

Magic Quadrant for Application Performance Monitoring

16 August 2012 ID:G00232180

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VIEW SUMMARY

Application performance monitoring has become a central focus for IT operations. Growth in spend continues, while the market is evolving rapidly.

Market Definition/Description

Gartner defines an application as a set of algorithms with the following five characteristics:

1. The end user initiates a request, which triggers the execution of the software and hardware components used to respond to the request.
2. Some of the steps in the execution are defined and sequenced by business logic, as opposed to computer system logic.
3. The software algorithms work with one another as they execute. The results are compiled and assembled into a resultant set of data.
4. The resultant data is delivered by using hardware and software to the user in a well-defined computer interface.
5. If the algorithms complete their execution successfully, then they achieve well-defined goals that meet the established requirements of some end users or end-user communities.

Application performance monitoring (APM), in turn, is defined as a process with the following five objectives:

1. Tracking, in real time, the execution of the software algorithms that constitute an application
2. Measuring and reporting on the finite hardware and software resources that are allocated to be consumed as the algorithms execute
3. Determining whether the application executes successfully according to the application owner
4. Recording the latencies associated with some of the execution step sequences
5. Determining why an application fails to execute successfully, or why resource consumption and latency levels depart from expectations

To monitor these five objectives, five functional dimensions are required:

1. End-user experience monitoring — the capture of data about how end-to-end application availability, latency, execution correctness and quality appeared to the end user
2. Runtime application architecture discovery, modeling and display — the discovery of the various software and hardware components involved in application execution, and the array of possible paths across which those components could communicate that, together, enable that involvement
3. User-defined transaction profiling — the tracing of events as they occur among the components or objects as they move across the paths discovered in the second dimension, generated in response to a user's attempt to cause the application to execute what the user regards as a logical unit of work
4. Component deep-dive monitoring in an application context — the fine-grained monitoring of resources consumed by and events occurring within the components discovered in the second dimension
5. Analytics — the marshalling of a variety of techniques (including behavior learning engines, complex-event processing (CEP) platforms, log analysis and multidimensional database analysis) to discover meaningful and actionable patterns in the typically large datasets generated by the first four dimensions of APM

The APM market, then, is the market for all the technologies and services that deliver these five dimensions of functionality.

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EVALUATION CRITERIA DEFINITIONS

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This mind share can be driven by a combination of publicity, promotional initiatives, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

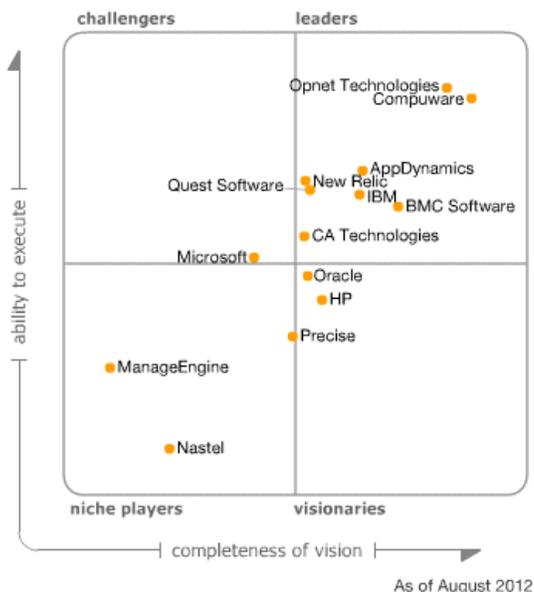
Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to

Magic Quadrant

Figure 1. Magic Quadrant for Application Performance Monitoring



Source: Gartner (August 2012)

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Vendor Strengths and Cautions

AppDynamics

AppDynamics is a new entry in this year's APM Magic Quadrant, having grown significantly. With the recent introduction of real-user experience monitoring via the injection of browser-based script measurements, a gap was filled in the product offering around this critical dimension of APM. AppDynamics Pro 3.4 requires agents, which run in Java and .NET application containers, as well as server-deployed machine agents providing server monitoring. The same product can be deployed on-premises or delivered via AppDynamics as a software as a service (SaaS) model, or a hybrid of the two. Interestingly, the product is also embedded, billed by usage, and purchasable from within Rackspace Public Cloud, Microsoft Windows Azure Marketplace and Amazon Elastic Cloud Compute (EC2) Marketplace. Handling some of the largest online APM deployments, the product has shown the ability not only to scale, but also to deal with dynamically allocated and deallocated public cloud environments. In the past 24 months, AppDynamics has gone from being an unknown company to being considered on many shortlists in Gartner inquiries.

Strengths

AppDynamics provides deep-dive and transaction tracing solutions wrapped with automated analysis provided by the analytics engine for rapid root cause analysis. This allows the end user to derive more insight into issues without being the application developer or architect. The use of these automated analytics is one of AppDynamics' key differentiators.

Ease of deployment, including a full-featured application performance monitoring as a service (APMaaS) offering, provides a comprehensive view of all five dimensions with a single console.

A strong partnership with BMC Software, as well as being bundled in many packaged applications (such as BlackBoard) and being offered by many public cloud providers, has unique appeal to application support and development buyers, especially when the journey to hybrid cloud is under way.

Integrated autoscaling technology enables dynamic workload management in Amazon EC2; this unique capability will become required by other independent vendors to control costs in public or hybrid cloud hosted applications. Larger IT operations management (ITOM) vendors will accomplish this in the cloud management platform.

Cautions

AppDynamics is a relative newcomer to the APM market.

End-user experience monitoring is new (as of March 2012) and, therefore, is less proven; this capability is often a critical buying criterion.

understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

Although the company offers the same product on-premises and via SaaS delivery, its foray into APMaaS self-service is just getting under way. Despite having a comparatively lightweight approach to the traditional sales process, it will likely take some time for AppDynamics to completely master the new model.

With lots of attention due to successful sales and marketing execution, as well as a plethora of partnerships, AppDynamics is often the target not only of competitors, but also partners that would like to acquire it. The January 2012 funding of \$20 million makes this less likely, but an acquisition is still possible and may force customers to do business with the acquirers. Additionally, the partnerships that drive some of AppDynamics's momentum may be threatened by changes in the marketplace.

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BMC Software

BMC Software's ITOM suite of tools includes an array of APM products, including BMC End User Experience Management (EUEM) 1.1.04 (formerly Coradient TrueSight), BMC ProactiveNet Performance Management (BPPM) 8.5.02, BMC Middleware Management (BMM) 6.0.0 and BMC Atrium Discovery and Dependency Mapping (ADDM) 8.3.02. This suite of tools was improved dramatically by the addition of the Coradient acquisition, bringing much needed real-user monitoring technology to BMC. They have adapted this technology to not only bring a unique APMaaS offering, but also eliminate the need to modify or instrument any applications in order to get real-user monitoring due to its unique partnership with Akamai. With integration of real-user, message queue and mainframe data flowing into BPPM, there is an ongoing effort within BMC to increase the use of BPPM's strong, multivariant analysis capabilities. As part of this suite, there is deep-dive code-level visibility across Java code and associated application servers, but it is not competitive in the market, and AppDynamics is often brought into these conversations. Deep dive into the internals of message queue infrastructure, and mainframe are areas in which BMC excels. The BMC EUEM product has strong buyer appeal, and is often brought up on Gartner client inquiry calls, especially for Internet-based businesses, due to its zero overhead and high value proposition.

