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The Essentials Series: Infrastructure Management

Understanding the Business Value of Infrastructure Management

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Understanding the Business Value of Infrastructure Management

In the grand scheme of business, the concept of infrastructure management, or the practice of managing all the assets (hardware, software, processes) within an IT infrastructure as a unified whole, is relatively new and includes all facets of infrastructure management including performance and fault management. The disciplines related to infrastructure management didn't spring into life as rapidly as those related to infrastructure asset management; instead, sound infrastructure management has had to grow and evolve. From its early beginnings as a simple concept that line of business (LOB) managers employed to manage their IT assets to the current series of technologies and applications used to manage the IT investment, infrastructure management has been central to sound fiduciary and administrative management of the technology required for business.

Long before there were Chief Information Officers, Technology Executives, and Service Delivery Managers to assist in the management of technology infrastructure, LOB managers were empowered to manage their own technology that supported the business processes in their area. Those business processes, much like today's, needed to be executed to an expectation of quality and, much as they are today, had to be continuously examined for opportunities to reduce the number of process interruptions and operational expense.

As the first computers were introduced into the workplace, there were few restrictions on what could and could not be done with them beyond their own limitations. These early computers were adopted to serve a business need. Although today, the role of the business manager in managing technology infrastructure is dramatically reduced from the dawn of business computing, the first, most important, lesson in infrastructure management remains: infrastructure management must be designed to meet the needs of the business and must never be allowed to hinder business operations.

The technology we deploy today and the methods that we use have dramatically changed over the past 30 years, but the mission remains clear. The infrastructure must improve the quality of service of business processes and reduce operational expenses (through process automation), and it must do so in a way that is easy for business managers to leverage while minimizing interruptions in service caused by the infrastructure itself. If your infrastructure management actions miss the mark in any of these areas, they will fail.

History of Infrastructure Management

One of the best ways to avoid failure is to study the past and learn from the successes and failures of our predecessors. The pioneering business managers of the 20th century have paved a road that is much broader than anyone could have anticipated, and today, infrastructure management is a paramount concern to business. It enables IT managers to align their management practice to the service needs of the business and it is the tie that binds all of the automated IT assets to business processes and the needs of LOB users. Business requires the execution of processes, processes are executed on technology assets, and assets are linked together through a common infrastructure. Simple, right? Hardly. Somewhere along the way, between the pioneering business managers and the service-aligned, business-focused technology executives we know today, infrastructure management lost its way. The business of technology management was unbalanced and remained so for quite some time as the business of running the business separated from the business of technology. Eventually, organizations began to find equilibrium between business needs and "technology as a business" needs, resulting in the infrastructure management we know today.

In years past, technology management was first aligned directly to the business unit and the focus on business needs was crystal clear. Small teams performed management for each business area, and then eventually those teams were combined and typically broken down into hierarchical tasks. Server infrastructure, storage infrastructure, and network infrastructure, teams separated and formed their own tribes within IT management, all rolling up to a Chief Information Officer struggling to keep his teams balanced and effective. The end result was a "centralized" IT infrastructure management team from an organizational/personnel sense but one whose processes and practices delivered an entirely decentralized, silo approach to IT management that was disengaged from the supporting business units.

Infrastructure Management Today

Infrastructure management is a far cry from the state it was in just 5 or 10 short years ago, but we still have challenges. Today, infrastructure management is still, in many ways, struggling to recognize the need for service management rather than mere element or silo management of IT assets.

A few short years ago, as the IT Information Library (ITIL) and IT Service Management (ITSM) as a whole came into serious consideration, the focus began to shift back to business needs and delivering business value through infrastructure management. Infrastructure management, as a concept, began to gain some traction in the CxO circles.

Today, many organizations are realizing service/asset relationship needs to be clearly re-established. Business services depend upon IT assets that are aligned across different organizational and management silos to deliver flawless results. For example, if your business renders customer statements, that "statement rendering" service will likely depend upon database, storage, network, application, and server infrastructure assets; the business service must be clearly aligned to the assets it depends upon to be managed as a service. The "statement rendering" service, once it's defined, then becomes manageable in both IT and business constructs. For example, if you know the current volume of statements as a baseline, you can then perform infrastructure capacity planning based upon actual business forecasts and not only deliver more accurate, business-driven estimates but also have clearer and more concise conversations around capacity planning with your business partners. The key to this setup, however, is in understanding how your infrastructure aligns to meet business goals and resolves to one clear need: The IT infrastructure exists to meet business needs, and that relationship must be transparent to the business in order for both to be successful.

