Proactively Manage End-to-End SAP Business Processes: Business Service Management for SAP Environments

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Focusing IT On Business Outcomes

According to research conducted by HP, 99 percent of chief executive officers (CEOs) say that information technology (IT) is essential to business competitiveness, but only 31 percent of chief information officers (CIOs) believe IT is sufficiently aligned with business objectives and strategy.

This disconnect is nothing new. IT has long acted as a siloed department within the larger business it serves. Traditionally, the focus of IT has been on operations—on managing applications and services in the most efficient manner at the least cost. Today, this focus is proving far too narrow. IT concerns are not necessarily the concerns of the business; and the language that IT uses to describe its priorities does not translate well to the business side of the organization. This only widens the gap between IT and the business—preventing the alignment that is required for IT to help the business execute its strategic initiatives.

But as businesses increasingly look to IT to act as a strategic partner, this gap needs to be closed. This is especially critical in complex, integrated enterprise SAP implementations that support core business functions. Businesses rely on SAP applications to automate processes such as customer relationship management, manufacturing or finance. If these systems fail, this is not just an IT problem. When you are not able to take an order, deliver a shipment or run your payroll, your entire business may be in jeopardy.

The world of SAP systems is complex and multi-dimensional. Today's SAP implementations are tightly woven into heterogeneous enterprise networks of hardware, databases, packaged application suites, legacy systems, custom applications and best-of-breed software. And every change, customization, new requirement, patch, support pack or bug fix ripples through multiple systems and applications.

How can your IT team cope with large volumes of changes, SAP instance consolidation or upgrades while making sure that SAP business systems remain operational? How can IT satisfy service level agreements and provide acceptable resolution times if they are operating as a group of independent technology consoles? Is your IT able to proactively recognize and diagnose application problems before they impact the end user?

The concept of business service management (BSM) offers a path toward more effective IT/business alignment. In brief, BSM is an approach to focusing the efforts of IT operations on business outcomes. The idea is that IT acts not only as a service provider but a fully engaged strategic partner taking actions to help the overall business achieve its goals. The emphasis for IT, then, becomes one of managing the overall health of SAP applications and other related business services—not only from a technical perspective, but also from the business viewpoint.

A Use Case—Quote-To-Cash Business Process

SAP applications support a variety of critical business processes. But let's look at an example where the problem with the Quote-to-Cash transaction is threatening to paralyze the sales organization right before the end of the sales quarter.

Imagine a familiar scenario—an account manager is entering the order information using the Siebel front-end and notices that the order forms are not

responding. He checks back after a few minutes, but the system is still unavailable, and by now the others in the group are starting to notice it too. It is crucial for the sales team, and any technical delays can directly impact the bottom line. What is going on with the system and how quickly can it be fixed?

Reactive problem solving: using customers as IT monitors
While sales is unable to enter orders, IT is unaware that there is a problem with one of the most critical business transactions. They only get alerted when the account manager picks up the phone and calls the Help Desk. After receiving the complaint, the Help Desk opens a trouble ticket. In other words, IT is now in the position of chasing a problem long after its impact has been felt and customer dissatisfaction is on the rise.

Unfortunately, today, most SAP applications are managed in a reactive fashion. Even though there is no lack of application and performance data being collected by various teams such as the Basis, Java, network and database administrators, their disparate monitoring metrics do not help determine the overall health of business services. IT may be drowning in systems management data, but support teams still learn about problems after service levels have been breached.

Clearly, IT needs to be more proactive. To the extent that customer complaints serve as the main means of monitoring the customer experience, IT will remain reactive in its problem solving abilities.

Poor Triage: Whose Problem is it, Anyway?
After the Help Desk acknowledges the problem, they try to assign the incident to the appropriate IT group—which can be easier said than done. In our example, the end user has reported a problem with entering the order information through the Siebel front-end. Should the issue be routed to the Siebel support team, the infrastructure support team, the engineering group that recently upgraded the entire front-office system or perhaps the QA group that is responsible for validating the quality of changes?

With many independent IT consoles—often one for each level in the technology stack—there is no complete view of system infrastructure health and no visibility into the end-to-end user experience, leading to incomplete or inaccurate triage, finger-pointing, and ultimately slow resolution times.

Without the proper tools to isolate the problem based on end-to-end service data, the Help Desk assigns the issue to the most obvious owner—in this example, the Siebel application support team. The Siebel team—which is optimized to perform diagnostics only on specific systems—spends a great deal of time trying to get to the bottom of this critical issue, but despite calling in additional experts, finds nothing wrong.

