Availability and ITIL process management solutions
White paper

Tivoli software

Provide proactive, automated availability management with IBM Tivoli solutions.

Middleware is Everywhere | Can you see it?

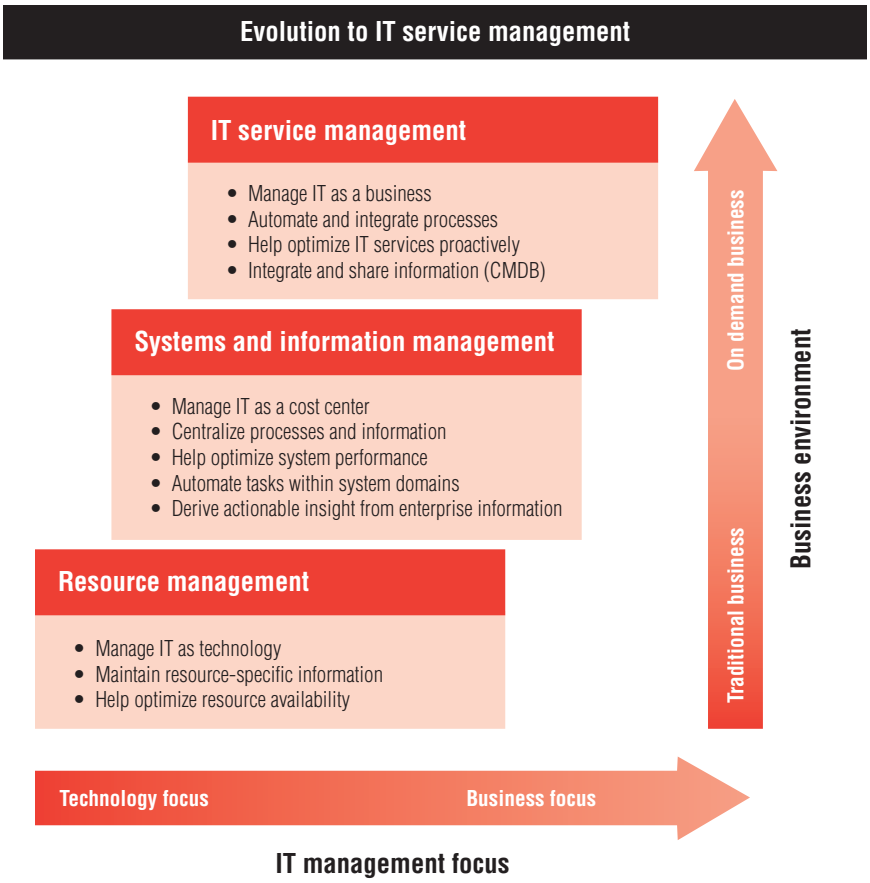
September 2005

Contents

Introduction

No longer limited to mundane back-office functions, IT has moved to the forefront as a key enabler of customer-facing processes. But along with this new visibility comes an increased demand for availability. If a back-office accounting or payroll system goes down, a company is inconvenienced but operational. However, if a business-critical process – such as Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) or an online commerce Web site – goes down, a vital part of the business may go down with it. The company might lose sales, customers might defect to the competition or a strategic initiative might be compromised. In fact, an outage in a high-volume financial service application could cost a company millions of dollars per hour.

To ensure the high availability of mission-critical applications and optimize IT resources, many companies today are turning to formally defined processes and IBM Tivoli® availability management solutions. Together they can help organizations maximize the efficiency and effectiveness of their end-to-end processes, and thereby deliver the robust, adaptable and highly available IT services that are so essential in meeting today's business goals.



This paper will explore how businesses with various levels of process and tool maturity can benefit from IBM Tivoli availability management solutions. The focus will be on how these solutions can help link IT operational services to processes, data, skills and tools, while leveraging existing staff and breaking down barriers across IT silos. It will also show how these Tivoli solutions can help you minimize response time to incidents, reveal root causes and provide the kind of proactive management that both speeds up the resolution of current incidents and prevents future incidents from occurring.

Highlights

Use ITIL as a foundation for designing and deploying processes for availability management

Take a structured approach with Information Technology Infrastructure Library (ITIL) processes and IBM Tivoli solutions

In the past, technology usually involved one application running on one server, so IT operations focused on managing individual resources. However, as businesses became more complex and demanding, composite applications became more common. In this new era of heterogeneous infrastructures and flat budgets, the traditional approach of throwing additional resources at availability management is no longer effective.

