2012 – The year of Application Performance Management (APM)

*IT executives prioritize APM to address increased user demand for better performance and to meet business goals, making APM more vital than ever before*

February 2012

New research presented in this report shows that IT executives, in general, and CIOs, in particular, know that application performance is the most important issue that needs addressing to improve the user experience and the performance of business transactions and, ultimately, to increase revenues. There is strong agreement that, to do this, they need to both monitor and manage applications across their lifecycle and at all stages of delivery; that means not just in the data center, but across networks, the cloud and on the end user devices where the user experience is actually witnessed.

The report should be of interest to senior IT and business leaders who want to gauge where their own business sits with regard to competitors when it comes to providing effective experiences to customers through the applications that sit at the core of their businesses.
2012 – The year of Application Performance Management (APM)

IT executives prioritize APM to address increased user demand for better performance and to meet business goals, making APM more vital than ever before

EXECUTIVE SUMMARY
A recent survey conducted by Quocirca reveals the vital importance of APM to business success, and the lack of confidence by IT executives in their ability to meet user demand. This report presents these results, along with a self-evaluation tool to help determine whether your business’ APM needs are being met, as well as a set of APM system selection criteria should you consider, as many respondents to the survey do, that new investment is necessary.

Key findings in 2012 Application Performance Management Outlook Survey

<table>
<thead>
<tr>
<th>Users will demand better performance in 2012</th>
<th>Users will expect better performance, such as faster page loads, checkout, etc., from applications in 2012.</th>
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<tr>
<td>Current capabilities won’t meet expected user demand</td>
<td>IT executives are not confident that their organizations will be able to meet this increased demand without improving current APM capabilities.</td>
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<td>There is a need for more proactive insight into application performance</td>
<td>Most respondents report that application performance monitoring should be more proactive to accelerate problem resolution and improve the user experience.</td>
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<td>Businesses must understand, from the user perspective, how their applications and websites are performing</td>
<td>Achieving this level of insight requires monitoring of applications to go beyond the data center and start with the user perspective.</td>
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<td>The demand for better performance has made improving APM capability the number one priority</td>
<td>If APM is not top of mind, then it probably should be in order to meet increased user expectations, achieve competitive differentiation and realize business goals. Organizations not investing in APM may be at a competitive disadvantage.</td>
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<tr>
<td>APM systems need to go beyond production monitoring to provide value across the application lifecycle</td>
<td>In order to optimize performance of key transactions, reduce release cycle times and improve the code being delivered to production, monitoring of applications needs to take place at all stages of application development and deployment.</td>
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<tr>
<td>A single APM system with full application visibility is required</td>
<td>A single APM system provides full visibility into all user behaviors, business transactions, complaint resolution times, conversation rates, etc. to eliminate time spent correlating between different tools.</td>
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Conclusions
Ultimately, all IT delivery is about application delivery. If the performance of applications that serve a business and its employees, partners and customers is sub-optimal, then so is that business’ competitiveness. Although application delivery is complex, it is possible to get a holistic view of the transaction performance and the user experience, but only if an APM system is in place that is capable of achieving this.
Introduction – it is the end user experience that counts

Those who get to visit a modern large-scale data center for the first time cannot fail to be impressed. The endless racks with their tightly packed units of hardware, the squeaky clean floors, neatly arranged masses of wiring and the steady purring of cooling equipment all project an image of technical excellence and efficiency. However, most consumers never see this side of the Internet. In years gone by, office workers may have been vaguely aware of the machine rooms housing computers in remote corners of the buildings they worked in but, increasingly, the IT systems they now rely on are completely out of sight in vast data centers often owned and run by third parties.

However, both consumers and business users witness the result of all this technology right in front of them, day-in, day-out, through the performance of the applications they use. Whether it is buying goods from an e-commerce site, completing a stock trade, or making an airline reservation, IT users take good experience for granted and are frustrated when it fails to meet their expectations. This is where the real results of an IT department’s efforts to deliver applications are measurable. In the everyday experience of users, any slowdowns impact the revenue of a company because the competition is just a click away. Yet, IT executives indicated a lack of confidence that they will be able to meet these demands and it is for this reason that recent Quocirca research shows that monitoring and managing the performance of applications is the highest priority of IT leaders amongst a range of issues they were questioned about.

