

Windows Phone 8: The Right Choice for Business

A Reviewers Guide

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Data plan and/or Wi-Fi access required for some Windows Phone 8 features. Carrier fees may apply. Availability of some features and services may vary by app, area, language, phone, carrier, and/or service plan.

Unless otherwise noted, all features are available in all countries in which Windows Phone 8 is available. Screen layouts may vary in some Asian countries.

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Contents

Windows Phone 8: The Right Choice for Business.....	1
Robust Security.....	3
Device and App Management	11
Easy Deployment and Access to Existing IT Services.....	20
Powerful Communication Tools	22
Fast and Easy Collaboration	33
Additional Resources.....	39

Windows Phone 8:

The Right Choice for Business

In developing Windows Phone 8, we didn't just focus on delighting consumers. We also focused on meeting the needs of businesses large and small — from sole proprietors who can't afford to be distracted by technology to large enterprises with complex IT needs, policies, and existing IT infrastructures. Windows Phone 8 closes the gap between what employees want from a phone and what organizations require of phones that are used for both personal and business purposes.

No other phone delivers the same, no-compromise experience with the Microsoft software and services that end-users and IT departments already know and trust. Similarly, no other phone is as easy to deploy and manage within a Windows-based IT infrastructure — a fact that holds true regardless of whether that infrastructure is hosted in the cloud on Office 365 or on-premises on Windows Server, Exchange Server, SharePoint, Lync, and other Microsoft enterprise software.

With Windows Phone 8, IT departments will benefit from the following:

- **Robust security.** Windows Phone supports BitLocker-based full device encryption to help protect data. Just like Windows 8, Windows Phone 8 is based on the NT kernel and has a trusted boot process that allows only validated software components to execute. Application sandboxing helps prevent malicious apps from gaining unauthorized access to data or preying on other apps. And Windows Phone is the only phone with native support for Information Rights Management, which businesses can use to help protect sensitive data.
- **Integration with existing IT infrastructure.** No other phone integrates as seamlessly, rapidly, and cost-effectively with existing Windows-based IT infrastructures. Windows Phone 8 supports Exchange Server and Exchange ActiveSync (EAS), enabling businesses to use technologies that they already know and own to deliver rich email experiences and help protect corporate data. Similarly, Windows Phone 8 “just works” with SharePoint Server and Lync Server, enabling businesses to provide easy access to communication and collaboration services — regardless of whether they're hosted on-premises or in the cloud on Office 365.
- **Full control over mobile devices and line-of-business apps.** With Windows Phone 8, companies can develop enterprise mobile apps using the same tools and technologies they already employ for desktop and server software development: Microsoft Visual Studio. Companies can package, sign, and distribute mobile line-of-business applications while maintaining end-to-end control — including publishing apps via private app portals or via their own Windows Phone Hub. Windows Phone 8 also supports native mobile device management, enabling IT departments to use tools such as Microsoft System Center

Configuration Manager 2012 and Windows Intune for device enrollment and management, software distribution, configuration management, and reporting.

IT departments aren't the only ones who can benefit from an organization's deployment or endorsement of Windows Phone 8. Business end-users will have immediate access to powerful out-of-the-box communication and collaboration tools, including the following:

- A **People Hub** that brings together all their contacts in one place — and allows them to communicate with those people using any of the ways that are relevant for each contact.
- **Outlook**, which syncs with Exchange Server to provide powerful tools for email, calendar management, and tasks. Through these capabilities, users can easily stay on top of tasks, view and respond to meeting requests directly from their email inboxes, identify schedule conflicts, view meeting invitees and their responses, or join a Lync meeting with just a tap.
- An **Office Hub** that provides one-stop access to documents received as email attachments or stored on SharePoint or Office 365. The Office Hub "recent" document list can remain in sync with the recent document list on the user's Windows-based PC¹, so users can always find and access the latest copies of their files — even if they've never accessed those files on their phones before.
- The Office Hub also provides the latest mobile versions of **Microsoft Word, Excel, and PowerPoint** — touch-ready versions of familiar Microsoft Office applications that make it easy to view, edit, and comment on Office documents while on-the-go.
- **OneNote**, now available directly on the Start screen, gives the user control over synchronization of notebooks over SkyDrive and Office 365. Users have complete control over which notebooks or pages in a notebook are synced, can easily navigate multiple notebooks, and can even dictate notes while the phone is locked and have those notes automatically transcribed and added to a OneNote page.

Windows Phone 8 also boosts productivity by enabling users to personalize their phones in ways that work best for them. They can choose and resize the Live Tiles on the Start screen to put what matters the most to them front and center, and can view notifications and other essential information on their lock screens — including the number of new text, email, and voice mail messages, upcoming appointments, and more. The end result: a phone that's great for both work and play, and that IT departments will love as much as business users.

The remainder of this guide provides additional detail on the above features and capabilities to explore how Windows Phone 8 is designed to meet the needs of businesses small and large.

¹ Requires Office 2013. Also requires SkyDrive and a Microsoft account, or Office 365.

Robust Security

As organizations of all sizes move to support an increasingly mobile workforce, ensuring strong security remains essential. Company management, business partners, and customers all expect their sensitive data to remain protected, private, and confidential, and for its access and storage — including by mobile devices — to comply with an ever-increasing number of laws and regulations.

We designed and built Windows Phone 8 with a holistic approach to security design, employing strict standards and a multilayered, defense-in-depth approach to help protect against malware, data leakage, and other threats. We began by employing the industry-leading Microsoft Security Development Lifecycle (SDL), a security-assurance methodology used by all Microsoft engineering teams that includes extensive threat modeling, penetration testing, and security-focused development practices, all of which help prevent unauthorized access to phone resources.

