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## Measuring Success:

A Case Study About Implementing Business Service Management and ITIL at BMC Software

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## Abstract

The BMC Software IT staff faced the challenge of improving IT service delivery in a rapidly changing business environment, without increasing costs, a challenge faced by many similar IT organizations. To address the challenge, the BMC Software Service Management Team embarked on a journey to implement Business Service Management (BSM) strategies — a means of more closely aligning the IT infrastructure with the business operations it supports. Along the way, the team discovered the need to establish a success measurement approach to determine what represents a successful BSM implementation.

This paper documents the BSM implementation approach taken and the metrics and measurements ultimately derived that may help other organizations facing similar challenges.

Results included:

- > Identified 46 key business processes in the customer support, sales, and finance business areas and aligned them with more than 100 IT systems
- > Identified five key measures of success and obtained data to evaluate these measurements
- > Identified key “gaps” in proactive application monitoring and increased the number of effectively monitored applications by more than 50 percent
- > Improved communication to the business community, enabling more than 98 percent of all service disruptions to be communicated to the business in a timely manner
- > Improved service and increased the value of IT services without increasing the cost of delivery

## Introduction – The First Step

As with most companies, BMC Software had become highly dependent on the services provided by its IT organization. The IT organization needed to deliver these services with the high level of availability and performance required by business users, while containing the costs of IT. To address these challenges, BMC Software's IT Service Management Team (IT team) launched an initiative in early 2003 to more closely align the IT processes and technology with the business requirements and objectives and help reduce costs.

As a first step, the IT team held meetings with business executives to identify any IT service problems they were experiencing. The executives indicated they had no major issues or concerns with the levels of service, at that time. In the absence of specific business service issues, IT worked from an internal perspective, to increase the overall value of IT services while decreasing the costs of service delivery.

The primary goals of this initial effort included:

- > Establishing a configuration management database (CMDB) to reduce the reliance on the "corporate memory" of exactly what information is stored in the data center
- > Reducing the over-management of services by understanding their business impact and priority
- > Increasing service availability by identifying "gaps" in monitoring coverage

The team focused on configuration and change management to achieve these goals and lay the foundation for future service improvement activities. The team initially leveraged tools developed and deployed by BMC Software, such as BMC® Performance Manager and PATROL® Enterprise Manager. By December 2003, the team had redefined the change management process and deployed BMC® Remedy Asset Management and BMC® Remedy Change Management to improve the management and tracking of changes to the IT infrastructure. Deploying Remedy Asset Management enabled IT to begin building a CMDB and IT service model. During this timeframe IT also deployed BMC® Service Impact Manager to provide real-time, visual insight into the service model and the impact of the IT infrastructure on the business.

As a result of this initial effort, the IT team identified 46 key business processes in the Customer Support, Sales, and Finance business units. These 46 key processes were then aligned with more than 100 IT systems. This information allowed IT to more effectively understand the impact on the business of changes to the infrastructure.

## Refocusing to Address Issues in a Changing Business Environment

Significant changes were occurring in the business environment. BMC Software had acquired other companies, driving the need for IT to support additional users and applications. Additionally, the company had to achieve and maintain compliance with new government mandates, such as Sarbanes-Oxley, putting additional pressure on the staff. As is so often the case with many companies, IT had to meet these increasing demands without adding headcount. In the summer of 2004, the IT team realized that a gap was growing between the service-level expectations of the business and the levels of service being delivered by IT. Although substantial progress had been made in building a service model and refining the IT configuration and change management processes, very little of this progress was visible to the business community.

As a result, the perception of some business executives was that IT was not sensitive enough to their business needs and did not fully understand how these executives measured success.

To address this issue, IT took a step back from the pursuit of its original objective and began to look at IT service from the business executives' perspective. This required a switch in vantage point from an operational perspective — looking at internal IT assets and processes — to looking at service delivery from the end user viewpoint. For example, to gauge performance, end users do not typically look at the processing speeds of application servers, the transaction rates of database servers, or the write speeds of disk drives. Rather, they assess performance by discerning how long it takes them to perform a business function end-to-end, such as inputting a new sales order or creating a new customer support case.

To focus on business concerns from the end user viewpoint, IT re-interviewed the originally polled executives to determine their satisfaction with the current levels of IT service. Based on these interviews, IT discovered that there was indeed an overall request for "improved service." More specifically, the business executives identified the following five key requirements as criteria for "improved service."

Five key requirements for improved service:

- > Improved availability of critical systems
- > Improved performance of critical systems
- > A better end-user experience as it relates to service desk interaction
- > Better communication concerning service incidents
- > Improved incident response

Achieving success in these five key areas would be directly visible to the business; however, IT realized that it would need to refine its key IT processes, in addition to deploying new technology. BMC Software had adopted the IT Infrastructure Library (ITIL®) model, which provides a framework for best practices in service management. In addition to the work previously done in the configuration and change management process areas, IT reviewed and refined the ITIL function and processes that would most directly impact the newly identified key requirements for improved service. Those processes identified are:

- > Incident management
- > Problem management
- > Availability management
- > Service desk

Refining these processes and leveraging the service model would allow IT to ensure that the resulting processes would be effective in delivering service more closely aligned with business needs and expectations.

