

EMA Research Report: The Many Faces of Advanced Operations Analytics

Report Summary

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) Research Report

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IT & DATA MANAGEMENT RESEARCH,
INDUSTRY ANALYSIS & CONSULTING

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Executive Introduction

In the summer of 2014, EMA completed a research project including 150 U.S. respondents and 100 European respondents on Advanced Operations Analytics (AOA). “Advanced operations analytics” is Enterprise Management Associates’ term for big data as used by IT for a variety of use cases. These include optimizing service performance, minimizing security issues, managing change and optimizing capacity across internal IT and the extended enterprise (partners, service providers, suppliers, etc.), and ultimately governing IT more effectively as a business in support of the business its serves. While these are indeed separate areas with largely separate constituents and traditionally separate markets, EMA’s premise was that effective AOA investments are beginning to blend those values and promote more effective ways of working across IT. To large degree, that premise was borne out this research.

EMA looked at a benefits/use-case analysis. The average was five for deployed AOA with some as high as 10 or 13.

Some of the highlights from this research include the following:

- EMA looked at a benefits/use-case analysis. The average was five for deployed AOA with some as high as 10 or 13. In other words, AOA is multi-use case and modular in how it brings benefits. Most AOA investments don’t do just one thing.
- EMA saw strong interest in DevOps, as well as cloud. In fact those who were “extremely successful” in AOA were *20 times* more likely to be “very successful” in their hybrid cloud adoptions than those who were only moderately successful or less in their advanced analytics.
- Aggregated data stores—either as a part of the AOA solution, or as a separately provided resource—are clearly becoming more and more prevalent.
- In-house AOA initiatives still lead third-party purchases, presumably because of the newness of the market.
- EMA also tested service modeling deployment and priorities for AOA. EMA found that “extremely successful” AOA respondents were significantly more invested in linking AOA to service interdependencies, and were 3 times more likely to have deployed CMDDBs and/or Application Discovery and Dependency Mapping (ADDM) as those groups that were only moderately successful or less. In fact only 9% of respondents had no interest in capturing interdependencies by linking their AOA investments to some sort of service modeling or service topology.

Research Specifics and Demographic Insights

Data collection occurred in August of 2014 with 150 U.S. respondents and about 100 respondents evenly divided between England, Germany and France. To focus the research, we targeted those who were seeking cross-domain analytics that leveraged big data in order to optimize IT performance and/or business alignment. EMA required that the AOA solution either be fully deployed, or in deployment, or in PoC or planning mode in order to avoid purely speculative answers.

In terms of company size, EMA was fortunate to get a fair diversity of balance—targeting companies above the 250-employee level. 43% had fewer than 2,500 employees, 30% were mid-tier enterprises with between 2,500 and 10,000 employees. And 26% were large enterprise with more than 10,000 employees. In fact, 21% had more than 20,000 employees.

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In order to test out the idea that AOA could support multiple initiatives instead of just one, EMA also looked at prevalent skill sets (as might be associated with use cases).

- Security/IT governance and risk
- Application management
- ITSM/service desk
- Software development
- Change and configuration management
- IT asset and financial optimization

The following characteristics for each skill set are telling. Please note that all data is relative to OTHER SKILL SETS to highlight areas of difference among them.

- Security: Consistently prioritizes security values, favors predictive trending, events and time series data, values real-time insights and historical trends on IT services.
- ITSM/service desk: Favors reports on asset and financial optimization, better alignment of IT service and business performance, is more likely to feel only “marginally successful” with AOA deployments.
- Software development: Prioritizes systems availability and performance, if/then change impact, log files, integrations with Dev/Ops tools and application dependency mapping for performance, and on-premise AOA.
- Application management: Prioritizes application optimization, problem isolation in systems, business events and time series data, app performance, event management and operational dashboard integrations, and ADDM for performance.
- Change and configuration management: Prioritizes configuration and change management effectiveness, isolating problems in provisioning applications, if/then change impact analytics, capacity planning analytics, and CMDB/CMS /ADDM linkages.
- IT asset and financial optimization: Prioritizes business activity metrics, CapEx savings, OpEx savings, application usage for cost, business process impacts and supply-chain related outcomes, and CMDB/CMS and financial planning integrations.

