The Challenges and Opportunities of Mobile Application Development

EXECUTIVE SUMMARY:
In February 2014, for the first time in history, Americans used smartphone and tablet applications more than PCs to access the Internet. No technology category has grown more rapidly than mobile devices. Nearly all business users now demand mobile devices—their own or company-owned—along with anywhere-access to corporate applications and data.

What turns mobile devices into productivity engines for enterprises? Mobile applications. In this report, we’ll look carefully at some of the primary challenges and risks organizations face in developing and managing mobile apps. And, we’ll look at opportunities to optimize the process of mobile application development.

IDG Research and CDW Corp. recently conducted a survey of IT and business management executives to determine the extent of their organizations’ sophistication and maturity around mobile application development and to determine the challenges that remain. While many organizations develop their own mobile apps, many also turn to outsourcing partners. Most of these apps continue to be developed and operated outside the purview of any overarching corporate mobile app strategy, despite the fact that they’re often mission-critical business apps.

» Introduction: It’s a Mobile World
The landscape of mobile devices and mobile apps continues to expand at a blistering pace. Devices have become faster, more capable and less expensive. Mobile workers on mobile devices need easy, consistent and secure access to retrieve, evaluate and manipulate corporate data in the course of conducting their business. That scenario has led to the emergence of managing mobility as the most pressing current corporate challenge.

In response to this explosion of devices, IT managers have understandably taken a “protect the data first” approach.

Managing and securing the apps and devices mobile users have in the field is of paramount concern. Mobile device management (MDM) solutions are becoming more widespread as a way to provide a blanket layer of mobile app and device management. According to the CDW and IDG Research survey, more than half of respondents deployed an MDM solution to address different mobile management needs within their organizations.

Mobile devices and mobile apps are the norm and corporate data is being accessed from anywhere at any time, requiring companies to improve how they manage their portfolio of mobile apps. An organization’s mobile infrastructure will have often risen in the absence of solid strategic direction. Of the companies responding to the survey, an alarming 89 percent indicated they have no such strategy in place.

It’s a safe bet most of those companies have a clear direction for developing and deploying desktop applications and maintain a fairly tight grip on their desktop and network infrastructure, so why wouldn’t they apply the same guidance to their mobile applications? That “wild west” sort of mobile environment can’t continue, especially considering the widespread usage and strategic importance of mobile devices and the essential mobile applications they’re running.
Plan a Mobile Application Strategy

Managing mobile infrastructure is about much more than securing corporate data, although the security function is indeed critical. Creating a clear and comprehensive strategy for developing mobile apps around an organization’s mission and communicating that strategy to its workforce and public is essential to mobility success.

While only 11 percent of the CDW and IDG Research survey respondents have what they consider to be a solid application development strategy, more than one-third report their companies are already developing applications that perform mission-critical or strategic functions. With no strategic oversight in place, those critical applications are falling outside any guidelines for addressing the most pressing organizational needs.

Companies must examine their corporate priorities, determine how they plan to best serve their customers, increase their competitive advantage in the marketplace and decide how they will streamline business processes. When developing a strategy around mobile app development and management, executives should center their plans on the organization; involve all key stakeholders and decision makers from the business units and IT; and listen to the concerns of their mobile workforce. What do they need? That’s where the mobile devices are working effectively—or not.

Companies with more than 5,000 employees are generally further along in their development of mobile policies, roadmaps and app development strategies versus smaller organizations.

Defining a mobile app strategy can drive competitive advantage by generating additional revenue, cost reduction, employee productivity gains, and increasing customer satisfaction. This isn’t just to ensure you’ve developed the right set of applications to support your business. Operating within the parameters of a clearly defined and comprehensive mobile strategy is good for many other business reasons:

» It can be a competitive advantage, as it has a direct result on improving customer experience.

» It can improve employee productivity and streamline business processes.

» It can not only meet customer expectations, but also exceed them by making improvements to customer experiences they did not even know they wanted or needed.

The right mobile app portfolio governed by a determined mobile strategy can help your company gain a significant advantage well in advance of your competitors. And all this with an eye toward not only streamlining and improving productivity and business operations, but also the ever-important customer experience.

Organizations’ stand on developing the following as part of its mobility strategy over the next 12 months

<table>
<thead>
<tr>
<th>Completely developed</th>
<th>Partially developed</th>
<th>Beginning stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile policy to govern mobile device usage and data access</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>Mobile roadmap to outline key work processes or functions that will be mobilized over time</td>
<td>16%</td>
<td>34%</td>
</tr>
<tr>
<td>Mobile app development strategy to identify app development needs and priorities</td>
<td>11%</td>
<td>34%</td>
</tr>
</tbody>
</table>

SOURCE: IDG Research Services

Boost Your Competitive Advantage

Next, companies should proceed with strategic conceptualization. After that self-examination, develop a mobility strategy, plan out a roadmap to get there and a set of policies to govern the use of their mobile devices and mobile apps. When choosing the list of apps to mobilize, keep this in mind: include only the essential functionality, and that which provides the most value. Corporations should consider these factors for success:

» Engage the key stakeholders—involving the important decision makers and don’t neglect the need for C-level sponsorship.

» Demonstrate the payback in terms of benefits and justify decisions and plans based on the ROA—The Return on Applications.

» Look at their mobile app strategy as it relates to their company’s mission statement.

Factors for Mobile Application Development Success

**User Interface:** Mobile apps must be developed precisely and efficiently. These are the front line business apps. Getting the user interface right for these mission-critical applications is the most challenging aspect of application development, according to survey respondents. The stakes for the end result...
Bake in security from the start—Security is the No. 1 consideration for mobile app development. Addressing it at the policy stage assures minor course corrections rather than hit-or-miss as the policy is put into practice.