In designing the multilayered security defenses in Windows Phone 8 itself, we began with a secured boot process and code signing, which help assure platform integrity by allowing only validated software components to execute. Building on this foundation, we implemented a chambered security model based on the principles of isolation and least privilege, which help minimize attack surface, maximize user consent and control, and prevent apps from accessing the memory used or data stored by other apps.

We took steps to help ensure that malicious websites could do no harm, that apps submitted to the Windows Phone Store are checked for malicious characteristics and digitally signed before being made available, and that companies who want to privately sign and deliver their own line-of-business apps have the tools to do so. We also addressed the software update process, establishing a single, controlled channel for the delivery of feature updates and bug fixes across hardware manufacturers, mobile operators, and the Windows Phone engineering team. And we established processes with the industry-leading Microsoft Security Response Center to deliver critical updates to all Windows Phones globally if high-impact vulnerabilities are discovered.

On top of all this, we implemented a combination of full-device encryption and robust device access policies — including those to enforce the use of a PIN or password, to remotely wipe a phone, and to prevent the use of removable memory cards. We also built-in native support for Information Rights Management (IRM), as a means of helping to protect sensitive information contained in email and Microsoft Office documents.

The end result of all these efforts is a powerful security model — a multilayered, defense-in-depth approach that can withstand many types of threats, and that puts Windows Phone 8 in an industry leadership position with regard to security and malware protection. Windows Phone 8 is quite

different from anything else in the market today with regard to privacy and security, providing a compelling alternative to competing mobile platforms.

System Integrity

A more secure smartphone begins with more secure platform, which is why Windows Phone 8 employs a secured boot process and code signing to help assure platform integrity. These features are designed to help protect the boot process and operating system from malware attacks — especially rootkits — by only allowing validated software components to execute. As such, they're the first of several essential lines of defense that we've employed in making Windows Phone 8 a platform that application developers, corporate customers, and consumers can all trust.

Secure Boot

Windows Phone 8 uses secure boot technology to validate firmware images. Under this approach, all boot components have digital signatures that are cryptographically validated from the pre-UEFI (Unified Extensible Firmware Interface) bootloaders to the UEFI environment. This helps ensure that only authorized code can execute to initialize the device and load the Windows Phone operating system, thereby establishing an essential link in a chain of trust that extends all the way down to the phone's firmware and hardware.

After the pre-UEFI and UEFI components complete their own boot processes, the Windows Phone boot manager — provided by Microsoft — takes over to complete the boot process, so the user can start using the phone. The Windows Phone boot manager requires all code in the operating system — including OEM drivers and applications — to be signed by Microsoft, thereby providing the next layer of defense in helping to ensure platform integrity. Apps that are added post-manufacturing or installed from the Windows Phone Marketplace or other locations (such as a company's private app portal or Company Hub) also must be properly signed in order to execute.

The Windows Phone architecture uses a System on a Chip (SoC) design provided by SoC vendors such as Qualcomm, under which the pre-UEFI bootloaders and the UEFI environment are provided by the SoC vendor and device manufacturers. The UEFI environment implements the UEFI secured boot standard described in section 27 of the UEFI specification, which can be found at www.uefi.org/specs. This standard describes the process by which all UEFI drivers and applications are validated against keys provisioned into a UEFI runtime variable before they are executed.

Note: The [UEFI and Windows](#) document on MSDN describes the advantages of using UEFI and how it is supported by desktop versions of Windows. Although the document focuses on UEFI and Windows, most of the information in it also applies to Windows Phone.

App Platform Security

Secured boot and code signing are the primary ways that Windows Phone 8 protects the integrity of the operating system. However, they're not the only security controls built into Windows Phone to help prevent malware from taking over.

Chambers and Capabilities

Windows Phone 7 introduced a chambered security model, which uses isolation to achieve the principle of least privilege. Under this model, each chamber provides a security boundary and, through configuration, an isolation boundary within which a process can run. Each chamber is defined and implemented using a policy system, with the security policy for that chamber defining which operating system capabilities the processes running within that chamber can call.

Every app on Windows Phone (including Microsoft and non-Microsoft apps) runs within its own isolated chamber, which is defined by the declared *capabilities* that the app needs to function. A capability can be any resource for which privacy, security, cost, or other business concerns exist, such as networking, location data, camera, microphone, or the phone's other sensors. A basic set of permissions is granted to all app chambers by default, including access to isolated storage, and that set of permissions can be expanded to include additional capabilities that are granted during app installation. App permissions *cannot* be elevated at run time.

The chambered model employed by Windows Phone is advantageous for the following reasons:

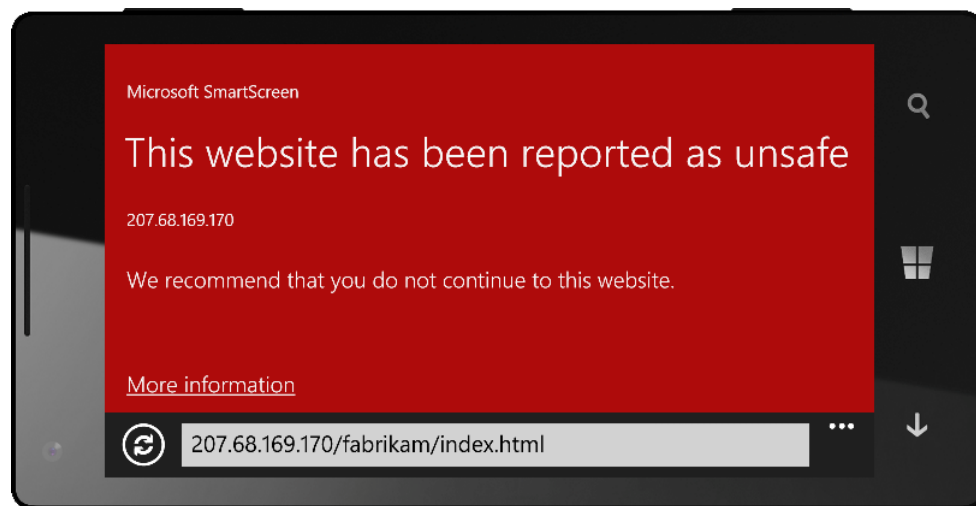
- **Attack surface reduction.** Each app receives capabilities needed to perform all its use cases, but no more.
- **User consent and control.** Each app discloses its capabilities to the user on the app details page in the Windows Phone Store, and provides an explicit prompt upon download for capabilities that have legal requirements for explicit disclosure and specific consent collection, such as geographic location.
- **Isolation.** Apps only can communicate with each other via the new contract technology from Windows 8, which was designed with security in mind. Apps are isolated from each other and cannot access memory used or data stored by other applications, including the keyboard cache.

