

IBM IT Service
Management
Strategy
Connects IT
Silos to Create
Real-Time
Business Value

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White
Paper



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IBM IT Service Management Strategy Connects IT Silos to Create Real-Time Business Value

The development, deployment and ongoing operation of IT applications and infrastructure have historically been highly segregated activities relying on specialized tools, processes and people—optimized for very specific technology silos and their unique functional requirements. It's increasingly clear that the proliferation of these silos results in inefficient, inflexible and costly management of enterprise IT environments. CIOs report that anywhere from 60-80% of their total IT budget is consumed by the support, maintenance and operation of existing resources—leaving very little money or time for IT investments that can help businesses innovate and grow.

IT service management, i.e., delivering IT to the business as end-to-end services rather than as stacks of independent components, is not new. In fact, in recent years, many CIOs have begun to seriously evaluate how the IT Infrastructure Library (ITIL) best practices models and other similar process standardization efforts might help them reduce costs and improve the value of IT to the business.

What is new, however, is IBM's just-launched IT Service Management strategy that aims to give customers a highly integrated set of tools, ITIL-aligned process models and implementation services to help accelerate the connection of people, processes and technology across heterogeneous data centers. IBM's new offering is enabled by its platform for process automation, the Change and Configuration Management Database (CCMDB), which collects configuration data, streamlines data analysis, automates the execution of policy-based workflows resulting from that analysis, and allows customers to model IT processes.

IBM is uniting technology and best practices from multiple parts of its services and software portfolio including the WebSphere workflow engine, Rational's release management capabilities and IBM Tivoli's policy-based provisioning and management automation tools. The vendor is structuring this new offering around a highly modular implementation approach that allows customers, depending on their own business priorities, to select which process areas (such as release management, information lifecycle management, availability management, etc.) to target first. This modular approach is critical for customer success, as most early adopters report the cultural and organizational challenges related to service management roll-outs dictate a step-by-step implementation plan supported by strong executive leadership.

IBM's strategy is to provide customers with a tightly integrated environment that assures scalable cross-platform process integration but remains open enough so that third-party tools and systems can be incorporated as needed. With the launch of the integrated IBM IT Service Management portfolio, IBM is clearly becoming an important player in this emerging market.

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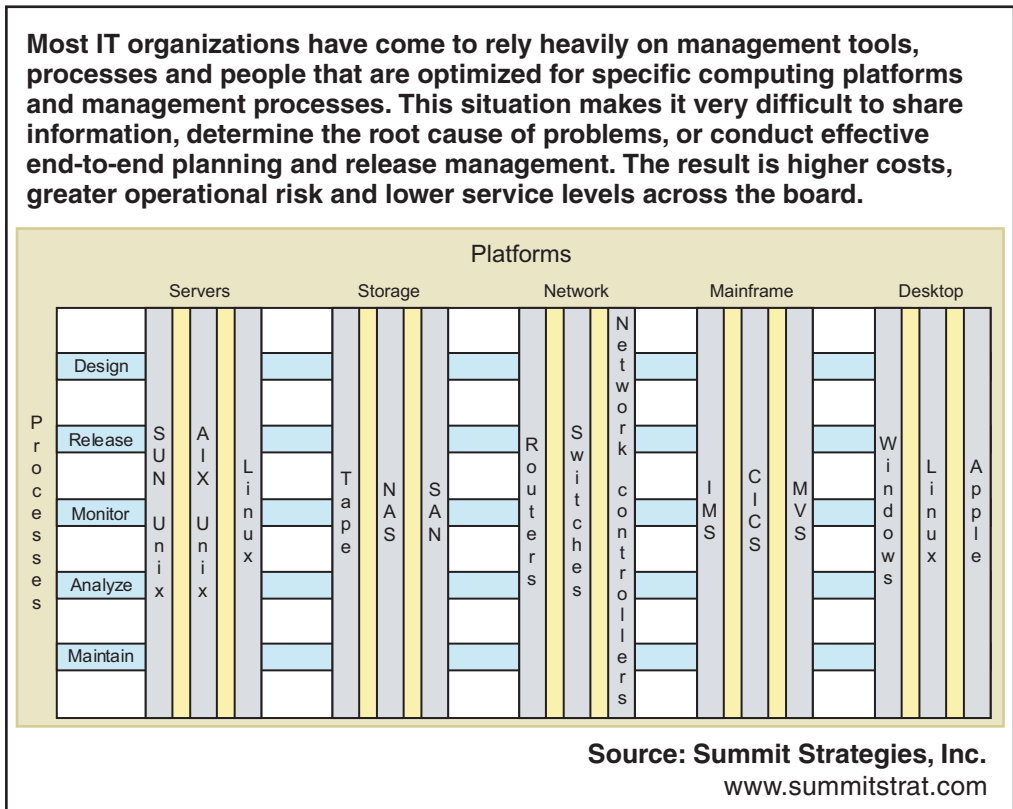
White Paper