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AOA Technology Priorities

In terms of domains, security edged out network, systems, virtual systems and database (Figure 1) among the top tier priorities; however, if third-party applications and in-house applications were combined, they would tie security for the lead.

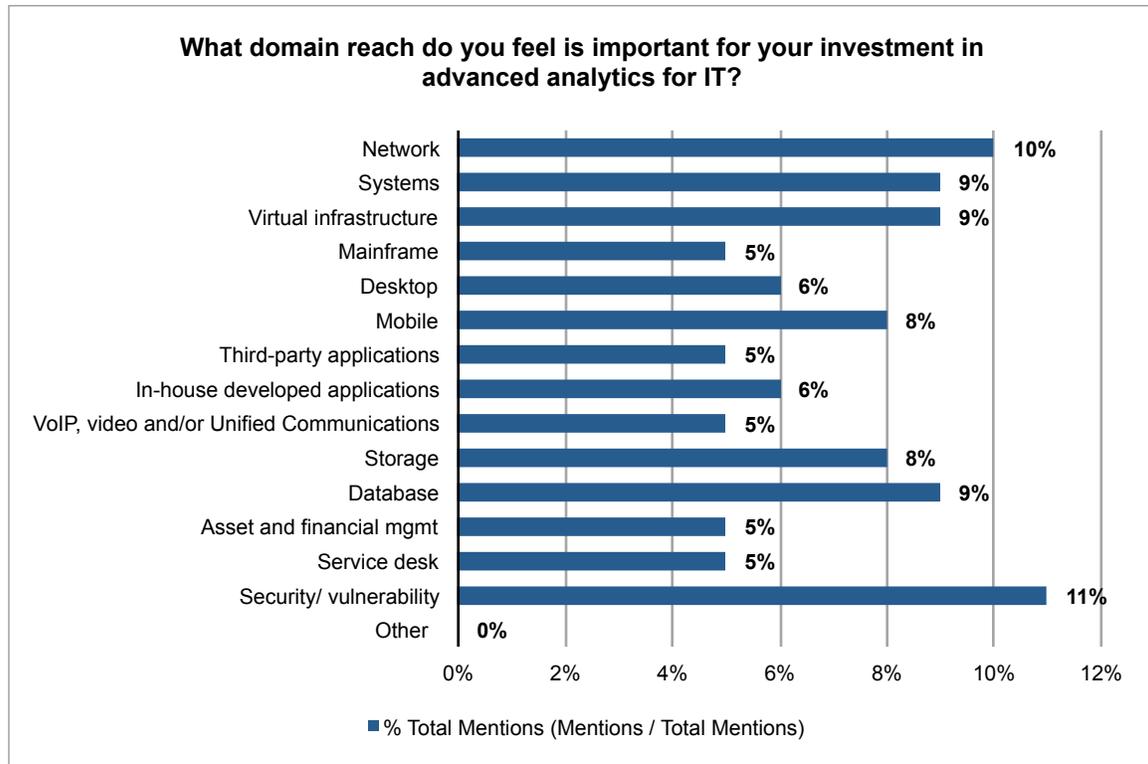


Figure 1: Domain priorities for AOA also underscore the diversity of AOA value, with security tied for the combination of in-house and third-party applications for the lead. (Sample Size = 252, Valid Cases = 252)

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Similarly, in addressing “technical issues” for AOA, security was clearly in the lead, followed by systems availability and performance, network availability and performance, storage availability and performance, and application optimization. For triage priorities, (Figure 2), security tied cross-domain analytics (isolate where the problem is across the application/infrastructure).