This report presents the results of research from 500 interviews with senior IT executives across the US and Europe in four key business sectors: e-commerce, financial services, technology, and other commercial organizations. It looks at the pain businesses suffer when it comes to trying to get on top of the problems regarding application performance, the experience of users and the performance of business transactions and where these issues sit in a long list of priorities. It also looks at how well prepared businesses are to monitor, measure and improve these issues and the degree to which they are planning to invest in the tools to do so.

The report should be of interest to senior IT and business leaders who want to gauge where their own business sits with regard to competitors when it comes to providing an effective experience to employees and customers through the applications that reside at the core of their business.
Deliver performance – ever increasing circles

One of the issues with delivering good application performance is that the need to monitor, measure and fix never ends. We live in an application-centric world where content and infrastructure are constantly changing, adding complexity and impacting performance. Gone are the days of a six second response time to load a page. It’s now two seconds or less, otherwise you risk losing customers to another site. A two second slowdown in response time is estimated to equal about 4% of revenue loss per visitor to an e-commerce site, so speed matters. There are also opportunity costs; once prospects defect to a competitor’s site, they are unlikely to return. In addition, online businesses also need to prepare their applications to be accessed by end users from across the globe, through third party code and services, as well as from an array of different browsers and devices, such as tablets and smartphones.

Although IT systems are becoming ever more powerful, the expectations of users are outstripping the capabilities of most application implementations, which is probably why 82% of CIOs and 66% of all respondents to current research say that users will expect better performance, such as faster page loads, checkout, etc. from their online applications in 2012 (Figure 1).

Against this backdrop of increased pressure to improve performance, businesses in the US and Europe cited significant concerns and pain points. Nearly half of the CIOs are not confident that their organization will be able to meet the expected demand without improving their current APM capabilities (Figure 2).

Most businesses are struggling to map application performance to their business goals. CIOs, in particular, worry that the metrics they collect on application performance do not map well to business metrics. They need the APM system to allow them to combine a wide range of statistics in real-time about how well applications are meeting the requirements of lines of business alongside those on pure performance (Figure 3).
The ability to monitor and manage Web-based applications is no longer an advantage, but a necessity. There are all sorts of issues that can lead to poor application performance, which is probably why nearly 90% of CIOs and four out of every five IT executives know they need more proactive insight to accelerate problem resolution and improve user experience (Figure 4), with the concern varying little by business sector (Figure 5).

They also know that a full understanding of how well they are doing cannot be gained from monitoring the data center alone; three quarters say they need to start with the user perspective and work in from there (Figure 6).
The search for a better solution is on

The majority of businesses have a collection of APM tools in place or, at least, have some sort of procedures for achieving the task. Most accept that they could do more, moving from just production monitoring to look at the whole application lifecycle, including the optimization of individual transactions, providing the insight to improve software and issue new releases more regularly and, indeed, improve the quality of the user experience altogether (Figure 7).

To achieve this, the majority accept that this means they need a single solution to examine user behavior, business transactions, complaint resolution times and conversion rates as a whole to eliminate the need to gather data with different tools and go through the time-consuming process of integrating and interpreting the results (Figure 8). In many cases, a disjointed view may defeat the objective; the need to fix a pressing problem may be noticed too late to take effective action and prevent lost revenue opportunity from failed business processes.

One of the most widely acknowledged benefits of being able to carry out full APM is that it frees up IT staff for other tasks. It is not just IT users whose experience needs to be improved; it is also the employees that keep IT systems running on a day-to-day basis. The jobs of system administrators, software developers, help desk staff, etc. would be far more satisfying if they were less about keeping the lights on and more about improving the value provided through being part of effective IT delivery teams. 92% of CIOs recognize this as a key challenge (Figure 9).
The need to focus on application performance is most striking when viewed in comparison to other priorities. When asked to rank APM against issues such as cloud deployment, virtualization, network upgrades, and delivering new application and desktop changes, checking the performance of existing applications was the overwhelming priority (Figure 10). More than half listed it as a top 5 issue out of the 15 they were asked about.

Regardless of title or business sector all respondents agreed that APM would be more vital in 2012 than ever before (Figures 11 and 12).

Most have a will to see this through; the will to invest in a better APM solution is there and 82% of CIOs agree that it is driven by ‘best value’ and ‘total cost of ownership,’ and not just purchased based on lowest price (Figure 13).
Two thirds are actively upgrading their APM capability in 2012 (Figure 14). Often this is not a one-off investment but a process of continuous improvement. Over one third said they have recently invested in APM, but will still invest more.

