains IT infrastructure in-house to support development projects, but it's exploring opportunities to move to a cloud-based service.

Having project managers with the right skills and knowledge on his IT team during the virtualization transition is vital.

"PMP® certification holders can incorporate project management theory into project decisions," Mr. Tjon says. "They see what needs to be done, they collaborate more effectively, and they can better leverage resources in our environment."

Making the Case for Clouds

The clouds are clearly rolling in. But it's still takes down-to-earth project planning to make cloud computing work.

"Security, in particular, is the top concern right now for companies transitioning to cloud computing," says Shekhar Tewari, solutions architect at Sify Technologies Ltd., an IT services provider in Mumbai, India.

The *2011 Global Information Security Survey* found that 62 percent of business and technology executives said they have little to no confidence in their ability to secure any assets they put in the cloud. Even among the 49 percent of respondents who have ventured into cloud computing, more than a third (39 percent) have major qualms about security.[v]

At the beginning of the project, project teams must create a detailed risk-management plan that identifies key concerns and issues, such as where data will be stored and who will have access to it. That list of risks will help project executives vet the security and reliability of potential vendors.

Companies must also invest the time and effort up front into benchmarking current IT costs and defining a clear expected ROI. "Savings are relative," Mr. Plummer says. "If you don't know

what you're paying now, you can't know what you saved."

Companies must evaluate the costs associated with:

- Energy to run hardware
- Heating and cooling
- Resource support
- Future hardware upgrades and any other related IT investments

To help define the cost benefits of cloud computing, Mr. Verma develops a value case that includes the time and costs that the transition will require and the expected ROI.

Once the business case has been made and vendors evaluated, companies should carefully select which applications to transition. "Not every application belongs in the cloud," says Mr. Tewari.

Highly optimized tools, for example, and those that manage extremely sensitive data may be better kept in-house. However, non-core applications and new initiatives that aren't tied into the existing infrastructure make more sense for a cloud transition.

As part of its due diligence, the project management team must assess the risks and benefits of moving any application into the cloud.

Cloud computing can help organizations move forward, but only if the business benefits are clearly defined, Mr. Tewari says.

Serve It Up

Although it generates the most buzz, cloud computing is just one aspect of the virtualization movement.

Looking to improve the security of their data and cut costs on remote devices, many organizations are pursuing virtual desktop infrastructure (VDI) projects. Desktop operating systems are hosted on a centralized server, giving workers remote access.

Forty-two percent of business technology professionals surveyed recently have already deployed or were in the process of testing VDI projects, and 35 percent are currently evaluating them.[vi]

Done right, a VDI project can create a nimble, far-flung work force. But it can also prevent employees from accessing their computers, bringing a company to a standstill. As with any virtualization projects, companies must rely on skilled project leaders and teams who can mitigate risks and roll out VDI deployments with minimal impact to end-users.

Server virtualization is also gaining traction as a strategy to cut IT hardware and operating costs. Server virtualization involves running multiple independent virtual operating systems on a single server to maximize the power and storage capacity of each machine. Rather than having dedicated servers for specific workloads—which means they often sit powered-up but underutilized—servers are partitioned to support multiple workloads on a smaller number of machines.

The *2010 State of Virtualization Security Survey* revealed that more than half of the organizations surveyed have virtualized up to 30 percent of their servers, with plans to continue the server virtualization process into 2011.[vii]

Even when government organizations see their budgets reduced, stakeholder expectations remain the same. The State of Michigan's IT team saw virtualization as a way to address both those issues.

"It's a compelling business case," says Dan Lohrmann, CTO of the State of Michigan. **"We are saving money, power and space."**

At the same time**, implementing virtualization across the organization helps shorten project delivery times and improve ROI,** Mr. Lohrmann says.

In the past, a major IT project might require him to create a budget for new servers, put in a hardware order and bid the project to multiple vendors per government contract requirements. Once the server was purchased, it would have to be configured, tested and tweaked before moving to the next phase of the project. "Setting up new server architecture can take a month," he says. "But we can set up a virtual server in days."

The team has seen a massive payoff—which Mr. Lohrmann readily shares with management:

- Potentially reduces annual expenditures for server management by 30 percent to 40 percent
- Enables continuous uptime and non-disruptive

maintenance of IT environments with live migration of entire running systems
- Reduces provisioning time for new virtual servers to be hosted on existing physical hardware
- Provides high availability within and across hosting centers
- Provides a cost-effective solution to reduce required data center size, rack space, power, cooling, cabling and network components

The State of Michigan won't achieve results overnight. Virtualization will only work if those projects are delivered time and on budget. And that takes strict adherence to project management processes.