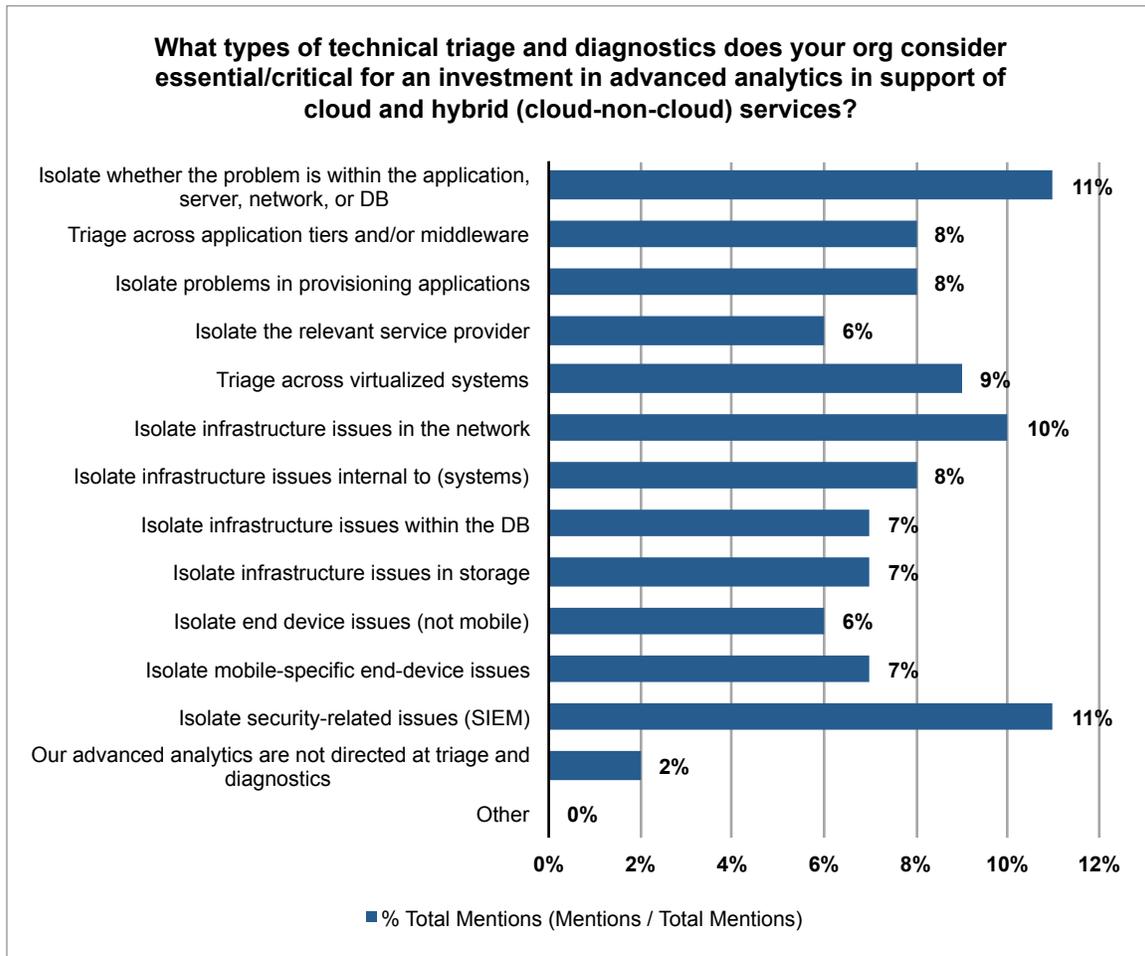


Figure 2: Technical triage and diagnostic priorities featured cross-domain problem isolation across the application infrastructure and security, followed by triage across the network and virtualized systems. (Sample Size = 252, Valid Cases = 252)

The top six business metrics affiliated with AOA deployments (in a relatively close race) were:

1. Internal cost of service delivery
2. External costs associated with service delivery (tied with internal costs for first place)
3. Time to create/develop and deliver new IT business services
4. Business process impacts
5. Business Activity Metrics (BAM)
6. Service level agreement requirements

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An impressive number of respondents (89%) currently aggregate, or plan to aggregate, AOA-related data into an a single data store such as NoSQL, SQL or Hadoop—with a fairly balanced mix of interest in open source and commercial sources. Either through these data stores (55%), or directly (33%), or through a combination (12%), most respondents intend to assimilate data from between 10 to 20 monitoring or other tools. Of these, network performance, application performance and security lead for technical integrations. Similarly, security audits tools, capacity planning and service optimization analytics, business process management systems and executive dashboards lead for business or change management sources. ADDM and asset and financial planning information also scored high in the business and change management arena.