## Establishing the Metrics and Measurement Approach

After identifying the process areas and establishing the goal of improved service, the IT staff then established objective metrics to measure progress in each of the five key requirements for improved service. For each requirement, the team identified an objective measure of success and identified the factors that contributed to the success of that requirement. For example, in the requirement for improved availability, the objective measures were:

- > The availability percentages of the key business systems at key business locations
- > The total number of business system outages during a given reporting period

Internal IT factors that contribute to improved availability include:

- > Level of availability of the underlying system architecture
- > Number of required components being proactively monitored for trends prior to service outages
- > Number of errors and incidents that occur during planned work (i.e., change and service requests)
- > Stability of the systems (i.e., number of change requests)
- > Mean time to repair (MTTR) a system in the event of an outage

The matrix in the Appendix section of this paper contains the full set of metrics identified by the team.

## Service Improvement Program

Armed with a clear mandate from the business and a means of objectively measuring success, IT launched a Service Improvement Program to address the issues raised by the executives. On a weekly basis, staff from key IT disciplines (networking, applications, servers, etc.) come together to review the service levels from the previous week and identify the actions to take to address any service deficiencies. Additionally, the IT team has begun collecting and reporting on the success measures and contributing factors.

As a result of these efforts, IT has:

- > Identified key “gaps” in proactive application monitoring and increased the number of effectively monitored applications by more than 50 percent
- > Improved communication to the business community, enabling more than 98 percent of all service disruptions to be communicated to the business in a timely manner

Additionally, through process improvements in incident management, IT is laying the foundation to improve its problem management and availability processes.

## Conclusion

BMC Software’s business users have begun to notice and comment on the improved service in several of the five key areas identified as requirements for improved service. Going forward, the IT staff will continue to use the service improvement metrics to establish a baseline service level that can be used to identify areas of focus for continued improvement.

As a result of their BSM implementation efforts, the IT team gained some valuable insight that companies should consider when launching their own BSM initiatives:

- > Understand the business problem you are trying to solve: Ultimately, IT exists to enable and add value to the business. Therefore, it is imperative to understand what the business needs from IT to be successful.
- > Begin with the end in mind: IT departments need to understand what represents “end-game” success, from a business perspective, keeping in mind that each business executive will have a different measure of success.
- > Determine service level targets: Once objective measures of success have been identified, IT should establish a baseline and then set service level goals in conjunction with the business.
- > Recognize that implementing tools and technologies is easy; managing people and processes to support service management can be more challenging: IT departments should not underestimate the amount of organization and process change management that may need to occur in

order to successfully implement BSM. New roles, such as that of a service model analyst, may need to be created and new emphasis on existing processes may need to be placed.

Ultimately, the BMC Software IT staff is targeting 100 percent success in meeting or exceeding its agreed-upon service levels. Via its BSM implementation, IT wants to develop a "dial-tone" level of confidence in business users; that is, users should have the same level of confidence when logging into their workstations as when picking up their telephone handsets. When this happens, business service dashboards should become unnecessary. Business users will not feel the need to continually monitor the availability and performance of their business services. They will simply always know that the services will be there when and where they need them.

See the Appendix section of this paper for an overview of the various goals discussed in this report, characteristics of these goals, objective measures, measurement approaches, and contributing factors to the success of these goals.

## Appendix: IT Service Improvement Program Success Metrics

### Goal: Improved availability

Goal characteristics based on user feedback:

Better availability of critical systems

Objective measures:

Availability of key systems and number of outages

Measurement approach:

Synthetic transactions against target systems from target locations; manual count of outages based on after-the-fact research

Contributing Factors	Objective Measures	Measurement Approach
Level of availability of the underlying system architecture	Number of single points of failure	Work with the application infrastructure team to identify high-availability systems
Quantity of required components that are being proactively monitored for trends, prior to service outages	Percentage of critical business systems currently monitored by the IT team Number of outages avoided through proactive notification Number of times automated actions were able to negate an outage	Critical systems: Information on systems being monitored can be obtained from PATROL Enterprise Manager Avoided outages: Subjective assessment of available outage information by the IT team Negated outages: Manual count of service restarts
Planned work/human error (i.e., administrative)	Number of planned changes and human errors resulting in unplanned outages	Subjective assessment of available outage information by the IT team
Stability of system (i.e., number of changes)	Number of changes	Count from BMC Remedy Change Management
How quickly a system can be recovered	Average duration of an outage	Manual calculation based on outage data

**Table 1.** Contributing factors, objective measures, and measurement approaches to provide better availability of critical systems

**Goal: Improved Performance**

Goal characteristics based on user feedback:

Improved performance of critical systems

Objective measure:

End-user performance of key systems at key locations

Measurement approach:

