Can Windows Phone 7 Be Your Corporate Mobile Platform?

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Introduction

The release of the iPhone in 2007 opened the floodgates for smartphone adoption within enterprises. Though Windows Mobile and Blackberry were significant players before the arrival of the iPhone, Apple’s entry into the market led to the development of an ecosystem around application development and delivery. The arrival and adoption of the iPhone has significantly dented Microsoft’s dominance in the mobile market. After three years of development and missteps, Microsoft has decided to completely revamp their mobile strategy by releasing a new smartphone platform, Windows Phone 7 (WP7). Unlike previous editions of Windows Mobile, which unsuccessfully aimed to bring the Windows experience to the mobile device, WP7 takes a consumer-first approach. The goal for the platform is to deliver a compelling user-experience, while providing developers the capability to leverage their existing toolset to build enterprise applications. Microsoft has publicly stated its commitment to regularly update its mobile offering, and the platform is expected to evolve as a top notch competitor to iOS and Android in the near future.

Microsoft’s commitment to the platform has encouraged many IT organizations to revisit their mobile device strategy. Most large firms have clear mobile device management policies and strictly control access to their network. Companies streamline their mobility infrastructure by consolidating service providers, standardizing mobile hardware, and clearly segmenting their user-base based on their access needs and corporate roles. However the end user’s experience with their devices is an important factor to consider when driving an enterprise mobile strategy. Though security and standardization are critical, it is important to balance those requirements with a focus on the usability of these devices. Therefore, an ideal mobile device strategy would be to pick a single device that would provide all the features that an end-user would need while complying with the corporate mobile device policies. However, the reality is that different devices are used to satisfy various user roles in the organization.

In this White Paper, we will explore the strengths and weaknesses of the WP7 platform and identify the top five reasons to consider the platform. As a “version one” product there are some platform limitations, which may limit the adoption of WP7 in your enterprise. We will also explore the top five reasons to wait before taking the plunge with WP7.

Forrester estimates that about 25% of businesses leverage mobile phones for Sales Force Automation, emergency response, and field services by building native applications targeted towards iOS and Android.
Considerations for Choosing a Mobile Platform

Every enterprise trying to develop a mobile standardization strategy runs into one major stumbling block - “End-User Preference”. End-users do not often care if the smartphone that they like/use is enterprise-ready. The end-user prefers to use a single device that provides features suitable for both personal and business use. They would like to bring their devices to work to be as efficient and productive as possible on a familiar platform.

For example, the first version of iPhone was not enterprise-ready. However, it provided users a simple and efficient user-interface, and provided entertainment features. Executives and early adopters bought these devices for personal use and demanded IT to support it as an “approved corporate device.” This phenomenon where end-users buy devices for personal use and leverage it within the workplace is called the “Consumerization of IT,” and it has significantly impacted the mobile device landscape in many enterprises.

Mobile device makers like Apple and BlackBerry and platform providers like Microsoft and Google are very much aware of the consumer’s power to influence corporate purchases. These companies are devoting and increasing amount of energy and resources to please the consumer by providing a compelling end-user experience.

We can safely claim that the iPhone started the trend and has extended to other devices, such as the iPad. Previously, the corporate purchasing department worked closely with IT to drive standardization of the devices used in the enterprise. However, with the consumerization of IT, end-users now play a significant role in determining the devices supported by corporate.
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its mobile workforce and further increase the value of these devices to end-users.

**Top 5 Reasons to Consider Windows Phone 7**

*Enhanced UI*

In previous versions of Windows Mobile, the user-interface was focused on tasks. Items were organized by “type” (e.g., email, SMS, Outlook task) instead of “whom” or “what” the item was linked to. With WP7, the user-interface is “contact-centric” allowing for the intelligent grouping of items based upon the “person” or “group” that they pertain to. When a user selects a contact, they will also see everything related to that contact including: emails, SMS, Facebook, Twitter updates, etc.

