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## The Essentials Series: Infrastructure Management

# Realizing the IT Management Value of Infrastructure Management

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by Chad Marshall

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## Realizing the IT Management Value of Infrastructure Management

So far in this series, we've covered how IT and infrastructure management have evolved separately from the core business and how, by aligning infrastructure management to meet the needs of the core business units, IT will regain value that will provide a lean and powerful business advantage. We've eluded to IT management value but have focused up to this point on the message of IT's true value: meeting the needs of the business.

In this article, we're going to expand our scope and talk about the benefits of infrastructure management in IT. We'll explore several of the most common "pain points" in IT today and how IT management tools, especially those that follow the Unified Service Model (USM), will enable your organization to significantly reduce the "pain" many in and IT are experiencing today.

### Benefits of IM to Traditional IT "Pain Points"

IT management suffers from many distinct areas of pain that generally revolve around the complexity of infrastructure management. Whether it's the challenge of aligning infrastructure to meet the need of the business or the complexity associated with consolidating a data center, the common threads have always been team work, communication, and collaboration. When an organization has multiple IT management tools, each returning their own brand of results to different project teams, it can be nearly impossible to get people to work together to solve institutional problems such as ITIL adoption, compliance, virtualization, and consolidation. As we walk through each of these traditional "pain points," think about your own infrastructure and how a centralized infrastructure management view that keeps all parties focused on a common vision might benefit your organization.

#### **ITIL/ITSM**

Throughout this series, we've been focused on the needs of the customer. It should therefore not be surprising that one of the top-level "pain points" for IT aligns directly with this concern. Since business and IT separated, there has been a need to recapture a service-level understanding that meets the needs of business. IT's reaction has manifested in the form of IT Service Management (ITSM), which is the high-level discipline of managing IT service and delivery to a meet the needs of the customer. Over the past decade, the IT Infrastructure Library (ITIL) has become one of the most commonly used frameworks for enabling ITSM, and it is being embraced by widely.

ITIL and ITSM surface as an area of "pain" in IT infrastructure management because it has been extremely difficult to align IT service functions (silos) to the needs of the business. In addition, there have been a large number of complications that have entered the ITSM arena over the past decade that have either served to complicate the issue or to distract IT managers from the goal of ITSM. Rapid technology growth such as the adoption of storage area networks (SANs), server virtualization, security responses to increasing technical complexity of security concerns, and regulatory compliance have all played their part, but the real heart of the matter is centered on expectations.

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The business has an expectation that IT will perform without giving IT the benefit of knowing exactly to what level that performance is expected. The question hasn't been *if* IT can meet the service expectations, the question has been, "How can we articulate the business need in a way that is clearly measurable within the IT infrastructure?" The answer to this question has finally arrived.

New enterprise IT management tools, specifically those that follow USM, provide a clear view into how IT services align to business needs and can enable views that are measurable to business goals. For example, if a business unit requires 99.999% uptime of their service, and their application uses many different servers on multiple platforms, spread across a few data centers with SAN storage in some, identifying and monitoring all those components to meet the business need can be made measurable by tools designed to work together to manage and monitor the infrastructure.

Aligning monitoring is really just the beginning. All the functions aligned under the ITIL service function—including Release Management, Change Management, Configuration Management, Incident Management, and Problem Management—can benefit from IM tools that enable a 360 degree view of the infrastructure. Your business partners are most concerned about their impact from a business-centric view, but from an infrastructure management-centric view, the ability to research incidents and problems across the enterprise is not lost. In fact, these views can be customized for very specific problem management research and enable enterprise problem managers to identify common threads across the infrastructure easier than ever before.

### ***Performance Management***

The art of performance management includes network performance management as well as server and application performance management. Essentially, performance management is a disciplined approach to analyzing and controlling performance throughput and error rates. Individually, from the "silo" perspective, performance management can be tricky. Performance of the storage infrastructure and the performance of the network may both manifest as the same problem to end users, when in fact the problem can actually end up belonging to one of two or more distinct groups.

ITSM tools that follow the USM vision enable a consolidated, simplified view of performance management from an enterprise end user perspective of performance but with the power to dig deeper into performance to manage the real concern. Some of the most challenging performance management issues often involve multiple performance impacts occurring to multiple infrastructure components simultaneously, so the ability to view infrastructure performance from a service-oriented view will greatly enhance the ability to track and report on performance issues from a business perspective as well as a silo perspective. With infrastructure management tools, you and your business partners are seeing the same metrics, and you can directly correlate business impact to performance issues as they occur.