Of the countries surveyed, the US and Germany are on the leading edge with the latest technology and plans to invest more (Figure 15), with France and the UK lagging. UK respondents did indicate the intent to catch up in 2012.
### APM Self Evaluation Tool

In order to evaluate your organization’s APM needs, this report includes a template with ten of the same questions that were included in the survey conducted as background to this report. Simply answer the questions, total up the score, and see where your organization fits on the APM Pain Index.

For each pain point/statement assign a value between 1 and 5 where:
- 1 = no pain/strongly disagree
- 2 = low pain/disagree
- 3 = moderate pain/neutral
- 4 = pain/agree
- 5 = high pain/strongly agree

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<tr>
<th>#</th>
<th>Pain/statement</th>
<th>Score</th>
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<tbody>
<tr>
<td>1</td>
<td>Our users will expect better performance, such as faster page loads, checkout, etc., from our online applications in 2012</td>
<td></td>
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<tr>
<td>2</td>
<td>Our organization is unable to meet this increased demand without improving our current APM capabilities</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>We need to immediately resolve performance issues to free human resources for more strategic goals</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Our monitoring should be more proactive to accelerate problem resolution and improve user experience</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>We’re spending too much time resolving problems in production that should be caught earlier in the application lifecycle (i.e. in development, testing and quality assurance)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Our organization’s APM systems need to be much easier to configure and maintain with few IT resources required</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>We need full visibility of all user behaviors, business transactions, complaint resolutions, conversion rates, etc., through a single APM system to eliminate time spent correlating between tools</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Monitoring of our applications needs enhancing to go beyond the data center and start with the user perspective</td>
<td></td>
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<tr>
<td>9</td>
<td>We are finding it difficult to determine if our applications are supporting our business goals because our APM system metrics do not map to business-relevant metrics in real-time (e.g. revenue and conversion rates)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>We need to improve our APM system to go beyond production monitoring to provide value across the application lifecycle in order to optimize performance of key transactions, reduce release cycle times and improve the code being delivered to production</td>
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</table>

**Total:**

**APM Pain Index:**
- Score 40–50: better APM should be top of mind, a necessity for your business, invest now. You could be losing revenue; user experience is likely to be sub-optimal and transactions performing poorly.
- Score 30–39: you are at a competitive disadvantage; not efficient; likely to be significantly behind competitors and probably losing revenue.
- Score 20–29: you are doing OK but there is still room for improvement.
- Below 20: you are doing some things right but make sure that you have the right APM system to stay at the top of the game. Speed matters.
## APM system selection criteria

Selecting an APM system involves evaluating a wide set of needs and capabilities. The table below lists some of the criteria that should be included in any evaluation.

<table>
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<tr>
<th>Requirement</th>
<th>Description</th>
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| A common platform across the application lifecycle | • Common interface and language for all stages from development to deployment  
• Capability for continual end-to-end monitoring of applications from end-user click to application server/database and back again  
• Reports on all tiers: web-browser, network, application server, etc.  
• Provision of reports to facilitate continuous improvement and regular release of new versions of applications |
| Can cover multiple physical, virtual, cloud and hybrid environments | • Support for multiple programming languages (Java, C/C++, .NET, etc.)  
• Multiple application server support (.NET, WebSphere, CICS, etc.)  
• Support for common cloud environments (Microsoft Azure, Amazon EC2, etc.)  
• Must be rapid to implement and easy to use in complex environments |
| Proactive monitoring                             | • Capable of high fidelity and continuous monitoring  
• Capability to check for regressions (i.e. changes do not introduce new errors)  
• The ability to compare the results of different sets of tests (diffing) |
| Fast diagnostics                                 | • Continuous, thorough real-time monitoring and reporting, which eliminates the need for problem recreation after the event  
• Ability to rapidly identify the root causes of problems |
| Works online and offline                         | • Ability to support global teams, both network connected and working in isolation  
• Ability to include developers and administrators from 3rd party service providers |
| Provides a view from the end user perspective    | • Ability to measure the end user experience rather than the just the core application  
• Visibility into services and incidents beyond the data center |
| Must reside in the application                   | • All layers of infrastructure must be visible from the application perspective  
• Monitoring capability must ‘travel’ with the application along its complete path |
| Ability to advise on scalability                 | • Should be capable of providing advice on where infrastructure needs scaling to support rising demand |
| Support for 3rd party code, services and frameworks | • Must provide an insight into everything regardless of supplier  
• Provide required information to request actions from third parties as necessary |
Conclusion - competitive edge through effective APM

We live in an application-centric world where business users and IT need to work closer together than ever before to drive business, achieve customer satisfaction and grow partnerships. Businesses are looking for meaningful information and a transparent view of their applications to make sure end users are happy and to drive competitive edge by bringing new enhancements and capabilities to market faster than ever before. IT departments care about availability, performance of applications, anticipating problems before they become issues for their users and continuing to reduce cost and increase efficiency while providing a better service to the business they serve.