So how does one take an IT infrastructure, comprised of hundreds, perhaps thousands of assets, and align them to meet the service needs of business units? Well, first you need to begin to think about IT infrastructure management from the point of view of a business manager. Business managers don't see routers, switches, servers, and storage; they see "My Application" that performs "My Production Process." Alignment of IT assets to services therefore needs to align to at least the application level in order to be of understandable value to the average LOB consumer. Under the traditional "silo" approach to asset management, this alignment might seem challenging, but today, tools exist that can consolidate asset relationship to the application and service level. These tools align asset management across silos into a unified service model (USM), which provides a view into all the technology, assets, people, projects, and processes supporting any given service. USM is designed to ensure that IT managers clearly understand which IT assets are related or aligned to specific services so that a common frame of reference can be used for metrics including uptime, performance, quality, and the ability to meet service level agreement (SLA) goals. Tools that enable USM when combined with a solid configuration management database (CMDB) and solid silo management tools make the CIO's job of "controlling the IT environment" much, much easier.

Business Drivers for Infrastructure Management Today

From the history of infrastructure management, it should be relatively clear that over the past 30 years, there has been a divergence of the alignment of IT from the core business purpose for IT. Somewhere along the way, the business of IT has, to an extent, overwhelmed the business purpose for IT. Today, managers are learning that they must repurpose IT in terms of business value by taking actions such as:

- Developing service-focused, simplified infrastructure management that can be understood, in business terms, by non-technical LOB partners.
- Managing infrastructure resources to improve business productivity while reducing the total cost of ownership (TCO).
- Meeting increasing SLA demands and increasing the technical rigor and collaboration that goes into defining those demands for all the technology teams responsible for meeting those goals.
- Providing a technology infrastructure agile enough to meet the needs of the business.
- Controlling the IT environment and the operational risks presented through the management (or mismanagement) of logical control points.
- Meeting corporate information protection, business continuity, and enterprise architecture standards and ensuring legal and regulatory compliance.

Simplifying Infrastructure Management

From an LOB operational perspective, the business of IT is a service business. Whether you're an internal storage team or a provider of voice and data circuits, business units view you, and what you do, as a service, and they are the consumers. This is an important consideration for any team responsible for the management and delivery of infrastructure services. Even if your management is top notch and on target operationally, if your LOB partners don't understand the value of the service you provide, your value as a service provider is diminished and may be replaced.

In addition to infrastructure management, you and your teams have a role as a sales person, a marketer, a solutions provider, and as a trusted ally in the performance of functions critical to your LOB *consumer*. Simplifying infrastructure management to services upon which the LOB can depend is a clear and easy way to make a contribution to LOB in a way consumers can understand. Consider, for example, a telephone company. When you contract for a phone line, there is an easily understandable level of expectation for that service that would be much easier to relate to than a contract for the phone jacks, lines, switches, and supporting infrastructure that makes a telephone service a reality. Keep it simple.

Improving Productivity (RAPID Value)

From an LOB perspective, technology is a means to an end. You, your staff, your assets, and the tools you use to manage the delivery of products and services are a tool to business to meet their goals, and it is important that you understand not only what those goals are but specifically what it is that you can do to enable those goals within your organization. Consider a relatively standard LOB productivity need that usually comes across in two parts:

1. We need to increase the number of transactions made, per Full Time Employee (FTE), in our production environment.
2. We need to reduce the number of defects per million opportunities (DPMO) made in our production processes.

First, take notice that neither of these spoke specifically to technology but rather to the business process that is enabled by technology. This is how business managers view their environment. Next, consider what it is that your technology infrastructure can do to meet these goals. Although you might not be able to make the business FTE work any faster, you *can* work to ensure continuous availability; the more available the environment, the more transactions can be made by associates. Reducing the number of defects, when caused by technology or by breakdown in technology processes, is also something you can do to help your LOB partners. This second statement is also a clue that your LOB partners may be open to new products and services to automate existing manual processes that are, by their nature, prone to human defects.

Meeting SLAs

A byproduct of aligning infrastructure offerings to services is the accompanying SLAs. These documents spell out the formal expectation of the LOB for an IT service. This document, and the conversations leading to its creation, can take many forms; however, the most commonly accepted implementation of ITSM is following the general guidance set forth in ITIL.