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Consider a SAN performance management issue that manifests by way of a server going offline. Traditional troubleshooting begins with the offline server and expands out from that centralized point. Server engineers typically don't have access to network performance data; they operate within their "silo" and function strictly within their area of responsibility. Through infrastructure management, all metrics can be made available to all parties. Thus, rather than testing, executing, failing, and reassigning, the engineer assigned can view all metrics related to a device, subnet, or service (any view they desire), rapidly identify the performance issue, and engage the appropriate teammate to resolve the problem.

### **Virtualization**

Virtualization is delivering a revolution of IT efficiency and is liberating many organizations from the drudgery of dedicated hardware and software solutions. From a high-level perspective, virtualization does two main things for infrastructure management. First, it significantly reduces the server hardware and complexity. Second, it drives the management of the service level to a slightly new degree of complexity in infrastructure management. Fortunately, this complexity is easily managed with the proper tools.

Virtual servers offer IT managers total flexibility over the server environment. The server memory and disk space are shared between the virtual servers, which allows some level of freedom and adjustability. Rather than three servers all running at 25% utilization, for example, you may now have one physical server running at 75% utilization. But what happens when one system starts demanding more server or network horsepower? How do you ensure the optimum level of server hardware efficiency? Prior to consolidated infrastructure management tools, determining which applications function best within virtual environments was difficult. Today, however, an infrastructure manager can view the performance and utilization of systems by business function and by physical server, and drill down to the granular virtual server view.

### **Consolidation**

In its most common use, the word *consolidation* typically refers to data center consolidation and is primarily focused on server or data migration; however, consolidation can take on many meanings depending upon the use and context. During data center consolidation efforts, every team responsible for the computing infrastructure must come to the table to lend a hand, including network, server, and storage engineers as well as project managers, risk managers, and service delivery managers anxious to ensure minimal impact on their line of business (LOB) partners. Ensuring the smooth transition of production systems throughout the consolidation process is one of the most challenging infrastructure management tasks and requires that all teams are marching to the beat of a common drum. It is at this time that a common perspective of the infrastructure can be most valuable. Infrastructure management tools that enable your teams to work together and share views of the infrastructure, and its associated metrics, from their perspective enable consolidation by limiting the amount of time spent in gathering data, maximizing the amount of time focused on consolidation efforts, and minimizing their impact to business partners.

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## **Security**

Infrastructure management tools today aren't all about just IT. They also enable IT compliance with corporate policy, which often ties directly into enterprise release management. As updates become available for software—such as hotfixes for operating systems (OSs) or new version releases for application software—they will need to be deployed throughout the enterprise to ensure that all computer systems are up to date with the latest security fixes. Infrastructure management tools help provide a centralized view of compliance so that security administrators can quickly and easily identify which systems are up to date and which systems need to be updated.

## **Business Continuity/Disaster Recovery**

Infrastructure management is absolutely essential to meeting the business continuity and disaster recovery needs of your business. Although your business partners see what the IT organization does as a “service,” the many pieces that converge to make IT function are disparate. As such, when stress is placed on a decentralized environment, maintaining focus can be an especially daunting task. Consider, for example, a small single location client/server application that utilizes SAN and whose business continuity plan is to recover at a secondary site from backup. If the power to the building were lost due to a fire or flood, recovery of environment at a secondary location may involve representatives from server engineering, network infrastructure, storage, and application support. Getting all these teams to act as one team is rarely more important than during a business continuity event. A single point infrastructure management view of the situation can be extremely valuable in this type of situation, as teams work together to share information and recover the system as quickly as possible with minimal downtime to the client.

## **Summary**

Sound infrastructure management reduces the “pain” associated with IT management by ensuring that all your teams, regardless of their geographic location or technical discipline, are all using the same, valid, up-to-date information and metrics to make decisions. With this data, project teams can align goals across organizational departments, engineers can articulate business impact to internal business partners, and change management executives can help business managers plan for a forecast growth that is based on real business data rather than speculating how much storage or how many servers they “might” need to meet the three, four, or fifth year demand.