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IT2020: The New Performance Management Paradigm

A WHITE PAPER

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IT2020: The New Performance Management Paradigm

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"Over the next five years, business will become so deeply embodied in technology, and the technology so deeply embedded in the business, that IT will need to be managed quite differently." [1]

Executive Summary

How is business? This question is quickly becoming the only relevant metric for IT performance. IT performance management used to be the exclusive domain of system administrators who focused solely on IT stability, with little or no understanding of business impact. Now, with multi-dimensional business models, on-demand business services for both internal and external customers, and with the pervasive use of complex Web-enabled applications, businesses are realizing that the performance and availability of their technologies are critical to their growth and competitive advantage.

Because business success is tightly fused with technology, IT costs are rising, and this trend is expected to continue. As a result, businesses are demanding that IT be more than a static resource. IT is expected to deliver business results with a measurable contribution to the organization's bottom line. These expectations are driving a new performance management paradigm as traditional methods of managing technology performance cannot ensure maximized business use, let alone drive business results.

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The change in expectations does not mean that IT can stop focusing on delivering high availability and reduced costs. All organizations expect IT management maturity, providing quality computing environments at ever-decreasing costs. What it *does mean* is that IT must build on this maturity, aligning closely with business units to fuse IT performance with business performance.

Business managers now insist on understanding how their IT performance enables their business services, and performance management teams are being challenged to demonstrate their contributions to the bottom line, customer and end-user benefits, and revenue. This amounts to a new paradigm: IT2020.

To successfully move to IT2020, organizations must embrace the BT concept in support of business service management (BSM). BSM dynamically links business-focused IT services to the underlying IT infrastructure, creating a singular BSM model. A business-focused IT service can be quite simple, or highly complex, but either way, it *must support significant business metrics* and be visible to stakeholders outside of IT. Because effective IT performance management is crucial to the success of business service initiatives, it must be BSM-based.

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Traditional methods of managing technology performance cannot ensure maximized business use, let alone drive business results.

Performance Management Today

Current performance tools already provide IT departments with excellent performance information on their platforms, systems, and applications, so why re-engineer something that works? The emergence of BT and BSM is dramatically changing the IT picture. In the recent past, IT infrastructures and business processes were essentially linear:

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"Forrester calls this new state, built on and emerging from today's IT, business technology (BT), defined as 'pervasive technology use that boosts business results'…the emergence of BT will be characterized by transformations in technology management organizations, technology use, and the technology industry" [1]

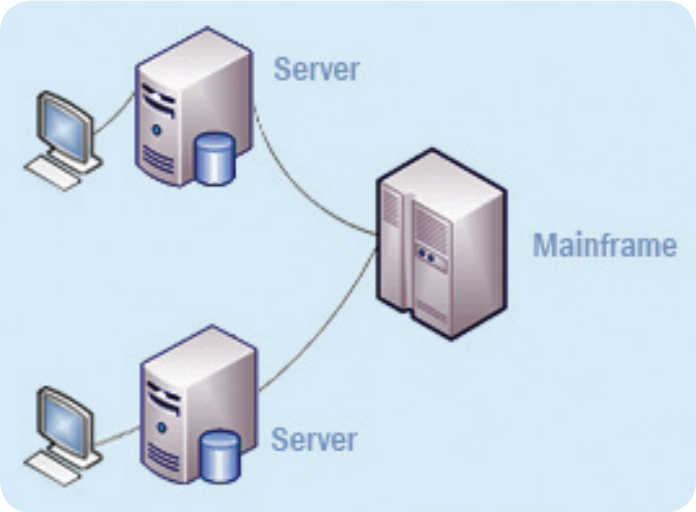

Figure A. Yesterday's IT Infrastructure

Applications were housed on single servers, and network activity was confined to internal users. Detecting, diagnosing, and correcting performance issues was fairly simple. IT managed the systems using standard performance tools, resulting in perfectly acceptable end-user service.

Now, the business/IT landscape is not as straightforward. Even a simplified IT infrastructure involves multi-threaded business processes. Applications are housed on multiple platforms, and users can be customers, partners, contractors, and employees located anywhere.

