CONSUMERIZATION DRIVES INCREASED INVESTMENT IN MOBILITY

In 2013, the use of mobile devices is a pervasive aspect of society as these handheld computers have truly become an indispensable asset across our work and personal lives. According to IDC research, by the end of 2012, smartphone manufacturers shipped 722.5 million smartphones worldwide, and this number is expected to more than double to 1.6 billion by 2017 at a 16.9% CAGR. Tablets have also become commonplace, with shipments expected to grow from 144.5 million at the end of 2012 to 410.3 million by 2017 — a 23.2% CAGR. The mobile device itself is certainly a marvel of modern-day science, but the real value of this technology is manifested in the functions we perform on these devices. In 2012, a whopping 47.2 billion applications were downloaded from app stores worldwide — both independent and brand affiliated. Despite this already impressive number, the market is still expected to grow at a very healthy CAGR of 31.7% from 2012 to 2017.

As we can see, the markets for mobile devices and apps are expected to experience healthy growth for the foreseeable future. This proliferation of devices has given way to a ubiquitous trend called the "consumerization of IT," which refers to the use of consumer-oriented technology for business purposes. The first wave of consumerization has largely been observed via "bring your own device" (BYOD) initiatives, but IDC believes the impact of the trend has a much wider circumference than the realm of devices alone. As proof of this, organizations are increasingly realizing that they need to provide the user experience of a consumer application in their organizational applications and that they need to allow business applications to run on consumer-grade devices. This shift requires not only new developer skills and a focus on user experience and interface but also a new development pace to keep up with the speed of mobile. On the IT operations side, consumerization requires organizations to invest in new technologies to deploy, manage, and secure devices, apps, and data.

Consumerization does require organizations to reconsider current internal processes, but those that take a strategic view toward mobility understand that they must undertake some short-term change management to reap long-term rewards. IDC's latest Mobile Enterprise Software Survey demonstrates that organizations are looking to make these investments in mobility by increasing the overall share of IT budget that is allocated to mobility. In 2011, the largest percentage of survey participants allocated 10–19% of the IT budget to mobility. In 2013, the largest percentage of survey participants allocated 20–29% of the IT budget to mobility, with 25% of respondents in the United States and the United Kingdom allocating more than
30% of the IT budget to mobility. Today, many organizations are still in the early stages of adopting enterprise mobility, and to reach the later stages of the maturity cycle, they will need to take a focused, strategic approach.

BUILDING THE BUSINESS CASE FOR MOBILE APPS

One of the greatest challenges organizations struggle with in building their mobility strategy is where to start. Taking these first steps can certainly be daunting because mobility requires organizations to consider a broad set of new decisions that include people, processes, and technology. However, we believe the best place for any organization to start is to review its key goals and mandates and then let the mobile strategy support them. At a basic level, most employees use some kind of business application to do their jobs, so this is typically a good area to begin the analysis. The exciting aspect of mobile is that it offers lines of business (LOBs) and developers a fresh opportunity to build business apps that can drive new levels of user engagement and business results. In the mobile world, applications are the vehicle through which return on investment will be realized — or not.

However, before the work of building requirements and design can begin, organizations have to take the time to make thoughtful decisions about what apps they want to mobilize and why. It is helpful to think of this process as merely building a business case for the mobile app. If your organization will not be able to tie the app to real, meaningful business results, serious consideration should be given as to whether or not that investment should be made. In addition, organizations must think through the ongoing cost to maintain the application once built — and this should be a key consideration in the build versus buy decision. Of course, if every organization had unlimited resources in the way of time and money, this process wouldn’t be as critical. The reality is, each organization has only so much money in the budget for new projects, and if you don’t move fast enough, your competition will.

One of the most helpful exercises an organization can undertake as it is working through what apps make the most sense to mobilize is to build mobile worker profiles for the organization. This exercise not only is essential to prioritizing applications but also plays a key role in ensuring that the organization leverages the proper application architecture. In a pharmaceutical company, for example, IT will need to prioritize mobile applications built for sales reps who are typically on the road all day and also serve as the revenue-generating center of the business. In a construction company, workers may need to access their data in locations with limited cell tower access, so the organization needs to consider what the proper architectural approach is for workers who need comprehensive offline capabilities on the client-side application. Organizations must evaluate the relative importance and requirements across all application types — organization to employee (as outlined previously) as well as organization to partner and organization to consumer.

