Mobile Backend as a Service Is the New Enterprise Middleware

Mobile Backend as a Service (MBaaS) has emerged as one of the hottest trends in today's technology market. While most of the adoptions of MBaaS technologies have taken place in the consumer or B2C space, these platforms are starting to make serious inroads in the enterprise. In order to win in the enterprise and to overcome the firmly seeded taboos with the adoption of cloud infrastructure technologies in corporate environments, MBaaS platforms must provide very tangible solutions to the well-known challenges in the mobile enterprise.

When analyzing the characteristics of enterprise and consumer mobile applications, we can find marked differences between the backend requirements of both paradigms. While consumer mobile apps typically leverage social network profiles and public data sources, enterprise mobile solutions normally require incorporating backend capabilities residing in corporate systems.

In order for MBaaS technologies to be seamlessly adopted in the enterprise, they need to provide efficient mechanisms to broker the communication between mobile applications and line-of-business systems, whether those are hosted on-premise or SaaS-based. If successful on this endeavor, MBaaS technologies have the opportunity to create a new generation of mobile-first middleware technologies that lay out the foundation for the mobile-first enterprise.

The Main Challenge of Enterprise Mobile Apps Is... Integration

No doubt about it. When analyzing the roadblocks encountered by organizations building enterprise mobile solutions, the integration between mobile apps and line-of-business systems stands as the biggest challenge to enable a mobile enterprise infrastructure. The complexity of the client libraries of most business applications, the security implications of enabling mobile consumers to interact with business data and the significant learning curve that most mobile developers need to overcome in order to understand line-of-business systems are some of the most common challenges that organizations face when trying to build mobile applications that integrate with corporate systems.

To address those challenges, enterprise MBaaS platforms must provide a consistent and drastically simple model that allows developers to seamlessly integrate with line-of-business systems when building enterprise mobile applications. Whether integrating with a SaaS system like Salesforce.com or an on-premise application like SAP, an MBaaS platform should provide the APIs, libraries and management capabilities that allow mobile developers to accomplish that task in a seamless manner and focus on delivering a great mobile user experience instead of writing infrastructure code.
MBaaS as a Mobile-First Middleware

Almost every game-changing enterprise software trend during the last few years has been accompanied by a new type of middleware technology to address the integration needs of different systems. The B2B technology revolution of the 1990s produced the traditional Enterprise Application Integration (EAI) platforms that focused on B2B standards such as EDI or Rosetta Net. That movement was followed by the evolution of the Service-Oriented Architecture (SOA) ecosystem, which brought together the infamous Enterprise Service Bus (ESB) as the fundamental type of middleware. The cloud years have brought us the Integration Platform as a Service (iPaaS) trends as the essential mechanism to implement cloud, or cloud-on-premise integration solutions.

Like most novel enterprise software technologies, mobility introduces new integration challenges that require a specialized type of middleware. MBaaS technologies are a natural platform for enabling integration models between mobile devices and enterprise systems. To get to that level, MBaaS solutions should embrace traditional and emerging mobile enterprise integration patterns as first class citizens and simplify the experience for developer to incorporate those integration blocks into enterprise mobile apps.

Mobilizing Business Data

Consuming business data from mobile devices in a secure and private way is, arguably, one of the top priorities of enterprise mobile infrastructures. From an enterprise perspective, exposing business data to mobile consumers not only introduces security concerns but it requires line-of-business systems to be optimized to support mobile consumers. While the enterprise mobile ecosystem has already produced very effective technologies for securely sharing files and documents to enterprise connected devices, we are still in the early stages of finding similar solutions that work for enterprise data sources.

Given their ability to integrate with diverse line-of-business systems, enterprise MBaaS platforms are in a unique position to provide a robust mechanism that allows enterprises to expose corporate data sources to mobile consumers. I tend to think about the enterprise mobile data virtualization models as a natural next step in the evolution of enterprise MBaaS technologies. To accomplish this, enterprise MBaaS platforms need to not only expand their line-of-business integration capabilities but also provide a secured and compliance-ready infrastructure that allows organizations to seamlessly expose data resident in corporate systems to enterprise mobile consumers.

