Ovum Decision Matrix: Selecting a Mobile App Development Platform Solution, 2015–16
Summary

Catalyst

Mobile device software is where enterprises are devoting massive efforts today in application development. Smart mobile devices are proving to be the preferred choice when connecting to the Internet, not only for consumers, but also now for enterprise workers. This means that app development has undergone a shift of focus from web programming to web and mobile programming. The choice of development platforms and technologies is vast, and this has made the process of selecting a suitable mobile app development platform (MADP) difficult. Ovum has engaged with the leading vendors in the market to produce an Ovum Decision Matrix for MADP, designed to help make it easier to find an appropriate solution.

Ovum view

Mobile app development is one of the most active areas in app development today, and given the continued fragmentation of the market in terms of mobile devices and operating systems (OSs), for enterprises it is also one of the most difficult areas in which to make long-term decisions. Almost every organization needs to have some kind of mobile strategy, and typically this revolves around the question of building open web, hybrid, or native apps. We find that there is no single right answer; it depends on the app’s business requirements and business objectives, and within larger enterprises there will be a spectrum of approaches taken in different business divisions and departments. To achieve the highest performance, or to reap the full benefit of offline mode, or to engineer multi-factor authentication, native and possibly hybrid approaches are chosen. For access to mostly server-side services and applications, pure web apps are suitable. This is a changing situation, as open web standards improve each year, but we no longer expect a simple transition from native to HTML5 development, as much depends on business needs.

There has also been a lot of activity on the tools front: the consolidation in the market that we saw a few years ago has wound down and players have been building up their capabilities. We are also seeing a number of new entrants and solutions from major IT vendors including Amazon, HP, and Oracle. To assess the tools on the market we chose to take a wide-feature-scope approach that overlaps with mobile app management (MAM), mobile device management (MDM), app performance management (APM), app lifecycle management (ALM), and mobile security. This is motivated by what an enterprise user will want in order to build and run a mobile app portfolio. Some of the practices in the scope, such as APM, may be brought in by an enterprise from a specialist vendor, but there is an overlap area that is specific to mobile apps, and we do see MADP solutions that address these specific needs. This wide-ranging overlap with a number of disciplines is what distinguishes a platform solution from a purely app-development solution. For example, a line of business will want a platform solution when it does not have access to the enterprise IT department’s APM solution.

Enterprise users will take a view on how to cover their needs across one or more solutions, especially the overlap between MADP and MAM. However, in our analysis, the core app development features are weighted the most heavily, and with the addition of security (of paramount importance for enterprises) they represent 60% of the technology scoring. Of course, with our interactive ODM,
Ovum subscribers can modify this weighting of the MADP features according to their individual business requirements.

The MADP solutions that feature in the top tier are platform solutions that should be on any enterprise shortlist, but the other solutions also have strengths that should be considered. We provide this ODM to help inform your decision-making.

Key findings

- Enterprises are prioritizing mobile apps over all other app development requirements, for both external (business and consumer-facing) and internal requirements.
- The uncertainty about choosing between HTML5, hybrid, or native app development refuses to be resolved in a simple outright choice; it depends on the requirements.
- The last two years have seen huge efforts by the large IT vendors to carve a space in the mobile software market. Mobile app development and management are necessary components of a comprehensive enterprise application strategy.
- Pure-play MADP vendors are facing tougher competition from the highly resourced large IT vendors in this space, but they are holding their market share well.
- The advantage of a wide-scope MADP solution in one box is that developers have a one-stop solution, reducing tool overheads and integration issues, facilitating traceability of work assets, and so on.
- A wide-scope MADP solution may not be the right choice for all developers: an organization that already has tools that cover a number of the features in a MADP will want to look for a purely development-focused or specialty solution.
- When comparing MADP products, consider what functionality is available out of the box in a single license, compared to having to add-on modules with separate licenses.
- The advantages of an MDAP solution focused on a power user or business domain expert are often ignored by businesses. Typically it is the IT department making the purchasing decision, and it naturally favors developer-oriented tools. The line-of-business manager needs to be aware of the dramatic reduction in budget and increase in speed to market that alternative business-oriented solutions can offer.

