

The Right Availability and Performance Management Model: Your Recipe for Value Maturity

By David Williams, Vice President of Strategy, CTO Office, and
Leslie Minnix-Wolfe, Lead Solutions Manager, BMC Software

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EXECUTIVE SUMMARY

Have you ever heard the saying, “Anyone who can read a cookbook can cook”? That may work if the recipe is well tested and the cook has a basic knowledge of cooking terms and processes. However, culinary experts — professional chefs — have a deeper knowledge of how various factors can affect the results. This includes how the freshness of ingredients or an alteration in cooking temperature at the right time can influence the outcome of a dish. They are likely to taste-test frequently, monitoring the cooking progress and adjusting seasonings or cooking procedures accordingly. This close attention to detail is often the difference between a good meal and an excellent one.

Likewise, real-time monitoring and management plays a critical role in day-to-day IT operations, often making the difference in how well you achieve your business objectives. The effective implementation of availability and performance management tools enables organizations to understand the current state of IT, with a growing number of IT organizations using these tools to understand how well they are supporting critical business services. To this end, application performance management is considered a core subset of availability and performance management, which provides visibility into how well user and application transactions flow across the IT infrastructure in support of these business services.

Analyst firms continue to create and enhance their maturity models to help their clients understand the value of technology, as well as provide a path toward greater organizational and process maturity. New technologies, approaches, priorities, and challenges have changed how IT is, and should be, monitored. The focus has moved from monitoring faults and outages to managing performance degradation. It has also moved from a reactive approach based on mean time to repair (MTTR), to a proactive approach that uses behavioral analysis to avoid outages. In addition, there is a need to understand how end users are working with IT, and how new IT service delivery models (e.g., public and private clouds) are being used. These factors, plus a growing reliance on IT, are fueling the need for more effective ways to monitor IT applications and end-user behavior — no matter where those applications are located or how users choose to access them. For example, many users now access applications from their smartphones, tablets, televisions, laptops, and other devices.

This paper explains the shortcomings of traditional, analyst-developed IT maturity models for informing and guiding the evaluation of IT monitoring capabilities, the purchase of monitoring tools, and the creation of effective monitoring strategies. Also described are the features of effective value maturity models for meeting the challenges of new technologies and management requirements. BMC’s Availability and Performance Management Value Maturity Model, which builds upon maturity models already established by several leading analyst companies, is presented and its value levels are described. The paper then explains how the latest application performance management tools can provide insight into how IT is supporting the ever-changing needs of the business and how such tools can be integrated at multiple levels.

TRADITIONAL MODELS ARE NO LONGER ADEQUATE

IT organizations looking to evaluate their existing IT monitoring capabilities, purchase new monitoring tools, or create a monitoring strategy may find that traditional, analyst-developed IT maturity models may not provide them with sufficient information and guidance. Most maturity models assume that higher levels of value require tools with greater complexity, sophisticated architectures, tiered-tools integration, custom integration, and more services. Even though this was true when IT used element-based monitoring, it isn’t the case when using the latest availability and performance management and behavior learning tools.

Traditional maturity models assume that availability and performance management tools must be integrated into a hierarchy to attain a *high-level* view of the IT infrastructure (see figure 1). The assumption is that tools at the lower levels are less sophisticated and costly than those at the higher levels, and that IT teams must reorganize and change their processes to gain a view of higher-level value. Fortunately, significant innovations have been made to meet the availability and performance management needs of IT organizations seeking to support the business without the complexity and costs associated with traditional tools developed for monitoring clients and servers.

