White Paper

Mobile Device and Application Trends — Are Mobile Applications Moving to the Cloud?

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IDC OPINION

The use of mobile devices across job levels and functions in businesses continues to broaden and deepen. Smartphones and tablets are increasingly critical tools for employees accessing information and engaging throughout their organization's workflow. With this device trend comes an increase in the use of mobile applications and content beyond traditional email and messaging. Access to company resources, such as shared files, customer relationship management (CRM) applications, and financial applications, is emerging as a high priority for employees, lines of business, and IT departments. Businesses are also increasingly mobilizing timely and relevant activities with the end customers of their products and services, such as in the case of hospital services and portal access for patients and retail shopping environments.

Management faces the increasing challenge of making mobile applications accessible while dealing with the deployment and budgetary impacts of providing mobile access. To address the challenges, mobile applications are increasingly put in the cloud. Mobile applications in the cloud are essentially mobile applications for which the software, platforms, and infrastructure are virtualized and hosted over the Internet. The mobile applications are procured "as a service" and, as such, bring the benefits of cost-effective scalability and ease of management through such tools as management dashboards and self-service interfaces. Cloud services are increasingly being adopted by businesses. Phased deployment strategies and the availability of hybrid public and private cloud deployment options allow for the leverage of cloud technologies and services as part of overall business mobility progression.

IN THIS WHITE PAPER

This IDC white paper examines the benefits of cloud technology for mobile application solutions in the business.. It characterizes the high-level challenges facing the line of business management and IT management. The white paper describes the benefits of cloud technology and services and showcases the trends in adoption of solutions designed with the line of business and IT management in mind.

SITUATION OVERVIEW

Mobile devices are increasingly penetrating businesses of all sizes. Regardless of whether these devices are corporate liable or individual liable, IT departments and lines of businesses have quickly realized the benefits of enabling mobility. Employees can not only communicate with each other on

the go, but also access and interact with an expanding set of useful applications and business content as well as enhance the opportunity to interface with end customers, as in the retail, healthcare, and financial services industries. Cloud technologies and services, which enable shared access to virtualized resources over the Internet, allow IT to provide access to business applications across the workflow cost effectively and securely amid the expanding employee mobile device set. Cloud services are commonly referred to as "as a service" offerings, where the software, network, or other offering is billed on a per-device per-month basis, as an example. Lines of business are increasingly making budgetary decisions around these cloud services for the benefits of internal and external business mobility solutions.

The Increasing Role of Mobile Applications in Business

Driving mobile application usage in medium-sized and large businesses, in particular, is the explosion of mobile devices. Smartphones and tablets dominate business, led by strong enterprise mobility and bring-your-own-device (BYOD) growth. Expectations are that individual-liable smartphone shipments will grow an average of 30% for the 2012–2017 period. Corporate-liable devices continue to maintain a strong presence in businesses as well. Along with the explosion of devices has come the expansion of the functional roles of mobile workers. No longer are mobile workers limited to field service employees; instead, they encompass a broad range of employees across the business, including IT and executive and business management employees. The trends toward business mobilization across device types and the broadening use cases by type of job function are here to stay. In the United States alone, by 2014, IDC expects that more than one-fifth of enterprises will have 100% mobile employees.

Beyond arming employees with devices and facilitating the BYOD trends, businesses are quickly realizing that integrating mobile devices into the workflow and associated applications provides value. Beginning with connecting mobile employees to email and instant messaging communications, businesses saw productivity and collaboration benefits. Arming employees with the ability to interact with the organization's applications, in a truly integrated workflow process while on the go, is a critical next step. In 2014, IDC expects 80% of licensed users of enterprise apps to use mobile versions of traditional software applications.

Challenges Facing the Increasingly Mobile Business

Businesses are faced with the challenges that come with mobilizing their workspaces, including dealing with a multioperating system environment and managing the range of application types in the workflow. With increasing enablement of mobile access to CRM, financial, and accounting applications, in particular, comes much angst in the business. IDC research in late 2013 revealed that a top concern among U.S. enterprises is employee sharing of sensitive information with non-company parties. Another top concern is around unsecured exposure in public or shared networks. From a strategic and operational vantage point, the list of business challenges goes on, including:

- Maintaining acceptable authorized and secure access by employee-liable and corporate-liable devices that come and go from the organization
- Ensuring consistency in user experience, regardless of device type
- Integrating with business systems
- Managing technical resources efficiently and cost effectively, despite the dynamic time and knowledge required
- Staying current with network technologies
- Expanding the base of users cost effectively and dynamically

Further, support costs in enterprise mobility and BYOD environments may not always align with the cost savings expected. For example, typically BYOD policies do not provide direct support to employees. However, there is often still the need to support software on these devices. To the degree that business executives take advantage of BYOD policies, businesses will almost certainly find themselves supporting the executives' required applications and services on multiple mobile devices. Application development costs exist across enterprise mobility and BYOD environments, as do the costs of the application management and security software for these devices.

