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Ensure a Successful SOA Deployment With Application Performance Management

By Paul Ellis

Service Oriented Architecture (SOA) is one of the hottest topics in the business and technology world today. Holding great promise for improving business services while reducing the cost and delivery time for new services, SOA is on just about every CIO's radar.

SOA is not a product, but an application architecture where reusable services are made available over a network and linked to provide a specific business process. The reusability and availability of these services can significantly reduce new application development time and expense. While this new paradigm simplifies new application and business process deployment at the business unit level, it adds yet another layer of complexity to the Distributed Application and Web Services environments.

The SOA Train Has Left the Station

SOA deployments run the full range from a well-planned, CIO-driven strategic initiative, to ad hoc solutions that seem to appear out of nowhere and run on existing and often overstressed IT infrastructure. Fortunately, as is often the case with any new technology or architecture, most organizations are taking a somewhat cautious approach to SOA, learning from — and building on — the success of small pilot projects before evolving to more complex, enterprise-wide strategic initiatives.

"Whatever a firm's SOA platform strategy, the majority of firms evolve toward their SOA platform in small steps rather than attempting one big jump to land at their strategic SOA platform" says Randy Heffner, vice president and principal analyst at Forrester Research[1].

This transition can take years and even then many organizations will still depend on non-SOA legacy applications for many business initiatives. So how do you manage this dynamic and evolving infrastructure to make sure you can maintain current service levels while deploying new technology and architecture to improve Service Level Agreements (SLAs) and the overall customer experience?

Application Performance Management (APM) should be directly related to the business process to assure that truly mission-critical transactions are given the highest priority. Stated another way, not all transactions or users require or warrant the same performance level. A brokerage firm, for example, would want market trades where delays could result in huge financial losses, executed with the highest priority. Conversely, that same brokerage firm may be less concerned about an internal application for some less critical function. SLA objectives then should be manageable at both the business-process and user-role levels.

Most organizations today have some level of infrastructure-management tools to address these issues. In some cases they are very focused point solutions designed to provide detailed insight into a specific component. At the other end of the spectrum are management suites providing a broader but frequently less detailed view of the overall environment. It's not

unusual to find a single enterprise with investment in literally dozens of infrastructure-management tools, with a much smaller subset used for day-to-day management of the environment.

On the Right Track

For most organizations then, one of the infrastructure-management challenges is to invest in management tools that can serve all worlds, from Distributed Application through complex Web Services and emerging SOA environments. Further complicating the SOA picture is the need to manage heterogeneous environments where cross-platform services add another level to an already-complex environment. Additionally, the IT infrastructure may include some level of Virtualization adding another layer of abstraction. So it's easy to understand the proliferation of point solution tools.

In addition to addressing the level of complexity just described, APM tools should be non-intrusive, adding little or no overhead to the total customer transaction experience, and finally, they should be open to integration with other infrastructure-management components to help unify and simplify the management of the entire infrastructure. Deploying tools that provide cooperative integration can help triangulate on problems faster and avoid costly service interruptions or delay.

While some of this may seem overwhelming, solutions to help manage that complexity do exist. According to vice president of marketing for CA Wily, Prabhjot Singh, "CA Wily's APM solution has been helping some of the largest enterprises around the world manage complex environments serving billions of transactions per- second. Our solutions help simplify and manage complex environments providing the all-important and often elusive visibility into the total customer experience."

One of the key attributes of the CA Wily APM solution is the ability to capture information from transaction initiation to conclusion, gathering performance data from every layer in the transaction path. The total customer experience is observed and compared in real-time to the stated service levels based on the business process or user role as defined by the business unit. When a potential SLA violation begins to emerge, APM software raises the alert and provides root-cause analysis using both real-time and recent history information to help pinpoint the failing component. In many cases, problems can be resolved without impacting the user. If an actual failure does occur, the actual impact can be minimized by having extensive information and insight into the likely failing component. The ability to provide this level of insight and problem avoidance is important.

It is also important to note for the above scenario that this performance data is gathered using non-intrusive or passive monitoring techniques that do not delay the transaction. This is an especially significant concept to consider as you look at APM solutions. Solutions that operate in the transaction path, sometimes considered "active" solutions, can add significant transaction overhead. These solutions frequently work initially, but will not scale as a specific application transaction volume increases or as additional demand is placed on the application infrastructure. This can be especially disastrous when the failure is a result of higher transaction levels, which indicate either a greater number of users or a larger revenue opportunity is now at risk.

The Take-aways

APM needs to be considered at the beginning of any application development process regardless of implementation architecture. APM tool sets should be capable of cooperative integration with existing or planned tool sets to provide the greatest level of information for problem avoidance and rapid triage. APM tools should provide a real-time view of the actual customer experience without adding significant transaction overhead. Invest in APM tools that can manage the current and emerging environment to protect your investment in operations staff training and practices.

1. Forrester, "How to Build Your SOA Platform," Randy Heffner, May 2008.

Paul Ellis, CA Wily Senior Marketing Manager has over 30 years of IT experience spanning a wide range of disciplines including world-wide marketing, product management and sales responsibility at companies like IBM and Amdahl Software Group. His background includes significant experience in infrastructure management software and on-demand applications, in addition to hardware platforms. He has written articles and delivered presentations at industry conferences in North America, EMEA and Asia Pacific linking business needs with technology solutions.