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Extending the AOA Reach

One thing that separates out AOA from traditional BI is the chance to align with other service management and service modeling investments such as ADDM and even in some cases CMDDB/CMS. These alignments proved to be a critical determinant in achieving high levels of AOA success, as we will see later in this report. Figure 3 indicates a high level of interest in capturing interdependencies, often linked with service modeling.

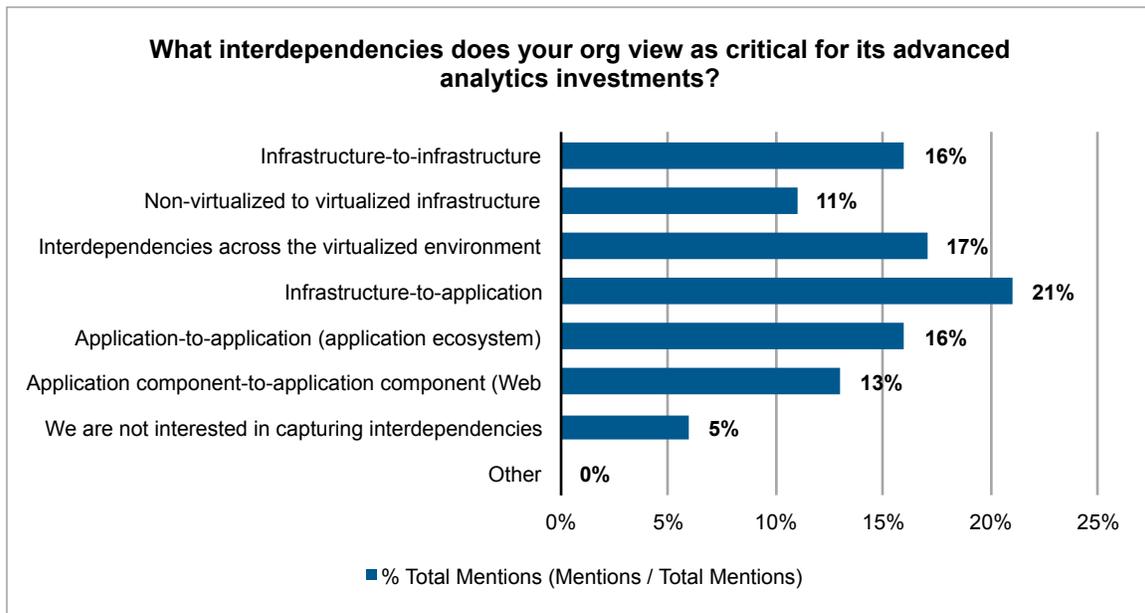


Figure 3: Infrastructure-to-application led in capturing interdependencies to support AOA investments. This figure once again indicates that interdependency interest is broad and diverse, with only a small minority claiming no interest. (Sample Size = 252, Valid Cases = 252)

When EMA tried to map these to service modeling and other investments, priorities were for a service-modeling topology provided by the AOA tool, followed closely by ADDM for performance and ADDM for change. A service modeling dashboard and a federated configuration management system were also high on the list. Only 5% (of those interested in capturing interdependencies) were not interested in linking service modeling to their AOA investments.

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Organizational and Role-related Insights

The executive suite is most likely to be the driver for AOA deployments. The executive suite is also more than twice as likely as any other group to be the deciding factor in AOA purchases.