Internet Explorer 10 for Windows Phone

Because viruses can be downloaded by merely visiting an infected website, we took steps to make Web browsing safer. Windows Phone 8 includes Internet Explorer 10 for Windows Phone, which is based on the same code base as Internet Explorer 10 in Windows 8. It runs in an isolated chamber

to prevent web apps from accessing the resources of other apps on Windows Phone. And it does *not* support a plug-in model, so malicious plug-ins cannot be installed.

Internet Explorer 10 for Windows Phone also includes a new SmartScreen Filter. Based on the same SmartScreen technology in Internet Explorer 10, it alerts users whenever they try to visit a potentially malicious website. And unlike the browsers on some other smartphones that require manually downloading lists of such sites, the SmartScreen Filter checks a centralized list of potentially malicious sites and downloads in real-time to provide more effective and up-to-date protection.



Windows Phone Store

Although most malware exists on the Web, apps developed in unmanaged environments with minimal security precautions also can be unwitting carriers of malware. Similarly, malware can be intentionally packaged within a downloadable app. As anyone who stays abreast of such issues can attest, other smartphone platforms are proof that apps downloaded from an app store present an effective means of malware delivery.

To help prevent this, we implemented a stringent process designed to prevent malware from ever reaching the Windows Phone Store — let alone users' Windows Phones. Under this process, all apps submitted to the Store are checked and certified before being made available. The developer of the app is validated and the app is checked for inappropriate content, adherence to Store policies, and potential security issues, including scanning the app with multiple commercially available antivirus engines. Only apps that pass this certification process are digitally signed — necessary for them to install and run on Windows Phone — and made available in the Windows Phone Store.

Enterprise Line-of-Business Apps

Although users can download only certified apps from the Windows Phone Store, organizations also want the ability to develop and directly distribute their own custom, line-of-business apps to employees. With Windows Phone 8, organizations can register with Microsoft to obtain the tools to develop, package, sign, and distribute apps to employees using a validated process, without having to submit them to the Windows Phone Store, as they did in the past.

Windows Phone Updates

To minimize yet another potential attack vector, the Windows Phone update service is the only source of updates for the Windows Phone operating system. Under this model, Microsoft centrally manages and distributes all feature updates and bug fixes, regardless of whether they originate from hardware manufacturers, mobile operators, or the Windows Phone engineering team. In addition, the Windows Phone engineering team has worked with the industry-leading Microsoft Security Response Center to establish processes for reviewing security issues and delivering critical security updates to all Windows Phones globally should a high-impact vulnerability be discovered.

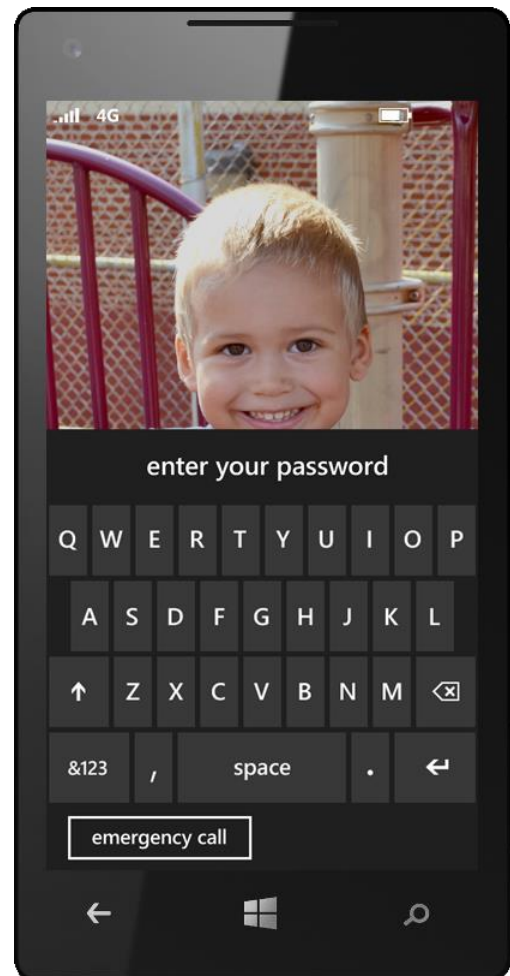
Data Protection

Microsoft understands that organizations of all sizes need to protect the confidentiality and integrity of their data, and that users who store personal data or conduct transactions on their smartphones have similar needs. Windows Phone 8 includes several features designed to help protect against unauthorized data access or unintended disclosure. What's more, every Windows Phone includes this same set of manageability and security controls, enabling organizations to minimize risk by managing all their Windows Phones in a consistent and predictable way.