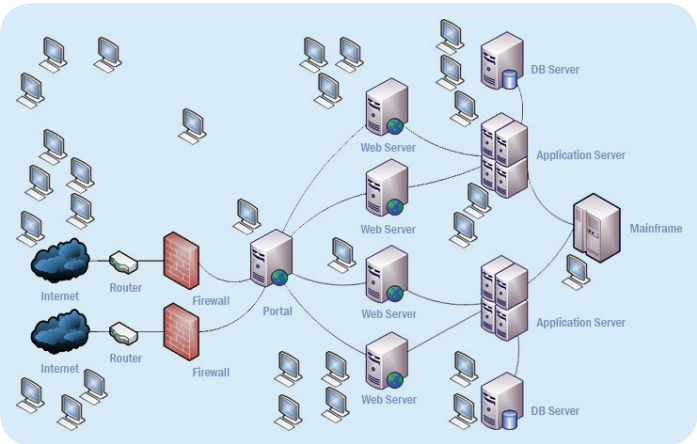

Figure B. Today's IT Infrastructure

This picture continues to expand in size and complexity. Individual performance management tools offer only limited, lagging views of the specific systems and applications they monitor.

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Even a simplified IT infrastructure involves multi-threaded business processes. Applications are housed on multiple platforms, and users can be customers, partners, contractors, and employees located anywhere.

Performance data used to make complex operational decisions comes piecemeal, or simply arrives too late. So-called "enterprise solutions" involve a complex structure of vendor products, custom applications, and middleware that produce highly technical, partially-integrated views of operations, lacking any business service framework. Too often, IT support teams do not even know that they have a business problem until someone complains, or they get a negative report on a service-level agreement (SLA). These issues persist, despite major advances in process automation and metrics management systems. It is past time for performance management to catch up with business reality.

The Need for a New Approach

Internal and external customers expect Internet-speed business services that are always available, and poor performance means lost business. The applications that support these services offer extraordinary power and flexibility; leveraging legacy systems, distributing complex applications between multiple service tiers, and integrating a wide variety of technologies. However, they can also stretch the underlying IT infrastructure to the breaking point. Typically, these applications will:

- Span servers and platforms including main-frame (z/OS) and open-systems (Linux, Windows, UNIX)
- Use Web-application server environments such as WebSphere®
- Use middle-ware and messaging technologies like MQSeries®
- Drive transactions through sub-systems like CICS and IMS
- Access multiple databases like DB2, Oracle, and SQL Server
- Rely heavily on the back-bone of networks like TCPIP and VTAM to support the connectivity and flow of information between the systems, platforms, and components
- Support unpredictable transaction loads and 24/7 internal and external user activity

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Detecting, diagnosing, and correcting performance issues in this complex, heterogeneous environment presents a formidable challenge. Add to that the BT model, fusing IT performance with business performance, and IT must also be able to understand impacts on business services and explain it all in simple terms that business managers and users can understand.

The Paradigm Shift: BSM-Based Performance Management

Although most businesses recognize their reliance on technology, growth initiatives often fail to deliver on expectations because they have not adequately considered technology's impact on business results. The typical business model fully anticipates business objectives, revenue projections, human resources, and initial technology investments, but it often fails to factor in the impact of day-to-day IT performance. Fully exposing and adequately correlating the performance layer between a strategic objective and its execution gives both business and IT teams the missing link to ensure strategic success.

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"While pressure to control costs and maintain operational efficiency is still a priority for businesses of every size and across every industry, most are reporting a renewed emphasis on top-line growth."[2]

Exposure and correlation are the crucial capabilities missing from today's performance management paradigm. Developing a performance management strategy based on BSM delivers these capabilities. IT performance must be logically exposed to the business users and directly correlated to their business transactions. Likewise, business services must be exposed to IT support teams and correlated to their supporting technologies. By linking specific business processes to underlying technology performance down to the transaction level, business managers are able to keep track of the business' health in real-time and make fast, well-informed decisions. Simultaneously, IT teams can see how performance is affecting the business, do immediate root-cause analysis, and resolve issues before they become real problems.

Comprehensive performance trending and analysis is an increasingly important IT2020 capability made possible through BSM-based performance management. Effective SLA management

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Comprehensive trending and analysis provides a holistic, quantitative approach to predictive business service performance management.

alone demands trending data collection and analysis. SLAs define the standard that IT performance must meet every day. But with the complex and seemingly erratic nature of day-to-day business usage, simply managing SLA performance in real-time will permanently keep IT teams in a reactive state; preventing the proactive IT management that businesses expect. Real-time-only performance management is also insufficient to support the IT "profit support center" model that enables business innovation. Comprehensive trending and analysis provides a holistic, quantitative approach to predictive business service performance management. Compiling seemingly random capacity problems reveals clear and predictable bottlenecks. Seemingly erratic end-user issues become patterns clearly linked to a specific device or application with cascading performance impact. Viewing "moving performance averages" of the business service infrastructure as a whole enables IT managers to focus on strategic business optimization rather than individual technology efficiency.