Market and solution analysis

Ovum Decision Matrix: MADP, 2015–16

Ovum defines MADP as an enterprise solution with a wide scope of features that are well suited for the enterprise. Despite the challenging mix of technologies in one platform, we have found vendor solutions that are able to cover a good deal, if not all, of the categories of features under review. Some of the solutions are single-box platforms, some require add-on products from the vendor’s portfolio, and some have connectors to third-party solutions, so this needs to be taken into account during a MADP product evaluation.

An enterprise will typically have consumer-facing, internal, and business-to-business apps. Covering all these use cases will require apps that can run on multiple OSs. Pure HTML5 apps will run across

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any OS, but once apps require some degree of offline usage, then pure native or hybrid apps are necessary. Some platforms allow HTML5/CSS/Javascript (i.e., open web standards) to be the core development languages, and then use frameworks such as Apache Cordova, Adobe PhoneGap, and Sencha Touch to wrap the code based on open web standards and tap into native features.

Two of the vendors under review are distinctly different from the rest: Magic Software and OutSystems. Magic uses its own proprietary fourth-generation computer language, and although it still requires professional developer expertise, it is a complete development environment that has many time- and cost-saving features, including a visual graphical user interface (GUI). OutSystems is designed to be used by power users or business domain experts, has a rich visual environment for creating apps, and also has many time- and cost-saving features. Other vendors, such as Salesforce, have a visual development environment aimed at power users, but this is not the sole focus of their offerings, and for most of the other solutions under review the target user is a professional developer creating web, hybrid, and native mobile language solutions.

Acquisitions in the mobile market, particularly between 2011 and 2013, have seen larger IT players bringing in solutions and using these as a core basis upon which to build, for example IBM and its acquisition of Worklight. In addition, vendors such as Amazon, HP, and Oracle entered the market with either completely new or newer offerings. Amazon (which did not participate in this review), HP, and Oracle are still relatively young in the market with their latest offerings.

Salesforce is also an interesting vendor in this report: the use of its mobile solution requires a license to use the Salesforce.com platform, which naturally offers a whole host of other supporting features. The pure-play mobile vendors in this report are Globo, Kony, and Sencha, and this dedicated focus of their businesses may appeal to some users. SAP is also a veteran in the mobile space, and it continues to provide a solid solution. For C++ programmers, the entry of The Qt Company (part of Digia) in the mobile space may be of interest; it plays principally in the embedded space and is now branching into new areas under its new Digia ownership.

Figures 1 and 2 show the ODM bubble charts for our MADP evaluation. We find distinct clusters that tier the vendors, and our vendor categorizations by tier are presented in Table 1. Note that the vendors in each tier are listed in alphabetical order.

The Ovum rainbow map for MADP, 2015–16 (Figure 3) shows how each vendor scored in each feature category in the technology dimension of the ODM. Black indicates that the vendor does not provide the given functionality.
Figure 1: Ovum Decision Matrix: MADP, 2015–16