Device Access and Security Policies

Windows Phone 8 provides several lines-of-defense against a misplaced, lost, or stolen phone leading to unauthorized access to data, including the following:

- **PIN or Password.** Access to a Windows Phone can be controlled through a PIN or password, which users can set via the Lock Screen Settings on their phones. IT departments can use an Exchange ActiveSync (EAS) policy to mandate the use of a PIN or password, and can configure additional EAS policies for password length, complexity, and other parameters. EAS policies can also be used to configure additional security functionality, such as device encryption. (A full list of supported EAS policies is provided later in this guide.)
- **Remote Wipe.** If a Windows Phone becomes lost or stolen, IT professionals can initiate a remote wipe of the device by using the Exchange Server Management Console. It's also possible for users to initiate a remote wipe by using the Outlook Web App or via tools provided on www.windowsphone.com. Similarly, an EAS policy can be set to wipe a phone after a configurable number of unsuccessful PIN attempts.
- **Tools for finding a lost phone.** Web-based tools on www.windowsphone.com also make it easy to locate a lost phone by mapping its location or making it ring loudly, even if the phone's ringer is turned off.



Most enterprise organizations worldwide use Exchange Server, which is why Microsoft chose to focus on EAS to achieve the broadest possible reach. Not only does EAS enable policy-based management, but it also enables world-class functionality with regard to the synchronization of mailboxes, calendars, and tasks. Windows Phone 8 is compatible with version 14.1 of the EAS protocol and supports EAS for synchronizing email, calendar, task, and contact information with Exchange Server 2003 SP2 and subsequent releases, or with Microsoft Office 365.

Windows Phone 8 also includes a built-in mobile device management client that supports a similar policy set to EAS, enabling organizations to manage their Windows Phones using Windows Intune or third-party mobile device management systems.

Device Encryption

To help keep everything from documents to passwords safe, IT administrators can configure Windows Phone 8 to use BitLocker technology to encrypt all internal storage, including operating system and data partitions. When device encryption is turned on, any file saved to the phone is also encrypted automatically. If a PIN-protected Windows Phone were to be lost or stolen, the combination of device lock and data encryption would make it extremely difficult for an unauthorized party to retrieve sensitive information from the phone.

Removable Storage

Windows Phone 8 supports removable microSD cards, enabling users to extend their phones' built-in memory to store more pictures, movies, or music. The Windows Phone operating system prevents the storage of anything but media files on removable storage, the files on which are *not* encrypted when the card is inserted into the phone. Should they desire, IT professionals can configure a policy setting to prevent the use of external storage on users' Windows Phones.

Data Leak Prevention

IT professionals who desire an additional layer of defense against information leakage may want to consider the use of Information Rights Management (IRM), which allows content creators to assign rights to Microsoft Office documents or email messages that they send to others.

When IRM is employed, the data in rights-protected documents or email messages is encrypted, so that it can only be viewed by authorized users. IRM can also be used to limit other rights to a document or message — such as the ability to limit access to read-only, prevent content in the document or message from being copied, or prevent the document or message from being printed. IRM also can be used to prevent an email message from being forwarded, allow forwarding only within the organization, and more.

Windows Phone is the only smartphone that currently offers native support for IRM, enabling users to fully participate in IRM-protected email conversations and to access IRM-protected documents on their phones. Support for IRM in Windows Phone is based on Windows Rights Management Services (RMS), a Windows Server-based technology.

Secured Access

Windows Phone is fundamentally a cloud-connected phone. Upon initial setup, the user is prompted to enter a Microsoft account that enables many of its engaging capabilities, such as downloading apps from the Windows Phone Store, automatic upload of photos to SkyDrive, backup of phone settings in the cloud, and so on.

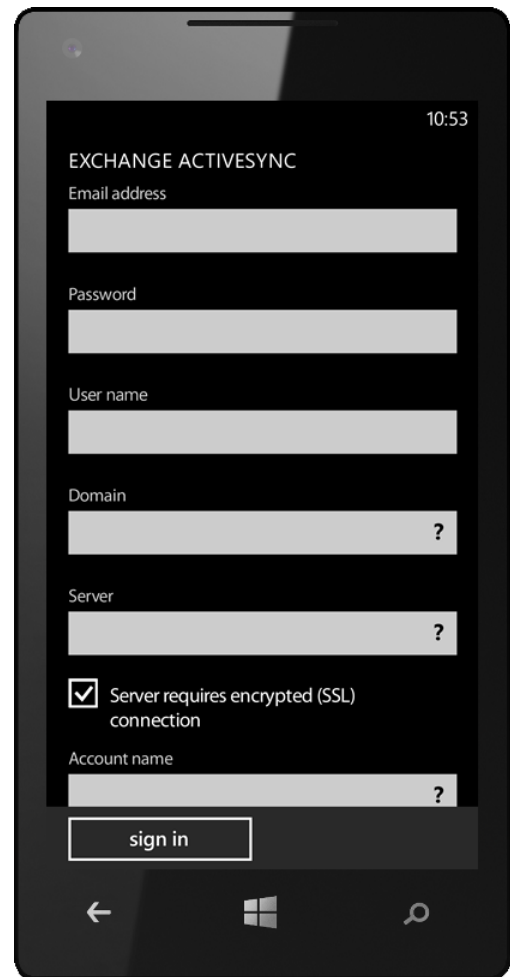
To help protect sensitive information, data synchronization between Windows Phone and most cloud services or on-premises servers uses an SSL connection. All traffic for critical Windows Phone business apps — including communication with Exchange Server and SharePoint Server — is encrypted using 128-bit or 256-bit AES encryption, which applies to both on-premises server deployments as well as to Office 365 deployments. Most third-party or custom business apps on Windows Phone also use the SSL encryption infrastructure to protect information in transit.

Device and App Management

More and more today, smartphones used for business are likely to be owned and controlled by the individual and thus cannot be “managed” like a typical corporate-controlled PC. In addition, they’re often not on the corporate network but instead utilize the Internet for connectivity, even when used to access corporate data.

To address these challenges, organizations require the means to effectively manage business functionality and help protect business information on employees’ phones. Similarly, because part of the business value provided by a smartphone is its potential as a platform for custom line-of-business apps, organizations need the tools to efficiently develop, deploy, and manage those apps.