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Section 1 Traditional IT Management Strategies Rely on Platform and Process Silos

In most enterprises, IT management relies on different experts, tools and processes to support the operation of network devices, servers, storage, desktops and many other sub-components depending on the size of the organization (see Figure 1).

Figure 1 IT Management Traditionally Relies on Platform and Process Silos



Typically, each operational platform has its own set of tools to support key management activities including:

- Incident and fault detection;
- Root cause analysis and problem resolution;
- Capacity planning and provisioning;
- Configuration and change control;
- Application pre-production/release planning and design;
- Service-level monitoring and reporting;
- User administration and access control;
- Information backup and recovery; and
- Policy-based automation.

Often, the only true integration points for these operational silos are the service desk or asset tracking systems. In service desk environments, user complaints look across silos and focus on end-to-end performance problems. Asset management systems roll all resources up to a high-level summary so that the CFO and other senior business executives can evaluate the budget. But neither set of tools dynamically manage across runtime operational environments.

From an IT development and operations perspective, relying on silos of management tools, people and processes actually worked reasonably well as long as application architectures depended on dedicated technology stacks and only shared the lowest-level network resources. Application-specific health metrics and service-level agreements (SLAs) could generally be used as effective proxies for assessing business process performance when technology stacks were dedicated to specific business processes and services. Capacity planning, infrastructure provisioning and day-to-day problem resolution could be addressed on a case-by-case basis when dedicated stacks made it relatively straightforward to assess business priority and impact. Ad hoc processes could be used to resolve problems that occasionally crossed technology boundaries and customized financial and capacity-planning analysis could be developed on an as-needed basis to satisfy top-level business and budget requirements.

However, as enterprises migrate to Web services and service-oriented architecture (SOA) applications architectures, CIOs are finding that siloed infrastructure management strategies are increasingly too complex, rigid and expensive to maintain. Multiple, parallel groups of platforms, management tools and people have a hard time responding quickly to changing business requirements. Brittle, time-consuming manual processes are

often instituted to coordinate change and capacity planning activities across systems that don't connect automatically. Yet, over time, dedicated silo computing and management strategies have ended up consuming more and more of the IT budget, leaving little money for innovation and investment in the future of the business.

Section 2

IT Service Management Attacks the Root Cause of Cost, Risk and Poor Service-Level Performance

Over the past decade, many organizations experimented with a range of strategies to hold down costs, reduce the risks of operational failures, and increase business flexibility in the face of rising business requirements and architectural complexity. These strategies included:

- Outsourcing infrastructure, application development and/or day-to-day operations in a bid to convert their fixed costs into variable expenses;
- Consolidating, simplifying and standardizing IT infrastructure and applications environments via the aggressive use of corporate standards, centralized purchasing strategies and the elimination of under-utilized assets;
- Adopting composite applications and Web services architectures to reduce application development time, cost and complexity and to increase the reuse of core software components; and
- Implementing IT infrastructure management automation including policy-based virtualization and provisioning solutions.