Source: Ovum
Figure 2: Expanded view of Ovum Decision Matrix: MADP, 2015–16

Source: Ovum
Market leaders: IBM, Kony, Oracle, OutSystems, Salesforce, SAP

The market-leading vendors have exceptionally good feature coverage in technology, execute strongly in the market, and have significant market revenue. These tier-1 vendors also have the breadth of scope, with feature coverage across all areas. Enterprise security features and APM (which in this report includes analytics and customer experience) are two areas where tier-1 vendors scored highly compared to the other vendors.
Tier-1 vendors fall into two sub-clusters. IBM, Kony, and Salesforce form a tight, exceptionally high-scoring sub-group, and Oracle, OutSystems, and SAP form another sub-group. Since acquiring Worklight, IBM has made mobility a key strategy for the business and launched its MobileFirst series of solutions, which is a comprehensive solution set. The IBM Bluemix developer cloud is also a key hosting platform for the server-side mobile solution and offers developers many additional benefits. IBM has partnerships with many MDM vendors, which increase its domain knowledge around mobile applications. Kony is a pure-play mobile vendor with a leading solution that has one of the best platform offerings for the enterprise, and it also has a cloud hosting service. A strong cloud-based back-end hosting service is a necessity in this market this year, unlike last year (as noted in our 2013 report on mobile platforms). The Salesforce.com platform underpins its mobile solution and, as such, offers a considerable feature set to its existing customers, particularly its large base of CRM users, who now have an easier entry into mobile applications. The challenge for Salesforce is in reaching out to new customers that are mainly interested in mobile and not the whole Salesforce package – something the vendor may need to address in its licensing model.

Oracle’s solution is relatively new to the market but it has huge ambitions, and we expect it to grow in the market. SAP is a long-time player in the mobile market with operators as well as enterprises, and it has also been one of the active acquirers in past years (acquiring Sybase and Syco). It recognized the importance of enterprise mobility early on and retains a leading position, but it is facing tougher competition as other leading IT vendors ramp up their play in mobile. OutSystems is the new player in this group. Its approach is typically to appeal to the business unit as much as developers (like Salesforce), with a platform solution to reduce the time to market and cost of development. OutSystems represents a type of power-user-oriented solution that professional developers perceive as job-threatening, but development is not a zero-sum game: business units can benefit from such solutions that complement traditional development. Note that a number of other vendors reviewed here also have solutions with business-oriented user design/development visual environments.

Market challengers: Adobe, Globo, Sencha

Adobe’s acquisition of PhoneGap forms the basis of its mobile solution Adobe PhoneGap Build, which is cloud hosted. PhoneGap is a pioneering solution for hybrid app development that represents the commercial version of the Apache Cordova open source solution, and to which Adobe is the principal contributor. Adobe’s strong presence in web analytics has also been translated into mobile and, in addition, the creative suite solutions now target mobile app design and development.

Globo is a fast-expanding mobile-dedicated business that also combines a consulting service division, following its recent acquisition of Sourcebits. Its earlier acquisition of Notify brought strong “bring your own device” (BYOD) mobile management capabilities. Sencha Touch is an open-community free product that has made Sencha a key player in the mobile space. The company has built a number of enterprise products on top of it, the latest being Sencha Space, which is designed for managing mobile apps securely.

All three vendors in this market cluster have the potential to become tier-1 players, and they challenge the tier-1 vendors today.
Market followers: HP, Magic Software, The Qt Company

This tier represents solutions that are more limited in scope or execution, and this is also reflected in their limited market presence (represented by their bubble size in Figures 1 and 2). HP’s mobile solution is a new entrant in the market, and with the backing of HP’s considerable resources it has the potential to grow. Its technology capability is on a par with those in the second tier, but it currently falls short on execution. Magic Software is a veteran in the development space and continues to evolve its fourth-generation language (4GL) approach. The latest evolution is a switch from a proprietary integrated development environment (IDE) to one based on Microsoft Visual Studio. It has also been transforming its solution to support desktop, web, and mobile, as technology needs change. The constant element is the fast development speed that the product offers. The Qt Company is also a new entrant in the mobile development market. It is well known to the Linux community, and its C++-based cross-platform application framework, Qt, is traditionally used for high-performance desktop application development, with embedded software another potential expansion area. C/C++ developers may find Qt the ideal solution to support mobile front ends.
Market leaders

Market leaders: technology

The radar chart in Figure 4 shows the vendors with the top three scores (including those that are tied) for each category of the ODM technology dimension. The tier-1 vendors are naturally well represented on this chart, but tier-2 vendors are also represented in certain areas. The vendors that offer a full ALM suite – HP and IBM – naturally do well in the integrated ALM category, but note that these are add-on products from the vendors. Overall, the platforms do offer some degree of in-built ALM features, such as those from Kony, Oracle, OutSystems, Salesforce, and SAP.