In addition to this philosophical change, WP7’s user-interface is built around the interaction with floating icons that Microsoft calls “Live Tiles.” The Live Tiles are customizable system icons that are extremely flexible and robust. The Live Tiles can represent anything from applications, pictures, music, map locations, favorite websites, documents, and contacts.

In today’s always-connected world, employees are spending more time heads-down on their phones than interacting with the people sitting right next to them – leading to information overload and burnout. With Live Tiles providing real-time updates, WP7 truly supports a “glance and go” lifestyle.

*Office, SharePoint & Cloud Integration*

WP7 offers the most comprehensive and versatile Microsoft Office integration available in the smartphone market. With the Office Hub, users can access Word, Excel, PowerPoint, and One Note documents directly on their devices. Not only can users review documents, but they can edit, save as a separate version, sync with their PC through ActiveSync, or upload the document to a SharePoint document library. Along with SharePoint document library integration, users can also browse sites, view lists, calendars, announcements, and leverage SharePoint search. WP7 supports access to SharePoint 2010 Servers over an internal/external Wi-Fi connection or cellular connection; however, the cellular connection requires a Forefront Unified Access Gateway (UAG) server.
WP7 applications can also take advantage of cloud-based, rich internet application web services. This allows for all data storage to take place in the cloud and reduces the reliance on local storage. With all data living in the cloud, as opposed to the device, the risk of losing data due to a lost or damaged device is greatly reduced. Additional support for Office documents in the cloud will be available in an update in late 2011 to further support SkyDrive and Microsoft’s Office 365 cloud-based service due out this summer.

**Corporate Security**

With Microsoft Exchange ActiveSync (EAS), corporate security has become even more streamlined and easier to control. All communication to and from the device can be encrypted using SSL Encryption (128/256 bit). In addition to encryption, corporate IT can manage individual device PINs and ActiveSync password policies. With EAS, devices can be locked or completely wiped remotely, further protecting sensitive data. Some WP7 devices support SD card slots; however, they can only be used to increase storage and WP7 will encrypt, lock, and integrate the expansion card to that device only. This helps prevent security risks of lost or stolen SD cards that might contain sensitive information.

**Leverage Traditional .NET Technologies**

WP7 applications are developed entirely using the .NET Compact Framework, which is a subset of the full .NET Framework targeted at mobile platforms. In addition to leveraging internal .NET capabilities, WP7 applications are built with Microsoft Silverlight (XNA Game Studio for 3D games), which has been Microsoft’s chosen platform for building rich internet applications (RIA). Not only can companies leverage existing skill sets like .NET and Silverlight, any preexisting Silverlight web or desktop applications can be ported to a WP7 application with substantial code reuse. With this linkage across mediums, companies will now have the ability to substantially streamline their user-experience, leveraging preexisting applications to give the mobile experience a consistent look and feel.

**Hardware Standardization**

With previous versions of Microsoft’s mobile platforms (Windows Mobile), the hardware specifications were very loose and hardly regulated by original equipment manufacturers (OEMs). With no specificity and very little predictability, it was impossible to ensure what type of environment the application would be running in. Everything from the phone’s registry keys to the types of buttons on the device were customizable by the OEM, leading to platform fragmentation. With WP7, Microsoft has laid out specific hardware requirements and taken the ability to manipulate components of the operating system away from OEMs. With the increased predictability and standardization of WP7 devices, developing applications that work across all phones will be much easier.
Top 5 Reasons to Wait Before Supporting Windows Phone 7

**Lack of VPN Support**

WP7 does not currently support socket level networking access. This means companies like Cisco and SonicWall cannot develop VPN applications for the platform. Additionally, IPSEC VPN is not supported either. If you require your mobile workforce to VPN into the network to access corporate resources, WP7 in its current state is not the recommended platform. This lack of low level networking access is also the reason for the lack of VOIP applications for the platform. WP7 currently only supports SSL VPN via UAG (Unified Access Gateway) when connecting to Exchange, BPOS, or SharePoint servers. Though an official WP7 roadmap has yet to be released, many expect traditional VPN support to be released in the next version.