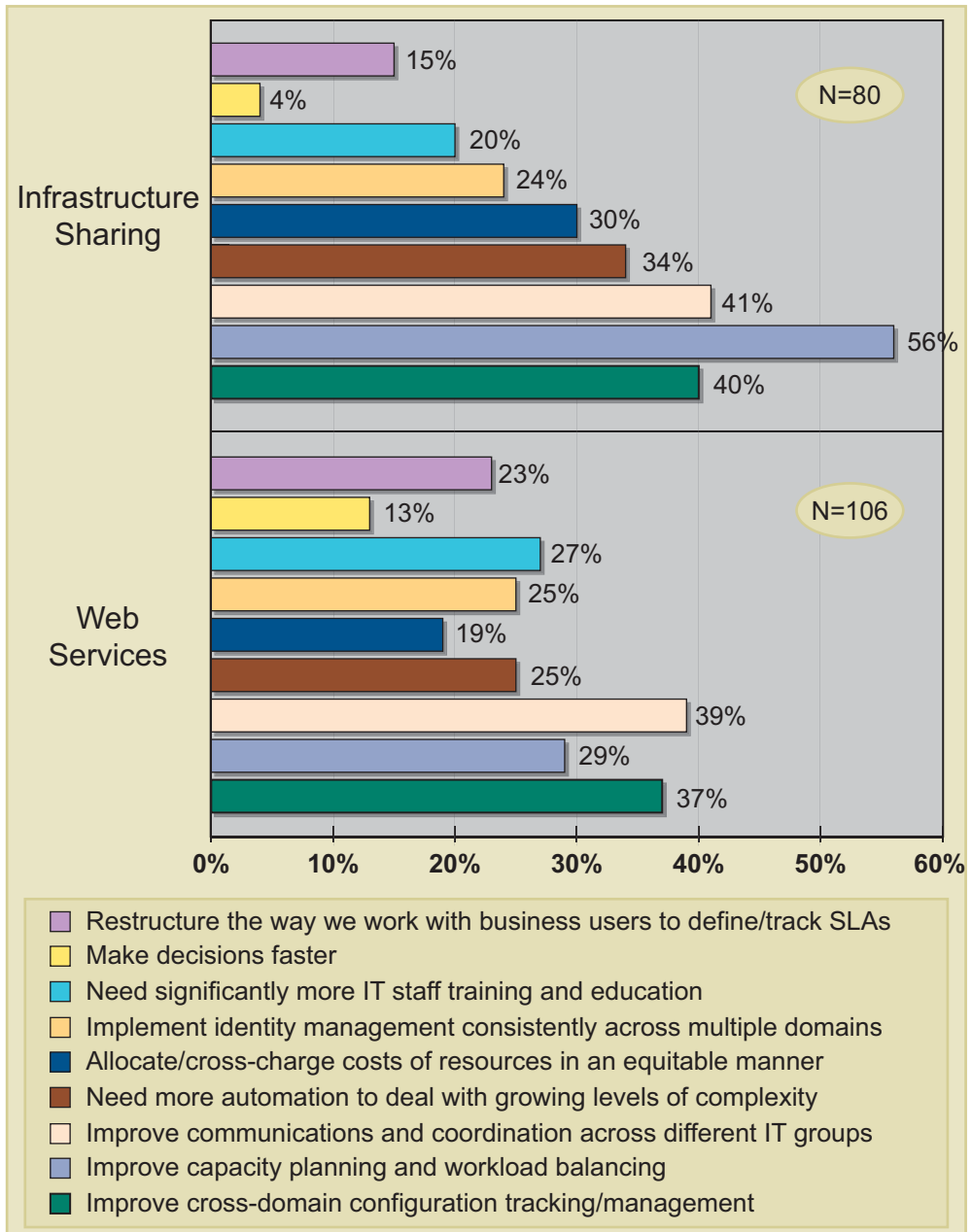
Most of these strategies focused on the needs of just one or two platform or process silos and did nothing to improve the end-to-end efficiency or flexibility of IT. In fact, when asked about the management impact of new technologies such as SOA, virtualization and Web services, the majority of IT decision makers indicate they find these dynamic computing architectures to be very challenging to manage with traditional silo tools and process strategies. In particular, they note a need for better collaboration and communications across IT silos, better configuration data management and more end-to-end automation (see Figure 2).

This concept of looking across the silos to focus on the end-to-end needs of the business is at the heart of service management best practices programs such as the IT Infrastructure Library (ITIL). By standardizing and optimizing end-to-end IT management processes and tools, IT organizations are able to operate more efficiently and with more flexibility—resulting in fewer errors and service-level violations. They can determine root cause of problems more quickly and define and enforce consistent operational policies across the board. Over time, these policies can be used to drive automation tools that further reduce costs and increase service reliability and performance.

Figure 2

**Early Virtualization and Web Services
Users Report Siloed Management Strategies Don't Scale**

Early adopters of Web services and infrastructure-sharing technologies such as blades, virtualization and grid computing report a number of management challenges including the need for improved cross-platform capacity planning and workload balancing, better communications and coordination across different IT groups, and improved cross-domain configuration tracking and management.