Fighting the Homegrown Mobile Middleware

Every enterprise mobile solution requires backend capabilities whether it manifests in the form of horizontal infrastructure capabilities such as storage or identity, or on the integration with corporate systems. Because of this intrinsic need and the complexity of the traditional mobile enterprise application platforms (MEAP), many organizations have invested in building custom middleware infrastructure, typically in the form of web services that can be used from enterprise mobile applications. This investment in homegrown infrastructure can cause organizations to, erroneously, ignore innovative mobile middleware technologies that can provide very tangible benefits to their enterprise mobile apps.

In order to overcome those challenges, enterprise MBaaS platforms should provide very clear return on investment (ROI) criteria compared to homegrown mobile backend infrastructures. This ROI typically comes in the form or richness of features that can quickly solve some of the well-known challenges on enterprise mobile solutions. As simple as this might sounds, justifying the "Buy vs. Build" argument is one of the biggest roadblocks in the adoption of mBaaS platforms in the enterprise.

Public, Private and Hybrid MBaaS

The adoption of cloud technologies continuously faces challenges in the enterprise in areas such as data privacy and compliance. Some of these challenges have now extrapolated to MBaaS platforms becoming one of the major roadblocks to their adoption in the enterprise.

While public clouds will still remain the preferred infrastructure of enterprise MBaaS platforms, these technologies must embrace hybrid and private cloud models in order to mitigate some of the traditional privacy and security concerns associated
with the adoption of most cloud infrastructures in the enterprise. Supporting this diversity of models is not as big of a challenge as it might seem at first glance. From the technology standpoint, enterprise MBaaS technologies are exponentially simpler to deliver in a hybrid or private cloud model compared to their infrastructure or platform as service counterparts.

**Operationally Ready**

During the past few years, enterprises have invested in building different operational infrastructures and processes to enable the usage of connected devices. Technologies like mobile device management (MDM) or mobile application management (MAM) have become an integral component of any mobile experience within the enterprise.

In order to enable enterprise-ready mobile apps, MBaaS platforms should provide seamless integration with mobile operations technology stacks. This capability will allow developers to build enterprise mobile apps that are compliant with corporate policies while simplify the provisioning and management lifecycles of those apps. Additionally, the integration with MDM or MAM technologies will help to mitigate some of the fears expressed by organizations while considering MBaaS technologies.

**Not Everything Is Middleware, We Need Apps**

Enterprise mobile platforms have traditionally focused on providing the required infrastructure to build mobile applications. Because those platforms mostly provide infrastructure capabilities, organizations are left with no option but to build every single app completely from scratch. In the modern app economy, enterprise mobile platforms should provide more than just infrastructure and enable organizations with a portfolio of mobile business apps that address some common business scenarios on any enterprise.

Due to the simplicity of its delivery model, MBaaS platform are in an enviable position to enable the next generation of mobile business apps. In that sense, MBaaS platforms should complement its infrastructure capabilities with mobile applications that can be adapted and tailored by organizations embracing the platform. This model will allow organizations to receive tangible benefits from the MBaaS platform from the first day by having access to various mobile apps that can be customized to their specific needs.

**Summary**

Due to the increasing integration needs of enterprise mobile solutions and the complexity of the current incumbents, MBaaS platforms are positioned to evolve onto a new type of enterprise middleware. To accomplish that, MBaaS platforms must provide enterprise-ready capabilities in areas such as system integration, security, MDM-MAM-enablement as well as simplify the implementation and management of enterprise mobile apps. Finally, MBaaS platforms have a unique opportunity to enable and deliver business-ready mobile apps that solve some of the most common scenarios in the mobile enterprise.

**July 23, 2013   Jesus Rodriguez**