Windows Phone 8 was designed to meet those needs. Organizations can easily provide mobile access to corporate email, including deployment of policies to help protect corporate data when employees use their Windows Phones for business purposes, such as turning on device encryption and mandating the use of a PIN or password to lock the phone. The Windows Phone ecosystem enables organizations to easily build and privately deploy custom line-of-business apps to employees phones while maintaining full, end-to-end control over those apps.



Email and Access Policy Management with Exchange Server and Exchange ActiveSync

Organizations running Exchange Server on-premises or Office 365 in the cloud can use EAS to manage email and device access policies, including limited configuration management functionality. Windows Phone 8 supports the latest EAS protocol (v14.1) while maintaining compatibility with older versions, enabling organizations to use the same version of Exchange Server that they already know and own.²

² Windows Phone 8 is compatible with Exchange Server 2003 SP2 and later versions.

Exchange Active Sync (EAS) Policies Supported

EAS policies — they're similar to the Group Policy settings for PC operating systems — provide the ability to manage Windows Phones through the use of security-related policies that are configured by an organization's IT department. EAS security-related policy settings that can be managed using Exchange Server and a combination System Center Configuration Manager and Windows Intune include those shown in the following table:

Policy setting	EAS	Windows Intune
AllowSimpleDevicePassword – Specifies whether a simple device password is allowed.	✓	✓
AlphanumericDevicePasswordRequired – Specifies whether the password must be alphanumeric.	✓	✓
DevicePasswordEnabled – Specifies whether a password is required.	✓	✓
DevicePasswordExpiration – Specifies the length of time that a password can be used.	✓	✓
DevicePasswordHistory – Specifies the number of previously used passwords to store. The user is not allowed to reuse these stored passwords when creating a new password.	✓	✓
IrmEnabled – Specifies whether IRM is enabled for the mailbox policy.	✓	(N/A)
MaxDevicePasswordFailedAttempts – Specifies the number of attempts a user can make to enter the correct password for the mobile phone before a device reset to factory settings is initiated.	✓	✓
MaxInactivityTimeDeviceLock – Specifies the length of time that the phone can be inactive before the password is required to reactivate it.	✓	✓
MinDevicePasswordComplexCharacters – Specifies the number of character groups that are required to be present in the password. (Character groups include lower case alphabetical characters, upper case alphabetical characters, numbers, and non-alphanumeric characters.)	✓	✓
MinDevicePasswordLength – Specifies the minimum number of characters in the device password.	✓	✓
RequireDeviceEncryption – Specifies whether encryption is required on the device. (Once set, BitLocker conversion automatically starts encrypting the internal storage of the phone.)	✓	✓
RemoteWipe – Deletes data on the user data partition and resets the phone to factory settings.	✓	
AllowNonProvisionableDevices – A server enforced setting that specifies whether all mobile phones can synchronize with the server running Exchange. When set to \$true, this setting enables all mobile phones to synchronize with the Exchange server, regardless of whether the phone can enforce all the specific settings established in the EAS	✓	✓

policy. This also includes mobile phones managed by a separate device management system. When set to \$false, this setting blocks mobile phones that aren't provisioned from synchronizing with the Exchange server.		
AllowStorageCard - Specifies whether the mobile phone can access information stored on a storage card.		✓

Supported EAS Features by Exchange Server Version

Windows Phone 8 was designed to support the latest EAS features. However, previous versions of Exchange Server may not support all the EAS features that are supported by Windows Phone 8. Supported EAS features by Exchange Server version are shown in the following table:

EAS Feature	Exchange Server 2007	Exchange Server 2010	Exchange Server 2013
Direct Push	✓	✓	✓
Email sync	✓	✓	✓
Calendar sync	✓	✓	✓
Contacts sync	✓	✓	✓
Remote wipe	✓	✓	✓
Sync multiple folders	✓	✓	✓
128-bit SSL encrypted transmission	✓	✓	✓
User-initiated remote wipe	✓	✓	✓
Link access	✓	✓	✓
HTML mail	✓	✓	✓
GAL lookup	✓	✓	✓
Follow-up flags	✓	✓	✓
Meeting attendee information	✓	✓	✓
Auto-discovery	✓	✓	✓
Bandwidth reductions	✓	✓	✓
Reply state		✓	✓
Nickname cache		✓	✓
Block/Allow/Quarantine list		✓	✓
Allow attachment download		✓	✓
256-bit encrypted SSL transmission		✓	✓

Native Mobile Device Management

For organizations that only want to provide mobile access to email, Exchange Server and EAS may provide all the management capabilities that they need. However, many companies also recognize the value of Windows Phone as a platform for custom line-of-business apps. From an IT perspective, this may require additional management capabilities beyond those provided by EAS.

Windows Phone 8 includes native mobile device (MDM) management, which organizations can use together with Windows Intune or third-party MDM systems³ to implement a managed environment for their Windows Phones. Capabilities include device enrollment and management, software distribution, configuration management, and reporting. If organizations also have Microsoft System Center Configuration Manager 2012 SP1, they'll have the flexibility to use either Windows Intune or Configuration Manager to set policies, distribute apps, and view reports.

An approach based on Windows Intune offers several advantages over an approach based solely on EAS, including the following:

- One-step device enrollment and policy provisioning
- Line-of-business app deployment and automated deployment of a company "app catalog" app (discussed in greater detail below)
- Ongoing app deployment and automatic app updates
- Remote or local removal of device enrollment, line-of-business apps, and related app data
- Asset and inventory management
- Management of a custom Company Hub (discussed in greater detail below)

An approach based on Windows Intune also facilitates comprehensive reporting functionality, including access to the following data:

- Server configured policy values
- Query installed enterprise apps
- Device name
- Device ID

³ Examples include MDM systems from AirWatch, MobileIron, Zenprise, and Symantec.