Don’t stop at MDM—As mobile apps and corporate mobile app stores proliferate, your mobile policy must look beyond the devices and supporting infrastructure to encompass apps and end users.

Maintain flexibility—Operate within a flexible app development process that uses the right platform for the app requirements and works with external partners as needed.

are high—companies need to develop an interface that will be adopted by their workforce or the public, not one users won’t use. Often the most efficient and effective route to getting the interface right is to bring in external resources.

**FLEXIBLE STAFFING:** The decision to conduct application development efforts in-house or with external resources should be based on the available skill sets within the company’s IT and development ranks. The proper development skills on the proper platform, plus the ability to test those apps and perform the full spectrum of quality assurance must be ensured. In some cases, what may be the best app development process for an organization is a combination of both in-house and outsourced development and quality assurance testing.

Seeking development expertise from an outside partner shouldn’t be considered a failure or a sign of weakness. On the contrary—it’s an acknowledgement of the need for additional or more specialized development skills. In fact, CDW and IDG Research’s study finds that less than four in 10 respondents would rate their organizations’ current ability to develop and test mobile apps across different platforms, devices and screen sizes as excellent or very good. An overwhelming 55 percent rank “Mobile App Development” as the aspect of mobility to benefit most from outside help. By 2015, IT decision makers report they will do 50 percent of their development in-house and 50 percent with external resources.

**FLEXIBLE PLATFORM CHOICE:** According to the survey’s findings, there appears to be a relatively even distribution in the use of the four leading application development platforms, which include Web-based/HTML 5.0, custom native apps (such as iOS or Android), platform specific apps (such as SAP and Salesforce) and app virtualization (such as Citrix and VMware). More than 50 percent of respondents had frequently or sometimes used any of these top-ranked development methods. Companies may need to follow any of these major development approaches to deploy the app portfolio that fulfills their needs.

**BALANCE INNOVATION AND SECURITY**

The applications running on an organization’s mobile devices aren’t just simple single-function apps. They’re mission-critical, line-of-business applications, often essential for your business users. Allowing your mobile workforce to continue running these mobile apps in the absence of any governing policy runs numerous data compatibility and security risks.

Data security and user application requirements are the most important aspects of mobile application development policy. Mobile users need the right solutions to protect not only the corporate data, but also the mobile devices with which they’re accessing, manipulating and transmitting that data. Those solutions will typically include mobile device management (MDM), network access control (NAC) and device and data encryption.

The MDM marketplace has matured to the point where many organizations have already deployed more than one MDM solution over the course of their history. Companies may need to evolve their MDM solutions to adapt to changing requirements. Of those IT executives responding to the mobility survey, 51 percent reported having one MDM solution deployed, 21 percent have deployed two and 32 percent have deployed multiple MDM solutions. So while the majority of organizations have indeed embraced MDM, a good number have already evolved to their second or third generation of MDM deployment. Consider these essential steps:

» Bake in security from the start—Security is the No. 1 consideration for mobile app development. Addressing it at the policy stage assures minor course corrections rather than hit-or-miss as the policy is put into practice.

» Don’t stop at MDM—As mobile apps and corporate mobile app stores proliferate, your mobile policy must look beyond the devices and supporting infrastructure to encompass apps and end users.

» Maintain flexibility—Operate within a flexible app development process that uses the right platform for the app requirements and works with external partners as needed.

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**Most Challenging Aspects of Mobile Application Development**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting the user interface right</td>
<td>54%</td>
</tr>
<tr>
<td>Supporting the full range of popular mobile platforms</td>
<td>45%</td>
</tr>
<tr>
<td>Finding developers with the right skills</td>
<td>44%</td>
</tr>
<tr>
<td>QA and testing</td>
<td>41%</td>
</tr>
<tr>
<td>User technical support</td>
<td>38%</td>
</tr>
<tr>
<td>Accurately estimating project costs</td>
<td>36%</td>
</tr>
<tr>
<td>Gathering market requirements</td>
<td>25%</td>
</tr>
<tr>
<td>Application distribution and/or dissemination of updates</td>
<td>25%</td>
</tr>
<tr>
<td>App hosting services</td>
<td>16%</td>
</tr>
</tbody>
</table>

SOURCE: IDG Research Services
Maintaining a flexible approach toward the choice of development platform for mobile apps also plays into the decision to develop those apps in-house or with external partners or in some combination thereof. Executives should give themselves the flexibility to proceed in the manner that suits the needs of their current situation.

» Conclusion: It’s All About the Apps
Enterprise leadership needs to empower its business technology executives with the proper apps to drive their mobile devices and provide access to corporate data, all of which propels the business forward. They need to consider what is possible with mobile applications and fully realize how they enable business goals and objectives. By considering the full range of mobile infrastructure—from devices to applications—companies can develop a mobile app portfolio that is truly an active component of their business:

» Build a business case for every app—Mobile apps can and should be game-changers. From driving new revenue to boosting engagement within an organization, companies need to clearly articulate how the apps will drive business forward.

» Work with external partners—Recognize the need to reach out to external development resources to fulfill app development needs.

» Focus on the user experience—it’s the No. 1 challenge, and the No. 1 key to a successful deployment.

There are unique challenges to developing a mobile infrastructure, but as long as they are addressed at the outset, business operational benefits and the potential customer benefits can be maximized. The center of it all is the portfolio of mobile apps. After all, full seamless and secure mobile access to corporate data and resources has evolved from being an option to becoming an essential element of a successful enterprise’s infrastructure. The bar for mobility has been raised and both customers and employees expect it these days.

Learn more at http://appmarketplace.cdw.com

SOURCE: IDG Research Services

Those at larger companies (5,000+ employees) report a lower percentage of apps being developed externally (43% vs. 58% among smaller companies).