In the meantime, a Network Operating Center (NOC) operator detects a performance problem with a simulated SAP transaction—Quote to Cash. Only one SAP instance is experiencing this problem, while all the others seem to be unaffected. The problem is reported to the SAP Certified Competency Center (CCC), and a new ticket is opened.

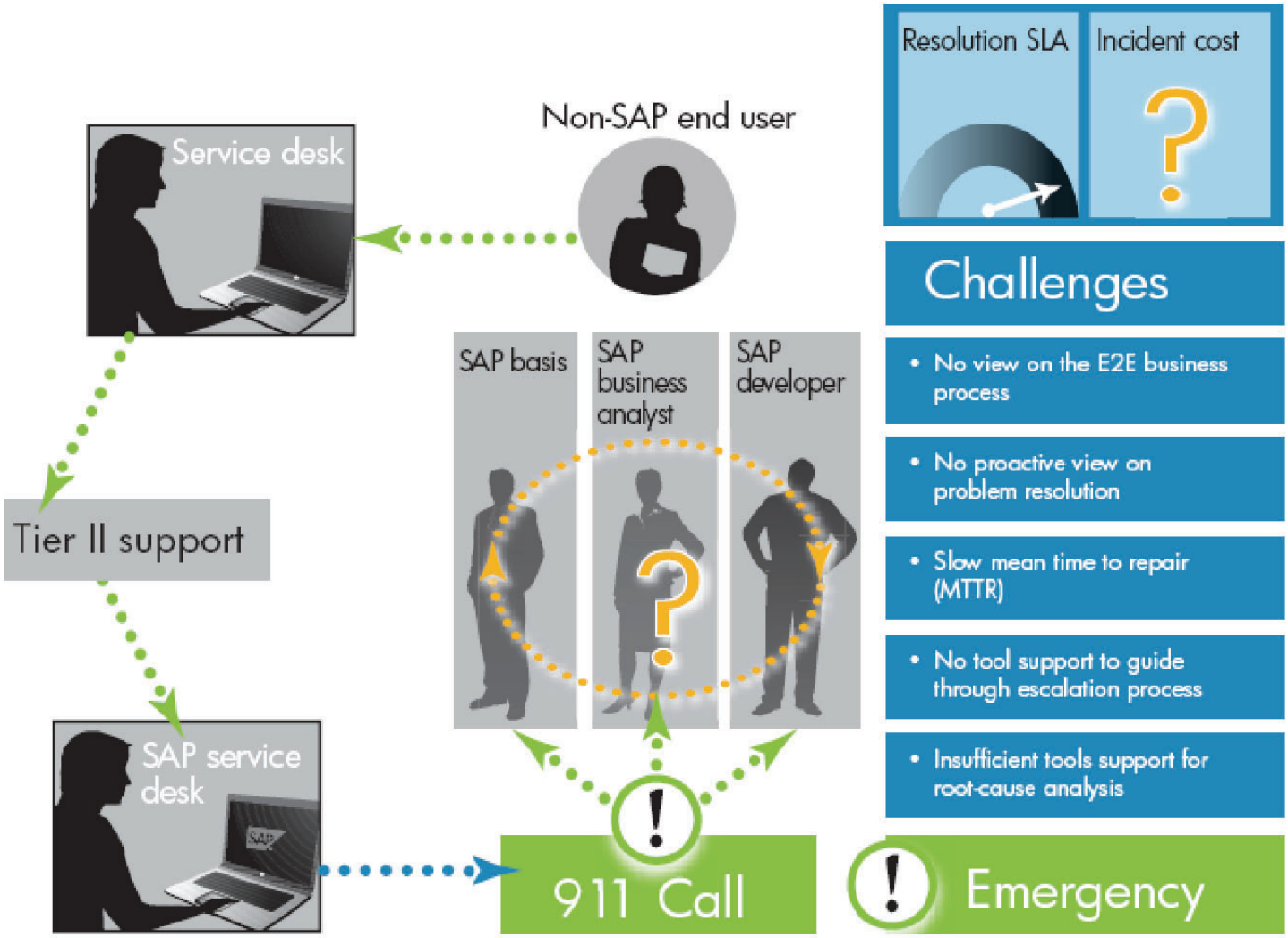
In fact, both of these issues are related—the slow performance of the SAP Quote-to-Cash transaction is bringing down the integrated Siebel front-end and preventing the account managers from taking orders. But IT does not know it yet, and two separate groups of experts are working on what appears to be two different performance problems.