- OS platform type
- Firmware version
- OS version
- Device local time
- Processor type
- Device model
- Device manufacturer
- Device processor architecture
- Device language

Note: The reporting functionality provided by this approach does *not* enable querying information that is private to the user, such as Web browsing history or which personal apps the user has installed.

Powerful App Development Platform

With Windows Phone 8, developers already have the tools and skills they'll need to quickly deliver compelling line-of-business apps, as well as the backend services needed to power those apps.

Microsoft Visual Studio

Developers can build mobile apps that integrate with the Windows Phone 8 experience using the same familiar, best-of-breed tools that they already employ for desktop and server software development — namely, Microsoft Visual Studio. Windows Phone 8 is compatible with the same tools for building apps for Windows Phone 7.5, and we've worked hard to ensure that apps developed for Windows Phone 7.5 will also run well on Windows Phone 8.

Developers building apps for Windows Phone will enjoy superior productivity thanks to a platform based on XAML and C#. And now, with Windows Phone 8, developers can also take advantage of existing C and C++ libraries within their apps, making it easier than ever to migrate existing business applications to Windows Phone. *(It's worth noting that, while Windows Phone 8 enables the use of C and C++ within an app, developers will still need to use XAML and C# to create the app's user interface.)*

Windows Azure

With Windows Phone and Visual Studio, developers can use the same development tools and skills to deliver both line-of-business apps *and* the backend services needed to power those apps. Organizations will have the flexibility to host those backend services in-house, or to use Visual Studio to build them on Windows Azure for hosting in the cloud — an approach that helps ensure immediate scalability and hardware redundancy without a large, up-front investment in new server capacity. Instead, enterprises can simply “pay as they go,” increasing the amount of compute resources available to them on Windows Azure only if and only when those additional resources are needed. A hybrid approach is also possible, where only the data an organization desires to make available to line-of-business apps is synchronized between its data center and Windows Azure for access via the cloud. *(Note: Windows Azure is the Microsoft cloud services development, hosting, and management environment. It provides on-demand compute, storage, networking, and content delivery capabilities through Microsoft data centers.)*

Full Control Over Line-of-Business Apps

After development is complete, enterprises can package, sign, and distribute mobile line-of-business applications while maintaining end-to-end control — in a way that enables them to distribute their apps privately instead of submitting them to the Windows Phone Store. This involves obtaining a digital certificate that is used to sign the apps developed by the organization. The certificate is also used to generate a signed enrollment token that contains the enterprise's identity so that, when the token is placed on employees' Windows Phones, it enables those enterprise line-of-business apps that have been signed with the same certificate to install and run.

Registration Process

To privately distribute their apps, enterprises must first obtain a digital certificate for signing those apps and generating the enrollment token that enables them to run on Windows Phone. This is accomplished via a short registration process, which involves the following steps:

1. The enterprise registers on the App Hub at <http://dev.windowsphone.com>, where they can also get documentation and download app development tools — including those needed to digitally sign their apps and generate an enrollment token.
2. Upon receiving the registration, Microsoft will notify the Certificate Authority (Symantec/VeriSign) of pending enterprise registration.
3. After the Certificate Authority completes the qualification process, the Certificate Authority generates a digital certificate that the organization can use to sign app packages and enrollment tokens.

Organizations will need to re-register annually, for a nominal fee. It's important to note that this process is designed to enable organizations to distribute their apps privately *to employees*, without submitting them to the Windows Phone Store. It is *not* intended to enable organizations to set up their own version of Windows Phone Store, nor to distribute apps to consumers in general.

See <http://dev.windowsphone.com> for additional details on the registration process.

Device Enrollment

After an enterprise generates an app enrollment token, it can deploy that token to users' Windows Phones via its mobile device management (MDM) infrastructure. To initiate this process, users simply go to Settings > Company Apps on their phones, tap Add Account, and enter their credentials. IT organizations can set up this process to rely on users' normal domain credentials, or can implement it to use different credentials.

As an optional (and recommended) step during this process, the MDM environment can be configured to download and install a single app to the phone. Enterprises can take advantage of this capability to install a dedicated “app discovery app” or custom Company Hub that employees can use to browse all other apps in the company’s private app catalog.

After a phone is enrolled, the process of deploying an enterprise line-of-business app to the phone is simple. The enterprise need only sign the app’s XAP file with its digital certificate using the provided tools and post the signed app to its private app catalog (discussed below). Users can then navigate to the private app catalog via a Web browser, a dedicated “app discovery app,” or a custom Company Hub (also discussed below) and select the app they want to install, upon which it will be downloaded and installed on the phone.

App Deployment

Companies can publish their mobile applications via their own private app portals, providing an effective means of securely distributing those apps to mobile employees. An organization’s private app catalog can reside on an intranet site, an extranet site, an Internet site that requires login using domain credentials, a SharePoint list, or a document folder on Office 365. For user convenience, the same private app catalog can also include links (or hidden deep-links) to other useful apps hosted on the Windows Phone Store.⁴

Because apps distributed via the enterprise line-of-business app ecosystem for Windows Phone are not submitted to the Windows Phone Store, it’s up to each organization to test its own apps to ensure that they’re up to par with respect to security standards, user experience standards, and so on. The enterprise is solely responsible for the quality of the app and its impact on the user’s overall experience on Windows Phone. Of course, organizations can still use the testing tools provided by Microsoft on the App Hub for these purposes.

Apps distributed in this way will still need to comply with those restrictions enforced by Windows Phone at the time of installation. This includes compliance with the Windows Phone security model — including the security mechanisms described earlier in this guide under Chambers and Capabilities. For instance, if an enterprise line-of-business app wants to access the user’s location, then the app should prompt the user for permission and provide an option to disable this feature.

Finally, it’s worth noting that enterprises should *always* include authentication against domain credentials as an additional line-of-defense within any enterprise line-of-business app. For user convenience, an app could be coded to store these credentials and have them expire after a predetermined amount of time, after which they would need to be re-entered.