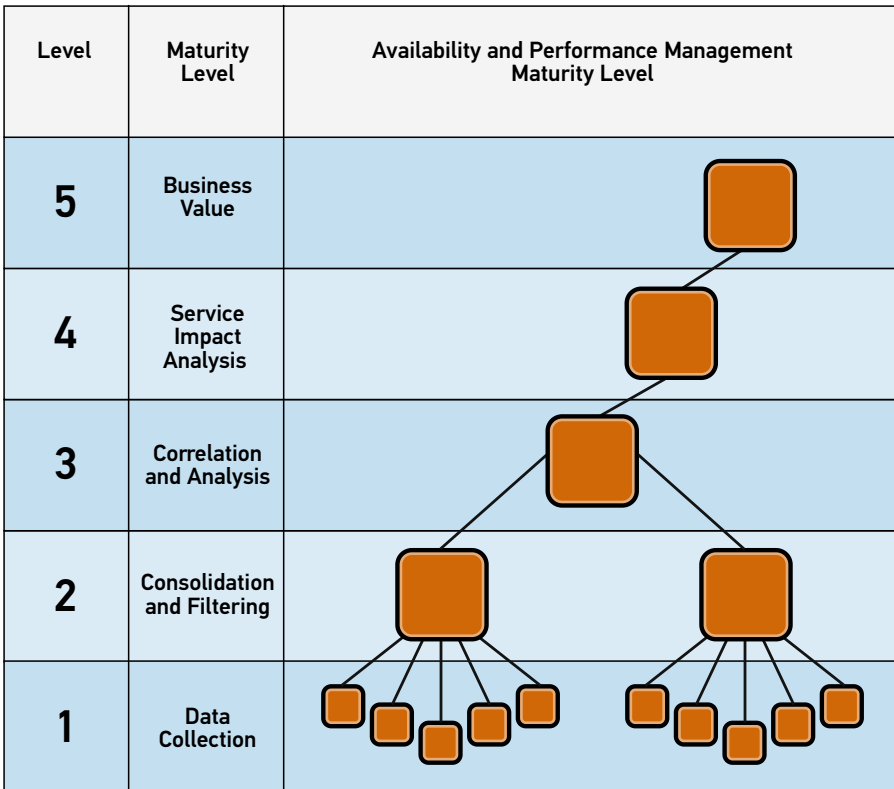


Figure 1. Traditional Availability and Performance Management Maturity Model Alignment

The traditional approach to climbing through the availability and performance management value maturity levels is to use a multitude of element monitoring tools to collect data, and then pass that data to a stack of other tools that integrate, filter, rationalize, correlate, normalize, associate, and group it until a service view is created. This bottom-up approach mandates product/tool integration to obtain a business view. Once the architecture is created, the approach requires constant maintenance to ensure policy is set at all levels in line with constant IT infrastructure changes.

The emergence of highly virtualized and dynamic IT infrastructures, business-driven IT decisions, and service-oriented approaches (e.g., private clouds) — coupled with the need to optimize resource usage — has made this traditional approach impractical. Today, IT operations demand better ways to evaluate their IT monitoring and management requirements, tools capabilities, needs assessment, integration points, and gaps analysis.

NEW CHALLENGES DEMAND NEW MODELS

The most effective value maturity model should leverage level numbering from published maturity models, updating the level descriptions to reflect new technology and management requirements. It should enable you to answer the following questions:

- » What types of tools are available?
- » What coverage can these tools provide?
- » How far can these tools take you?
- » What value should you expect?
- » Where does value start for each product type? Where does it stop?
- » When should integration be considered?
- » Where can integration occur?
- » Where are the gaps?

The model should also provide insight into how to address the business-driven needs of today's IT organization, and when and why new approaches and tools are required.

BMC'S AVAILABILITY AND PERFORMANCE MANAGEMENT VALUE MATURITY MODEL

The BMC Availability and Performance Management Value Maturity Model leverages maturity models already established by several leading analyst companies. The maturity levels go from the lowest maturity level of 1 (data sources) to the highest maturity level of 5 (business value). (See figure 2.)

LEVEL	MATURITY LEVEL	TOOLS ALIGNED TO LEVEL
1	Data Collection	Basic fault monitors [static policy, Simple Network Management Protocol (SNMP)] are used for IT element monitoring.
2	Consolidation and Filtering	Up/down status events are detected, consolidated, filtered, and logged by the following tools: log file managers, search tools, fault monitoring products, basic performance monitoring, and synthetic transaction monitors.
3	Correlation and Analysis	Manager of managers event consolidators and availability and performance management tools are used to monitor end-to-end application transactions and the end-user experience.
4	Service Impact Analysis	Service impact management tools are integrated with configuration management databases, discovery, and mapping tools to show how events directly impact customer-facing, business-oriented IT services, as well as enable drill-down to root causes of problems. Performance tools are integrated with capacity management products.
5	Business Value	Integrated event and performance tools provide decision-making logic to support the dynamic, elastic run-time infrastructure (RTI) enabling dynamic allocation of resources, changing configurations, and provisioning the infrastructure.