End-to-end transactions executed against key systems at key locations

Contributing Factors	Objective Measures	Measurement Approach
Proper sizing of underlying infrastructure	System utilization, I/O metrics, and available memory stats, plus additional key performance indicators as identified or selected	Analysis of BMC Performance Manager data
Number of concurrent users on key systems	Number of concurrent users by date/time  Evaluate percentage of increase during peak or key periods	BMC Performance Manager and application APIs
Volume of data in key systems	Measurement of database sizes  Percentage of increase over time	Analysis of BMC Performance Manager data  Export data for analysis and trending (Microsoft Excel and Access applications)
Usability of key systems (number of screens/clicks)	Ratio of system response to end-to-end response (this is subjective, based on user perception and type of user)	Analysis of BMC Performance Manager versus end-to-end response time data  User feedback gathered via surveys, interviews, focus groups, etc.
Key system response time at key locations	Actual system response time from click of "enter" key for key transactions	Analysis of end-user response time data, BMC Performance Manger, and application APIs  Validate that transactions that are currently measured are representative of the "average" end user
Proactive monitoring of system resources	Percentage of critical business systems currently monitored by the IT team  Number of performance incidents avoided through proactive notification  Number of times automated actions were able to negate a performance incident	Critical systems: Information on systems being monitored can be obtained from PATROL Enterprise Manager  Avoided outages: Subjective assessment of available outage information by the IT team  Negated outages: Manual count of service restarts

**Table 2.** Contributing factors, objective measures, and measurement approaches for improved performance of critical systems

**Goal: Improved service desk experience**

Goal characteristics based on user feedback:  
 Better end-user experience related to service desk interactions

Objective measure:  
 User satisfaction

Measurement approach:  
 Satisfaction survey

Contributing Factors	Objective Measures	Measurement Approach
Timeliness of response/resolution	Percentage response within SLA Percentage resolution within SLA Percentage first-level resolution of tickets	Manual review of help desk data
Quality of response/resolution (i.e., was the problem actually fixed)	Percentage decrease in reopened tickets Degree of end-user satisfaction with resolution	Manual review of help desk data and selected customer surveys
Quality of interaction and communication	Degree of end-user and business-unit-management satisfaction with interaction/communication efforts	Selected customer surveys
Quality and uniqueness of resolution documentation	Percentage of reused resolution documentation	Future measurement objective

**Table 3.** Contributing factors, objective measures, and measurement approaches for better end-user experience related to service desk interactions

**Goal: Improved incident communication**

Goal characteristics based on user feedback:

Better communication about service incidents

Objective measure:

End-user satisfaction

Measurement approach:

Satisfaction survey

Contributing Factors	Objective Measures	Measurement Approach
Timeliness of communication during incident (e.g., communication of outage, when the system can be expected to again be available, etc.)	Increased utilization: Percentage of incidents or outages where alert system/global outage list is utilized  Time lapse of communication: Initial incident/outage report time versus posting time of the alerts, issuance of user email, etc.	Review global outage list and intranet alerts versus known outages
Thoroughness of communication during the outage (e.g., what is being done, what decisions need to be made)	Subjective	Subjective assessment by the IT team of posted alerts, emails distributed to the user groups, etc. (who, what, when of the incident should be communicated)
Timeliness and thoroughness of communication after the outage (e.g., what was done to resolve, what was done to remediate)	Compliance with defined communication timelines	Assessment of actual communication timeline versus objective. Subjective assessment by the IT team of posted alerts, emails distributed to the user groups, etc. (who, what, when of the incident should be communicated)

**Table 4.** Contributing factors, objective measures, and measurement approaches for better communication about service incidents

**Goal: Improved incident/problem management process**

Goal characteristics based on user feedback:  
 Improved incident response/problem management

Objective measure:  
 Average duration of outage

Measurement approach:  
 Manual calculation based on outage data

Contributing Factors	Objective Measures	Measurement Approach
Timeliness of event notification	Percentage of outages identified by the IT team prior to user notification	Outages identified by IT team: Continue with current measurement method
Group/administrator response/resolution time	Percentage of IT group response within SLA	Response/resolution compliance: Continue current IT team processes, but update IT employee and organizational information in the program
	Percentage of IT employee response within SLA	
	Percentage of IT group resolution within SLA	
	Percentage of IT employee resolution within SLA	

**Table 5.** Contributing factors, objective measures, and measurement approaches for improved incident response/problem management



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## About BMC Software

BMC Software helps IT organizations drive greater business value through better management of technology. Our industry-leading Business Service Management solutions ensure that everything IT does is prioritized according to business impact, so IT can proactively address business requirements to lower costs, drive revenue and mitigate risk. BMC solutions share BMC Atrium™ technologies to enable IT to manage across the complexity of diverse systems and processes — from mainframe to distributed, databases to applications, service to security. Founded in 1980, BMC has offices worldwide and fiscal 2004 revenues of more than \$1.4 billion. BMC Software. Activate your business with the power of IT. For more information, visit [www.bmc.com](http://www.bmc.com).