Enterprise security for all applications is an important requirement for many users, and vendors that do particularly well in this category include Adobe, IBM, Kony, Oracle, Salesforce, and SAP. Connecting to back-end systems is also important for enterprises, and the vendors that perform best here are Adobe, Globel, IBM, Kony, Oracle, OutSystems, Salesforce, and SAP.

The “Vendor solution selection and methodology” section of this ODM provides details of the specific technologies assessed in each category of the technology radar.
Market leaders: execution

The top three scoring vendors in each category of the execution dimension are shown in Figure 5. The categories are defined as follows, with the relevant vendor performance discussed:

- **Maturity** covers not just how long the product has been in the market but also product fit in terms of evolution of the market, the vendor roadmap, and routes to market. The vendors scoring well in maturity are: IBM, Kony, Oracle, OutSystems, Salesforce, SAP, and Sencha.

- **Interoperability** covers integration with other solutions and systems, APIs and SDKs, web services support, and alignment with mainstream IT architectures. Nearly all of the vendors have done well here: Adobe, IBM, Kony, Magic Software, Oracle, OutSystems, Salesforce, SAP, Sencha, and The Qt Company.

- **Innovation** measures product, business, and support innovation of benefit to the customer, and what mechanisms are used to monitor and capture customer feedback. The following vendors scored above average: Adobe, Globo, IBM, Kony, Magic Software, Oracle, OutSystems, Salesforce, and SAP.
Product support and deployment examines whether the vendor provides business domain templates, whether additional services are offered (integration, consulting, maintenance and support, and solution management), the levels of support offered, the ease of updating the solution, how open the solution is, scalability, and the ease of contract renegotiation. IBM, Kony, Oracle, Salesforce, and SAP all did well in this category of the execution dimension.

Market leaders: market impact

The market impact is measured with a formula that uses relative revenue and revenue growth data. Additional data is collected on the customer base size and the number of business and technology partnerships. In each category, vendor scores are regauged to the maximum vendor score. Some of the large IT vendors have very large customer bases and partnerships, and our aim was to define such data solely for each vendor’s mobile market segment. We capped customer bases at 750 and numbers of partnerships at 500, so these categories offer a perspective rather than definitive statistics. IBM, Kony, and Salesforce had the highest market impact scores.
Vendor analysis

Oracle (Ovum recommendation: Leader)

### Figure 13: Oracle radar diagrams

**Market impact**
- Revenue
- Revenue growth
- Partnerships
- Customer base

**Execution**
- Maturity
- Product support & deployment
- Interoperability

**Technology**
- Core platform features
- App performance management
- Code support
- Security
- Operational management
- Integrated app lifecycle management

Source: Ovum

### Ovum SWOT assessment

#### Strengths

**Oracle’s MADP offers agnostic client-side development, mobile cloud service, and enterprise connectors**: Oracle offers a deep solution set that allows developers to choose from a host of client-side options: Oracle Mobile Application Framework (MAF) using Java skills for write once, publish to multiple devices; native development using third-party tools, Android, iOS, and so on; open-web-standards-based solutions; and a GUI-based development environment for non-programmer, power users on the Mobile Cloud Service, where they can easily build apps (this is Mobile Application Accelerator, which Ovum expects to be launched in the next 12 months). The back end has a range of connector options to enterprise applications, custom applications, and other cloud services (the Enterprise MBaaS launch is also yet to be announced, but Ovum believes that this will also be in the next 12 months).

**Oracle Mobile Cloud Service APIs can connect to analytics and performance monitoring services**: Oracle can offer a range of analytics to support understanding user behavior, including
anomaly detection, big data analysis, and predictive analytics. The APM capabilities are also comprehensive, on both the server and client sides. For example, on the server-side, monitoring by geography and app version; and on the client-side, crash analysis to line-of-code level of detail. There is real-time discovery of apps on a device.

