

How to transform IT into a strategic business partner

White paper



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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. But as businesses increasingly look to IT to act as a strategic partner, this gap needs to be closed.

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 concerns 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’s required for IT to help the business execute its strategic initiatives.

The concept of business service management (BSM) sheds light on this problem and 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 providing business but as 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 business services—not only from a technical perspective, but also from the point of view of the business.

A familiar use case: airlines and online check in

While BSM is applicable across all industries, a particular example taken from the airline industry serves to illustrate the point in a way that is familiar to business people virtually everywhere.

Let's say it's Friday afternoon, and you've just completed the last leg of a multi-city business trip. You're in your hotel room and eager to get back home, so you log onto your airline's website to check in online. As your airline makes clear, this will help expedite things once you arrive at the airport. Problems, however, start immediately. The website is painfully slow. You continue packing your bags and check the page again after 15 minutes. This time you see a notice apologizing that the online check-in service is not available at this time. Over the course of the next hour, you check in periodically to see if the service is back up. Eventually, you give up.

When you arrive at the airport, you fall in at the end of the check-in line—which is longer than usual because you're not the only one who was unable to load the online check-in page. Tempers are high, boarding time is fast approaching and the airline lacks the staff to efficiently process the increased passenger load. In the end, you're informed that the flight is overbooked and you're invited to spend the evening in the airport hotel. If you were able to check in online a few hours earlier, you would have secured your seat. What went wrong?

Reactive problem solving: using customers as IT monitors

If IT is critical to business success then the ability to identify IT problems and fix them before they negatively impact the business is equally critical. In this example, the airline has no idea that it has a problem on its hands until one of the customers is smart enough to call in and register a complaint. The service desk raises a ticket only after receiving the complaint. IT, in other words, is in the position of chasing a problem long after its impact has been felt and customer dissatisfaction is on the rise. 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 downtime information: How long will it take?

A notice explaining that a website is down is a bit like a mechanic telling you that your car doesn't work after you tow it into the station. In our example, you already know that the online check-in page doesn't work; the critical piece of information is when it will be back. If you had known that the service was going to be down for the next three hours, you might have darted for the airport immediately to check in and secure your seat. Instead, you wasted precious time dithering with the service hoping that it would come up shortly. By the time you made it to the airport, you were too late.

A different example from the airline industry helps illustrate the importance of downtime estimates as well—namely fuel trading. A common practice in the airline industry is to buy large amounts of fuel at advantageous prices—when available—to hedge against future price spikes. Let's say that you've just identified such an opportunity and you're preparing to make the purchase. Payment is due by the close of business—and you want this transaction completed before prices escalate again.

Now let's say that your systems go down an hour before the close of business. Here, an accurate estimate of when the problem will be fixed and specific details regarding which purchase transactions have been impacted would help determine your course of action. If your transaction has yet to finalize but the system will be up in ten minutes you have no problem; your transactions will go through as planned before the end of business. But if the system will remain inactive for the next 90 minutes, you'll want to execute a work around immediately—perhaps faxing the information to the appropriate parties instead. Either way, IT has given you the information you need. Without the ability of IT to provide downtime estimates and an accurate account of the precise transactions impacted by the IT problem, you run the risk of missing your payment and having to pay a higher price down the line.

Incomplete diagnostic: What's wrong from the business perspective?

Part of the reason why IT can't proactively identify problems and provide accurate downtime estimates is due to an inability to understand infrastructure problems in terms of the business services they impact. To illustrate this point, let's take our online check-in example into the back office.

At the same time that you're trying to load the check-in page from your hotel, an IT staff member in the network operating center of the airline identifies a problem with a network path. The speed between two points on the network path is horrendously slow. Meanwhile, in another part of the organization, an IT staff member working on an application server notices that the server keeps timing out every time it makes a call to a certain gateway.