Unified Performance Management Dashboards

To achieve these results, BSM-based IT performance management must employ unified management dashboards. Some performance dashboards already exist as part of standard enterprise reporting tools, but they are typically narrow in reporting scope, providing specific IT information tailored to a single audience. The result is piecemeal, silo-based reporting that cannot provide a single, comprehensive view of the health of the business. Unified management dashboards incorporate BSM-based performance management criteria, ensuring that all critical business service information is shared vertically and horizontally throughout the organization. Business managers get a straightforward view of their critical services, enabling them to quickly identify a service that is not meeting customer needs or performing to agreed-upon SLAs and take immediate action. IT managers can quickly identify issues, drill down through supporting technologies and platforms, find the root cause, and resolve the issues as they arise. When all stakeholders share the same view of business service performance and health, the net result is organizational alignment that guarantees business success.

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The Features and Benefits of BSM-Based IT Performance Management

Features	Benefits
Linking business services directly to supporting applications and underlying infrastructure	Fuses IT and business strategies, driving the "How is business?" metric throughout the organization
Collecting, aggregating, and reporting information on complex business services, processes, events, and ongoing operations in real-time	Enables IT to clearly justify HR and infrastructure budgets
Identifying and monitoring critical path IT components (hardware and software) and correlating them to business-relevant SLAs	Focuses IT resources on business-critical activities and ensures that agreed-upon SLAs are met or exceeded
Monitoring and reporting on end-user activity and response time in real-time	Enhances the end-user experience, customer retention, and employee satisfaction
Maintaining all critical data to enable ad-hoc and structured trend analysis	Enables effective IT capacity planning and predictive business modeling based on comprehensive historical data
Simultaneously alerting business managers, users, and IT teams of issues so that all stakeholders proactively respond to the same information	Enables timely and proactive business decisions through improved operational efficiency, resulting in increased business agility
Enabling immediate root-cause analysis to solve business service issues as they occur	Addresses performance issues before they seriously impact business
Tying all of this together and delivering it in a manner that is easy to understand and has value to all stakeholders	Contributes measurably to the bottom line, driving growth and competitive advantage

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Unified management dashboards ensure that all critical business service information is shared vertically and horizontally throughout the organization.

Unified IT performance management dashboards deliver real-time data on performance metrics for business services and the supporting IT infrastructure through concise, clear, and intuitive display mechanisms such as gauges, charts, and tables. They present a wide number of separate, but related metrics in a single, consolidated, easy-to-understand view. Complex business services can be logically summarized and understood by all stakeholders.

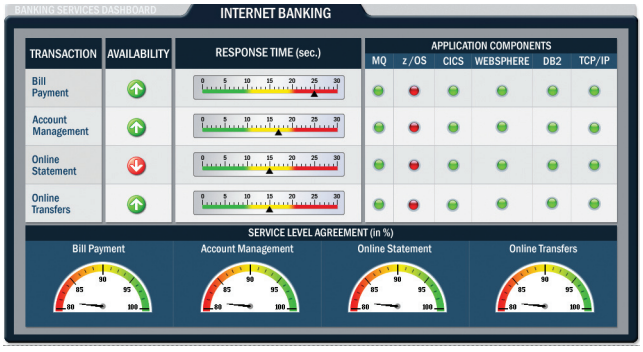

Figure C. Internet Banking Dashboard

In Figure C, the entire Internet Banking business is exposed as a set of unique business services and correlated from end-user (Transaction, Availability, and Response Time) through supporting infrastructure (Application Components and SLA metrics). Results are presented in a single dashboard that is available to business and IT managers simultaneously.

To deliver maximum value, dashboards like this also provide unified and comprehensive drill-down capabilities. Rather than accessing disparate technology data randomly and correlating it manually, IT performance information is aggregated into a single, centralized access point. All problem diagnosis, corrective action, trend analysis, and capacity planning is centrally managed through the same dashboard.

From this dashboard:

- Business managers can quickly see the availability and health of the business services (bill payment, account management, online statement, online transfers) and use the Availability status indicators to drill-down and see what is impacting a specific business service.
- Business and IT managers can monitor end-user response time and quality of service tied directly to SLAs.
- IT managers can easily see which IT components are used by each business service, and how performance issues in a specific component impact that service. They can use the dashboard to drill-down directly into that component to pinpoint the issue and correct the problem.