Strengths

BMC's market understanding of the criticality of the end-user experience monitoring dimension has prompted heavy investment in future-proofing the limitations of packet-capture-based technologies.

By leveraging the BPPM analytics engine across the APM and other monitoring products, BMC has the ability to baseline and threshold data in an integrated and unique analytics and monitoring platform.

Through integration with a broad and deep range of mainframe performance monitoring capabilities, BMC is able to provide an end-to-end view of application behavior.

Integration of monitoring technologies with the private cloud monitoring offering provides automated provisioning and visibility of applications deployed on that platform.

Cautions

Deep-dive and transaction tracing in production or heavy transactional application environments is limited, aside from message queue and mainframe technologies, without leveraging the relationship BMC has with AppDynamics.

Data about network performance and topology with the dynamic nature of cloud computing is increasingly critical for understanding the root causes of application performance problems. To date, BMC has opted not to make significant investments and relies on its partnership with Entuity to fill a portion of this gap.

BMC's large portfolio of APM-relevant technologies remains fundamentally a collection of disjointed technologies with some level of click-through integration and event data flowing into BPPM.

The SaaS solution is only initially applicable to Akamai content distribution network (CDN) customers, and thus is very limited in appeal to the broader public. Gartner believes BMC will extend its Akamai product to other SaaS and CDN use cases.

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CA Technologies

CA Technologies ITOM product portfolio and growth in the APM market began with its acquisition of Wily Technology and was followed by other strategic acquisitions. The APM portfolio includes CA Application Performance Management 9.1 (formerly Wily) for deep-dive and transaction tracing, CA Application Delivery Analysis 9.1 (CA ADA; formerly CA NetQoS SuperAgent) for network response time monitoring. Dashboarding and high-level business metrics are provided by CA Executive Insight. CA Cross-Enterprise Application Performance Management 2.0 (formerly CA Sysview Performance Management for CA Wily APM) enables mainframe deep-dive visibility. The agentless ADA product supports packet collection and analysis for APM use cases, but is more often purchased for network

performance monitoring (NPM) use cases. ADA provides deep insight into voice over Internet Protocol (VoIP), video, and other application response time metrics. The CA Application Performance Management 9.1 product supports Java and .NET technologies, and has a large installed base, due its long history and it being well-understood by partners and the general APM ecosystem. CA's APM technologies are leveraged for traditional CA enterprise customers, but have not yet been adapted or applied to the more nimble and integrated Nimsoft product portfolio. CA remains top of mind and is included in many client inquiry calls and shortlists around its market-creating APM solution.

Strengths

The broader portfolio encompasses system, network, mainframe and application visibility, which allows for a broad and deep portfolio from a single vendor.

Wily is a well-known deep-dive product introduced 13 years ago; it has a large installed base, the technology is well-understood and it continues to appear on shortlists.

The convergence of NetQoS technologies into APM for end-user experience was introduced in 2011 with the CA ADA product. CA ADA provides a deep understanding of many applications from a network perspective.

CA Application Performance Management provides code-level deep dive with leveraged partnerships for multiple packaged applications (e.g., SAP, Tibco Software, IBM, Oracle and Software AG). Uniquely, the CA product is being bundled with the base SAP Solution Manager license as of 2011, providing an advantageous sales channel for CA.

With CA's introduction of the separately licensed CA Executive Insight product, it provides visibility of application metrics and data to line-of-business and senior executives, which helps offset some of the concerns with the previously weak dashboarding capability in the APM offering.

Cautions

Although there has been some convergence in the product offerings, as well as in data sharing, there is a lack of a centralized construct for data convergence across network, system, and APM.

Workflow between the products is weak and complex, consisting of multiple user interfaces with click-through integration. Decentralized data sharing between products helps this weakness, yet undermines the ability to apply centralized IT operations analytics approaches.

CA's Nimsoft Cloud User Experience Monitor APMaaS offering provides synthetic end-user experience transaction monitoring, a small subset of the end-user experience dimension.

Lack of script injection creates limitations when monitoring modern Web applications, which rely on heavy use of Ajax, as well as CDNs and proxies in the delivery path.

High prices and a complex product portfolio often requires professional services or consulting assistance, thus further increasing the price of the solutions.

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Compuware

Compuware's APM product offerings show an understanding of the need for both traditional data center and SaaS deployment models, with the acquisition of Gomez in 2009 and the dynaTrace software acquisition in 2011. The current product offerings include the data-center-bound dynaTrace products, consisting of the classic dynaTrace Deep Application Transaction Management 4.2 and User Experience Management (UEM), providing real-user monitoring and deep-dive code-level visibility, and the products formerly branded Vantage, including dynaTrace Data Center Real-User Monitoring (DC RUM) 12 for network application response time monitoring, dynaTrace Synthetic Monitoring 12 and dynaTrace Business Service Management 12. The SaaS offerings still use the Gomez brand name and include user experience monitoring in multiple delivery models, including browser script monitoring and synthetic transactions. Gomez modules address Web, mobile, and streaming synthetic application monitoring. In the DC RUM agentless product, there is support for Citrix Systems, SAP, VoIP, video and other applications. The dynaTrace Deep Application Transaction Management product comes from the dynaTrace acquisition, providing deep-dive code-level visibility for Java, .NET, and C/C++, as well as support for packaged applications, such as those from PTC and Siemens PLM Software. Compuware remains high on most shortlists, and is often discussed on Gartner client inquiry calls; this includes the multiple APM technologies that Compuware sells.

Strengths

There has been good progress, over an aggressive timeline, to integrate dynaTrace and its PurePath Technology across the entire portfolio. Currently the integration spans the Gomez and dynaTrace products, including the formerly branded Vantage products. Once extended to the mainframe, end-to-end transaction visibility will be more extensive than is currently available on the market.

The dynaTrace product is considered on many shortlists due to its deep-dive capabilities, which appeal to development organizations. Much of this is fueled by its successful freemium strategy around Ajax edition, as well as features which allow detailed performance comparisons (e.g., releases, system upgrades, data center moves and cloud migrations). Prior to 2011, the product

was not typically deployed to production environments due to the manual configuration of the instrumentation. This was corrected by adding automatic code instrumentation to reduce the number of methods that are fully instrumented, while still monitoring 100% of transactions. This has reduced overhead, allowing production environment deployment.

With a large global synthetic end-user experience monitoring network and an extensive collection of benchmark data, Compuware can differentiate itself more easily than its competition due to its APM focus and scale.

Compuware's packet capture technology, dynaTrace DC RUM, has been augmented to measure packaged applications (e.g., SAP, Cerner, Epic, Oracle forms, VoIP and Citrix XenApp), while also having NPM features that can be leveraged by the network engineering staff.

Cautions

Deep-dive diagnostics and other capabilities from dynaTrace are not offered as a service comparable with the Gomez SaaS offerings. Self-service across the SaaS portfolio is limited in terms of implementation and administration, and is not available for purchasing and contract management.

Packet capture technologies have been marketed toward APM use cases, while alienating prior NPM buyers of the former Vantage product.

Pricing tends to be higher than most APM vendors, with an increased reliance on professional services for implementation; therefore, the solutions are less appealing to those who wish to implement on their own.

From a financial perspective, Compuware's reliance on services and mainframe maintenance overshadows its focus on being an APM-centric software business.