In fact, all these problems are related—the non-responsive online check-in page, the sluggish network performance, and the timed-out application server. It turns out that a routing table on an adjacent but heavily used network device is corrupted—due to mistakes made during a recently scheduled change. This causes traffic re-routing and network congestion along the path. The online check-in service runs on an

application server that makes a call to a certain gateway across the poorly performing network path—causing it to time out. Accordingly, the network group, the application server group, and the check-in application group all receive event notifications—but only the network team needs take action. The end result of all this is duplication of effort, inefficient IT operations, and repair times that are slower than need be.

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. Unable to effectively monitor the customer experience, IT depends on the customer to act as the primary monitoring device for any given business service. This makes IT almost entirely reactive. When a problem is reported, furthermore, IT has little idea regarding the area of responsibility. Should the incident be assigned to the network group, the database group, or the application server group? Is the problem concerned with the integration bus, the mainframe, or the network? Answers to these questions—or at least more informed deductions—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 has no way to prioritize its repair activities to minimize business impact. Worse still, each siloed IT unit lacks the visibility to understand how their specific problem might impact critical business services. For example, the network team might know that it will take 25 minutes to correct the routing table problem that's slowing down the network path. But if it doesn't know that the slow network path is bringing down the online check-in service, it remains in the dark as to who would most benefit from this valuable piece of information.

What's needed: technology to support better business alignment

The point here is not to suggest that top-down and bottom-up approaches to BSM are inherently faulty. Both approaches, in fact, are required to maintain service health. But to be effective, IT needs better visibility of IT events and a more effective means of translating these events into the language of everyday business. Essentially, IT needs a way to combine proactive top-down problem isolation with more effective bottom-up service analysis.

Consolidated event monitoring

Event monitoring is hardly a new idea in the world of IT. The problem for most IT organizations, in fact, is not so much a lack of monitoring but the proliferation of tools used to accomplish it—typically the result of siloed purchasing decisions. This leads to a highly segregated monitoring environment—with separate tools used to monitor your network, storage systems, servers, databases, applications and so on. The end result is costly duplication of effort. Without the ability to see that separate events are in fact related, IT will dedicate multiple teams to solving the same problem. This complicates the problem and wastes precious resources.

The existence of multiple monitoring tools within a single IT environment also impedes the effective management of core IT service management (ITSM) processes—most notably incident management. Effective incident management requires that every monitoring tool be integrated into the service desk—something that is simply cost-prohibitive for organizations maintaining large numbers of heterogeneous monitoring tools. HP research, in fact, has determined that the number one driver for the adoption of consolidated event management solutions is the desire on the part of IT and business to more effectively manage ITSM processes.

To rectify the multiple event-source problems, IT needs to consolidate low level infrastructure events into a single console. It then needs to clean events with functionality that manages de-duplication and event correlation. A typical problem with infrastructure monitoring is that the same events get reported over and over again. For example, let's say a developer on staff writes a "lazy application" that repeatedly reports faults or issues warnings on the same problem. This could lead to hundreds or thousands of messages. By recognizing the problem only once and routing the issue to the responsible parties, de-duplication

functionality helps clean up these event messages, thus turning down the volume on an otherwise noisy monitoring environment.

Event correlation functionality also goes a long way toward cleaning up events and keeping the volume down on the monitoring environment. Take the example of a downed network device. Typically, IT will be actively monitoring not only the device itself but also the boards on that device and the interfaces on those boards. For this reason, IT will receive event notifications every time someone tries to ping the downed device or one of its boards or interfaces. IT will also receive a slew of "timed-out" event notifications for all the downstream devices, boards and interfaces associated with the original device. With event correlation capabilities, IT gets a single event notification regarding the downed device—with all the other noise filtered out. And with clean events coming into a single monitoring environment, IT is in a better position to analyze problems and respond effectively to minimize business impact.