There is a direct correlation between the IT infrastructure and the quality of services based upon defined SLAs. BSM-based IT performance management collapses organizational boundaries, continuously synchronizing technology performance management resources with business demands. This synchronous model provides immediate business and operational intelligence, making IT more adaptable to change, and better able to accommodate immediate user needs and fluid business requirements.

Availability and SLA data is based on the business services being used and how those services are distributed across various components within the IT infrastructure. Illustrated in Figure D, business managers can drill down to a graphical representation of the systems and applications supporting that service and identify the specific source of the issue.

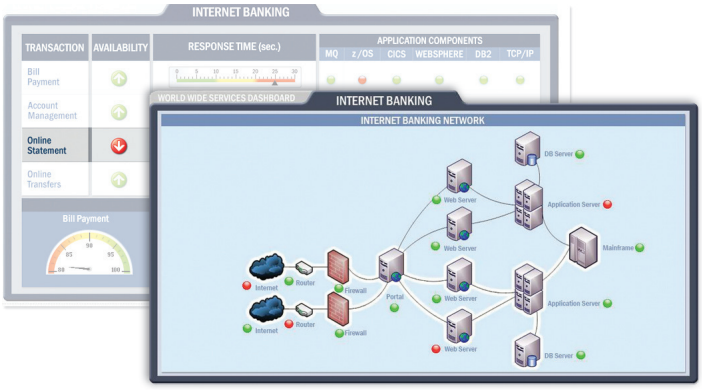

Figure D. Internet Banking Network View

From the same Internet Banking Network component screen viewed by the business manager, the network support team can drill down further (Figure E) to show the network-connected devices (routers, PCs, firewalls, servers, etc.) that are generating alerts, and navigate directly to the specific device that is the source of the problem to pinpoint and resolve performance issues.

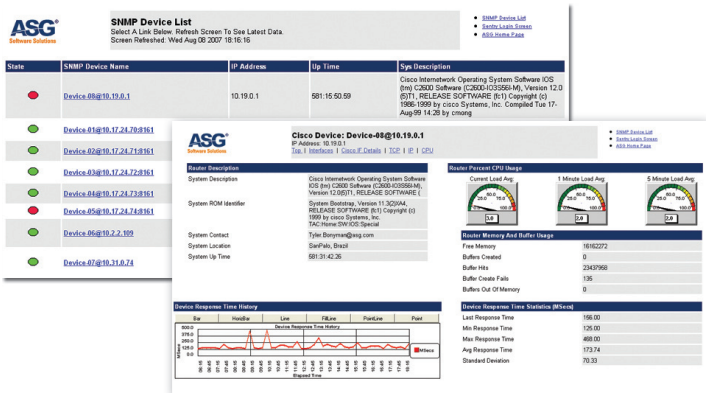

Figure E. Network Device View

Response time metrics *report on the integrity and consistency of services based on user experience* rather than individual components, as in the example below (Figure F). By providing a user-centric view of response time, IT can greatly reduce immediate time-to-resolution. Response times and availability from all service-related components can be measured, recorded, compared, and reported in a variety of analysis types and graphical formats.

Figure F. Response Time View

Through the same dashboard, IT managers can drill down to each related application component to pinpoint issues, determine what is impacting the business service, and take immediate corrective action.

By addressing IT business service performance comprehensively, through predefined key business indicators, unified performance management dashboards deliver additional benefits. For example, in Figure G, rather than identifying only the business service that is currently experiencing poor performance (online statement) and/or only the related component issue (z/OS), IT can clearly see that the z/OS system issue is impacting other business services (response time for bill payment is below standard, but not yet critical). Such integrated views enable IT to proactively maintain system performance; maximizing availability and often preventing downtime altogether. Business managers can see how business services map to the underlying infrastructure and the relationships between the systems and applications that impact the service. Gaining a clearer understanding of the actual IT structure required to deliver business services enables them to more accurately assess cost/benefit and ROI for potential new services.