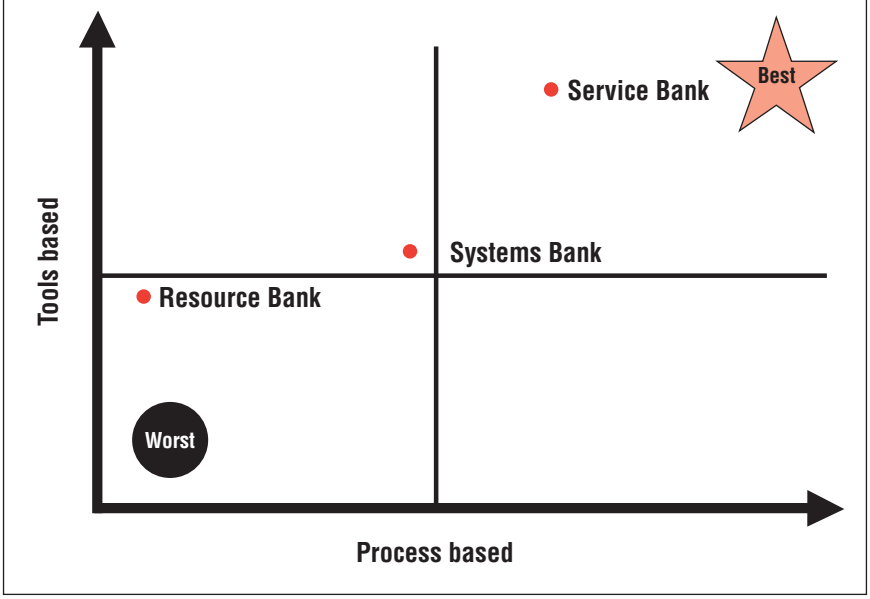
A more productive approach is to move from technology-centric systems management (many tools, no processes) to business-focused services management (optimal solutions that are integrated with optimal processes, data and IT skills). In fact, many organizations are now structuring their activities into processes that are formally defined and consistently executed. They are relying on proven best practices such as those outlined in ITIL. Developed by the British government in 1988 with input from IBM and other companies, ITIL is currently the most widely accepted approach to service management today.

The next step is to integrate and automate these processes with tools that will grow IT maturity levels, and this is where IBM Tivoli solutions come in. They enable IT organizations to become highly efficient, freeing up staff for more value-added tasks and helping to reduce the potential for human error. By understanding IT environments in terms of lines of business or delivered services, businesses can accurately identify and prioritize problems before they arise and provide proactive responses and rapid remediation.

Consider three availability management approaches

Let's look at three hypothetical businesses with different processes, different tool maturity levels and different challenges: Resource Bank, Systems Bank and Service Bank. Each wants to optimize its IT operations so it can respond to evolving business needs with agility. The availability management solution each bank adopts will ultimately determine whether its new venture is successful or not. As you will see, Resource Bank's current approach and processes are ad hoc, which prevents it from scaling IT resources effectively. Although Systems Bank has some processes and tools in place, it lacks a coordinated approach for integrating its IT operations due to a recent merger. Service Bank, on the other hand, provides a model of scalability and predictability as it supports the aggressive rollout of new, leading-edge applications across the globe.

Integrating IT tools with processes: a look at where three banks started



IBM Tivoli availability management solutions for three maturity levels

Scenario	Resource Bank	Systems Bank	Service Bank
Tivoli products	• IBM Tivoli Monitoring	• Tivoli Monitoring • IBM Tivoli Enterprise Console®	• Tivoli Monitoring • Tivoli Enterprise Console • IBM Tivoli Business Systems Manager
IT maturity level	• Resource management	• Systems and information management	• IT service management
Customer characteristics	• Manage IT as technology • Maintain resource-specific information • Help optimize resource availability	• Manage IT as a cost center • Centralize processes and information • Help optimize system performance • Automate tasks within system domains • Derive actionable insight from enterprise information	• Manage IT as a business • Automate and integrate processes • Help optimize IT services proactively • Integrate and share information (CMDB)
Tivoli solution benefits	• Out-of-the-box best-practice solution enables "plug and play" • IT management from a single portal interface • Lightweight installation that is easy to deploy and maintain	• Enhanced event correlation • Integrated console that consolidates event correlation with availability management • Accurate root cause analysis for fast problem resolution across diverse infrastructures	• Customizable dashboard, providing business views • Linking IT operations to processes, data, skills and tools • Proactive analysis • Comprehensive, scalable end-to-end solution • Interoperability in complex environments • End-to-end auto-discovery of resources and relationships • Workflow automation

Resource Bank: the situation

Resource Bank is a midsized bank with several branches, several thousand customers and two major data centers in the western United States. Both house several consumer Web sites, along with tools used by tellers to process transactions. Although the bank focuses on Monday-Friday, business-hour availability, some of its critical business applications are available to consumers 24x7.