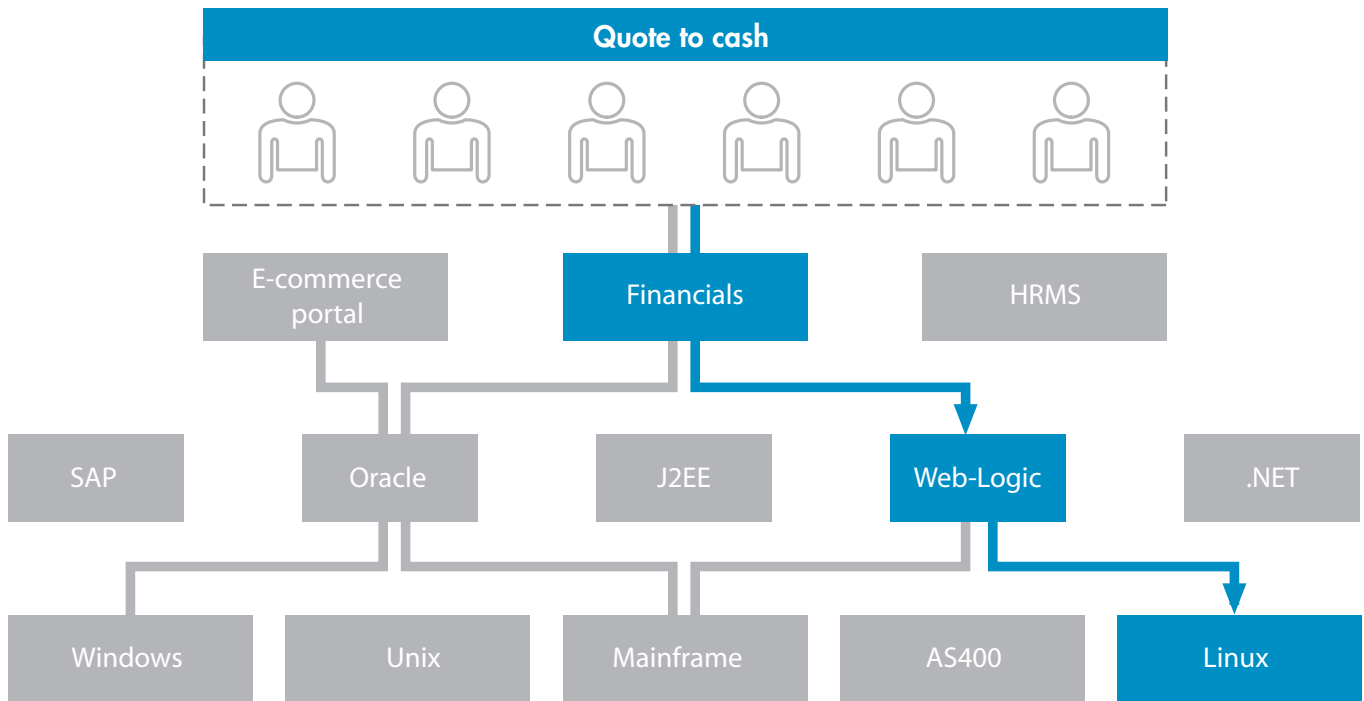
Service monitoring—from the business's perspective

To truly align with the business it serves, IT needs to speak the language of business not the language of technology. What the business wants is relatively simple: end-to-end services that run optimally without disruption. This, after all, is the primary reason it spends so much on IT. Business users never see themselves as triggering events. They do, however, understand the notion of service status. Most calls to the service desk, in fact, reflect a problem with service status as understood from the user's perspective.

IT, accordingly, needs to find a way to translate the language of IT events into the language of service status. This requires a way to logically associate business processes, user experiences, and transactions with the lower level technical components that underpin them. The shorthand for this process is service dependency mapping.

Traditionally, IT organizations have approached service dependency mapping in a highly manual manner—using tools such as spreadsheets, databases and Microsoft® Visio. While the initial creation of a service dependency map certainly requires a degree of manual effort up front, it's the ongoing maintenance of the map that makes the manual approach untenable. This is especially true for large organizations making changes to their infrastructure at a rate of several thousand per day. At the practical level, manually maintaining service dependencies in a complex, highly fluid IT environment is impossible.