Once an organization has gone through the extensive exercise of tying applications to business results and figuring out what the application requirements look like for those apps, they need to decide whether to build or buy applications. The build versus buy decision will need to be evaluated on an app-by-app basis, but if packaged apps are
available that meet at least 70–80% of the criteria, it is always a good idea to evaluate them because they can help speed time to market and lower the cost of the application over its lifetime. In addition, organizations can shift the maintenance and management of that application to a third party to help keep costs lower over the lifetime of the app. With the breadth of apps available in the public app store today, this also offers another option for simpler apps that don't require much back-end integration. However, it is important to realize that public applications will need to go through an internal vetting process to determine the existing security posture of those apps and whether they can be secured and managed in an enterprise-friendly fashion. In the cases where an organization has to do custom development, it is often wise to evaluate mobile development platforms that assist with back-end integration and tie server capabilities to the front-end applications. Of course, completely outsourcing development is another option, but organizations may want to maintain some part of the code in-house due to the rapid changes in devices and OSs. Leveraging cloud solutions can also help IT organizations get up and running faster with app development. Although it is time consuming to go through each of these exercises, giving careful thought to each decision and building a holistic mobile strategy will ultimately impact whether or not the organization is able to realize the ROI it is seeking to achieve across its mobile application deployment.

BUILDING AN ENGAGING APP

Once an organization has built a road map for mobile application development, one of the top areas of investment should be the design of the apps, especially the area of user experience. The organization can spend all the time in the world making sure that the app functions well from a technical point of view, but if the end user doesn't enjoy using it, then the organization will never be able to gain its return on investment. Thus, it is important to understand what makes an app engaging from the end user's point of view. The following are commonly cited characteristics of engaging apps:

- **Intuitive.** Little or no training is required.
- **Fewest clicks/screens possible to get the job done.** Users can get in and out of the app fast.
- **Social capabilities.** Users are able to interact with other colleagues on the go.
- **Native experience.** App offers best integration with device and most functionality.
- **Context aware.** If an app has information about a user's location or context, it can proactively offer useful information.
- **Good performance.** Users need the app to work reliably.
- **Gamification.** Building a "game" into the app makes it fun or competitive.
Building an engaging app requires that developers leverage the right kind of app in the right kind of context. We referenced this previously, but it's also helpful to have some guidance on the kinds of capabilities to look for in an app platform or toolset to achieve these objectives. Specifically:

- **Design.** Design is one of the most important aspects of creating engaging applications. Look for products that offer a sophisticated simulation environment where the app can be viewed in real time as it is being designed and allows for plenty of user experience (UX) testing. If training or services are offered on UX, it will be a worthwhile investment. In addition, prebuilt templates can help offer guidance on how to build engaging apps.

- **Client-side tooling.** If using a platform, look for those that allow developers to use the front-end tooling of their choice. They may prefer to use the studio provided in the environment, but offering choice will allow the flexibility for creativity.

- **Analytics and performance.** The integration of analytics into the platform is important to ensure not only that the app is working well but also that if the app is underperforming, your organization will be able to identify the reason why and then fix the problem quickly. If the app is not able to scale properly, this can also affect performance.

- **Back-end integration.** Again, this is one of the most difficult components of mobile application development, but it is critical to ensure that your employees and partners are always accessing the most up-to-date information from back-end systems in the mobile app. If they don't feel they can trust the information in the app, they will not use it. Relying on an enterprise-grade mobile enterprise application platform can assist developers not only with the integration process but also with ongoing management of the app and integrity of the data once deployed.

- **Deployment and distribution.** Users need a central way to access all of the apps they need to do their jobs and need to make sure they are always on the most recent version of the app for the best experience. A mobile enterprise application store allows IT to centrally distribute apps based on role and make sure users always know when there is an update.