Eventually, both tickets find their way to the SAP service desk, but even there they can be routed in many directions: the SAP Basis team, developers, business analysts, etc. By now, the phones are ringing all across the organization demanding the escalation of the Siebel issue to the highest IT levels. Service levels have been breached, incident costs have sky-rocketed and the already strained relationship and fragile trust between the lines of business and IT are once again in jeopardy.

Every day, SAP systems go through dozens, sometimes hundreds of changes. And in today's world of heterogeneous IT environments and integrated enterprise software systems, there is no such thing as a small change. Every change, patch or fix that is applied to the SAP business system affects a multitude of interconnected applications. Unfortunately, most companies today lack a clear change management process and visibility into all stages of the SAP change lifecycle. Each group typically uses their own set of tools to log and track changes, making it virtually impossible to follow the change through its approval, implementation, testing and production deployment. In our example, IT may suspect that one of the recent transports delivering configuration changes has negatively impacted performance, but existing manual, ad-hoc, undocumented change management process does not allow them to easily pinpoint a connection between a change and a problem that they are trying to solve.

Many stressful hours pass, and finally IT is able to locate a transport that created a performance issue. Thinking in silos and bouncing the problem between the different teams has lead to unacceptably long repair times, high incident costs and severe negative impact on the business.

Figure 1. Reactive problem solving in heterogeneous, complex IT environment



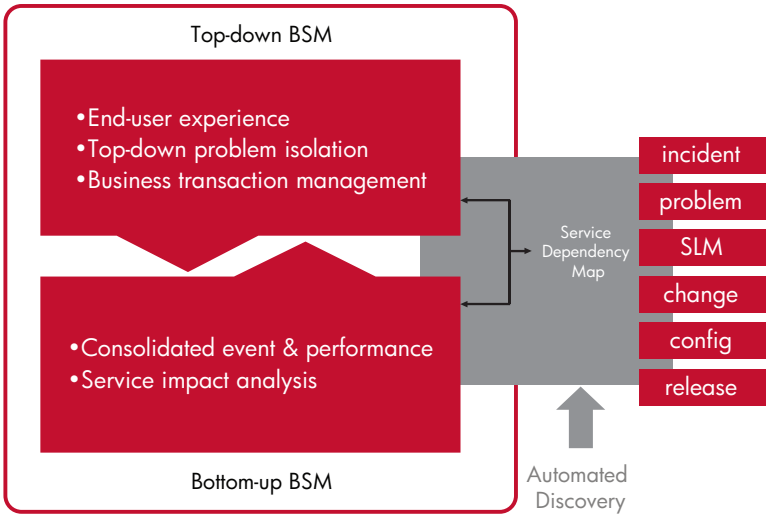
Should IT have given this issue a higher priority from the start? Didn't they know that the business was suffering significant losses while the problem was being routed from one group to another? Most likely, they didn't—at least not until the sales team started raising multiple complaints. Without clear visibility into the business impact of technical issues, IT has trouble determining which issues need to be given priority or allocated additional resources. Had they known from the start that an issue with the Siebel front-end is causing 50 orders per hour to be rejected, and is impacting close to half-a-million dollars in end-of-quarter revenue, the situation would likely have been different. Having the technical information translated into business terms would have also helped the business managers determine appropriate emergency course of action. They may have chosen to process priority orders manually or at least alerted customers of the temporary system problems.

A better scenario—proactive user experience monitoring

A much better scenario would be to proactively manage the end user experience and identify problems before the users are affected. A configuration management database would show the dependencies between the SAP and non-SAP applications, as well as their dependence on the infrastructure and the impact of changes; and a central system would consolidate all monitoring information regarding the composite business processes and would enable tracking the service levels.

It is imperative for IT to move from reactive to proactive application management with a top-down approach that helps you put technology metrics in context with the business service being delivered, manage planned and unplanned changes, understand the end user perspective, monitor the underlying heterogeneous infrastructure and diagnose and solve problems.

Figure 2. HP Business Service Management Solution Approach



Ineffective Problem Resolution: Top-Down Versus Bottom-Up Approaches

The example illustrated above presents two of the primary different approaches to solving IT-related business problems: top-down and bottom-up. The issue is that in practice, both have critical shortcomings that make IT far too ineffective to adequately meet the demands of the business.