From an infrastructure management perspective, ITIL becomes important here because it defines, specifically, two supporting documents for an SLA, including Operating Level Agreements (OLA) and underpinning contracts (UC). Essentially, these two documents are the same but with a different focus. OLAs are generally created between the technology management group responsible for meeting the LOB SLA goals and the internal supporting technical group (such as storage or server hosting). UCs are generally created with parties external to the organization (such as a telecommunications provider). It is important to understand these relationships so that when decisions are made on infrastructure management tools for your organization, you can take each management need into account. Consider the following requirements you might face:

- LOB partners require reporting of their application systems performance and availability to agreed upon service levels monthly
- Storage team requires daily monitoring of their services to the standards set forth in the OLAs
- Supplier managers require quarterly reviews of telecommunications provider services (performance and availability) for contract talking points with vendor managers

In an ideal infrastructure management environment, pulling each of these reports, aligned to the service provided, to the LOB should be easily accomplished.

Simplifying infrastructure management can be accomplished through improvement of availability and performance of IT services as they relate to their delivery channel (such as network delivery, systems delivery, database delivery, and application delivery). By ensuring each channel is achieving maximum availability and performance, the workload surrounding infrastructure management dramatically decreases.

Increasing Business Agility

Managing infrastructure from the business perspective enables the creation of predefined services based upon current business needs. This allows for less time to be spent in fully detailing business requirements and more time spent in the planning of future business needs. Standard service offerings make sense when they are aligned to business needs and doing so will create more availability of technology associates to work on reacting to business needs. To be most effective, however, your technology associates will need access to tools that "think" as they do and can align assets to services as well as provide a "real world" view of technology performance and availability.

Controlling the IT Environment

There is a myth in many circles that the CIO controls the IT environment. In actuality, it would be more accurate to say that the CIO's position exists to attempt to consolidate, reduce the complexity, and centralize the conversations needed to control the IT environment. The CIO's leadership must extend beyond his or her own hierarchy to the LOB executives as an instrument to make their IT dreams a reality.

The accomplished CIO knows that the infrastructure's size and complexity is driven by the business need for the infrastructure, and control over what comes in and what goes out is fleeting at best. The most important control point for infrastructure management risk doesn't actually reside within IT at all; it actually resides within the business. If an LOB manager can show a clear risk reward cost/benefit analysis for a technology, no matter how non-standard the technology, it will need to be adopted. With increasing pressure from third-party IT service providers, the responsibility of a LOB manager to choose an IT service provider has never been more important. If an LOB manager doesn't like what the internal IT Service provider is bringing to the table as a solution for the production environment, the manager might choose systems from external vendors, which will further complicate the IT manager's infrastructure management job down the road. An infrastructure management tool, such as one that enables a USM, can help CIOs relay the value of internal IT management to non-technical business executives and is therefore a strong asset in controlling the IT environment.

The Control Objectives for Information and related Technology (COBIT) is a set of best practices for information management that serves as a set of measures and processes for controlling IT. It provides solid guidance on improving IT processes including everything from delivery and support through monitoring and evaluating technologies, and it is an internationally recognized as best practice. Part of what makes COBIT so valuable is the interactions it lists between processes, which can be difficult to understand using traditional, silo-focused infrastructure management tools. Implementing COBIT controls successfully often requires views into IT infrastructure management from varying perspectives. Project management, for example, aligns to many other COBIT components, but making sense of all the control points for an entire LOB or organization can be challenging when done on a point-by-point, control-by-control basis. To gain the most from COBIT and other best practices, organizations need the ability to see and manage their infrastructure from any view they desire and make measurements of performance specific to their current need. Infrastructure management tools that utilize the USM can meet this need.

Standards and Compliance

Regardless of the current infrastructure management program, whenever government regulation and industry compliance concerns surface, the associated risk of mis-managing the infrastructure goes up. This is due primarily to the administrative overhead associated with ensuring compliance and the financial consequences if an organization fails to meet the mark set by the regulations. Compliance concerns add yet another need for the ability to customize the view of infrastructure assets and their associated metrics.

In normal operations, the need for infrastructure "views" may range from views necessary to meet network SLAs to LOB-specific views to discuss infrastructure utilization with LOB partners. Compliance concerns, however, may branch out across many application environments and may need to be looked at from both an LOB view as well as a silo view so that infrastructure teams can work with LOB managers to enact the steps necessary to meet the compliance concern.

IM Aligns IT to the Needs of the Business

From the first business computer to the data operations centers of today and the infrastructure of tomorrow, one thing will remain constant—the infrastructure must meet the needs of the business. Those needs may change rapidly, and management of your infrastructure must remain flexible and agile enough to meet the growing needs of your organization. Infrastructure management that is aligned to business services will help to ensure this goal. Infrastructure management that can unify technology silos and the IT personnel and processes that manage them will meet and exceed this goal by aligning not only to business services but also to any view into infrastructure management your organization may need.