**It is the only vendor to provide a Java-based cross-platform mobile solution:** The support for Java deserves a special mention. Oracle is the owner of the Java platform and, unsurprisingly, it has a pure Java solution, which will appeal to many enterprises with in-depth skills in Java. The fragmented nature of the mobile market, with a shifting line of recommended mobile frameworks, makes skills availability a problem for the enterprise. With MAF, an enterprise can build mobile apps using the same skills that it uses on the server side. This is a distinct advantage for businesses with Java-based environments.

**Weaknesses**

**Enterprise security at the code level could be improved:** Oracle has all-round good support for mobile security, for example it supports the full range of authentication options including multi-factor authentication. Where it could improve is in code-related security: developers are often insufficiently trained to prevent common exploits as enumerated by OWASP. Buffer overflow, SQL injection, and cross-site scripting are three well-documented and reported issues, and yet these are still commonly found in code produced today. These types of well-known problems should be automatically picked up and alerted to the developer.

**Its limited compliance support:** Oracle supports FIPS, but it should be compliant with a number of key industry standards, such as Payment Card Industry (PCI) standards and Section 508 website disabilities support. Oracle has solution templates for a wide range of vertical industries, so improved compliance support should be on its roadmap.

**Opportunities**

**Oracle’s MADP solution is a relatively new entrant in the market:** Oracle’s entry in the MADP market was late compared with some of its established rivals. However, it has the benefit of addressing the market’s needs with the very latest architected solution. There are a number of distinctions in Oracle’s solution, as mentioned in the strengths above, and being a fully in-house developed solution marks it out; it has the potential to grow its market share further.

**It needs to enhance its Technology Network with greater mobile presence:** One way to grow market share is by supporting one’s user community. Oracle is already a past master in this art, but its mobile support needs a greater profile on the Oracle Technology Network. Enterprises in particular are looking for advice on best practices and which client-side technology to choose for various business and consumer scenarios. Sharing knowledge in this way, even code snippets and modules, enhances user satisfaction with the product and helps to grow market share.

**Threats**

**The market only threatens Oracle’s mobile entry, not the business:** Mobile apps are very important for enterprises, and Oracle needs to be successful with its MADP if it is to provide end-to-end technologies: client side, middleware, and systems of record. So while mobility success is not crucial to Oracle as a whole, it is clearly advantageous to appeal to new customers and have a ramp up to the business via mobile, as well as provide that end-to-end capability for Oracle enterprise application customers. Oracle is doing the right things with its MADP, and it now needs to get its
Vendor solution selection and methodology

Inclusion criteria

The criteria for the inclusion of a vendor solution in this Ovum Decision Matrix are as follows:

- The solution’s target market is midsize to large enterprise customers, typically those with more than 1,000 employees.
- The vendor has more than 200 individual customer companies.
- The vendor does not focus on mobile app development in a single vertical industry and is not restricted to one application platform.
- In the lists below, the vendor solution should include support in the first, second, and at least two more core functional areas, and two additional features:
  - Core mobile app development and lifecycle platforms disciplines:
    - **Required**: Application development environment:
      - GUI build features
      - JavaScript-based development
      - Other languages and/or domain expert tools
    - **Required**: Supports cross-platform development:
      - HTML5 and open web standards
      - Hybrid development
      - Native development on Android and iOS
    - Back-end API and services for integration to enterprise systems
    - Application security control and monitoring
    - Mobile end-user behavior/usage analytics
    - Cloud hosting of tools and/or apps
    - Push technology services
  - Additional features:
    - In-built ALM features, including:
      - Source code version control
      - Requirements management
      - Design and modeling
      - Testing and test management
      - Build and release management
      - Project management and defect tracking
    - Supports extended native cross-platform development:
Methodology

Ovum conducted briefings with key vendors, and each one completed an ODM spreadsheet with detailed questions about the three dimensions of the ODM. In addition, Ovum has drawn on its research and depth of experience in the field, across its specialist groups that cover mobile technology, to inform its analysis.