In our example, the top-down approach starts with the customer reporting a problem after the service has already gone down. The drawback here is obvious—IT depends on the customer to act as the primary monitoring device for critical business services. This makes IT almost entirely reactive.

When a problem is reported, furthermore, IT does not have a clear picture about different areas of responsibility. Should the incident be assigned to the Siebel group, the SAP group, or the network group? Who within the SAP CCC is responsible for finding the fixing the problem root cause? Answers to these questions would save time and money for IT and the business.

The bottom-up approach in our example is illustrated by two different IT teams working on essentially the same problem in complete isolation. Not only does this duplication of effort expend valuable resources, it can add complexity to the ultimate solution as different teams work at cross purposes. Without an understanding of the larger picture, IT as a whole can have trouble prioritizing the repair activities to reduce business impact. Worse still, each siloed IT unit lacks the visibility to understand how their specific problem might impact critical SAP business services.

What Is Needed Is A Combined Top-Down And Bottom-Up Approach

A step-by-step approach to BSM

Once you have decided to embark on a Business Service Management initiative, how do you determine where to start? HP has developed an evolution path—or maturity model—to represent the way organizations typically approach BSM. There are some inter-relationships between the key BSM components but there is no need to follow the steps in any particular sequence. Many different paths can lead IT toward BSM maturity, and it can be achieved in any order. Each organization can follow its own business requirements and determine their own objectives and approach.

Consolidated service health management

The key to gaining visibility into end-to-end SAP business processes is a single business service dashboard that provides insights into business transactions, end user interactions and the underlying infrastructure. This consolidated view of all data collected from the end user, back-end business process and application and infrastructure performance monitoring tools delivers the most comprehensive Business Service Management capabilities and includes both the business and IT process levels.

Consolidated operations management

Consolidated operations management helps you clean up a noisy event monitoring environment and reduce duplication of effort while empowering teams to work across silos to solve complex problems. At the network level, the HP BSM solution provides ultra-fast event correlation and root cause analysis technology with the ability to automatically adjust to changes in the network environment—whether those changes are

virtual or physical. Methods of consolidating operations management revolve around:

- Consolidating event monitoring into a single console
- Effective management of ITSM processes
- Reducing event noise

Service impact analysis
Service impact analysis with automated service discovery is based on powerful service dependency mapping functionality. This gives you the ability to establish priorities based on business impact as well as the power to identify the impacted user group and provide estimated downtime information. Key considerations for effective service impact analysis include:

- Service monitoring from the business's perspective
- Departing from manual approaches to creating and maintaining service dependency maps
- Keeping your service maps up-to-date

Customer experience management
Customer experience monitoring—or management—provides visibility into the end user experience as well as back-office SAP processes. This empowers you to be more proactive in addressing events before they cause disruptions. Key considerations for effective end user management include:

- Customer experience monitoring
- A combination of synthetic and real-user monitoring

Application problem isolation and diagnostics
Problem isolation and diagnostics allow you to drill down from a high-level performance problem using workflow that automatically collects and correlates the information required to solve it. This provides insight into recent changes that may impact the service, allowing you to allocate the problem to the right group and resolve the problem faster.

Business transaction management
Business transaction management gives you the ability to pinpoint exactly which high value transactions may have broken down and at precisely what point in the transaction. HP Business transaction management technology can span heterogeneous systems and is able to produce views suitable for both IT operations and the business operations groups that rely on these transactions.

Let us return to the example of the end of quarter customer order taking. At this point, the sales team is not concerned with the overall performance status of the SAP system—they are likely to be interested only in a handful of critical services related to entering and processing orders. Given the crunch time and the urgency of the issue, the sales group would appreciate up-to-date information regarding service health. With effective BSM capabilities, IT is able to communicate this information to the right people at the right time—complete with estimates of when offline services will return. For account managers who are pushing to close end of Quarter deals and enter them into the system for processing, this is critical information that contributes significantly to the overall success of the business.

HP Business Availability Center For SAP Applications

No other vendor provides a more comprehensive portfolio of solutions to support all aspects of your BSM-related SAP system activities. With HP Software solutions for BSM, you can align your IT operations organization with the objectives of the business and help it more effectively execute its strategic initiatives. You will have the visibility to understand both the technical issues behind infrastructure events and the business service issues that those events impact. This helps you communicate with the business in a language it understands, and improve alignment.