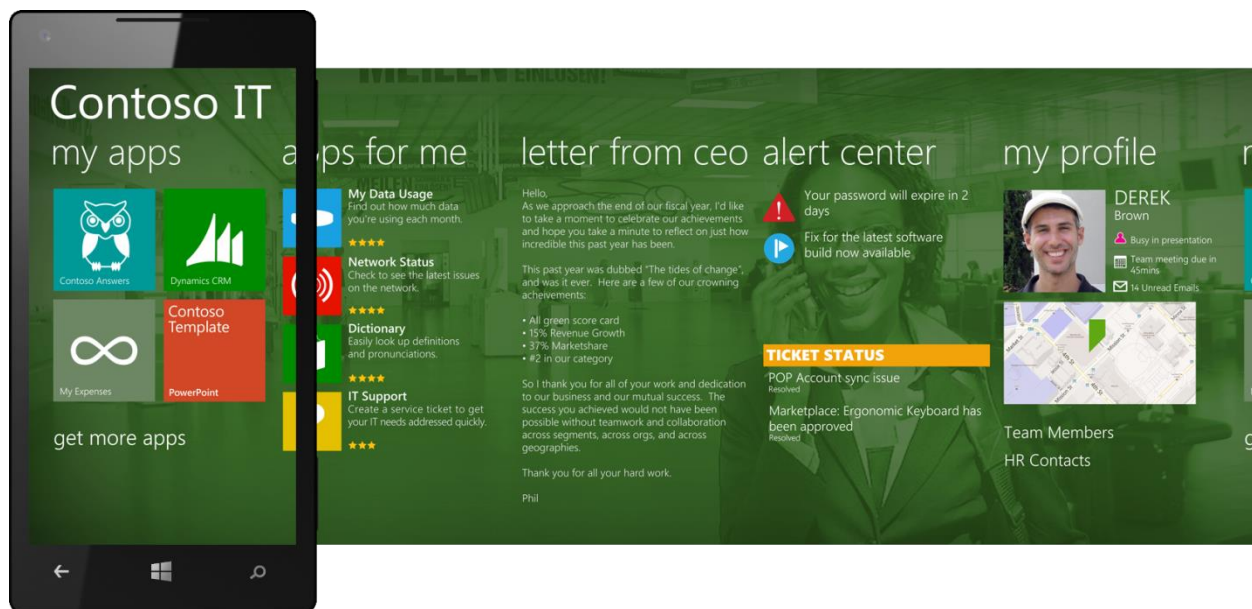
⁴ A Microsoft account is required to download apps from the Windows Phone Store.

Custom Company Hub

As mentioned previously, organizations may want to consider building a single “app discovery app” that employees can use to browse that company’s entire private app catalog. Or, to deliver even greater business value, organizations may want to consider developing and deploying a custom Company Hub, which can also be the one app that is pushed to employees’ phones during device enrollment in a managed environment.

Company Hubs can provide a one-stop-shop for working on a Windows Phone. Not only can they provide a convenient means of browsing a private app catalog, but they can tie into a company’s existing systems in other ways to help mobile employees be more productive. For example, a Company Hub could include a means of browsing for company apps, tiles for installed company apps, a company news feed, trouble ticket status, password reset reminders, links to intranet sites or SharePoint sites, key performance indicators, and so on.

A Company Hub template is included in the Windows Phone SDK. Just like with dedicated apps, an organization can require users to authenticate before entering a Company Hub and/or personalize the Hub on a per-user basis.



Easy Deployment and Access to Existing IT Services

Access to business email, calendar data, contacts, tasks, and Microsoft Office documents are all essential for business users of smartphones. IT professionals must be able to support such functionality as easily as possible, which requires finding solutions that integrate with existing software or services used to deliver those capabilities. For the majority of businesses today, this means finding a smartphone that “just works” with existing communication and collaboration solutions based on Microsoft software — a need that holds true regardless whether a company relies on Office 365 for access to Exchange Online, SharePoint Online, and Microsoft Lync services hosted in the cloud, or whether a company chooses to host those same services on-premises using Microsoft server products such as Microsoft Exchange, SharePoint Server, and Lync Server.

Windows Phone 8 was designed to do just that. No other phone integrates as easily, seamlessly, and cost-effectively with existing Windows-based IT infrastructures. For instance, support for EAS in Windows Phone 8 enables businesses to use existing investments in Exchange Server — likely an already familiar technology — to deliver rich email experiences and help protect corporate data. Similarly, Windows Phone 8 “just works” with SharePoint and Lync, enabling businesses to provide easy access to existing communication and collaboration services — regardless of whether they’re hosted on-premises or in the cloud on Office 365. Just as important, after IT administrators have enabled access to these services, it’s just as easy for users to get connected to them.

Office 365

Windows Phone users can enter an email address and password once, and their phones will automatically connect to Office 365 for Exchange Online, SharePoint Online, and Lync services — including access to the latest EAS capabilities and policies. Users also will be directed to the Windows Phone Store to download the Lync 2010 Mobile app, which is available at no charge and can be installed during or after the initial setup process.

Exchange Server

Users can easily connect to Exchange Server via its Autodiscover service, which simplifies the connection and authentication process to help minimize the need for technical assistance. After the phone is connected, Exchange ActiveSync handles all synchronization of email, contacts, and calendars, as well as deployment of device access policies to help protect corporate data.

SharePoint

Through the Office Hub, users can easily download, synchronize, and collaborate on documents that are hosted on SharePoint Server. Similarly, OneNote Mobile — now a dedicated app — makes it just as simple to access and collaborate on OneNote notes that are stored on SharePoint Server.

Users can take advantage of SharePoint in other ways, too. For example, the recently-released SharePoint Newsfeed for Windows Phone app (available in the Windows Phone Store) enables users to stay connected with colleagues using the social features of SharePoint Server.