The top five domain roles our respondents wanted to support with AOA were:

1. Security
2. Network
3. Database
4. Application development (two percentage points ahead of application management)
5. Storage

The top cross-domain roles for AOA are:

1. Service delivery (application services across the infrastructure)
2. Capacity planning
3. Infrastructure management
4. Configuration management
5. Change management
6. Executive IT

Among non-IT roles, business planning and business development takes a clear lead, while User Experience Management (UEM), on-line management and line of business support are tied for second place. UEM is worth singling out as key AOA opportunity as it involves a critical stage for promoting and consolidating both IT and business insights dynamically and in real time.

AOA Adoptions, Benefits, Success Rates and Purchase Priorities

Far more respondents were in AOA deployment than fully deployed—as is to be expected in a market that's still very much emerging. More specifically:

- 19% were fully deployed
- 51% were actively in the process of deployment
- 19% were not yet past proof of concept
- 7% were still evaluating what solutions to invest in for AOA
- 4% were planning but had not yet making evaluations

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Figure 4 shows the many diverse benefits that AOA can bring, with faster time to repair problems and better optimization of IT assets tied for first place. It should be mentioned that only those respondents who were fully deployed or in active deployment (about 70% of respondents) qualified to answer benefits. Further analysis also revealed that benefits were modular or multi-use-case in nature—as the average for those fully deployed was 5 across this list, with some showing as many as 10 or even 13. This modularity was reinforced when we examined role support, as per the below:

- Average number of domain-specific roles supported via AOA – 4
- Average number of cross-domain roles supported via AOA – 3
- Average number of non-IT roles supported via AOA – 2
- **Average number of roles overall supported via AOA – 9**