SAP applications are constantly changing and evolving. Each stage of the SAP application lifecycle introduces its own challenges: during the initial implementation, shifting business requirements create the need for implementing new functionality and customizations; and while the SAP system is in production, IT needs to maintain the system's integrity while rolling out many support packs and patches, managing upgrades, consolidations and major infrastructure changes.

HP Business Availability Center for SAP Applications is a comprehensive Business Service Management solution that enables IT to manage SAP systems as a service delivered to the business. It enables modeling of SAP business processes, provides infrastructure monitoring as well as application monitoring from the end user perspective, and allows IT to measure the business impact of incidents and system downtime. HP Business Availability Center for SAP Applications includes a business dashboard and an integrated set of applications that provide end user monitoring, change and configuration management, system availability monitoring and insight into the impact on the business.

With HP Business Availability Center for SAP Applications you can:

- Map and manage the dynamic relationships between business services, applications and the underlying infrastructure

Figure 3. HP Business Availability Center for SAP Applications Components

HP Business Availability Center Dashboard	Gain a role-based view on Key Performance Indicators (KPI) and service levels to proactively monitor SAP business service health before problems impact the end user experience
HP Discovery and Dependency Mapping	Achieve visibility into the dynamic relationships between SAP applications and the underlying infrastructure to reduce the costs and risks of introducing new services and making changes to existing ones
HP End User Management	Measure and monitor the behavior of SAP and non-SAP application business processes and users using a combination of synthetic and real end user monitoring to gain complete visibility into end-to-end business process performance
HP System Availability Management	Monitor performance and availability of applications and services in context with the end user experience to improve your return on investment and scalability by removing excess infrastructure capacity from your SAP systems
HP Business Process Insight	Monitor business process health, performance and impact information in a context that allows both IT and business to have a common understanding of how IT is meeting the needs of the business

- Gain insights into business transactions, end user interactions and the underlying infrastructure through consolidated, role-based KPIs
- Automate the tracking of planned and unplanned changes to the SAP applications and infrastructure
- Communicate information on business process health, performance and impact information in a language of business

Mapping and managing complex relationships between service components

Using Discovery and Dependency Mapping (DDM), HP Business Availability Center for SAP Applications automates the creation and maintenance of a model encompassing all logical and physical configuration items relating to both SAP and non-SAP environments and the interdependencies between them. These can include anything from the Solution Manager Business Blueprint business processes, through their supporting SAP® R/3® application servers, to work processes and SAP configuration files. Transports deployed onto the SAP system and their impacts on SAP transactions are also discovered.

Proactive customer experience monitoring

Once the model is complete, IT can begin to proactively monitor the end-to-end system performance, receiving alerts if application performance deteriorates or if there is a problem with a business transaction.

The HP lifecycle approach to SAP application quality allows automating many of activities related with deploying of application and infrastructure monitors, such as HP Business Process Monitor (BPM) which leverages scripts used in pre-production testing and go-live assessment to proactively measure the behavior of mission-critical business processes.

System monitoring

The monitoring picture is not complete without end-to-end system monitoring data. You can integrate and extend SAP Solution Manager and CCMS using the HP best-of-breed system monitoring solutions, such as HP SiteScope. HP SiteScope pulls infrastructure-related data regarding the SAP system from sources like CCMS and NetWeaver® Administrator, as well as from other mechanisms external to SAP. Additional data can be gathered by HP Operations Manager's agents like the SAP SPI, or by third-party Enterprise Management Systems (EMS), and tied to the relevant configuration items in HP Business Availability Center. HP SiteScope also brings in monitoring data from integrated non-SAP applications to create a complete picture of your system performance.