**Limited Multi-Tasking & Background Processing**

Another substantial downside to WP7 is the current lack of support for multi-tasking and background processing. This was somewhat of a surprise as most competitors have been supporting this for some time. It has been deemed a “future feature,” but no timetable has been given. While there is no real background processing support for applications, there is the ability to pause and pick up where an application left off when it restarts. However, this is not an actual pause, but rather the ability to save the current state of an application to the device’s isolated storage so that it can intelligently resume on the next startup.

This approach has been termed as “tomb-stoning” an application. It allows the application to catch the exit action at different stages of the process. For instance, the application has an event that allows processing during the closing stage, when the user’s state is still available, but the application has not completely exited. At this juncture, the application can store specific data about the state of the application to the phone’s isolated storage. Then, once the application is starting, an event takes place where the saved state data in isolated storage is extracted and used to “resume” the application as if it were running in the background. This is an important difference for corporations who desire an application that does any kind of background processing or monitoring. While it seems to be running in the background, it never actually is.

**Corporate Security**

While the support for Microsoft Exchange ActiveSync policies is extensive, it should be noted that not all of the features are supported. Only a subset of the full Microsoft Exchange policies is supported in WP7. Supported features include: requiring a password, minimum password length, idle timeout frequency value, device wipe threshold, allowing simple passwords, password expiration, and password history. It is important to note that Windows Phone 7 devices only support a subset of the Exchange ActiveSync (EAS) policies. All of the policies on the following page will be returned as “True” meaning that you cannot enable these features.
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**Not Supported Policies**
- Disable Removable Storage
- Disable IrDA
- Disable Desktop Sync
- Block Remote Desktop
- Block Internet Sharing

**No Application Side Loading**
While the MarketPlace Hub has many advantages, including a single-distribution channel for selling an application, there are drawbacks. The biggest hindrance created by the process of a single-distribution channel is the inability to side load applications to a device. It is no longer possible to deploy a single installation package (CAB in Windows Mobile) to a device through your desktop USB connection. This is not only useful for testing, but is helpful if your user-base is small and you don’t want your application to be public in the MarketPlace. The alternative to this scenario is to require authentication (e.g., login screen) when the user first starts the application. For testing, developers can unlock their device to deploy applications straight to their device, but there are limitations, including a maximum number of 10 applications on a device at one time. Microsoft has hinted that there will be the option of side-loading in the future, but the particulars of the process are still unknown.

**Cannot Use Unmanaged Code**
In previous versions of Windows Mobile, the .NET Compact Framework was not the only API available for developing applications. Developers could build programs that leveraged unmanaged code to provide better performance (not part of the .NET Compact Framework), including APIs for Java code. However, in line with the changes to the hardware specifications and requirements, Microsoft has restricted all WP7 application development to the .NET Compact Framework. Unmanaged code will no longer be able to communicate to the device through other APIs. A major drawback is that communication with the device is limited to the options offered by the .NET Compact Framework.
Conclusion

Microsoft has continuously strived to ensure that all of its products elegantly fit together to collectively help a business, regardless of its uniqueness in order to meet its business goals and vision. That commitment to integration is very apparent in the Windows Phone 7 (WP7) Platform. Its focus on the end-user experience clearly shows that Microsoft is aware of the Consumerization of IT and is actively targeting end-users with their WP7 marketing strategy. Enterprises currently leveraging or who plan to leverage Microsoft cloud-based services like Exchange Online, BPOS, and Office 365 should strongly consider supporting the WP7 Platform.

It is important to do your due diligence when evaluating your enterprise mobile application platform and ensure that its limitations are addressed when allowing these devices to access network resources. Microsoft has publicly stated its commitment to regularly update its WP7 mobile offering, and the platform is expected to evolve as a top notch competitor to iOS and Android in the near future.
About the Authors

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About Credera

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