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HP

HP's comprehensive IT operations management platform includes a wide array of functionality. These offerings were organically developed, as well as derived from acquisitions, such as Mercury Interactive. These product offerings include HP Business Process Monitor 9.10 for synthetic end-user experience monitoring, HP Real User Monitor 9.10 for network-based application monitoring, HP Discovery and Dependency Mapping Automation 9.05 for infrastructure mapping, HP Diagnostics 9.10 for application deep dive, HP SiteScope 11.10 for agentless system and application monitoring, HP Business Process Insight 9.10 for end-to-end business process monitoring, HP TransactionVision 9.10 for monitoring any application for transaction tracing (including any non-Java or .NET application), HP Service Health Analyzer (SHA) 9.10 for predictive analytics based on the real-time service model, HP Service Health Reporter (SHR) 9.10 for cross-domain reporting and business intelligence, HP Service Health Optimizer (SHO) 9.10 for active optimization of virtual and cloud environments, HP Business Service Management (BSM) 9.10 as the central management of these products, HP Operations Manager 9.10 for system monitoring and event correlation, HP Service Level Management 9.10 for service-level reporting, and HP BAC Anywhere (SaaS) to allow for externally hosted APM components. Many of these products cover a wide array of monitoring capabilities outside the core APM use cases, but are important in application delivery assurance and infrastructure health. HP has made investments with the releases of SHA, SHO and SHR, and these IT operations analytics products have been well-accepted. Implementation is automated due to the coupling of the products with the HP real-time service model. Prior to these product releases, HP had not released a new APM product. HP's APM market share has declined modestly during the past two years. We expect the vendor to revamp and enhance the products considerably in the short term, creating a more competitive APM offering. HP is a strategic vendor for many businesses and is on the shortlist in many Gartner client discussions.

Strengths

HP is able to have CIO-level discussions with many enterprises, and thus is considered a strategic trusted partner. This strategic alignment with customers' senior management allows them to sell solutions at a higher level of the organization, and this includes APM product offerings and the newly released HP IT Executive Scorecard.

With an extensive portfolio, HP is well-suited to deliver a complete application life cycle from development to testing to production support. HP's strength is in application life cycle management (ALM), which is of increasing importance in supporting rapid release cycles or executing a DevOps transformation.

HP's introduction of several reasonably priced analytics products has created additional value in the APM data gathered by those products. These technologies will be further leveraged in the other HP products, thus creating opportunities to derive value from large datasets.

With HP's heritage in network monitoring and management; we expect continued development of capabilities in NPM technologies. Network performance is critical to application delivery quality.

Cautions

With an extensive integrated product suite, HP's solutions are complex to implement and manage, often requiring professional services or consulting assistance if expertise is not in-house.

With the turmoil affecting HP corporate in 2011, the indecision around corporate direction has caused trepidation on the part of HP customers and prospects.

HP's application-aware NPM capabilities lag behind competitors with larger ITOM portfolios. We expect HP to further leverage the use of technologies from its APM portfolio to answer NPM questions.

HP's heritage of Web monitoring has included SaaS capabilities dating back to 1996, yet the platform has not kept pace with the increased importance of SaaS. HP recognizes this shortcoming in the offering and has specific plans to correct it.

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IBM

With the partial rebranding of the former IBM Tivoli products, the entrants to this year's Magic Quadrant include SmartCloud Application Performance Management v.7.5. This new product line is focused on simple-to-deploy-and-manage APM targeted at private and hybrid cloud implementations on both the open-system and mainframe platforms. Rounding out the rest of the APM portfolio are the Omegamon XE 5.1 product lines, which focus on mainframe system and middleware deep-dive monitoring. SmartCloud Monitoring focuses on infrastructure monitoring of physical and virtual servers. The IBM Tivoli Composite Application Manager (ITCAM) products include ITCAM for Transaction 7.3, with both agentless and agent-based monitoring; ITCAM for Application Diagnostics v.7.1, providing deep-dive Java EE capabilities; ITCAM for Applications v.7.1, providing the packaged application visibility (e.g., SAP, PeopleSoft and Siebel), service-oriented architecture (SOA) and associated Web-services-based components, as well as messaging (WebSphere MQ and WebSphere Message Broker) components; and ITCAM for Microsoft Applications v.6.2.3, providing Microsoft application and Windows server monitoring. With a broad product portfolio and integration into the IBM Tivoli Enterprise Portal (TEP), the application portfolio management products can be centrally managed, but require integration and configuration. Most buyers prefer a simpler approach to setting up and managing their monitoring; hence, IBM has created more lightweight packaging of the products under the SmartCloud moniker. The SmartCloud editions include differing functionality, but the simplified purchasing, deployment, and usability will help with IBM's ability to compete, articulate the value proposition, and implement proof of concepts and production solutions in a faster cycle than was previously possible. IBM's APM functionality includes Java deep-dive capabilities and code diagnostics, but does not provide the same level of functionality for .NET and other platforms. IBM has specific monitoring capabilities for its middleware products, in addition to the products from Oracle, such as WebLogic. IBM monitoring technologies have become more strategic for those Gartner clients who purchase other IBM products, especially those with mainframe, WebSphere or DB2 investments. The inclusion and bundling of related Tivoli solutions with other IBM product offerings allows a pricing advantage and builds subject matter expertise that is less often beaten by competing solutions.

Strengths

IBM is a strategic partner supplying multiple technology stacks, often at CIO and executive levels of the business. This strategic partnership affords the monitoring technology high penetration rates, especially for enterprises that implement mainframe technology.

IBM's understanding of buyers' demands for simple, easy-to-manage products has spawned easier-to-implement products with a renewed focus on usability. The inclusion of analytics helps the user make better decisions.

With the redesigned agentless SmartCloud APM transaction tracking capability, the product is able to marry agent-based tagging with agentless-based network packet capture technology, to allow the traceability of components that cannot be easily instrumented, providing alternate use cases where agents cannot be easily used.

Renewed investment in Omegamon has created considerable traction in mainframe customers, causing many that were using competitive offerings to revisit their deep-dive mainframe monitoring strategy. The revisiting of mainframe tooling is opening new selling opportunities for IBM across the broader Tivoli portfolio.

Cautions

The simple approach to monitoring that SmartCloud takes is underpinned by the well-established, yet complex, IBM Tivoli technology; although much of the complexity is hidden, it could present a support burden. Administration still requires the use of multiple tools and user interfaces across the APM offering.

Java is the only supported deep-dive programming language today, leaving a large gap for organizations leveraging .NET or other emerging languages, such as Python, PHP and Ruby.

IBM has been trailing other vendors in effectively exploiting its extensive intellectual property in its availability and performance portfolio in a timely fashion. Integration of Cognos and SPSS technologies has taken two years postacquisition, and more recent acquisitions in the machine

event and log search and analysis space have yet to be integrated.

Although IBM has extensive portfolios for network management, there is a lack of application-aware NPM capability that other large ITOM software suppliers have. This limits IBM's network response time monitoring to HTTP and HTTPS protocols.