Next Step: IT2020

Businesses expect IT to deliver far more than operational quality and systems management. Embracing BSM-based IT performance management not only enables CIOs and IT management to better manage current infrastructure components, it enables them to accurately forecast value-added infrastructure spending and enable innovation. IT departments embracing this model are ideally

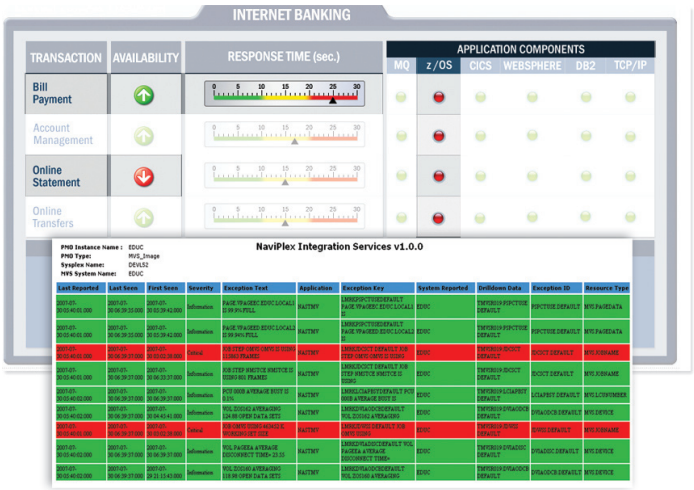

Figure G. Application Component Alert View

positioned to help craft new uses for technology investments. Innovative uses of technology can change the rules of markets, for example, the Web has had a tremendous impact on the retail and travel industries. It is no longer about thinking outside the box. Instead, BSM-based IT performance management removes the "box" altogether, fusing IT and business performance.

ASG's BSM-Based IT Performance Management Approach

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"Firms won't be able to innovate without the involvement of technology. To avoid being stuck in IT's engine room, CIOs will have to engage at the creative edge of their firms' evolution to BT."[3]

ASG fully embraces the BSM-based performance management model. The dashboards seen throughout this white paper have been developed under ASG's Business Service Platform™ (BSP) framework. The unified performance management dashboards discussed in this white paper are powered by ASG's differentiating meta configuration management database, ASG's MetaCMDB™. ASG's MetaCMDB provides the context for performance monitoring data, correlating it with information from across the organization to deliver a comprehensive view of the health of the business.

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ASG's BSP for Performance and Availability Management

ASG's BSP for Performance and Availability Management helps organizations realize the true potential of the IT systems that power the enterprise. For the first time, organizations can comprehensively monitor and manage the computing environment, from supporting systems, applications, components, and platforms, to actual end-users, through unified performance management dashboards. ASG's BSP for Performance and Availability Management follows a plug-and-play architecture, resulting in a unique, expandable solution that effectively addresses current business issues and fully enables future growth. Built on ASG's proven industry-leading technologies, ASG's BSP for Performance and Availability Management provides consolidated views of major systems' status and health. In addition, the plug-and-play architecture enables fast dashboard customization. Working dashboards can be developed in hours, rather than days, weeks, or even months. The highly flexible solution can incorporate products for any or all of the following:

Monitoring Mainframe and Web Environments

For over 25 years, ASG-TMON™ solutions have enabled IT organizations to effectively manage the performance and availability of their IBM mainframe operating systems and sub-systems. ASG-TMONs dynamically monitor every area of IBM's z/OS operating system, as well as the health and performance of CICS, DB2, IMS, VTAM, and TCP/IP running within those z/OS systems. In addition, ASG has leveraged the TMON heritage for managing other critical IT infrastructure components and systems, including WebSphere, MQSeries, and Web-based applications infrastructures. The industry-leading ASG-TMON solutions are fully integrated into ASG's BSP, ensuring that all IT components supporting critical business services are managed to maximum efficiency.

ASG-TMON monitoring products deliver the following features and benefits:

- The industry's only fully integrated, scalable CICS, DB2, and IMS performance monitors
- The industry's only z/OS TCP/IP product that monitors the entire TCP/IP network, including non-z/OS stacks and devices
- Best-in-class middleware support for IBM WebSphere MQ environments and applications
- Best-in-class Web-based application monitoring to ensure that critical Web-based business services are operating at maximum efficiency
- Simple, intelligent, cross-product navigation that provides seamless monitoring across TMON instances (go directly from CICS to DB2 to z/OS as you monitor a business transaction)
- Superior navigation and integration through ASG-NaviPlex®, providing real-time information across every partition in a Sysplex environment
- Robust SuperTrace application analysis facility for identifying problems before they impact the business
- Precise trend analysis for capacity planning and resource optimization allows overlaying past activity onto typical time frames