Figure 1. The service dependency map depicts the relationships between business services and the underlying IT infrastructure components. With an accurate service map, IT organizations can combine proactive top-down problem isolation with bottom-up service impact analysis to isolate the problem area.



Companies that want to streamline the service dependency maintenance process are moving toward automated service discovery technology—which enables you to run automated discovery inquiries in the background on a continual basis. These discovery inquiries automatically reveal the infrastructure components, middleware elements, applications and business services in your landscape—as well as the interrelationships between them. Running on a continual basis, these discovery inquiries help keep your service dependency map up-to-date—automatically identifying any changes that have occurred in the IT environment. This is no small

benefit at a time when nearly 80 percent of all business service performance issues are directly related to recently-made changes. With an up-to-date service dependency map, you're able to understand the changes that have been made to a poorly performing business service. This makes it far easier to translate an issue raised by a business user into the IT infrastructure events that lay at the heart of the problem. The end result is greater business alignment—which is the goal of every CIO attempting to transform IT into a strategic business partner.

Proactive service impact analysis

With an accurate service dependency map, IT is able to understand the impact of infrastructure events on higher level services. IT staff members working at the lowest levels of the infrastructure can proactively trace the ramifications of an event, notify the relevant parties and take rapid action to rectify the situation—or, equally importantly, notify no one, and raise no service desk ticket when the event impacts no services!

The ability to proactively analyze service impact rounds out your problem resolution capabilities—delivering a range of advantages. IT, for example, is better able to prioritize events based on real and potential impact, thus minimizing risk to the business. IT also has a better understanding of when to raise incident tickets and how to characterize their urgency. Based on impact analysis, IT might raise a high priority ticket for events that have an immediate impact on critical services while raising a lower priority ticket for issues of slower but chronic service degradation that nevertheless need to be addressed to maintain service performance. When a ticket is raised, furthermore, it can be populated with important contextual information such as the name of the impacted service and the estimated fix time. This then allows the service desk to inform business users or customers of when to expect service resumption so that they can chart a course of action based on the latest available information.

Customer experience monitoring

Effective BSM also requires the ability to more proactively manage service performance levels. Let's say that the business wants to promote fast online check in as a competitive differentiator to the business traveler market. To support this business strategy, IT should be able to constantly monitor the customer experience, measuring the speed with which it takes customers to check in using the online service. When the average falls below an acceptable range, IT can step in to investigate the issue and make the required modifications. The airline in our example would monitor the online check-in process, the ticket purchase process and the lost baggage claim process to ensure that in cases of performance problems IT identifies and resolves the problem before customers ever take notice.

Problem isolation with intelligent drill-down

According to Ziff Davis (IT Management Solutions Study, March 2007), 60 percent of service outage problems require the involvement of at least ten different people in the organization. The basic problem is that help-desk agents often don't know where to send the ticket, a problem known as allocation churn. With a description of the service behavior described in business terms and the ability to intelligently drill down to the root of the problem, agents can significantly reduce allocation churn and get the ticket to the right group faster. In our online check-in example, support staff can follow the service dependency hierarchy to see that a given service uses a particular application server that keeps timing out. They can also see the status of the network segments, paths and devices that

the service depends on and quickly identify network performance issues. A service desk ticket can then be sent out to the IT team responsible for that network device, which can respond with an estimated time to repair that will be posted online so that customers can make decisions about whether to wait for the resumption of service or dart for the airport.

Better problem allocation and more context for domain groups

To solve problems more efficiently and maintain service quality at acceptable levels, groups within IT need to better align and improve visibility regarding the information and activities of one another. Imagine every problem as moving through a production line where various groups come into play at different stages to achieve the common objective of producing healthy services. BSM helps to verify that each group at each stage has the information they need to solve the problem efficiently and effectively. When a problem is reported to the help desk, for example, the agent can access the BSM health monitoring system to enrich the ticket with relevant information that can help pinpoint exactly to which group it should be allocated. The domain group that receives the ticket then has the same visibility and access to research relevant issues: Is this the first time the problem has occurred? Are we the first group to touch it? How long has the ticket been open? What are the impacted services? With answers to such questions, the troubleshooting starts at a much higher plane than previously possible—and the problem can be solved that much faster.