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ManageEngine

ManageEngine enters this Magic Quadrant with an integrated on-premises offering. Applications Manager 10.4, as well as the online APMaaS solution, [Site24x7](#), which provides SaaS, remote, synthetic Web application monitoring. Applications Manager is offered stand-alone, but also as part of the packaged IT360 offering of IT service management (ITSM) products, which includes network monitoring, system monitoring and APM. Additionally, the bundled IT360 offering includes asset management and help desk software. The core Applications Manager product not only monitors the application servers, databases and associated server-related infrastructure, but also includes virtualization monitoring, allowing for an integrated low-cost offering, which covers APM functionality. Applications Manager's transaction monitoring feature, known as APM Insight, supports Java and Ruby on Rails environments only. Additionally, ManageEngine includes more-sophisticated add-ons that enable SAP monitoring. With constrained budgets and limited time to implement and manage monitoring software, the ManageEngine products have a growing installed base among Gartner clients.

Strengths

Applications Manager is a low-cost solution that includes full APM functionality for Java and Ruby on Rails, offering analytics that provide root cause analysis capabilities.

Customer references confirm that support and product management are very responsive to support requests and customer issues.

Despite being targeted at the small or midsize business (SMB) market, the platform can scale to encompass many thousands of nodes and continues to deliver on the promised capabilities.

Cautions

ManageEngine is considered a solution provider, not a strategic partner, to most customers. This is due to the lack of enterprise sales expertise, with each solution often sold via a separate team.

Integration is high level and doesn't include full data integration, limiting the application of analytics to being pattern-based within a single domain.

ManageEngine has had a SaaS offering for quite some time, but it has remained focused on synthetic end-user experience and server monitoring use cases. The product has not evolved to support additional dimensions of APM.

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Microsoft

With the launch of the System Center 2012 product bundle in 2012, Microsoft integrated its once separate AVIcode APM technology, acquired in 2010, into the core Operations Manager (OpsMgr) component of System Center 2012 agent and server. This provides .NET monitoring functionality for those applications written on the framework. Microsoft has also improved monitoring in OpsMgr around network, Linux and Java systems. While these new features are welcome in environments with basic needs, they are not comprehensive enough to compete with products that have effective multiplatform support. Microsoft enjoys having customers with a heavy reliance on Microsoft stacks, which is common in today's enterprises, many of which purchase this package as part of an enterprise agreement. Microsoft has significantly simplified pricing for System Center 2012, requiring that customers license standard or data center products; each includes the full System Center suite inclusive of monitoring (and APM), configuration management, backup and recovery, antivirus, anti-malware, orchestration, service management (service desk), and virtualization management. Although pricing was increased for System Center 2012, the offering includes all technologies for a single license cost. Some current customers will have a reduced cost, while others will see an increase in pricing. As enterprises leverage more System Center products, this cost difference can be easily eliminated. Gartner clients report that OpsMgr is still most often used as a monitoring technology without APM, but this is likely to change as Microsoft creates deeper linkages from application life cycle and packaged applications to the OpsMgr APM functionality.

Strengths

With the packaging of APM, server and application instance monitoring, network monitoring, and basic Java monitoring into a single product install and license, Microsoft has a high value proposition, with no additional cost for APM functionality.

By packaging the technologies together in System Center, when compared with other APM products, OpsMgr is still one of the price leaders, while the functionality of the suite is far wider

than just APM or monitoring. This price point and better leveraging of the APM functionality to automatically provide APM functionality for the Microsoft applications written on top of .NET will provide Microsoft additional monitoring of SharePoint, Exchange and other core Web-based Microsoft technologies.

Microsoft's control of the .NET development environment and a compelling ALM suite in Team Foundation Server (TFS) provide the ability to detect, triage, escalate and collaborate on issues from monitoring to the development organization. This will prove especially important as organizations move to agile release processes or go in a larger DevOps direction.

Cautions

Microsoft still remains focused on its technology stack, with minimal support for non-Microsoft technologies; the larger partner ecosystem provides solutions here, but can also increase cost and complexity of the implementation.

Microsoft's SaaS offering, Global Service Monitor (GSM), is well-integrated, but only provides synthetic end-user experience monitoring functionality, while other vendors are currently offering APM SaaS solutions meeting all five dimensions, even on Microsoft's own Azure platform. This shows a lack of execution around Microsoft's management philosophy pertaining to its own public cloud.

Java monitoring is a new capability, but is limited to Java Management Extensions (JMX) only, not allowing insight into any of the dimensions of APM, including the critical transactions tracing or real-user experience monitoring. The lack of ability to trace across application tiers is critical to many .NET applications, as they are often part of an enterprise Java Web services ecosystem. Microsoft acknowledges this shortcoming and is looking to improve its capabilities.

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Nastel

Nastel AutoPilot 6.2 provides a full-featured APM solution with a particular focus on mainframe and messaging middleware. The vendor differentiates the offering with a custom-developed CEP engine. This capability allows the product to process high numbers of event streams and do real-time analysis and correlation across the datasets. The single, consolidated product supports Java, .NET and packaged middleware, such as IBM WebSphere MQ, Tibco on distributed and mainframe platforms, and CICS and DB2 on mainframe. Nastel is targeted at those IBM-centric technologies, while also supporting open standards to handle the typically multiplatform enterprises surrounding IBM.

Strengths

Via experimentation in its freemium offerings, Nastel has been increasing its visibility, especially among enterprises seeking to replace monitoring technologies on IBM platforms.

The Nastel CEP engine provides extensibility to the APM platforms supporting use cases that integrate additional business metrics extracted from the transaction or obtained from other business systems. The granularity of configuration for monitoring, visualization, and issue detection are very detailed, enabling customized views into the data.

The reworking of the user interface to be Web-based should improve the product's configuration and general manageability from a single user interface.

Cautions

End-user experience monitoring is weak without the ability to instrument browsers with script, or provide packet capture for real-user monitoring. Relying on server response time is often ineffective and limited.

The complexity of configuration in the product prevents a possible downmarket play, reducing the appeal to those with extensive infrastructures consisting of IBM technologies.

The Nastel APMaaS offering is through a third party, CloudPrime, but offers the complete product delivered via SaaS (the product is not currently self-service, but rather multitenant). Due to the immaturity of this offering, care is needed during APMaaS evaluations.

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New Relic

The other new entry in this year's APM Magic Quadrant is New Relic's self-named product, which qualified due to rapid growth and feature expansion in 2011. New Relic is the only entrant in this Magic Quadrant targeting APMaaS-only with its deployment model. The product is not meant to be the deepest, but rather it focuses on providing easy deployment and immediate value. This value proposition manifests itself in the user interface, which analyzes and presents detected faults and elevates them to the user of the product. This simple approach is apparent across the entire product, including a well-designed intuitive Web interface. New Relic not only monitors Java and .NET, but also targets the emerging languages of PHP, Ruby, and Python. With many of these emerging languages, it has become a sticky APM solution for smaller companies building applications on those platforms, in

addition to PHP being used more often in larger enterprises, especially in the area of content management and open-source technologies. Aside from the core APM functionality, basic server monitoring is contained in the same agent; while this is currently limited to Linux, additional platforms are likely to be supported. Another part of the value proposition is a low monthly price point, where self-service transactions allow for a true bottom-up selling strategy. This has created an enterprise sales force by customer demand, as those small deployments scale up and gain visibility by executive management. Having penetrated a large number of SMBs in 2011, and collecting a staggering 60 billion metrics a day, New Relic is pushing the bar for scalability in transaction monitoring. Many Gartner clients have expressed interest in this model, seeking a "good enough" APM solution, which has been driving the market down in terms of ease of use and value for the investment.