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Section 3

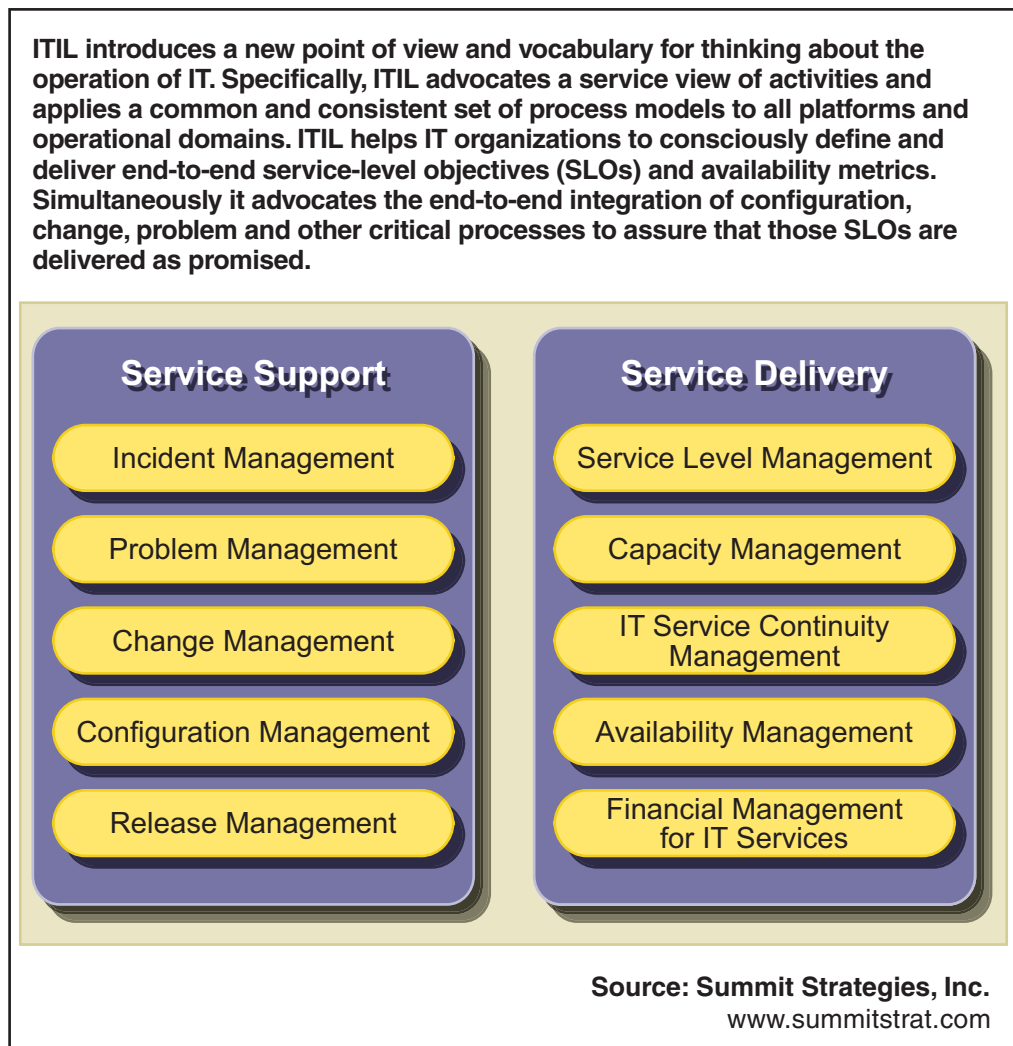
Success Requires Senior Leadership and a Long Term Vision

Viewing IT development and operations as a set of end-to-end services, rather than as activities unique to specific technology domains may not seem revolutionary. But, in fact, it challenges many assumptions that underpin the way most of today's IT organizations operate. It demands restructuring most IT design, development and operational processes and requires tools that can integrate IT management information across the full lifecycle of IT—connecting the silos and providing all IT and business staff with a shared view into cost, performance and future requirements.

The ITIL initiative has become a focal point for CIOs seeking to understand the benefits and best practices associated with treating IT as services. In a nutshell, ITIL provides a high-level process model for describing IT's core activities as a set of end-to-end IT management services (see Figure 3).