Technology/service assessment

In this assessment dimension, Ovum analysts developed a series of features and functionality that would provide differentiation between the leading solutions in the marketplace. The criteria groups identified for MADP are as follows, with percentage weights to create the total technology score:

- Core platform features, weighted 25%, cover:
  - OS targets, type of apps, development environment, mobile device simulators, messaging standards, event flow management, browser support, and compliance standards support.

- Code support, weighted 15%, covers:
  - Coding standards, coding languages, no (or limited) coding development, and code building blocks.

- Operational management, weighted 10%, covers:
  - Push notifications, push configurations, app updates, and administration.

- Integrated ALM, weighted 10%, covers:
  - ALM disciplines out-of-the-box features, and agile and DevOps support.

- Back-end server, weighted 10%, covers:
  - Back-end data support, enterprise applications support/connectors, and cloud services.

- Mobile security, weighted 20%, covers:
  - Authentication, TLS/SSL certification authorities supported, authorization integration, app barring, data protection, code-related security, and mobile application security monitoring.

- APM, weighted 10%, covers:
  - Analytics, alerts, reporting, and dashboards; app performance profiling; server-side app performance monitoring; and client-side app performance monitoring.
Execution

In this dimension, Ovum analysts reviewed the capability of the solution around the following key areas:

- Maturity, weighted 25%: The stage that the product/service is currently at in the maturity lifecycle is assessed here, relating to the maturity of the overall technology/service area.
- Interoperability, weighted 25%: In this element we assess how easily the solution/service can be integrated into the organization’s operations, relative to the demand for integration for the project.
- Innovation, weighted 25%: Innovation can be a key differentiator in the value that an enterprise achieves from a software or services implementation, and this is assessed in this criteria.
- Product support and deployment, weighted 25%: Referring to a combination of assessed criteria and points of information, Ovum analysts provide detail on product support and various deployment issues, including vertical industry templates, services offered, support offerings, deployment updates, open or closed standards, scalability, and deployment sizes.

Market impact

The market impact of a solution was assessed in this dimension. Market impact is measured on revenue (80%) and revenue growth (20%). Revenue and revenue growth scores are assessed relative to the respective market leader. The market impact radar also shows additional information, which though not scored in the ODM bubble chart, nevertheless offers useful insight: the size of the customer base (this is capped at 750) and the number of business and technology partnerships (capped at 500).

Ovum ratings

- **Market leader**: This category represents the leading solutions that we believe are worthy of a place on most technology selection shortlists. The vendor has established a commanding market position with a product that is widely accepted as best-of-breed.
- **Market challenger**: The solutions in this category have a good market positioning and are selling and marketing the product well. The products offer competitive functionality and good price-performance proposition, and should be considered as part of the technology selection.
- **Market follower**: Solutions in this category are typically aimed at meeting the requirements of a particular kind of customer. As a tier-3 offering, they should be explored as part of the technology selection.

Ovum Decision Matrix Interactive

The Ovum Decision Matrix Interactive for MADP 2015–16 is an online interactive tool providing you with the technology features that Ovum believes are crucial differentiators for leading solutions in this area. You can find the tool on the Ovum Knowledge Center.
Appendix

Further reading

2015 Trends to Watch: Enterprise Mobility, IT0021-000031 (November 2014)

Ovum Decision Matrix: Selecting an Enterprise Mobility Management Solution, 2014–15, IT0021-000023 (September 2014)

Framework: Implementing a Bring Your Own Device (BYOD) strategy, IT0021-000005 (May 2014)

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum’s consulting team may be able to help you. For more information about Ovum’s consulting capabilities, please contact us directly at consulting@ovum.com.

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