Strengths

The unique approach of SaaS-only provides rapid deployment and sales cycles, often requiring no involvement between the customer and New Relic staff. This lack of human interaction in a sales process is appealing to engineers, while senior management can interact with salespeople in building enterprise pricing.

With a focus on cost savings and resource constraints being a reality for almost every IT department, the ease of deployment and operation resonates with most buyers. Simplification of APM is now a target for almost every solution on the market, and much of this is driven by what New Relic has accomplished.

Within two years of introducing Java and .NET monitoring, New Relic has the largest APM installed base in the market in terms of customer count.

While many vendors struggle with the issues of shelfware and a lack of insight into customer usage patterns, New Relic is plugged into which customers are using the product, and how often they use specific features. This advantage allows the vendor to be agile, not only in terms of making product changes, but also in the deployment of fixes and features in a rapid and agile release cycle.

Cautions

While New Relic is easily installed and provides value, it can be a stepping stone to other APM products, providing a channel for companies to understand what APM has to offer. The features that make New Relic appealing also allow it to be easily replaced.

Due to its SaaS deployment model, detailed and granular metrics are rolled up, thus losing detail that many cloud-based businesses require to manage capacity and the cost of their infrastructures.

In some cases, security is a concern, because transaction data is monitored and sent off-site. This could prevent New Relic from executing strategic partnerships with certain industries.

With a young company, the volume of transactions and the business model it is executing is unique and consists of new challenges. These may cause shifts in the current business and technology, which can affect early adopters of the technology.

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Opnet Technologies

Opnet Technologies straddles and sells products into both the APM market and NPM market. This provides an integrated approach to understanding the critical impact the network has on application performance. The broad offering from Opnet includes AppInternals Xpert 8.0 for deep-dive Java and .NET monitoring; AppResponse Xpert 8.5.5 for end-user experience and network response time monitoring; AppResponse Xpert SaaS Edition 1.0 for SaaS deployment of Web application monitoring; CX-Tracer for Citrix monitoring; AppSQL Xpert 4.8 for agentless database monitoring; AppTransaction Xpert 16.0 PL1, which analyzes network-level and application-level traces from other Opnet products providing additional insight; AppSensor Xpert 1.7 for agentless infrastructure monitoring; and AppMapper Xpert 2.0, which takes data collected by multiple tools to build transaction and environment maps. The AppInternals Xpert product supports Java, .NET, and PHP, providing code-level deep-dive monitoring. Opnet's strength in the analytics space is driven by internally developed technologies. Inquiries by Gartner clients often include the network buyer instigating the conversation with Opnet, and the involvement of parties responsible for applications occurring in the selling cycle.

Strengths

Allowing for browser, endpoint, and network instrumentation, Opnet provides an extensive number of options for those looking to capture end-user experience, which is a critical buying criterion for APM buyers.

Combined mind share and market share for application and network buyers creates a unique opportunity for Opnet, which has been executing effectively to both buying centers. We expect other competitors in both markets to notice and adjust strategy to better compete. This is also driven by strong customer satisfaction reported by Opnet references.

With its proprietary big data store, Opnet offers a combined analytics approach, leveraging

intelligent agents, centralized storage and indexing of collected data. This provides flexibility when customers are involved in hybrid cloud environments.

Interest in detailed Citrix monitoring has increased, due to virtual desktop infrastructure (VDI) deployments and the use of Citrix receivers on tablet devices such as the iPad. With Opnet's introduction of this technology in 2012, it is addressing a market demand.

Cautions

Opnet is a technology-driven company that often appeals to engineers, and not business executives, who are critical buyers and customers of APM solutions. There must be a concerted effort to break this sales motion and become a strategic provider of technologies.

While Opnet positions itself as capable in both network management and APM, its network event and fault management product offerings are weak.

The portfolio consists of many different tools with differing user interfaces, often integrated with a click-through to another tool. Although each product has unique analytics capabilities, there is not a centralized approach, often making the learning curve high.

Centralized reporting and business-level dashboards are immature and newly released features in the Opnet product line.

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Oracle

Oracle's APM offering is integrated into its Oracle Enterprise Manager 12c product. The components making up this offering include Oracle WebLogic Server Management Pack Enterprise Edition; Oracle SOA Management Pack Enterprise Edition, which provides cross-platform Web service monitoring; Oracle Real User Experience Insight (RUEI), which also includes the Service Level Management Pack, for packet-collection-based end-user experience monitoring and synthetic end-user experience monitoring; Oracle Diagnostics Pack for Oracle Database; Oracle Management Pack for Non-Oracle Middleware; and Oracle Application Management Suite for Fusion Applications. These products have been consolidated in version 12c, but there is still work to be done for a fully integrated offering. Oracle has also introduced Java Virtual Machine diagnostics capabilities, which do not instrument the virtual machine in traditional methods (i.e., bytecode instrumentation), thus allowing them to diagnose issues without measurable overhead. To perform the transaction tracking via the SOA Management Pack, there is bytecode instrumentation. The SOA Management Pack supports all Java applications and the Web services written in .NET. Oracle focuses on its technology stack, which is primarily Java-based, and exerts the minimal amount of effort to support competing technologies and platforms. Due to Oracle Enterprise Manager's large installed base, driven by its best-of-breed Oracle Database monitoring and management capabilities, a fully integrated APM offering is a natural progression for customers. Oracle's use of non-published APIs in its middleware and Oracle packaged applications provide unmatched depth in the monitoring of those platforms. In addition to this monitoring depth, Oracle is able to provide active management of these technologies, enabling fault prevention, as faults cannot only be detected, but also remediated by the system. The end result is an improved user experience and increased uptime, and saving time in supporting these technologies. The ability to do active management, versus monitoring, is something few vendors can match, but is facilitated by the proprietary nature of the stack.

Strengths

Leveraging the current large installed base for Oracle Enterprise Manager, often used for Oracle Database environments, provides a natural uplift to higher-value APM offerings.

Active management and embedded knowledge of the Oracle technology stack is unmatched by other vendors in the market, with a growing set of products and portfolios under the Oracle brand; this has undeniable market implications. The active management capability not only allows corrective actions to be presented to the user, but also to be taken to avoid performance impact and downtime.

A single product that does hardware monitoring, operating system monitoring, application component monitoring, APM, release automation and management is compelling in an Oracle-centric environment.

Ability to automate and manage the application configuration and code within the management tool provides an integrated way to manage releases and rollbacks, and to understand the effect of change to the performance in an Oracle software environment.

Cautions

The Oracle-centric nature of the management products often means that other APM tools must be combined with Oracle solutions to meet other enterprise demands for APM.

Real end-user experience monitoring is still limited to packet collection, unless the application is written on the Oracle Application Development Framework (ADF). The RUEI product is not yet fully integrated into Oracle Enterprise Manager and has usability issues, including a lack of effective troubleshooting workflows.

Oracle has limited visibility of network availability and performance, relying on a partnership

with Entuity for that integration and event flow.

Oracle's SaaS offering is through partners at this time, partially due to Oracle's public cloud products being new to the market and, hence, immature.