Figure 3

High Level ITIL Model



ITIL recommends a best practices model for how to institute common IT management processes and procedures across diverse IT platforms. For example, it recommends the creation of a shared configuration management database (CMDB) in which configuration information about all IT assets can be stored and accessed across the organization. Likewise, it recommends a tightly defined and structured approach to change management assuring all changes are analyzed, approved and registered on an end-to-end basis before being instituted.

But ITIL stops short of telling CIOs which technology platforms to choose, which specific data fields to include in a CMDB, or even which change and provisioning activities can be safely automated and which cannot. In short, the service management model advocated by ITIL and others such as COBIT provides a very strong starting point for designing an IT service management transformation, but is not the complete solution for connecting the day-to-day operation of IT across the silos.

Operationalizing IT service management strategies across multiple technology domains and processes is, by necessity, an evolutionary journey. In general, it's a journey that must be led from the top. The CIO and the senior IT leadership team must be committed and demand that all IT staff rethink their core job functions and personal success metrics, while simultaneously adopting an end-to-end view of the services they deliver to the business. The heart of this challenge is to look at IT activities as end-to-end processes supported by integrated, cross-platform workflows and shared policies.

Asking database administrators, network administrators and systems managers to integrate day-to-day workflows and align around shared priorities and service-level objectives can be challenging in organizations that have typically allowed each functional group to set its own norms and determine the relative priority of its day-to-day activities. And, it can take time for behaviors to change (see Figure 4).

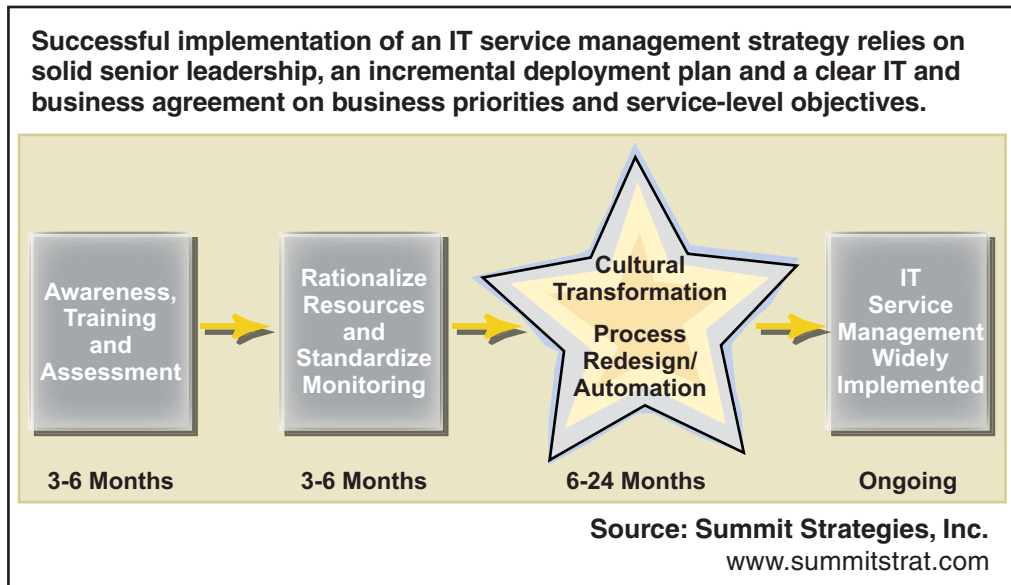
Most successful transformations begin with the senior IT and business team developing a shared service management strategy that reflects a prioritization of business services and processes, then maps these across IT assets and processes at a high level. Within that context, IT can set priorities in terms of training, tools and process integration programs.

At the staff level, many organizations begin with some type of service management training program to introduce the staff to the vocabulary and process models standardized by ITIL, COBIT or others. Simultaneously they conduct a service management readiness assessment evaluating how well the current environment is equipped to be managed in this way and identifies which element-specific tools are missing, if any.

This type of planning, training and assessment program can typically last 6-9 months depending on the organization. During that time, IT continues to invest in tools to manage the individual technology assets—as these will still be needed to feed the end-to-end process flows and the federated CMDB. Often, customers conducting initial assessments determine that they are missing platform-level element management tools or find that existing management tools require upgrading and stabilization.

Figure 4

IT Service Management Implementation is a Multi-Year Journey



Once an organization defines the strategy and the full complement of platform-level management tools are in place, they can begin to pilot this new approach in one or two process or service areas.