Gaining insights into business service health

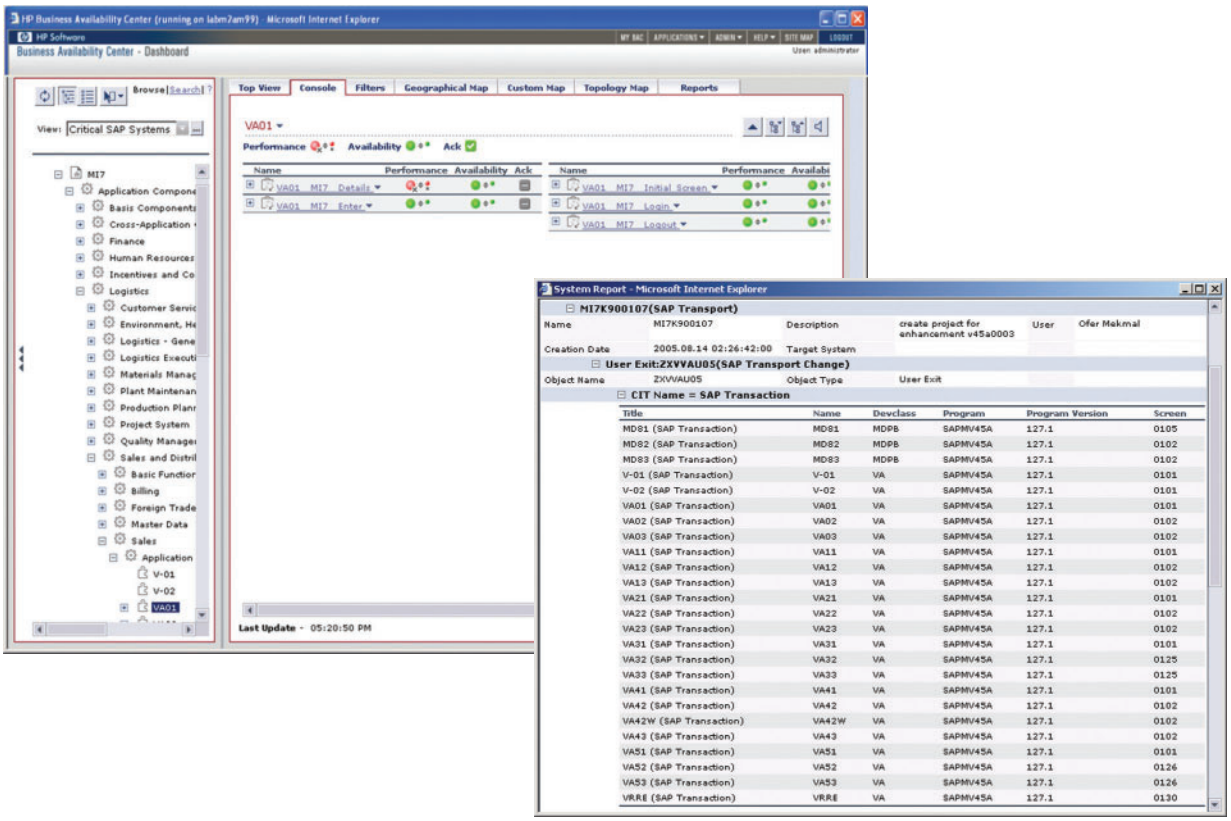
All monitoring information is fed into the HP Business Availability Center Dashboard, where each stakeholder can define key performance indicators (KPI) that are of interest and manage and report on service levels representing IT's commitments to the business.

Tracking of planned and unplanned changes

To help determine the root-cause of the problem, HP Business Availability Center for SAP Applications can indicate if there have been recent changes introduced to a transaction, and identify a transport that delivered the change. HP Business Availability Center can also bring up the list of all transactions affected by this transport to determine if it may have caused any additional performance degradations (see Figure 4).

HP Business Availability Center for SAP Applications enables you to proactively detect problems impacting SAP end users and allows prioritizing problems according to their business impact. Knowing which transactions and business processes have been

Figure 4. HP Business Availability Center for SAP Applications, change impact analysis



affected by the transport will determine how quickly IT needs to react to the situation.

The next step would be to identify the actual change and the developer who implemented it. This type of change impact analysis is only possible due to comprehensive discovery and cataloguing of all SAP entities and understanding the complex relationships between them.

HP Business Availability Center for SAP Applications supports several ITIL disciplines and provides automated tools to identify the impact on business processes caused by system changes. HP Business Availability Center for SAP Applications helps reduce the risk of change, which is responsible for more than 80% of all severe outages and system downtimes.

Communicating in the language of business

HP Business Process Insight (BPI) for SAP Applications is an integrated part of the HP BAC for SAP Applications solution. It extends the monitoring and reporting capabilities of HP BAC by translating IT events into the language of business and business processes.