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Precise

Precise has long been a pioneer in the APM space, especially with its capabilities to follow transactions deep into the database, and it has a close partnership with EMC, providing depth in storage monitoring. Still, the company has often not effectively communicated the extent of its innovations and its overall strategy to the market. This was initially a consequence of the Veritas acquisition (a company that was acquired soon thereafter by Symantec) and the failure of the successive parent companies to explain Precise's value to the market. Following its divestiture from Symantec, however, the company chose a low-key marketing style that allowed other vendors to claim credit for and shape the language describing functionality that first made its appearance in the Precise portfolio. This has started to change in 2012 with a new visibility-focused management team in place. Precise not only supports multiple databases and goes deep into those areas, but also supports packaged applications, such as SAP and Oracle. Precise was an innovator in real-user experience monitoring, having launched browser script injection in 2007; additionally, it supports native Android application instrumentation. Precise also added the ability to instrument native Android applications in version 9.5. The consolidated software deployment includes not only APM functionality, but also extensive database monitoring from a single product, thus allowing easier implementation than competitors, which require multiple products. Precise fully supports Java and .NET applications. Gartner clients who are seeking deep database diagnostics and APM often include Precise on their shortlists.

Strengths

The user interface has been improved and simplified in version 9.5, allowing for easier inclusion into existing portal systems.

Depth of understanding in the database tier allows Precise to not only track, but also provide corrective suggestions on the database, calculating those changes and their positive and negative impacts on the application's transactions.

Precise has a unique and strong relationship with EMC in which EMC not only resells the product directly, but also the depth to which Precise is able to go on the EMC storage platforms. With this insight, the product is able to correlate a user-defined transaction from end-user experience, through the application servers, middle tiers, databases and EMC storage subsystems.

With out-of-the-box support for packaged applications from Oracle (E-Business, Siebel, and PeopleSoft), as well as extensive SAP monitoring of Java code, and the SAP proprietary Advanced Business Application Programming (ABAP) code, Precise is a good option for those packaged applications.

Cautions

Marketing and awareness of the Precise brand have been consistently waning, thus it is often not considered for solutions unless they are database-focused or presented by partners with key selling criteria.

Because Oracle has invested more heavily in APM, a major market for Precise has been threatened and often it is not competitive, given Oracle's enterprise selling patterns.

There is still historical confusion regarding the company due to past transactions in which Precise was taken private and sold several times. With renewed investment and direction from the current investors, this seems to be getting addressed in 2012.

As a pure-play APM solution provider, Precise charges more for its solutions, although when database monitoring is a key buying decision, the value proposition is there.

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Quest Software

Quest Software has a broad array of product capabilities in the monitoring space, but often leads conversations with APM discussions. The Foglight 5.6.3 product is a single-product offering that includes monitoring and APM, which allow customers to acquire basic APM capabilities using the product's underlying performance monitoring platform and then add additional Foglight cartridges, including real-user experience monitoring, Java, .NET, Oracle E-Business Suite, PeopleSoft, Siebel, Database (Oracle, SQL Server, Sybase, DB2 LUW and MySQL), Exchange, Active Directory, operating systems, virtual hypervisors and storage. These products go from the operating system to application servers, the applications hosted on them, the databases used, and virtual infrastructure monitoring and management. Quest does have a relatively new entrant in its Foglight Network Management System, which is beginning to gain some market momentum by using a freemium model. The virtualization monitoring provided by vFoglight is popular, due to support of multivendor hypervisor infrastructures; this trend will continue, thus placing Quest in a good market position. Foglight

supports Java and .NET technologies, but the real-user experience monitoring and session reconstruction are differentiators. We expect the real-user experience monitoring functionality to be enhanced with the required client instrumentation capabilities to better address the needs of multiple types of non-APM buyers, such as CRM administrators and marketing professionals.

Strengths

Real-user experience monitoring has been one of Quest's standout features, with the ability to replay sessions; this often differentiates the core offering, adding use cases for additional buyers, such as those looking for customer experience metrics within CRM systems.

With the integration of Quest Spotlight and Performance Analysis (PA) real-time troubleshooting functionality into the Foglight product lines, there is a unified single product that provides monitoring and the data and visualization needed for real-time troubleshooting.

The marriage of APM with Spotlight performance monitoring and PA database workload analysis provides additional insight into performance from a back-end forward perspective, as well as from the end-user perspective to the database.

The multivendor virtualization awareness and monitoring provided by vFoglight and VKernel often come up on shortlists, and are influencers when existing customers seek APM solutions.

Cautions

Quest is most often not bought by a typical APM buyer, but instead the solutions are acquired by database or virtualization subject matter experts, as a supplement to other monitoring technologies. To change this behavior, marketing and sales must be retrained to focus on APM buyers.

Dell's acquisition of Quest could stall or delay current and future deals as the market waits for a clear picture of the role of Quest's technologies within Dell.

Quest's .NET monitoring has historically been based on technology licensed from AVIcode. Microsoft's acquisition of AVIcode is compelling Quest to develop new technology for future implementations.

Quest, as a whole, has been slow to move toward SaaS models. The APMaaS offering was released in mid-2012, and is limited to synthetic transactions and SQL Server monitoring.

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Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

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Added

AppDynamics qualified this year due to its revenue growth, and the addition of end-user experience monitoring.

New Relic qualified this year due to its revenue growth, the addition of Java and .NET, and the addition of end-user experience monitoring.

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Dropped

Aternity has a desktop focus, and does not meet all five dimensions of APM. It is unable to instrument server-side Java or .NET technologies.

Arcturus Technologies was unable to disclose revenue requirements.

ASG is only missing an APMaaS solution.

Coradiant was acquired by BMC Software in 2011, and is now part of the BMC End User Experience Management product.

Correlsense is only missing an APMaaS solution.

dynaTrace was acquired by Compuware in 2011, and now makes up components of the Compuware APM offering.

eG Innovations is only missing the user-defined transaction profiling dimension; plans are under way to correct this.

Idera does not fulfill all five dimensions of APM. It is unable to instrument server-side Java or .NET. The vendor remains focused on Microsoft database performance monitoring and

SharePoint performance monitoring.

InfoVista has a network-focused APM approach, and it does not meet all five dimensions of APM. They are unable to instrument server-side Java or .NET technologies.

Inetco Systems Limited does not meet all five dimensions of APM. The solution is unable to instrument Java or .NET. There is no APMaaS solution offered.

Network Instruments' network-focused APM does not meet all five dimensions of APM. It is unable to instrument Java or .NET. There is no APMaaS solution offered.

Progress Software is only missing an APMaaS solution.

Knoa Software has a desktop focus and does not meet all five dimensions of APM. It is unable to instrument server-side Java or .NET technologies.

NetScout Systems' network-focused APM does not meet all five dimensions of APM. It is unable to instrument Java or .NET. There is no APMaaS solution offered.

OpTier is only missing an APMaaS solution, but plans are in place to launch a solution by 2013.

SL focuses on the visualization of monitoring systems and does not meet all five dimensions of APM. It is unable to instrument server-side Java or .NET technologies. There is no APMaaS solution offered.

Visual Network Systems' network-focused APM, does not meet all five dimensions of APM. It is unable to instrument Java or .NET. There is no APMaaS solution offered.

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Inclusion and Exclusion Criteria

Vendors are required to meet the following criteria to be considered for the APM Magic Quadrant. We have increased the numerical thresholds, and have put more-stringent requirements around the vendor's ability to prove market execution:

The vendor's APM product must include all five dimensions of APM, including application runtime; application architecture discovery and modeling; deep-dive monitoring of one or more key application component types (e.g., database, application server); user-defined transaction profiling; and analytics applied to metric aggregation, trending and pattern discovery techniques.