Figure 2. BMC Availability and Performance Management Value Maturity Model

Due to recent innovations and changing IT needs, BMC's value maturity model differs from traditional maturity models in that the value of a tool can span across value levels (e.g., a tool providing Level 1 value can extend all the way to Level 4). Accordingly, there is less need to show a hierarchy of tools to achieve higher-level value. Moreover, traditional maturity models assume that higher-level values can be attained only when implemented by a mature, business-focused, collaborative IT organization. This model shows that tools can provide visibility into how applications are being supported by the business, without requiring changes in the complexity and organization of the tools hierarchy.

A CLOSER LOOK AT VALUE LEVELS

Each level has a set of attributes describing the value expected. A higher-level value does not necessarily correspond to the cost or complexity of the tools.

LEVEL 1. DATA COLLECTION

Tools collect data on the IT infrastructure in several ways, including constant, synchronous collection; a timed snapshot; or reactive collection once a policy is broken. The data collected include faults, performance, or general events. This level provides the first step to understanding whether critical components are up, down, or experiencing performance issues.

LEVEL 2. CONSOLIDATION AND FILTERING

At this level, the tools consolidate data from Level 1 collectors, filtering to remove and/or combine duplicate data to identify a root cause. If multiple repetitive events are received for the same fault on the same element, then duplicate events are automatically removed. Events are loosely integrated with help desk tools to aid in the event remediation process.

LEVEL 3. CORRELATION AND ANALYSIS

Tools at this level can accept and process data from their own sources and from multiple other sources. Data can be integrated either at a basic, superficial level, using such mechanisms as Simple Network Management Protocol (SNMP), or at a deeper level, providing better contextual information through custom adapters and APIs. Dynamic event thresholds are included both in event management and in availability and performance management tools to suppress extraneous data. Events are correlated to add content and context. Predictive behavior capabilities are used to provide proactive alerts with the goal of avoiding potential user-impacting outages or performance issues.

LEVEL 4. SERVICE IMPACT ANALYSIS

Tools at this level provide an understanding of how the IT infrastructure impacts applications and IT services by providing a customer-facing, business-oriented, services view of the IT environment. Element and transactional data are associated to provide an accurate, end-to-end view of service and user impact. Monitoring policy and service mapping is dynamic, adjusting automatically to business use. Basic automation is used for automatic remediation.

LEVEL 5. BUSINESS VALUE

Tools at Level 5 enable the IT infrastructure to be altered dynamically, in line with the real-time needs of the business. Embedded application knowledge, advanced correlation, application usage, behavioral analysis and integrated IT and business data are collected from sources, such as business activity monitors, to provide IT operations with the ability to manage the IT infrastructure in line with business policy. Business data are associated with element and transactional data to provide visibility into business impact. Potential issues are identified, analyzed, and automatically remediated. Upon a business requiring increased performance from a mission-critical application, Level 5 tools provide the information required to reallocate or add IT resources, while automatically adjusting policy to monitor the new IT environment.

WHAT'S NEW ABOUT APPLICATION PERFORMANCE MANAGEMENT AND BEHAVIOR LEARNING TOOLS?

The latest application performance management tools provide insight into how IT is supporting the fluctuating needs of the business. Gaining an application-centric view does not require elaborate, tiered integrations and architectures, nor does it necessitate long and expensive deployments requiring highly skilled personnel. It also does not require IT organizations to force collaboration among different support teams. Rather, the latest application performance management tools can take an IT operations organization from Level 1 all the way to Level 4 by monitoring application transactions flowing across the IT and application infrastructures. This approach results in IT organizations gaining an understanding of overall IT services health. When an issue is identified, the IT expert can use a domain-focused availability and performance management tool to provide greater detail and analysis.