Monitoring Open Systems and Network Environments

- Comprehensively monitor and manage distributed operating systems including Windows, AIX, HP-UX, Sun Solaris, and Linux
- Monitor and manage distributed database environments including Oracle, SQL Server, DB2 Sybase, and Informix
- Fully instrument applications, CPUs, disk space, memory, and files, providing threshold and trend monitoring, alert notification, and more
- Manage critical applications running in open systems environments, including Microsoft Exchange, Lotus Notes/Domino, SAP, and Citrix
- Comprehensively monitor and manage Linux on zSeries and zVM in real-time
- Collect and analyze network traffic, automatically detect failures, and analyze network behavior
- Provide real-time and historical analysis, send early warning alerts for potentially serious problems, and automate SLA measuring and reporting

- Create user activity simulations to pinpoint potential performance problems. Monitor, measure, compare, record, and report in a variety of analysis types and graphical formats

Managing Systems Administration

High-powered performance begins with good setup and administration. The ASG Performance Management suite includes secure, automated, centralized management facilities for total control of CICS Transaction Server (TS) and Oracle database environ ments. This ensures that your IT infrastructure is defined and configured to its maximum potential. ASG's systems administration products:

- Provide greater system quality, change histories, eliminate errors, and automate the scheduling, deployment, and back out of changes for all of your CICS resource definitions
- Automate complex and time-consuming Oracle database maintenance chores and proactively fix database problems
- Monitor and manage the thousands of Oracle database objects within a typical enterprise system

Conclusion

ASG's BSP for Performance and Availability Management is a flexible, scalable solution that can grow and evolve with the enterprise and its business services. Three key differentiators set this solution apart from all other performance management products:

1. Unified performance management dashboards bridge the gap between IT performance reporting and business service performance management. All enterprise stakeholders share the same view of services, effectively fusing IT and business performance. Business managers can monitor and diagnose service activity and effectiveness impacting both the top and bottom lines. Through the same dashboards, IT receives timely, quantitative (and qualitative) information to address operational efficiency and IT performance quality. Combining real-time, historical, and predictive reporting based on business metrics enables organizations to better manage their business environment and more effectively prepare for the future.
2. ASG-TMON and ASG-NaviPlex technology provide a proven, mature, and stable performance monitoring foundation with 25 years of industry-leading experience in monitoring IBM mainframe operating system environments. ASG has leveraged that heritage for managing other critical IT infrastructure components including WebSphere MQ, Web-based applications, and open systems-based operating environments, databases and applications. In total, they provide comprehensive, end-to-end monitoring and management of the IT infrastructure.
3. Out-of-the-box integration with ASG's BSP suite offers the combined benefits of addressing immediate business service performance management needs, along with the option of a clear, easily implemented path towards enterprise BSM.

As a key solution in ASG's BSP suite, ASG's BSP for Performance and Availability Management delivers everything you need to maximize IT management, performance, and availability with the fastest time-to-implementation, lowest total cost of ownership (TCO), and the industry's most flexible licensing terms.

So, how is business? Delivering real-time, consistent, business-centric IT performance management, only ASG empowers organizations to meet the challenges of IT2020.

Sources

[1] *"Business Technology Defined,"* Forrester Research, Inc. May 2007

[2] Reprint Courtesy of International Business Machines Corporation copyright (2006) © International Business Machines Corporation

[3] *"CIOs: Avoid IT Marginalization on the Path to BT,"* Forrester Research, Inc. July, 2007

author biography

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Ed Hallock has 25 years of experience in the software industry, including work in product development and support, product management, training, and business development. Mr. Hallock was responsible for successfully and strategically directing Mobius Management Group's ViewDirect Repository technologies. He is also a veteran of Candle Corporation, leading the market with its popular OMEGAMON® product line for 16 years.

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Business Service Platform
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About BSP ASG's Business Service Platform (BSP) allows you to deliver true business value by identifying, correlating, and aligning the relationship between IT investments and overall business performance. ASG's BSP allows you to effectively monitor the status of, report on the health of, and manage IT so you can, in turn, improve service to your customers. ASG's BSP allows you to deliver the business value of current commitments, freeing you to focus on the future and the growth of your organization.

About ASG | www.asg.com Since 1986, ASG has been using cooperative business practices and more than 200 leading software solutions to help companies around the world overcome everyday business challenges. ASG is headquartered in Naples, Florida, with offices serving the Americas, Europe, Middle East, Africa, and Asia Pacific.

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