The APM product must provide compiled Java or .NET code instrumentation in a production environment.

The vendor should have at least 50 customers that use its APM products actively in a production environment.

The APM offering must include part of or the entire solution as a service. This includes managed service provider hosting, regardless of other commercial arrangements, or SaaS delivery through its own distribution channels.

Total revenue (including new licenses, updates, maintenance, subscriptions, SaaS, hosting and technical support) must have exceeded \$5 million in 2011.

Customer references must be located in at least three of the following geographic locations: North America, South America, EMEA, the Asia/Pacific region and/or Japan.

The vendor references must monitor more than 200 production application server instances in a production environment.

In addition to these criteria, we will be evaluating the vendor's ability to cross multiple buying centers, as well as its ability to target specific verticals. APM tools have always had a strong market presence in the financial services industry, but the ability to execute and target other verticals will be evaluated by the reference customers.

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Evaluation Criteria

Ability to Execute

Gartner analysts evaluate technology providers on the quality and efficacy of the processes, systems, methods or procedures that enable IT provider performance to be competitive, efficient and effective, and to positively affect revenue, retention and reputation. Ultimately, technology providers are judged on their ability and success in capitalizing on their vision.

Product/Service: Core goods and services offered by the technology provider that compete in/serve the defined market include product/service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements/partnerships.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the

business unit, and the likelihood that the individual business unit will continue investing in the product, offering the product and advancing the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The technology providers' capabilities in all presales activities and the structure that supports them include deal management, pricing and negotiation, presales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: This category involves the ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the provider's history of responsiveness.

Marketing Execution: This criterion includes the clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This mind share can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: This involves relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, it includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups and SLAs.

Operations: The ability of the organization to meet its goals and commitments includes the quality of the organizational structure. This involves skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	High
Overall Viability (Business Unit, Financial, Strategy, Organization)	High
Sales Execution/Pricing	Standard
Market Responsiveness and Track Record	Low
Marketing Execution	Standard
Customer Experience	Standard
Operations	Low

Source: Gartner (August 2012)

Completeness of Vision

Market Understanding: This criterion involves the ability of the technology provider to understand buyers' needs and translate these needs into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance them with their added vision.

Marketing Strategy: This criterion involves a clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: This is the strategy for selling products that uses an appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: This involves a technology provider's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: This criterion includes the soundness and logic of a technology provider's underlying business proposition.

Vertical/Industry Strategy: This involves the technology provider's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: This criterion comprises the direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: This category involves the technology provider's strategy to direct resources, skills and offerings to meet the specific needs of locations outside the home or native geography, either directly or through partners, channels and subsidiaries, as appropriate for that region and market.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	Standard
Sales Strategy	Standard
Offering (Product) Strategy	High
Business Model	Standard
Vertical/Industry Strategy	Low
Innovation	Standard
Geographic Strategy	Low

Source: Gartner (August 2012)

Quadrant Descriptions

Leaders

Seven aspects characterize vendors that appear in the Leaders quadrant: (1) competitive offerings related to all five dimensions of APM and best-of-breed functionality in two or more of the dimensions; (2) credibility in the monitoring of application domains assembled from heterogeneous sources; (3) effective integration across three or more of the dimensions; (4) the ability to deliver and support APM on a global basis; (5) a consistent track record of innovation; (6) a vision that places APM at the heart of operations and application management (AM); and (7) demonstrated APMAaaS capabilities across multiple functionality dimensions.

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Challengers

Five aspects characterize vendors appearing in the Challengers quadrant: (1) they have competitive offerings in all five dimensions of APM, but some of the offerings are restricted either in terms of functional depth in one or more of the dimensions or with regard to the environments to which their technologies are applied that keeps them from being considered by some large enterprise accounts; (2) while staying abreast of market trends, Challengers rarely get out in front of them; (3) Challengers typically have a strong global support and services infrastructure; (4) they have a well-regarded brand, although that regard is not generated by APM; and (5) they recognize the importance of APM, if not its centrality to their overall software product portfolio.

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Visionaries

Three aspects characterize vendors appearing in the Visionaries quadrant: (1) while not demonstrating equally deep capability across all five dimensions of APM, they have been consistently ahead of the market in one or more APM dimensions; (2) they have demonstrated the ability to grow rapidly and maintain the position of their brand among demanding submarkets, like financial services and telecommunications; and (3) aggressive and innovative APMAaaS offerings.

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Niche Players

One of three aspects characterizes vendors appearing in the Niche Players quadrant: (1) they are explicitly focused on a limited number of application types, whether those types are defined in terms of vendor provenance or domain; or (2) they cannot demonstrate equally across all five dimensions of APM functionality; or (3) they keep abreast of market trends, but have not demonstrated innovation with regards to the functionalities they do support.

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Context

The effective deployment of APM technologies and services depends upon the acceptance of three fundamental premises regarding IT operations that run counter to the grain of many traditional practices.

First, monitoring (and, indeed, all aspects of IT operations management) must become primarily application-centric, and, within that application centricity, primary place must be given to ensuring a high quality of end-user or customer experience. That is not to say that monitoring infrastructure components (e.g., servers, storage, networks, the virtual fabric) becomes unimportant. Rather, processes must be reshaped to ensure that the data collected during the course of monitoring such components must always be analyzed for what it reveals about how the behavior of those components impacts the end-to-end performance of the applications that exercise those components. In other words, applications must become the windows through which the infrastructure and its performance are observed.

Second, monitoring's historical focus on past events signaling faults that must retroactively be analyzed and remedied has to give way to a focus on continuous performance monitoring, with the goal of anticipating problems before they make a palpable impact on the end user and the customer.

Third, the walls traditionally segregating application development from IT operations need to be knocked down, or at least perforated. This movement, known as DevOps, provides the foundational cultural changes needed to accomplish this change in operations, especially with regard to application understanding. Additionally, the data gathered and analyzed by APM technologies can greatly assist the tasks performed by application developers and testers; that community's expertise will be required to effectively interpret APM data.

Even if these premises are accepted in full, it is still not advisable to try to deploy all five dimensions of APM across the entire application portfolio. Given the cost and complexity of APM technologies, an enterprise should first focus on, at most, the top 10 most business-critical applications for those, concentrating initially on end-user experience monitoring. Once that is mastered, other dimensions may be taken up. Finally, once a state of familiarity with APM has been obtained, the enterprise can contemplate extending end-user experience monitoring and application performance analytics to the top 40 or 50 most business-critical applications. It is unlikely that further expansion, either in terms of functional dimension or portfolio coverage, will deliver a positive ROI.