- **Context and social integration.** Context-aware apps are more valuable to the user because they can deliver relevant information. This may help users do their job or provide a better consumer experience. Integration with social business platforms or social consumer networks also enhances the app experience and increases organizational productivity.

- **Proper architecture.** Ensuring that you leverage the right architecture for the app you are building is paramount to the success of that app. If your app requires a native app or wrapper for the best experience, build it that way.
MANAGEMENT AND SECURITY CONSIDERATIONS

When building a mobile enterprise application strategy, organizations must always consider how they will protect the information residing in that application. Typical business-to-consumer applications don't house a great deal of sensitive information because they are meant to be consumed by the mass market. With these applications, the key security concerns are the ability to protect the end user's financial information if the app has an ecommerce component and the app itself from malware. In the case of business-to-employee applications, security concerns are heightened by the fact that these applications often do house sensitive information that is not meant for the eyes of the general public. In addition to security, IT needs a streamlined way to manage the applications over their entire life cycle.

When organizations deploy corporate-liable smartphones and tablets to employees, the easiest way to manage and secure the devices is by leveraging a device management solution that gives IT complete control over the devices. However, the proper technique for securing information on BYOD devices is more open to discussion. IDC believes that in 2013, 69% of all smartphones leveraged for organizational use will be employee owned; therefore, the majority of organizations need to develop a strategy for protecting apps on these devices. In these cases, organizations must be sensitive to the fact that BYOD devices are not company assets and that privacy is a concern for end users. On the other hand, BYOD devices introduce new security concerns because they offer the opportunity for work and personal applications to commingle. Organizations should investigate products that strike the best balance between IT's need to protect sensitive data and the end-user experience.

In addition to securing and managing devices and data, IT needs a streamlined way to perform application life-cycle management and analytics. Organizational app stores give IT a level of control, security, and efficiency in the deployment of applications across multiple platforms and enables customized application delivery and management based on end-user segmentation. Mobile application management solutions that offer analytics can give IT and LOB key statistics into the performance of the application and usage. This insight can be very valuable in determining how users engage with the application, and if the engagement levels are lower than expected, it can help organizations identify potential reasons why.

The following guidelines will be helpful to organizations that are considering how to manage and secure corporate applications on employee-owned devices:

- **Use a mobile enterprise application store.** Leveraging a mobile enterprise application store that is integrated with LDAP/AD gives IT a centralized way to distribute apps by role and manage them over their lifetime.

- **Separate from consumer applications.** You need to protect your organizational applications from the consumer applications on the device. Investigate mobile workspace solutions that provide containerization for corporate apps or SDKs and wrappers that allow you to build granular security policies into each app.
Employ mobile antimalware. Leverage a mobile antimalware solution to protect mobile apps and have users access work Web applications through a secured browser.

Protect your network. Deploy a solution that allows you to set thresholds for what defines a compliant device/app and that is able to deny access to anything that doesn't meet the standard.

Protect content. How you will protect files and content is another key consideration. Today, a plethora of solutions can help with this.

APPLICATIONS DRIVE BUSINESS VALUE

Mobility is one of the four key pillars of what IDC refers to as the "3rd Platform." We believe we're in the midst of a massive structural shift from the PC and client/server-based "2nd platform" of technology growth and innovation to the "3rd Platform," which is built on a foundation of mobile, social, big data, and cloud technologies. In our view, organizations that embrace the 3rd Platform will be best positioned to capitalize on the key advantages that these new technologies offer. Mobility is at the forefront of this trend as a key driver of the need for anytime, anywhere access to socially driven, context-aware apps and information.

In this paper, we have discussed how to build a business case for mobile applications, how to develop applications that engage users, and some of the security and management considerations that must accompany any technology project. Today, the world of enterprise mobility is often referred to as the "Wild West" because it requires organizations to take new approaches to IT processes that have been somewhat standard in the past. In addition, mobility is driving even greater convergence between areas of IT that may have previously been siloed. However, organizations that are able to embrace this change and build a solid mobile strategy will be much better positioned to compete in the future. While mobile application development requires new skills, a faster pace, and a strong focus on the end user, the investment made in mobile applications will offer organizations the ROI required to compete in the rapidly evolving world of the 3rd Platform.

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