Flow-based views to better manage transactions

Another important capability for successful business service management is to have both hierarchical and flow-based views of running services. The hierarchical view is critical because it provides a visual representation of the dependencies for each service down to a granular level of detail. For example, a given service may depend on a specific application that runs on a specific application server and accesses a specific database that exists in a specific building housing part of your data center. This is all important information when it comes to managing change and isolating the problems that emerge as a result of it.

Equally important, however, is a flow-based view of processes. This is especially true for financial services, telecommunications and other industries where transactions are the business. Such a view tells you exactly where you are in a given process and intersects with the hierarchical view to help you drill down to the root event when the process comes to a halt. Organizations making high value payments, for example, will want to know exactly where the process broke down before deciding how to proceed. The flow-based view can help you make these determinations and support decisions based on them.

Service health visualization

Another important capability supported by effective BSM is the ability to visualize service health and provide feedback to key groups. Let's return to the example of our traders buying aircraft fuel. This group is likely to be concerned with a handful of critical services that might include a trading service for buying aircraft fuel, a treasury service for viewing and managing available funds, and a pricing service for calculating current fuel prices. For all these services, the trading group would appreciate up-to-date information regarding service health. If any of the services degrade beyond acceptable levels, the group can take action accordingly as detailed earlier. 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 traders preparing to execute a multi-million dollar transaction—and for nearly any other group that needs to perform well—this is critical information that contributes significantly to the overall success of the business.

Automatic problem resolution

With infrastructure-wide visibility of IT events and service dependency mapping that makes sense of these events in business terms, IT is now in the position to automate problem identification and resolution. This brings us into an area known as run book automation. Throughout the typical IT organization, staff members spend significant time executing highly structured tasks described in run books. In a highly complex, siloed IT infrastructure characterized by distinct domains and manual points of integration, run book automation is virtually impossible because IT can't get an holistic view of the cause of the problem. Without a clear view of the cause of a problem, automated actions can't be used—they may be "automatically correcting" the wrong problem! Only highly trained domain experts have the detailed knowledge to work through this complexity. With a rationalized IT infrastructure, however, run book procedures become perfect candidates for automation. This can help you significantly reduce the administrative burdens on IT so that you dedicate domain experts to higher value activities.

HP Software for BSM

No other vendor provides a more comprehensive portfolio of solutions to support all aspects of your BSM-related 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'll 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.

Supported capabilities include:

- **Consolidated event management**—with a single event console that rationalizes monitoring across the entire infrastructure. This helps you clean up a noisy 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.
- **Service impact analysis**—with automated service discovery 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.
- **Total user experience monitoring**—with visibility into the end user experience as well as back-office processes. This empowers you to be more proactive in addressing events before they cause disruptions and alleviates the potential relationship-destroying problems that occur when you use your customers as monitoring devices.
- **Guided problem resolution**—with abilities 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.

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- **Multiple views**—with the ability to support the needs of widely varying constituencies from low-level technical groups to business operations managers to end-users and customers. This enables you to communicate service health and relevant repair time information to the impacted constituencies.
 - **Business transaction management**—this 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.
 - **Two-way integration with service desks**—with improved visibility so that help-desk agents can gain insight into the problem and domain troubleshooters can better understand the background and context. This enables you to reduce allocation churn, resolve problems faster and improve your abilities to model and monitor service level agreements (SLAs) that include both performance and availability of services.

Find out more

To learn more about how HP Software can help you transform IT into a strategic business partner with help of BSM, contact your HP representative today or visit us online at www.hp.com/go/software.

To learn more, visit www.hp.com

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