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Market Overview

By year-end 2012, Gartner estimates that the global spend for APM software licenses and first-year service contracts will grow to \$2.14 billion, which represents a 9% growth over the \$2 billion spent in 2011. This 9% growth rate does represent an acceleration from the 5.6% growth rate experienced between 2010 and 2011, an acceleration which can be attributed to three factors:

The growing number of parties who have a stake in APM, including application development teams and business executives

The increased fragmentation and modularization of infrastructure, which, in turn, bolsters the role of the application as an organizing principle even for IT operations

The rapid expansion of the submarket for APMaaS

Although rarely acknowledged and called out as a distinct IT operational process before 2005, APM has, in fact, been an implicit part of IT operations since the mid-1990s. Vendors such as Patrol, EcoSystems Software, Mercury Interactive and Candle (eventually acquired by BMC Software, Compuware, HP and IBM, respectively) and service providers, such as Keynote, provided critical monitoring functionality to enterprises during the period in which classical client/server application architectures began to be set aside in favor of multitier Web-oriented constructs. Nonetheless, since 2005, there has been an increasingly explicit acknowledgment of and high-profile focus on the APM process among Global 2000 enterprises. Indeed, Gartner estimates that, at present, 20% of the Global 2000 are trying to reconstruct the whole of their IT operational process frameworks in a way that accords the monitoring and management of applications, rather than infrastructure, a central place.

The factor most responsible for the increased attention now being paid to the APM process and the tools and services supporting it does not come from IT, but from the business side of the enterprise, which has, during the past decade, fundamentally changed its attitude toward IT in general. Line-of-business and C-level executives now generally recognize that IT is not just infrastructure that supports background workflows, but is also, and more fundamentally, a direct generator of revenue and a key enabler of strategy.

However, heightened executive appreciation of IT has also meant greater executive willingness and ability to impose a model of what is important about IT on IT operations professionals, and, for the typical executive, what is important about IT is the application portfolio that directly allows him or her to accomplish business goals. Unfortunately, at just the moment when executives have become keen

about imposing an application-centric view of the world on IT operations, applications have become far more difficult to monitor than they have been; in general, architectures have become more modular, redundant, distributed and dynamic, often laying down the particular twists and turns that an execution path could take at the latest possible moment.

The combined impact of modularity, redundancy, distributedness and dynamism undermined the effectiveness of the technologies and techniques that traditionally supported the APM process. Products like those offered by Patrol and EcoSystems Software represented minor variations on classical event correlation and analysis. A comparatively small number of thresholds indicating unacceptable levels of resource consumption were set in advance, and, should those thresholds be transgressed during the course of an application's execution, the transgression would be recorded and sent to a screen or data store.

Because application code was developed, stored and processed in large contiguous blocks, it was, in theory at least, possible to infer the application's overall state of health or lack thereof from a few threshold transgression signals. It was, in particular, generally assumed that such a sparse set of threshold transgression signals correlated reasonably well with application availability and latency as experienced by end users. If anything further was needed, especially when users accessed applications over a variably performing Internet, monitoring could be supplemented by technologies from vendors like Candle or service providers like Keynote, which supported the launch of stereotyped scripts from strategically placed software robots standing in for typical end users.

Modularity, redundancy, distributedness and dynamism, however, combined to ensure that:

- Data gathered from the execution of one region of application code provided very little information with regard to what has happened at other times in other regions.

- Thresholds could be meaningfully set a priori.

- Stereotypical synthetic transactions could be defined in advance as user interactions with an application became increasingly varied, and availability and response time characteristics increasingly sensitive to even small differences in space and time.

In other words, a new approach to APM technology was required, and, between 2005 and 2008, the outlines of such an approach began to appear, both in the way in which technology buyers conceptualized the APM problem space and the way in which vendors were augmenting their product portfolios.

Five-Dimensional APM — An Overview

The fundamental problem was that applications built according to modern architectural principles needed to be monitored in a holistic, end-to-end manner. Detail remained important, of course, but that detail had to be set into a well-understood overall picture of system behavior. To that end, five distinct dimensions of, or perspectives on, end-to-end application performance have been assembled by market participants, each one essential and complementary to all the others.

While the technologies underlying each of these dimensions are typically deployed by different communities within an enterprise, and the dimensions themselves reflect the concerns of different stakeholders, there is, nonetheless, a high-level, circular workflow that weaves the five dimensions together. As a first step, end-user experience monitoring would pick up a problem as it impacts the application's user. As a second step, the application's runtime architecture would be generated and/or surveyed to establish the potential scope of the problem. As a third step, user-defined transactions would be examined as they flow across some subset of the possible paths exhibited by the runtime architecture graph, to ascertain what nodes in that graph are the sources of the problem impacting the end user. As a fourth step, deep-dive monitoring of those nodes is carried out in the context of the results of the previous three steps. As a fifth and final step, analytics are brought to bear — on the one hand, to establish root cause in the midst of the vast volumes of data generated in the first four steps, and, on the other hand, to better anticipate and prepare for end-user experience problems that could emerge in the future.

Adjacent Markets, Overlapping Definitions

APM as a technology category is closely related to, and frequently confused with, five other technology categories, and, unfortunately, vendors have often exploited and compounded the market confusion. The five related categories are:

- Application management (AM) — APM technologies are a proper subset of application management technologies, which include application development, testing, quality and release management technologies, as well application project portfolio management technologies.

- Application-aware network management (AANM) — Network behavior is a significant contributor to end-to-end application performance, and network administrators need to understand the application context within which network services are executing in order to contribute to the search for service problem root causes and to better prioritize their own management activities. This has led to the emergence of a set of technologies that, in many ways, resembles and sometimes overlaps with APM, and, in fact, many enterprises are increasingly expecting such

technologies to do double duty and meet the needs of both application operations and network administration. Nonetheless, network administration and application operations needs remain distinct, and, even if some technologies are shared (e.g., packet capture appliances), the ways in which they are used by the two communities are fundamentally different.

Business service management (BSM)— Business services are collections of IT functionality defined and presented in terms intelligible to business users or customers, and governed by service-level agreements stated and measured in terms that are relevant to business or customer concerns; while not essential to the definition of BSM, most BSM technologies have focused on mapping infrastructure events (i.e., warnings or instances of resource consumption or average latency threshold transgression) to business-meaningful events defined in terms of business service functionality and the resultant parallel monitoring of business service and infrastructure events. As such, BSM is compatible with APM, although, given that for many large enterprises the business services of interest to users and customers are applications, we do find an increasing number of them looking at APM as an initial step on a longer road to BSM. In such cases, a better way of relating BSM to APM would be to say that business services decompose into user-defined transaction types, the execution of instances of which are monitored by APM technologies.

Business process monitoring (BPM) — BPM technologies allow the monitoring of the execution of a modeled business process flow; now, most business processes in large enterprises contain some paths that are, in fact, executed by means of applications, and it would be conceivable for a BPM platform to hand off the monitoring of those application-enabled paths to an APM system, particularly those dimensions associated with end-user experience monitoring and user-defined transaction profiling. In practice, few BPM platform implementations capitalize on that possibility, although a number of APM vendors (e.g., HP, Oracle and Progress Software) have added some BPM functionality to their APM portfolios.

Business transaction management (BTM) — BTM remains a popular term to describe APM offerings that are restricted to user-defined transaction profiling and packet-based real-user experience monitoring. Many users, particularly those that are in operations management as opposed to being application-support-focused, find that conjunction of dimensions to be an attractive starting point for APM; therefore, we believe the term to denote a useful concept. The qualifier "business" is misleading, however, in that it assumes that such technologies are, out of the box, concerned with business-meaningful transactions, such as bank account updating or ticket buying, when they are simply concerned with any named set of user activities at an application interface. In addition, the qualifier "management" is misleading, because it presupposes that the technologies concerned do something more than simply exhibit how a series of events kicked off by some user activity at an application interface make their way across an application stack and supporting infrastructure.

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