Such pilots have multiple goals:

- To validate the IT service management concept;
- To document the cost and flexibility benefits;
- To raise business sponsor awareness and create support for broader roll-outs; and
- To show IT staff that their day-to-day quality of life can improve even as they are asked to look beyond their traditional comfort zones.

Different customers will begin this journey in different process areas depending on where they feel the most pain on a day-to-day basis. But regardless of which process or platform areas are initially targeted, customers need to make some early choices about their CMDB strategy and their process integration and workflow automation technology engines. Rather than select point solutions that work well for specific processes or platforms, savvy CIOs will look to the long term and implement architectures that can scale across diverse, heterogeneous platforms, tools, processes and skill sets over time.

Section 4 Shared Information, Processes and Tools Are Needed to Connect People and Platforms

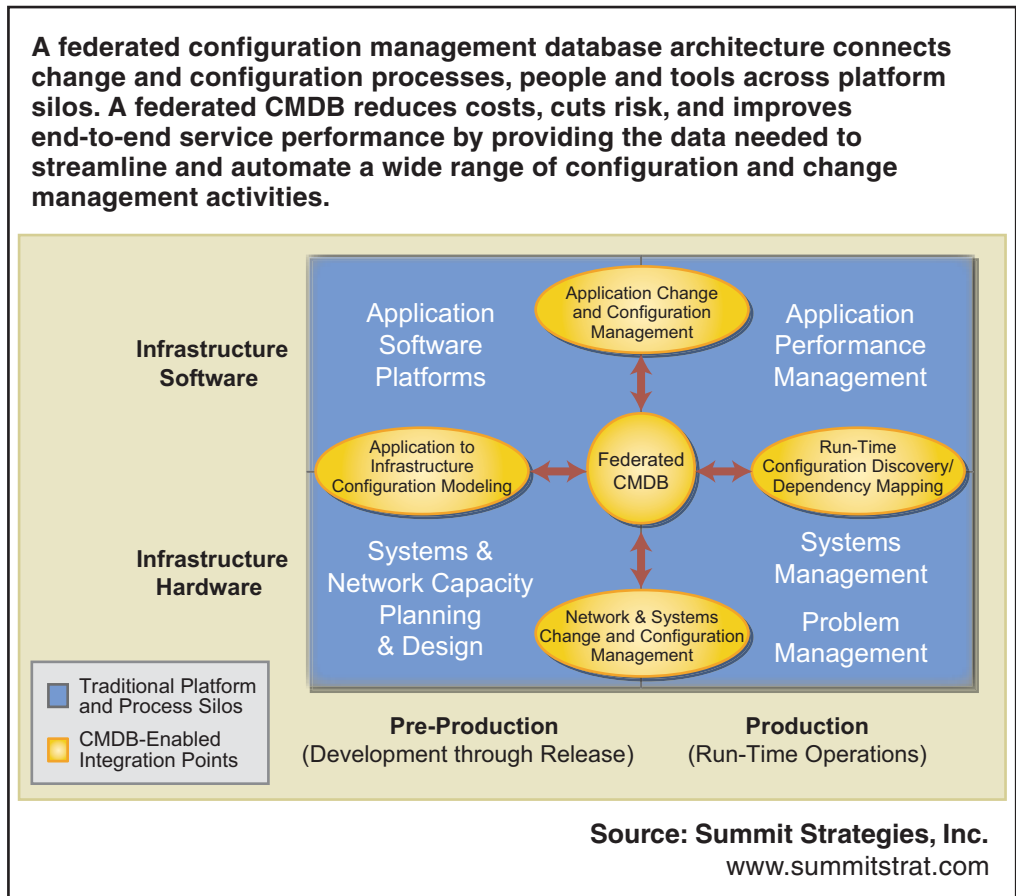
The heart of an operational IT service management environment is a federated CMDB, which can access, analyze and distribute configuration information from

all current and future technology domains. Forcing every element of configuration and performance data into a single central CMDB repository is likely to be too expensive and inefficient. Yet, fully replicating and constantly updating exhaustive databases to support each different process or service is also very inefficient.

Federated CMDB strategies rely on many component management tools and specialized management software tools to collect first line event, configuration and performance data. The federated CMDB engine finds, filters and accesses only the information needed to support a specific action or analysis on an as needed basis. In some cases, they may rely on highly specialized dependency mapping or analytic tools to isolate critical information.