Because the bank has no centralized IT operations unit providing Level 2 support around the clock, system administrators and managers run an on-call schedule to support critical applications during off hours. The IT organization has some automated tools for determining application availability, but most of its other tools are ad hoc. These rely on system administrators or application developers who write scripts to generate alerts and send them to either a pager or an e-mail address.

When tellers experience difficulty during normal hours, they call a centralized support desk, which interfaces with the systems group to resolve problems. With only a few people in the systems group, this is fairly efficient but reactive. Although the group has scripts and internal checking procedures to catch some problems and issues, customers and tellers still raise most of the alerts.

If Resource Bank truly wants some of its critical business applications to be highly available 24x7, this model is neither adequate nor scalable. As the bank attempts to grow its services, it will quickly exhaust the limited IT staff. In addition, the bank is completely reactive, so it will lose potential online customers when problems occur.

Highlights

IBM has a plan for implementing an ITIL-aligned availability management solution into Resource Bank's IT infrastructure

Resource Bank: the recommendation

Resource Bank assessed the major issues and identified the following needs:

- Identification and management of events to move from a reactive to proactive state and use IT staff resources more efficiently
- Performance and availability management solution that is easy to deploy, manage and use from a centralized console
- Application-level alerts
- Automated response that does not require special programming skills
- Integration with existing help desk to formalize the tracking and management of incidents

Resource Bank: IBM Tivoli solution

Because Resource Bank needs to focus its limited resources on existing applications, it cannot afford a complete ITIL solution at this time. However, Tivoli Monitoring with its Tivoli Enterprise Portal offers the advanced capability that Resource Bank needs to achieve immediate efficiency gains, while handling critical incident, problem and availability management issues.

Resource Bank took advantage of the product's out-of-the-box best practices and workflow automation to construct more-efficient, ITIL-based processes. From a central, intuitive portal that includes customizable workspaces, operations staff can now proactively monitor, correlate and automate responses to events.

Systems Bank: the situation

Formed two years ago through a merger of two smaller banks, Systems Bank is considerably larger than Resource Bank and more geographically spread out. It also has two different infrastructures and process models, along with multiple data centers housing applications that provide redundant features. The bank faces rising maintenance costs and has experienced problems integrating applications. Because it has not yet consolidated into one

centralized help desk, it still relies on independent data centers to provide local operations, such as monitoring, responding and routing events to subject-matter experts. Each data center uses its own set of legacy tools.

Systems Bank wants to implement a standardized solution that works everywhere and provides the ability to customize features and alerts for each particular environment. It also wants to cut support costs by centralizing IT operations, automating responses and sending automated trouble tickets to a centralized service desk that supports all sites.

Systems Bank: the recommendation

Systems Bank decided to house major semi-autonomous business units in separate regions. Subject-matter experts would continue to reside within the local data center and provide direct support to the regional business units. However, to reduce costs and improve efficiencies, the bank centralized IT operations for Level 2 support so it can proactively manage performance and availability of data center resources remotely. It decided to standardize on a set of performance and availability management solutions that would enable remote integration and data sharing at both the central and local levels, since subject-matter experts would also serve as Level 3 support.

Systems Bank needed to grow its IT maturity level, so it wanted to implement standard processes and adopt best practices that would lead to a tighter and more efficient integration of operations. At the same time, the bank needed to respond to evolving market needs at the local level. This meant enabling the business units to rapidly implement new software and processes, while at the same time ensuring a stable operating environment. The answer was to create a process integration point that would enable business units to respond to rapidly evolving business needs, while taking advantage of benefits provided by a centralized operational unit for remotely managing availability of the applications.

Highlights

Meeting Systems Bank's availability management challenges with Tivoli software

Systems Bank: IBM Tivoli solution

Thanks to the Tivoli Enterprise Portal component of Tivoli Monitoring, Systems Bank's centralized IT operations can be delivered from a single interface. Operators are now able to remotely monitor, analyze, correlate and automate performance and availability of regional data center resources across a broad range of technologies, no matter where those resources physically reside. In addition, the centralized IT operations unit is able to proactively manage bottlenecks, performance impacts and unpredictable outages, thus driving high availability and performance of critical applications across all the data centers, regardless of geographical location.