The project team took a slow and steady approach that included careful research and due diligence.

First, the team established a **formal virtualization infrastructure plan** with deployment templates, license agreements and migration strategies that more closely align the technology with the organizational goals.

The team rolled out a pilot project in June 2008 and now has 475 virtual servers. Today, when any major IT request is made, the first thing Mr. Lohrmann's team considers is whether a virtual server can accommodate it.

"We anticipate that 80 percent of our servers can eventually be brought into the virtual farm," he says. **"It's making us a more efficient organization** and better able to serve the needs of the people of Michigan."

Living Up to the Hype

Certainly one of the most talked-about benefits of virtualization is the cost savings, but executives must have a firm grasp of how those savings will be achieved, says The Knot's Mr. García.

"The biggest thing executives need to know about saving money with virtualization is that the ROI doesn't happen on Day One," he says. "Even modest virtualization projects will deliver financial benefits in the long term, but if executives expect to see results right away it's not going to work."

Although the savings of buying and supporting fewer servers are clear, there are up-front costs, such as training IT staff to implement and manage virtualized servers.

To manage stakeholder expectations, project managers must explain the early costs and emphasize the larger payoffs down the road.

"The long-term benefits that come from energy cost savings, reduced floor space and fewer support contracts aren't realized immediately," Mr. García says. "You start to see the savings 60 to 90 days in."

Virtualization projects need to align with the IT budget, the corporate vision and the long-term technology investment strategy, adds The Knot's Mr. McWilliams.

Virtualization isn't just about eliminating hardware. It's about better utilization of the hardware a company has to meet its business goals.

Virtualization projects should be timed to align with the decommissioning of older technology to

maximize the benefit of previous investments and move the organization toward more innovative technology for the future.

These are not small changes, and securing buy-in takes consistent communication.

"We are making things virtual that weren't virtual in the past, so it's a new way of thinking for people," says Aparna Agrawal, PMP, director of technical services for the State of Michigan.

This new of thinking requires strong project leaders who can effectively communicate the benefits of virtual technology and secure buy-in from end-users, she says. "There are huge benefits to be achieved from virtualization, but you need to be able to make that business case to get people on board."

As part of the education process, the State of Michigan team holds educational events. And there's nothing like strong statistics to bolster the business case among skeptical stakeholders.

"We put the numbers in front of them, which helps them to accept the concept," says Mr. Lohrmann. "We use less power, it supports our desire for green technology and it takes less time to provision new servers."

SUMMARY

Whether it's moving into the cloud or revamping a data center, virtualization can deliver phenomenal cost savings and energy efficiency. But that can only happen if the virtualization efforts are led by strong project managers who perform due diligence,

implement strong risk-management processes, and define measurable benefits that show real business value.

"You can definitely do more with less and make better use of your resources, but if the transition is not planned well you'll run into trouble," says The Tribune's Ms. Russ. "If you go into these projects with your eyes open, ask good questions and evaluate the technology, you can avoid the pitfalls."

Whether or not virtualization succeeds or fails often hinges on effective project management. Quite simply it is one of the best ways for companies to ensure virtualization projects mesh with organizational strategy, address stakeholder needs and deliver a worthwhile ROI.

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[i] *2010 State of Virtualization Security Survey*, Prism Microsystems. Results based on a survey of 302 IT professionals conducted in March 2010.

[ii] *Leading in Times of Transition: The 2010 CIO Agenda*, Gartner Executive Programs. Results based on a survey of 1,586 global CIOs conducted from September to December 2009.

[iii] *2010 FastView Survey: Cloud Computing Grows Up*, Yankee Group. Results based on a survey of more than 400 U.S. IT decision makers conducted in 2010.

[iv] *Cloud Services: Global Outlook*, IDC.

[v] Eighth Annual Global Information Security Survey, *CIO, CSO* and PricewaterhouseCoopers. Results based on a survey of 12,847 business and technology executives from around the world released in October 2010.

[vi] *Desktop Virtualization Survey*, InformationWeek Analytics. Results based on a survey of 430 business technology professionals conducted in July 2010.

[vii] *2010 State of Virtualization Security Survey*, Prism Microsystems. Results based on a survey of 302 IT professionals conducted in March 2010.