Constant IT infrastructure change has made the task of understanding the true state of IT very difficult, as all the lower-level value tools may provide different views of an issue. In addition, Level 1 and 2 element monitors and Level 3 event correlation and analysis tools are reactive, driving IT operations to respond to problems already impacting users and the business. Element performance tools can anticipate a potential issue based on trending data. However, the issue will be specific to an element type, not the potential impact on a service. Using key performance indicators (KPIs), behavior learning tools can consolidate data from different sources (such as a transaction), providing a dynamic understanding of both the current and future health of IT services from a single trusted source. This can be achieved without elaborate integration architectures and without requiring the IT organization to replace existing Level 1 and 2 products.

TOOLS INTEGRATION

Traditional maturity models focus on the distinct event and fault management tools needed at each level, as well as the required integration across the tiers to reach higher value levels. However, a new approach is required because newer application performance management and behavior-learning tools can span across different levels, creating no logical point where one tool type hands off to another.

However, even with tools able to span different value levels, the need to consolidate the data remains (e.g., integrating transactional data with element fault and performance data), which requires data to be integrated horizontally, not just vertically. Pulling data together across value levels requires a new type of solution — one that can integrate data from different monitoring sources (e.g., fault, search, and application performance management), and add context and overall understanding.

This is where behavior-learning tools come into play. A behavior-learning tool should consolidate the data and provide usage and behavior-related detail at all value maturity levels. This allows IT organizations to focus on any level and achieve a depth of understanding and overall maturity that cannot be accomplished in today's IT environment with traditional availability and performance management tools.

Integrating availability and performance management tools should also provide value to other IT tools in support of IT operations management processes (e.g., service provisioning, cloud management). Integration examples include bidirectional integration with configuration management databases (CMDBs) and capacity tools, as well as integration with service desks, automation tools, and service brokers.

Availability and performance management tools can be integrated at multiple levels. However, business value (e.g., decision-making data) is achievable only once the availability and performance management integration reaches the higher-value levels. It must be provided by technology that can consolidate different data types and provide predictive functions, allowing potential issues to be identified and remediated before impacting users or the business.

CLOSING THOUGHTS

Whether you are looking to update your IT organization's availability and performance management portfolio, identify gaps, or build a state-of-the-art command center, BMC's Availability and Performance Management Value Maturity Model can provide the first step toward an understanding of the tools needed to reach the various value levels. At BMC, our objective is to provide the ingredients you need — an availability and performance management portfolio, vision, and strategy — to take your IT organization to higher levels of value maturity without the costs and complexity of traditional approaches. Instead of trying to repurpose tools developed to meet yesterday's needs, we have invested in a new set of availability and performance management products focused on addressing the current market conditions, while leveraging your existing, low-level investments in availability and performance management tools.

For more information about Availability and Performance Management from BMC, visit <http://www.bmc.com/products/offering/performance-and-availability-management.html>.

ABOUT THE AUTHORS

David Williams is a vice president of Strategy in the Office of the CTO, with particular focus on availability and performance management, application performance management, IT operations automation, and management tools architectures. He has 29 years of experience in IT operations management. Williams joined BMC from Gartner, where he was research vice president, leading the research for IT process automation (run book automation), event correlation and analysis, performance monitoring, and IT operations management architectures and frameworks. His past experience also includes executive-level positions at AlterPoint (acquired by Versata) and IT Masters (acquired by BMC), and he served as vice president of Product Management and Strategy at IBM Tivoli. He also worked as a senior technologist at CA Technologies for Unicenter TNG and spent his early years in IT working in computer operations for several companies, including Bankers Trust.

Leslie Minnix-Wolfe is lead solutions manager for Proactive Operations and the Service Assurance products at BMC Software. Minnix-Wolfe has more than 25 years of diverse development and marketing experience, primarily in the IT systems management domain, with a broad base of other experience, especially in BSM and predictive analytics. She previously held product and development management positions at several high-tech start-ups, including Netuitive and Managed Objects. She holds a BS in math/computer science from the College of William and Mary.

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