This federated CMDB should not be expected to replace the in-depth configuration data collected and stored by the tools dedicated to specific technology platforms. Rather, it should be able to access and filter data from all available sources and then share it with people and tools responsible for implementing various processes and operational activities (see Figure 5).

Figure 5 **Federated CMDB Rationalizes and Links IT Management Information from Multiple Sources and Tools**



Similarly, IT service management policy configurators and workflow engines will rely on component-level provisioning tools to execute specific load balancing actions on the server or to apply software security patches or virus protection updates.

Most customers considering an IT service management strategy are already committed to a highly heterogeneous set of tools for enterprise infrastructure management, applications development, enterprise integration and management information data analysis. Implemented in a modular way, IT service management strategies will increase the value of these existing investments while reducing the total cost of ownership and operation.

Section 5

IBM IT Service Management Strategy Offers Highly Integrated Platform Strategy

IBM's recently introduced IT Service Management strategy is not the first vendor announcement to envision a service management approach for the operation of IT. But, it does envision one of the most tightly integrated and comprehensive offerings to date. IBM's vision is to connect configuration database technology, workflow engines, analytic tools, process modeling resources, professional services and systems management, and automation tools from across its software portfolio. This ambitious vision aims to eventually reach across the full breadth and depth of data center platforms and processes. Not unexpectedly, it will take some time to roll out.

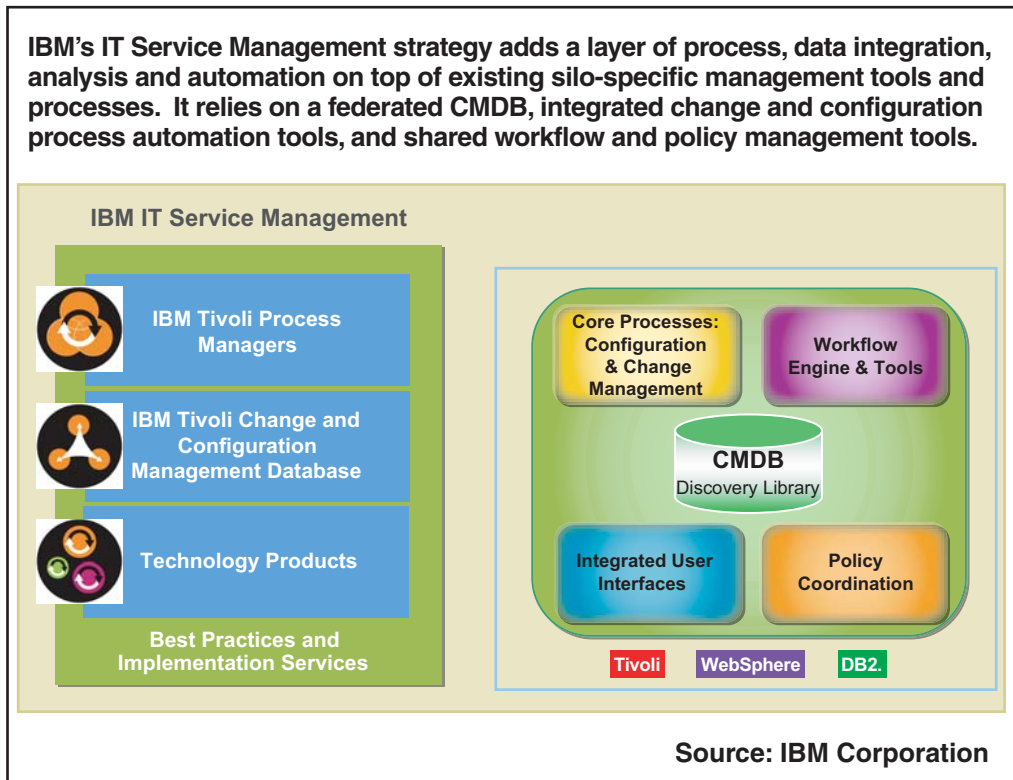
IBM's approach is ambitious in comparison to the many other currently available IT service management solutions which often attacked the problem from more specialized points of view including:

- Configuration data collection and dependency analysis;
- Application pre-production through release automation;
- Service desk workflow automation;
- Asset management database integration;
- Network and systems infrastructure management;
- Automated infrastructure provisioning and load balancing;
- IT governance and policy management; and
- Service-level reporting.