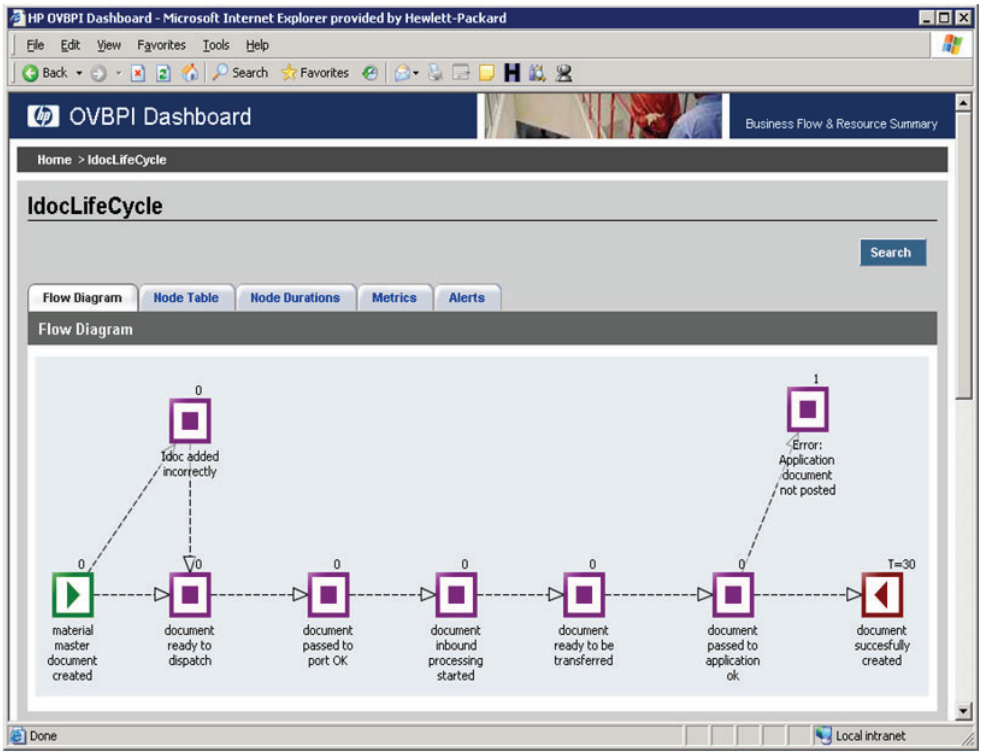
HP BPI enables IT service managers and service owners to visualize entire business processes or their critical parts—along with the IT services that support them. Business process visibility means that IT can monitor SAP applications and infrastructure not as a collection of hardware and services, but as indicators of performance and availability of the key business transactions.

Having insights into business processes brings IT closer to the business. The business in not concerned about server availability or system overload. They want to know if they can quickly process customer orders, or whether employees can access the self-service HR application without delay. HP Business Process Insight allows IT to measure, monitor and report application performance from a business perspective.

HP Business Process Insight is integrated with ARIS business process management software and can leverage the business process maps and data collected during different stages of SAP implementations. SAP-specific business process information can be imported from ARIS and interpreted for business-centric monitoring.

HP Business Process Insight also features a specialized SAP Accelerator—an add-on component for SAP Applications. The accelerator provides an out of the box adapter that can be configured to look for status changes in SAP iDocs and use this information as business event feeds to HP Business Process Insight. For example, using these events, HP Business Process Insight can establish if a purchase order status has changed to approved.