As a result of the complexity of mobilizing the business and the impact on the organization's bottom line, mobile strategies are constantly evolving to incorporate efficient and effective technologies and services. One increasingly present aspect of such mobile strategies is device, security, and application procurement and management in the cloud, as-a-service, which helps address the efficiencies that businesses need.

Benefits of the Cloud for Mobile Applications

IT management continues to incorporate the cloud into its enterprise mobile strategies and reap the benefits. IDC research suggests that the benefits will increasingly be sought and experienced by businesses. The benefit of basic mobility for remote employees, employees on the go, or customers of retail or financial services businesses has improved collaboration and communications internally and externally with clients, partners, and suppliers. This benefit increases in value as employees cost effectively access business applications and content on the go, all enabled by the cloud.

IT priorities are evolving in line with the needs of the employee user base. Employees are continually expanding on the functionality they require to work effectively and productively on the go. With the cloud, IT has available a wide range of more cost-effective and efficient advanced features and functionality. Businesses would find that without the infrastructure and development invested by the cloud provider, the cost and time requirements would be high. . Examples of the breadth of features enabled through cloud solutions that would otherwise require significant development and investment by IT and lines of business include:

- **Converged voice and data communications,** in which voicemails are automatically forwarded to email accounts or calls from an employee's cell phone number appear as if they are calls from a main corporate office number
- **Integrated CRM applications,** in which activities appear in both Outlook email, for example, and the employee's CRM application interface based on one activity entry rather than two
- **Enhanced spam filtering,** whereby emails across an organization are able to maintain a state of security and appropriateness as a result of IT policies set simply by IT in the cloud
- **Financial management,** in which a wide range of currencies and locations are consolidated according to standard rules the business defines in the cloud
- **Video services for conferencing or advertising purposes,** whereby the infrastructure in the cloud and interfaces are open enough to help ease the time and cost to market for marketing and other involved employees
- **Retail monetization opportunities,** whereby mobile applications leverage a shopper's buying history and behavior to create specialized offers
- **Patient care services,** whereby mobile applications improve on the information access or two-way communications between medical personnel or business services and patients

Migrating enterprise or business workflow applications to the cloud, as illustrated by the preceding examples, brings value not only to employees and line of business management, but also to IT. The value is in securely and rapidly enabling enterprise mobile devices and those devices brought by employees to work as part of BYOD programs.

Mobilizing the business almost always involves balancing cost while increasing ease of implementation and time to market. IT management continues to be challenged to prioritize cost savings measures while increasingly incorporating the business management priorities for expanded use of enterprise applications across a multitude of connected devices. Leveraging the cloud for mobile applications in the business can bring the following benefits to IT:

- **Increased flexibility and ease in scalability** for ease in adding or reducing devices as the need of the business changes
- **Simplified vendor management** that reduces the number of interfaces that IT is required to have with the multiple vendors that are feeding into the functionality of the solution
- **Minimized risk of technology obsolescence** that would otherwise be the case with solutions deployed on the business' premises
- **Enhanced disaster recovery capabilities and business continuity planning** that allow the business to leverage the ongoing investment typical of major cloud storage offerings, often including multiple redundancies in servers and management centers that would otherwise be too costly for a single business to build out and maintain on its own
- **Cost savings,** whereby capital outlays and operating costs are reduced; capital investments themselves are reduced; and infrastructure, software, and maintenance services are minimized, being dealt with on behalf of the cloud service provider and in the more manageable monthly per-device fee

In summary, the major advantage of migrating applications and services to the cloud is the opportunity for the IT organization to repurpose resources from maintenance to other cost-saving, strategic, or innovative initiatives that are important to the business.

Adoption Trends of Cloud-Based Applications and Services by Businesses

Medium-sized and large businesses have been adopting modern versions of cloud services since 2009. Factors important to businesses include remote management of devices and device policies, availability of applications, and online customer portals, all of which underscore the value of early cloud, or "as a service," offerings to the organization. The types of cloud-based applications and services adopted early on include:

- **BYOD as a service,** entailing the enablement and policy management of employee-liable devices
- **Collaboration as a service,** entailing the enablement of Internet-based communications tools, such as IP phones and video communications across a range of devices

These cloud offerings were, and continue to be, aligned with the major priorities of businesses. Enablement of devices and careful management of device and application access policies that facilitate communication between employees and customers remain priorities for IT management.