Building on its broad middleware assets and services experience, IBM's integrated approach—when fully deployed—intends not only to connect the network and system platforms and operations historically supported by Tivoli, but to reach beyond the day-to-day operations of the data center to better connect application development and release processes operations to the data center.

Figure 6

The IBM IT Service Management Strategy Integrates Process, Data and Tools



As shown in Figure 6, IBM's IT Service Management strategy adds a layer of process, data integration, analysis and automation on top of existing silo-specific management tools and processes. It includes:

- A federated CMDB engine, leveraging a Discovery Library that consolidates the output of multiple discovery technology sources—providing the ability to access and rationalize relationships and data from diverse systems and management tools, then forwarding that data to appropriate operators and tools as required;
- Integrated Change Management and Configuration Management Processes that provide best practice driven methods to manage the Configuration Items and govern the various requests for change across the enterprise;
- A workflow engine that supports tight automation and handoff of actions between different systems reducing human error and time to activity completion;
- A process configuration and collaboration portal that can present common data and process models across multiple technology silos in a context that makes sense to the individual technology silo specialists; and

- A policy configurator that enables IT and the business to define a set of service-level objectives, service definitions and performance policies and apply them to diverse resources in a common, consistent and automated manner.

On its own, the IBM CCMDB provides customers with a way to consistently collect, manage, distribute and interpret management information and changes to the infrastructure. But the power of the combined database, workflow and modeling toolkit shows most clearly when it is used to simplify and integrate specific services and processes that formerly required extensive manual interventions to bridge gaps between people, platform and process silos. IBM has targeted three IT service process areas for its initial roll-out. These are:

- Release Management—expedites and automates processes related to server provisioning and patch deployment to support the release of new and upgraded application software across the enterprise;
- Information Lifecycle Management—standardizes policy-driven automation for optimizing the cost of data storage and retention; and
- Availability Management—consistently applies policies to drive automated problem and incident response and remediation processes as quickly as possible based on business impact and priority.

Over time, IBM and its partners are expected to add additional modules to support such critical processes as security, capacity planning and chargeback. They also expect to continue to enhance the scope of automation supported by these initial modules as well.

The IBM IT Service Management portfolio builds on the strengths of IBM's many existing software products, hardware management tools and services capabilities including:

- The IBM Tivoli Orchestration and Automation portfolio;
- The Rational applications development suite;
- The WebSphere portal and enterprise integration platforms;
- The DB2 Database and advanced analytics capabilities;
- IBM Total Storage Information Lifecycle Management Tools;
- IBM e-Server virtualization and automated provisioning capabilities; and
- The IGS services organization's experience in helping customers transform IT organizational models and workflows.

Rather than ask customers to rely on point products to fill gaps between the silos, IBM offers customers a pre-integrated ITIL-aligned suite of tools sup-

ported by professional services offerings and the IBM Tivoli Unified Process (ITUP)—a newly launched unified IT process modeling tool.

Because process integration is just as critical as configuration management information integration, the ITUP process navigator is an important element of the overall IBM IT Service Management portfolio. It enables customers to use a web browser to navigate through a wide range of IT release, provisioning and operational processes and the relationships they have to one another. Available as a Web-based tool, ITUP provides customers with access to a pre-defined set of role descriptions, detailed operational process models, and recommendations on how to modify existing tools, processes and workflows to improve end-to-end performance and reduce cost and risks. Users can easily find process workflows, role descriptions, descriptions of activity inputs and outputs, and “tool mentors” that identify how to use Tivoli tools to implement those processes.

Just as the Rational Unified Process (RUP) has been very valuable in helping Rational software developers reduce the time and costs associated with code development and release, ITUP will help IT organizations to quickly and consistently take ITIL service management and process best practices down to the level of detail needed to actually implement systems and workflows that will deliver required SLAs.

Taken as a whole, the IBM IT Service Management portfolio is an aggressive extension and unification of IBM’s long-term commitment to IT operational excellence, automation and integration. The CCMDB and open architecture aim to assure customers that they can continue to rely on component-level tools and assets while implementing service management strategies at a pace that makes sense for their business.

IBM acknowledges that the full roll-out of the IBM IT Service Management portfolio will be a long-term incremental journey. We believe this approach is on target for an industry that needs to change but must also keep the business up and running and maximize the return on existing assets and people.

CIOs who are new to IT service management or who are looking for more automation and integration than they have been able to find to date should take a hard look at IBM’s vision and see how well it aligns with their own.

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