Figure 5. HP Business Process Insight



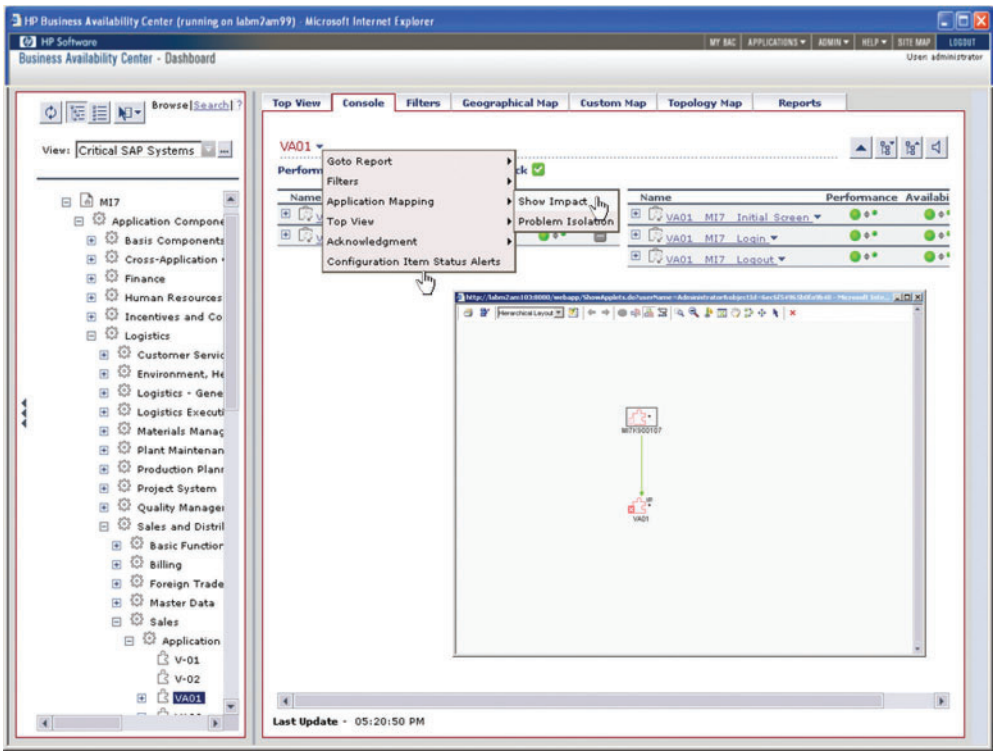
HP Business Process Insight captures business events that have occurred within the application environment—events such as creation of an order or receipt of payment. HP Business Process Insight then correlates these events to a process model flow to measure the business process performance and health (see Figure 5). HP BPI can calculate the time it took to go between one or more steps in a process, the time required for the entire process to complete, number of backlog items for each step and the throughput of one or more steps (for example, 100 orders per hour or $2.4M of bills per day).

These metrics help you to understand how well your key SAP business transactions are performing and whether you need to allocate additional resources to specific processes. This insight into business processes allows IT to better serve the business. It answers the business's key question: "How well are my business processes running?" If the processes are not running well, HP Business Process Insight enables you to perform root-cause analysis by drilling down to the IT components that a business process step or business metric depends upon.

The same business-centric approach is used in monitoring business-process service-level objectives (SLO). Unlike traditional, technology-focused SLO, business-process service levels focus on performance thresholds for the actual business transactions. For example, a business user may want to ensure that the time it takes from taking the order through shipping the order does not exceed 2 business days, or that no more than 20 orders per day go through the "rework" step. HP Business Process Insight allows you to constantly monitor the health of your SAP services by measuring the efficiency of the key business transactions and reporting this information in the language of the business.

Utilizing HP Business Availability Center and the HP Universal CMDB, HP Business Process Insight can correlate the health of business processes (such as orders) with the computing infrastructure on which they depend. This enables you to calculate the business impact of IT problems or performance issues and better prioritize IT's response. HP Business Process Insight is able to translate an IT-specific problem statement, such as "Server 23 is not responding", to a business-impact statement, such as "$500,000 in potential orders and 23 gold-level customers are affected by the current performance problem".

Figure 6. HP Business Availability Center for SAP Applications Dashboards



HP Software Complementary Value-Add To SAP Solution Manager

HP Software and SAP have collaborated to help our mutual customers reduce the risk and cost of their SAP application ownership. The HP solutions are tightly integrated with SAP Solution Manager and complements elements like the SAP Business Blueprint and SAP CCMS.

The integration between our two platforms spans all phases of the SAP application implementation and maintenance, allowing you to streamline the entire process, increase efficiencies, mitigate risk and proactively manage the end user experience and SLAs. The end-to-end lifecycle integration also allows different roles within the IT organization to use their preferred solution, while collaborating with the other groups.

Why Should You Choose HP As Your partner For Your BSM For SAP Environments Initiative?

The process of managing mission-critical SAP applications requires a clear strategy and an integrated set of solutions to reduce risk and increase their business value.

HP provides a complete solution across the lifecycle of SAP applications. It offers a full set of integrated products and services for SAP quality and performance management, change control and business availability. When implemented together with SAP Solution Manager, these offerings can support a complete lifecycle approach for managing SAP applications.

HP approach to consolidated service health management provides visibility into business and operational service levels. It helps cut IT costs, reduce resolution times and reduce the business impact of system performance issues.

HP helps IT reduce risk by ensuring that SAP domain and non-SAP domain experts have the right information delivered at the right time. This enables different IT teams to work on the right issues, in the right order, with the right urgency.

HP ensures better outcomes for your SAP projects, which means you achieve all of the benefits of running SAP applications while taking far fewer risks. HP helps you succeed with your SAP application initiatives.

To learn more, visit www.hp.com/go/sapsoftware

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Technology for better business outcomes