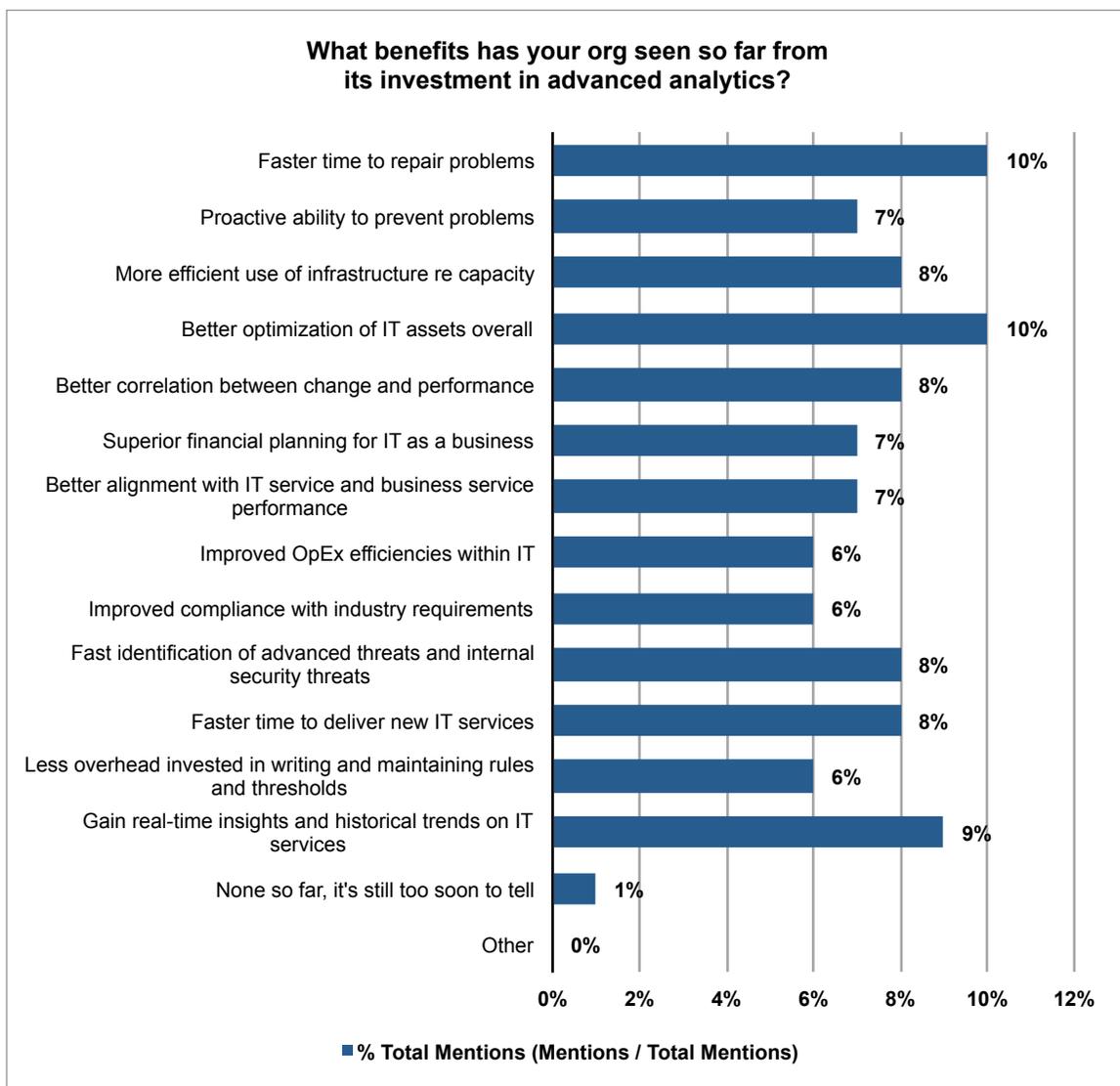


Figure 4: The list above shows that faster time to resolve problems was tied with better optimization of IT assets for the lead in benefits. Gaining real-time insights and historical trends on IT services was a close second. (Sample Size = 176, Valid Cases = 176)

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In addition, nearly two-thirds, or 65% of respondents plan to support DevOps requirements through advanced operations analytics. As Figure 10 shows, this was dominantly through either direct support for the application development process, or for minimizing the time that developers must spend troubleshooting production issues. Providing feedback to development from production issues—e.g. through UEM analytics—was also strong.

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AOA Success

Figure 5 shows perceived success rates for AOA.

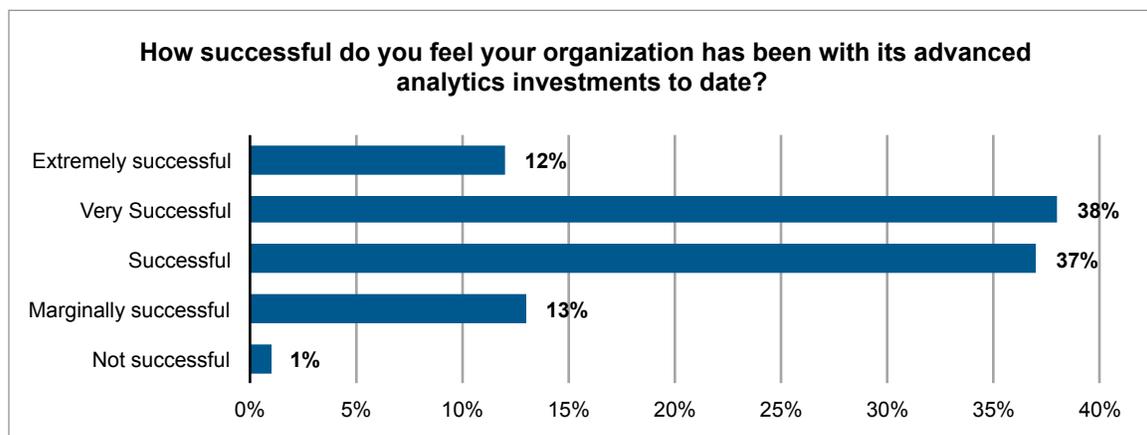


Figure 5: Perceived success rates for AOA. This question was only asked for respondents who were either “fully deployed” or “actively in AOA deployment.” (Sample Size = 176)

Those who were “extremely successful” had the following characteristics:

- More than 3X more likely to be “fully deployed” than “actively in deployed.”
- More likely to have a broader array of service management technologies deployed. Most dramatically:
 - 2X more likely to have SLM and UEM
 - 3X more likely to have CMDB and ADDM.
- More likely to seek a broader array of use cases, whether in technical triage, business impact metrics, more cross-domain and more non-IT roles.
- Significantly more likely to pursue DevOps.
- Likely to integrate more monitoring tools and other sources.
- More likely to seek to capture and/or integrate service modeling-related interdependencies.
- 20 times more likely to be “very successful” in cloud.
- Significantly more likely to get an increase in IT budget.