Regional subject-matter experts can still create their own localized best practices and set policies across the entire infrastructure. Although all agents are delivered with preset and preloaded metrics based on best practices, resident experts can modify and add thresholds. An intuitive, graphical policy editor is available for developing process rules and workflow automation, so there is no need to learn a special programming language. Resident experts can use existing best practices, tune policies and automate additional workflows to optimize the management of the infrastructure for which they are responsible.

By integrating Tivoli Enterprise Console into Tivoli Enterprise Portal, Systems Bank can grow from resource management into systems and information management. Tivoli Enterprise Console provides advanced event correlation that leads to root cause identification and rapid problem diagnosis. It also provides an ITIL integration point with the service desk by automatically opening incidents as required.

Service Bank: the situation

Service Bank is a middle-tier bank with more than 200 branches worldwide. It wanted to beat competitors to market with innovative services and solutions using state-of-the-art technology. To that end, the bank was developing new J2EE™ and Microsoft® .NET solutions and placing them into production at

Highlights

IBM can help Service Bank's customers deploy availability management processes across their IT infrastructure

IBM availability management tools

Tivoli Monitoring — Uses industry best practices to provide monitoring for essential system resources. Helps detect bottlenecks and potential problems, and provides automatic recovery from critical situations. Includes Tivoli Enterprise Portal, an easy-to-use console for incident and problem management across mainframe and distributed environments.

Tivoli Enterprise Console — Combines automated problem diagnosis and resolution with the ease of out-of-the-box best practices.

Tivoli Business Systems Manager — Enables IT to prioritize activities according to the needs of the business, communicate more effectively with each other and to the business units, and plan more effectively.

a rapid rate. It expected IT operations to deliver high availability without adding headcount.

This worked the first year: revenue improved, and the number of branches grew from 200 to 300. As growth continued, the bank experienced major outages in business-critical applications that resulted in significant revenue loss. Business units not only expressed concerns about the effectiveness of the bank's centralized IT unit, but even considered an outsourcing proposal.

While IT operations suspects the problems are attributable to bugs that were not uncovered during the test cycle, it lacks the right tools to prove it. In fact, the organization is so siloed that it cannot monitor transactions end to end or manage alerts and events across the bank's increasingly heterogeneous infrastructure, which includes:

- Traditional applications using IBM CICS® and IBM DB2® software on a 450 MIPS mainframe, which have been enhanced over the past year to accept transactions through new J2EE or .NET applications with Web interfaces.
- Newly upgraded card authorization applications linking ATMs to distributed computers.
- Back-office functions running on heterogeneous platforms.

Service Bank: the recommendation

Although IT was open to outsourcing, it believed it could create additional efficiency gains at a reasonable cost and with greater added value than the outsourcer. But to do this, it needed to do the following:

- Integrate IT operations for global branch offices that span heterogeneous environments.
- Create an IT infrastructure that can provide IT service management across global branches by combining technology with processes to provide more efficiency.
- Use proven best practices to automatically integrate processes end to end across the enterprise.
- Manage IT at a business level, as opposed to the traditional resource management level.

Service Bank: IBM Tivoli solution

Using Tivoli Enterprise Portal, Service Bank can integrate its IT enterprise across various domain experts, as well as across processes, data and tools. The software provides ITIL-aligned workflows out of the box so that IT operations can automate and integrate processes efficiently and effectively. This helps optimize the availability of Service Bank's IT infrastructure end to end, including host, distributed and composite applications.

Tivoli Monitoring works with Tivoli Enterprise Console to enable IT operations to collect metrics across the various technology domains, automate workflows and policies, and correlate events to rapidly uncover and resolve root causes of problems. In addition, Tivoli Business Systems Manager provides a business service view of the infrastructure. This allows IT to prioritize activities based on business impact, rather than by individual resource end points, enabling IT to align with business objectives.

By taking advantage of Tivoli best-of-breed tools and well-defined processes, Service Bank helps optimize costs, consistency and supportability, and deploys new applications successfully while staying within its IT budget.

Conclusion

Although these three scenarios are hypothetical, at least one of them should be similar to your company's situation and needs. No matter what IT maturity level your organization has in its availability management processes and tools, it can still gain from moving to the next level. Of course, the "optimal" solution for a small company would be different from the "optimal" solution for a global conglomerate. Even if your business is more like the size of Resource Bank or Systems Bank, it can achieve the same level of organizational efficiency and effectiveness as Service Bank. What's more, IBM has the availability management tools necessary to get it there.

For more information

To learn more about IBM availability management solutions, contact your IBM representative or IBM Business Partner, or visit **ibm.com**/tivoli

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