This isn’t easy. Millions or billions of dollars, euros or pounds are at stake; delays mean abandoned shopping carts, unsatisfied users and lost loyalty. This is why IT executives ranked APM as their top priority and state that APM is more vital than ever before for assuring production success of business-critical applications.

If APM is not top of mind, then either your organization has the problem solved or it is being complacent. Use the APM self-evaluation tool in this report to gauge your organization’s capability with regard to APM and see how it measures up against other organizations. Evaluate APM systems against the APM selection criteria to make sure that your next APM system meets the needs of the application-centric world we all live in.

Many organizations are investing in advanced APM systems that they believe will give them the insight needed from the user perspective to compete successfully, especially over the Internet, to satisfy customer expectations, to maximize use of resources and ensure they are meeting (if not exceeding) their business goals. Organizations not investing and regularly re-evaluating their APM capability are likely to be at a competitive disadvantage.
Appendix – methodology and demographics

The 500 respondents to the research presented in this report are IT executives and CIOs from selected organizations in the target industries. The individuals targeted were selected because they were expected to, and confirmed they did, have the knowledge to answer questions about the performance of applications in their organization and the tools in place to measure and improve this. Once qualified, the individuals were asked to complete a web-based survey.

For the data presented in Figure 10, the respondents were asked to select 5 issues from a list of 15 and place them in order of importance. Each issue selected was given a weighting; 5 for the most important, 4 for the second down to 1 for the fifth. The cumulative scores were then recast as a percentage of the highest possible score. If all had selected the same issue as the most important, it would have scored 100%.

The breakdown of respondents by country, job role, and industry sector and organization size is shown below (Figures 16 – 19).
References

About Compuware dynaTrace

About PurePath™
dynaTrace’s patented PurePath Technology® provides the industry’s most accurate view into application behavior under load. Ultra-light and production-safe, PurePath captures timing and code level context for all transactions, end-to-end, from user click, across all tiers, to the database of record and back. With this exact, deep atomic level detail, PurePath allows for more accurate reporting, granular business transaction grouping, precise SLA management and the fastest path to root-cause on the market. Recently extended to include zero-configuration and auto-adaptive capabilities, PurePath accelerates time to value even in the most demanding application environments and reduces cost of ownership to a fraction of the cost of traditional APM systems. To learn more about the magic of PurePath, click here.

About dynaTrace software
dynaTrace, a division of Compuware, is the new leader in application performance management (APM). With its patented PurePath Technology, the company offers the only continuous APM system on the market, transforming how applications are monitored, managed and optimized. Hundreds of companies including Amadeus, BBVA, Hiscox, Renault, Thomson Reuters and Zappos, rely on dynaTrace to drive better business results by optimizing performance, accelerating release cycles, reducing application management costs, and bringing business and IT closer together. Visit dynaTrace online at http://www.dynatrace.com. Follow us on Twitter at http://twitter.com/dynatrace.

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REPORT NOTE:
This report has been written independently by Quocirca Ltd to present research into issues faced by organizations with the performance of their applications and their use of APM tools.

The report draws on Quocirca’s extensive knowledge of the technology and business arenas, and provides advice on the approach that organizations should take to better monitor the performance of applications, improve their user experience and the performance of business transactions.

About Quocirca

Quocirca is a primary research and analysis company specializing in the business impact of information technology and communications (ITC). With worldwide, native language reach, Quocirca provides in-depth insights into the views of buyers and influencers in large, mid-sized and small organizations. Its analyst team is made up of real-world practitioners with first-hand experience of ITC delivery who continuously research and track the industry and its real usage in the markets.

Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of an organization’s environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to provide advice on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca’s mission is to help organizations improve their success rate in process enablement through better levels of understanding and the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research program, regularly surveying users, purchasers and resellers of ITC products and services on emerging, evolving and maturing technologies. Over time, Quocirca has built a picture of long-term investment trends, providing invaluable information for the whole of the ITC community.

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Details of Quocirca’s work and the services it offers can be found at [http://www.quocirca.com](http://www.quocirca.com)

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