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Conclusion

This report reflects the status of AOA adoptions in Q3 2014, planned, in-process, and actual. Given the newness of the technology, some of the data may change dramatically just a year hence. But other data may not alter radically, if at all. For instance we believe that the multi-use-case direction of AOA is core to its adoption, along with support for multiple roles and its transformative potential for IT as a whole. This should become even more evident in the years ahead as IT organizations continue to discover modular extensions to existing use cases, extending role support, and expanding overall AOA benefits.

As shown throughout this report, AOA solutions support multiple use cases, including DevOps and cloud, as well as many roles across IT, and even non-IT roles such as business planning and on-line operations. As a corollary to this idea, AOA investments can and should be viewed as at least potentially transformative—far beyond just the cliché. This may well be why the importance of executive IT is high—both in driving and acquiring AOA investments.

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One thing AOA is not is a single technology. So how will this new tidal wave evolve in the coming years? (It may be just as misleading to refer to AOA as a single market as it is to view it as a single technology.) We can only speculate as all this data is current—but based on data here, as well as many past and present dialogs with AOA deployments, EMA analysts anticipate the following:

- A growing number of vendors will create AOA offerings with differing architectures and distinctive value-feature-focus.
- We will see a trend borne out of competition to promote solutions with easy/fast deployments and well-evolved templates to support multiple roles and multiple use cases.
- This will result in faster time to value for AOA deployments.
- We will see greater awareness and interest in enabling service modeling integrations with AOA investments—including application discovery and dependency mapping (more directly) and CMDB/CMS (more indirectly).
- AOA will increasingly become a new stimulus for process awareness and cross-domain process training to support service delivery versus domain-specific activity and communication.
- AOA will also promote more meaningfully integrated cross-domain relationships, including operations to service desk, development to IT, security to operations and development, and IT to business.
- A moment will come when AOA builds a well-defined bridge to BI not as a subset of BI, but as another emerging continent all its own.

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Interview with a Large, U.S.-based Retailer

The interview below shows how AppDynamics' analytics can combine with ease of deployment and administration to adapt to ongoing conditions of change and demand in a DevOps context.

Would you describe your role and your organization?

"I am the senior manager in our performance team. We test and evaluate all application projects that are in pre-production and certify when they are ready for production. As such we work with development—running load tests and other tests to validate when they're production-ready. We also do production-level performance monitoring for our back-end order management system, which is based off an IBM platform. In terms of people, our performance management team is about 30 people in the U.S. and India, but all the applications are hosted in the U.S."

Can you say more about the application projects you support?

"We have done about 70–80 application projects a year recently, but the number continues to increase as we become more efficient. For instance in just the last nine months, this year we've done 89 application projects. Many of the applications are customer-facing and so critical to running our business. Some of the projects involve new applications, but most are enhancements. Generally what we see are new features being introduced that haven't been there before."

"We have done about 70–80 application projects a year recently, but the number continues to increase as we become more efficient."

"The applications span eight different verticals. When we say vertical, we refer areas such as 'order management systems/e-commerce,' etc."

Who within your IT organization is currently using AppDynamics?

"Our group is the core group, but the use of AppDynamics is spreading. For instance about 20% of production is using AppDynamics, and it is also being used by development in the sense that we share issues with them through the dashboard, and developers can access the AppDynamics dashboard whenever they want to. Some of the people in development use AppDynamics on a daily basis."