Over the past couple of years, however, businesses have shown peaked interest in additional cloud offerings. Businesses are keen on leveraging the cloud's efficiency for content sharing and applications. This is undoubtedly and increasingly the case as businesses realize the productivity

improvements from more fully mobile-enabled employees and realize the benefits of mobilizing the end-customer experience, which includes improved customer satisfaction and improved service-related interactions.

Management is consequently experiencing the taxing of its resources and time by this, albeit valuable, increasingly mobile business trend. Managing the billing and deployment of mobile devices and applications is time consuming, let alone the security and ongoing efforts to stay up to date with enterprise applications implemented for mobile. IDC research from late 2013 revealed that businesses want help managing the breadth of device types accessing applications and content, with one-third explicitly saying they want help managing the secure access of BYOD devices to the network.

More recently, the popularity of cloud offerings is seen with adoption of broader device management solutions in the cloud, such as mobile device management (MDM) as a service, network as a service, and network-aware mobile applications as a service. Further, IDC expects adoption to increase around mobile business analytics as a service and mobility as a service, as the network of connected people and things continues to rise in importance. The percentage of enterprises in the United States planning to implement cloud in the next 12 months has doubled from 26% in 2012 to 53% in 2013.

While businesses are generally increasing adoption of cloud offerings pertaining to device management, networks, and applications at an impressive rate, these same businesses are cautious in determining the optimal balance of cloud security. The reason for this is that each business has vastly different content and application types to be accessed by mobile devices in the cloud, as well as a unique appetite for security and operational risk. The nature of a cloud or virtualized solution can raise concerns for security of content and usage. The nature of a public cloud and the nature of a private cloud are outlined as follows, as each offers specific benefits to the business:

- With a **public cloud**, the virtualized resources are shared among a variety of businesses. The public cloud is available with less customization and professional services than a private cloud. Some feel that this raises security concerns over content stored or shared in this virtualized space.
- With a **private cloud**, the virtualized resources are apportioned from the public cloud and restricted to use by one business. This arrangement is intended to mitigate security risks of the public cloud as well as to elevate the flexibility and adaptability of the resources in the cloud for businesses that are concerned with the timeliness and availability of resource needs being handled by the cloud.

Hybrid clouds are garnering the attention of businesses because they are seen as offering the best of all worlds. Hybrid clouds offer the ease of readily available public clouds where mobile device and application access to business content can tolerate the potential for resource constraints and security angst, even if the reality never comes to be. However, hybrid clouds offer the business private virtualized resource sharing for specific cases, as defined in policies set by the business. The hybrid cloud enables a unified experience for the IT department interacting with the portal, while access to the cloud is managed differently depending on the policies outlined.

FUTURE OUTLOOK

Enabling business employees to communicate and work productively while on the go is a high priority and not expected to diminish at any point in the future. The trend of retail and financial services' lines of business targeting customers with mobile applications continues. These examples and others

underscore that extending mobility throughout an organization's workflow and even out to end-customer touch points is increasingly seen as valuable. IDC research has shown that voice and data communications were the early priorities of mobility in the business. Today's business is challenged to expand this enabled feature set for convergence and rich data experiences, as in the case of video conferencing. The costs and complexity of maintaining and evolving the technology and services required for voice, video, and other business mobile applications will continue to challenge businesses. The cloud will continue to rise in importance for businesses as long as IT management desires cost savings, efficiency in operations, security, and agility in deployment and the line of business prioritizes enablement of mobility.

Hybrid clouds are likely to rise in popularity, making them an increasing part of a business' mobile strategy for the foreseeable future. Businesses face the realities of ongoing security threats from content that comes with increased access of content rich applications and rich video applications and services. With these realities, businesses will likely increasingly opt for a hybrid cloud approach, where particularly sensitive business content can be managed within a private cloud specified for a given organization. Where businesses feel the risks to resource availability and security in the public cloud are tolerable, they will often opt for the public cloud. One thing is for certain, businesses will increasingly want the ease and resource efficiencies that come with single interfaces and simplified vendor management, a characteristic of all types of clouds, whether public, private, or hybrid.

CONCLUSION

Mobile workers proliferate businesses today. Mobilizing customer experiences is a priority. Medium-sized and large businesses must continue to cost effectively expand the set of applications that employees and customers can use on the go. To the business this means ongoing big investments in infrastructure, security, and other services, such as redundancy, storage and converged voice and data services, to name a few. Without cloud solutions, the costs and resource management would be nearly intolerable as mobile use cases expand. Businesses should plan for cloud as part of their ongoing mobile strategy implementation and consider hybrid cloud services as a step along the way, if not the final solution approach of choice.

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