"But AppDynamics is like bread and butter for us. We depend on it 100% to do our jobs and continue to improve in efficiency and effectiveness."

What were some of the drivers for moving to AppDynamics?

"Back in 2007 we began searching for an APM solution that would help us to break through our dependency on more siloed tools. Finally, around 2011, we looked at a leading AppDynamics competitor and AppDynamics after evaluating the broader market. AppDynamics gave us licenses to try their solution and provided good, open communication about their product. We found that AppDynamics was the better choice for us—in particular in terms of deployment and administrative efficiency. There was too much overhead associated with the other product by comparison at that time."

"Now we're able to get a much more holistic set of insights into performance issues. We're not just going back to development and pointing out problems—we're able to tell them where and what the problems are. To be specific, we can do triage across the board with AppDynamics, and then go all the way to diagnostics about 40% of the time. For the other 60% we depend on point solutions such as DB2 snapshot, or Oracle, or other point-specific tools."

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What are some of the things you like most about AppDynamics currently?

“One of the best features is the ease of implementation—which is especially important for us since every application project requires its own unique set of parameters. We couldn’t possibly do our jobs if it took two weeks or more to configure our APM solution every time a new project came our way. It has to be pretty much instant.

“With AppDynamics it is also very easy to visualize what and where the problems are. The dashboard shows me all the exit points of the application system. We’re also able to define custom exit points, say, to monitor a payment system. Moreover, AppDynamics doesn’t throw in all the data and overload you, but shows you what’s relevant—what you need to see. Before we would have looked into each of the tools and done a line-by-line code review for everything that came our way, but now we’re able to seriously streamline that process.”

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Interview with a Global E-commerce Company Headquartered in the U.S.

The interview below shows how AppDynamics’ analytics can deliver critical, real-time, end-to-end application insight across a complex e-commerce business system.

Could you share some insights about your role and your organization?

“I’m responsible for IT operations, the network operations center, the database team as well as support for customer service applications like Siebel. There are about 125 people in my team in four different global locations. To support our business, on the buy side, we monitor about 40,000 orders a day, or two orders a second. On the sell side we have about five to ten new listings every second. If you include upgrading or lowering prices, it’s probably about ten changes per second.”

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What was the driver for you to adopt AppDynamics in your organization?

“Most of our customer-facing applications are Java-based running on Linux with an Oracle back end, and API calls going internally or externally. It’s a complex application system and we have to manage it in real time with an eye to business impact, credit card fraud, and other parameters. Before AppDynamics we had very little visibility into internal and external API calls. Now we can go in and see exactly how long a call is taking. If a thread inside of a JVM that normally takes about 100 milliseconds jumps to 500 milliseconds we can evaluate why the transaction has slowed down. So a big reason for AppDynamics was the overall visibility it provided into what our application is doing across the entire application ecosystem including endpoints.”

Can you shed a little light on the deployment?

“AppDynamics was first in use about three years ago when I came on board. They had just a few licenses. I extended it to 100% coverage. So we went from proof of concept to full operational deployment. In terms of administration, I have one person who does most of the AppDynamics administration. In terms of scalability, the application is very lightweight, so using it pervasively has not been an issue at all.”

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Are there any features that especially stand out?

“One of the best things about AppDynamics is that we can evaluate the third-party issues beyond our own data centers—which is very helpful in isolating problems such as those involving tokenization of the credit card number, fraud at the bank, etc. We can see everything visually.

“Our performance management team also leverages AppDynamics to evaluate changes to the infrastructure that might improve performance or otherwise produce bottlenecks. These insights can also help in triage and diagnostics when problems arise from changes made.

“Another strong positive is the currency with which we can understand application interdependencies. We make about 250 changes to our core business application system every year—and with AppDynamics we can see changes as they occur. Moreover, the customer-facing website has about 500 releases a year to keep up with changing customer and marketing priorities. If we depended on weekly reports to stay current, we couldn't support the business. But with AppDynamics we can manage and optimize with real-time currency.”

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About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on [Twitter](#), [Facebook](#) or [LinkedIn](#).

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