Lync Server

Users who need to collaborate with co-workers in real time via Microsoft Lync Server or Lync services on Office 365 can download the Lync 2010 Mobile app, which is available at no charge from the Windows Phone Store. Users who set up an Office 365 account will be directed to the Store to download the app as part of the setup process. After downloading the app and entering their credentials, users can view presence information, update their availability, start and participate in instant messaging sessions (including multiparty chat), search for people in the company, and join a conference call from a Lync meeting on their calendars.

A new Lync app, to be released at a later date, will take advantage of new and improved capabilities in Windows Phone 8, such as background execution for VoIP apps.

Windows Rights Management Services (RMS)

As discussed under Security, Windows Phone is the only smartphone today that provides native support for Information Rights Management (IRM) via Windows Rights Management Services (RMS), a technology in Windows Server. Through this capability, users at companies that employ RMS can participate in IRM-protected email conversations and access IRM-protected documents on their phones, giving authorized mobile users access to sensitive business information while providing an additional layer of defense against potential data leakage.

Powerful Communication Tools

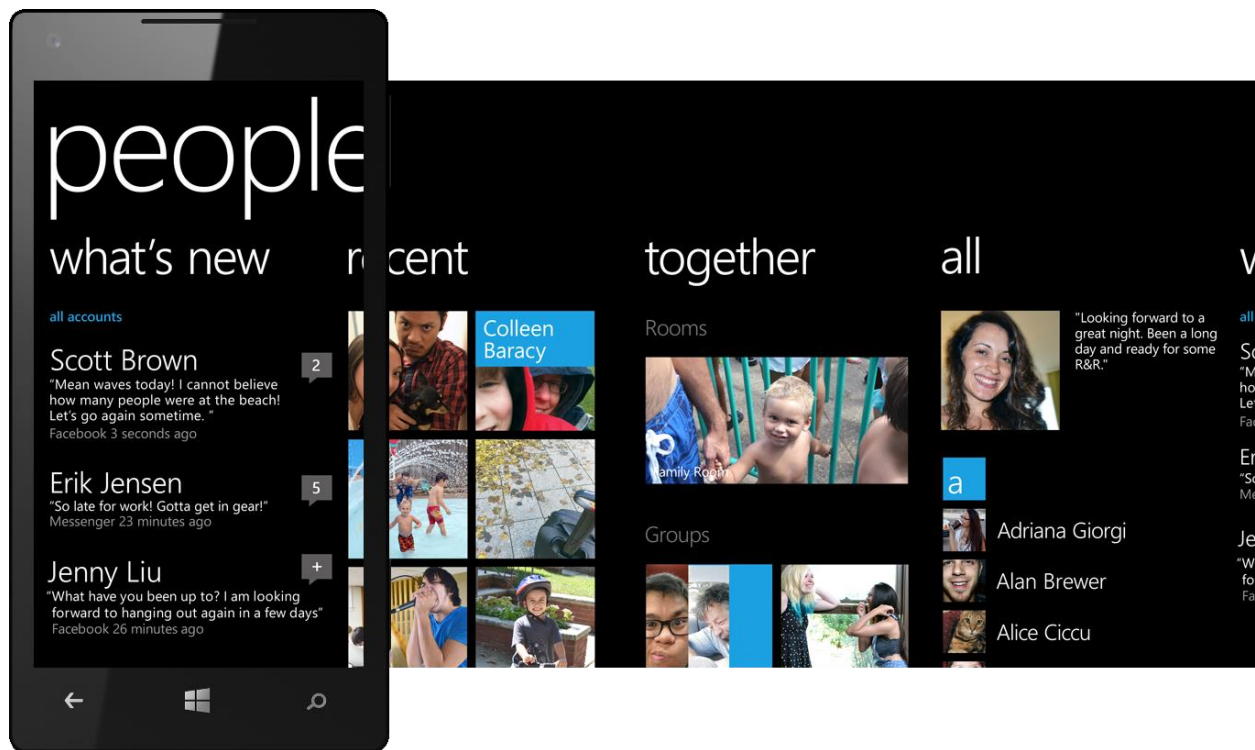
Communication in today's world involves more than just a single email account. Business users are likely to have a corporate email account, one or more personal email accounts, and be active on popular social networks — and need an easy way to stay on top of all these communication channels. On top of this, they need juggle work and personal commitments, constantly respond to new meeting requests, and connect with co-workers and business associates in real time.

These are all reasons why business users will benefit from Windows Phone 8. They'll be more productive thanks to its powerful communication features, beginning with a People Hub that brings together each user's contacts from corporate and personal email accounts, Facebook, Twitter, and LinkedIn — all in one place, in a single list, with one-tap access to the information the user has about each contact and the various ways to communicate with that person.

Windows Phone 8 also includes Outlook Mobile to provide a immediately familiar experience for managing and/or responding to email, appointments, meeting requests, and tasks. And with the downloadable Skype and Lync Mobile 2010 apps just a few taps away in the Windows Phone Store, users can easily can add those communication tools to their Windows Phones.

People Hub

Windows Phone is the only phone with a People Hub, which brings together the information that users have about each contact and the ways to communicate with them in one place. Users simply enter their corporate email credentials, personal email credentials, and credentials for Facebook, Twitter, and/or LinkedIn during the setup process, upon which Windows Phone will populate the People Hub with information from all those accounts — including all the information the user has about each contact, options for communicating with that person, recent calls and conversations, and recent activity on Facebook, LinkedIn, and Twitter. Downloadable communication apps like Skype can integrate with the People Hub, too, so users won't need to manually launch those apps and then find the right contact to start a conversation.



All Contacts — And All Their Info — In One Place

On the “all” panel in the People Hub, users will see a single list that combines contacts stored on their phones with their contacts on Outlook, Hotmail, Messenger, Facebook, Twitter, LinkedIn, Google, and other compatible email accounts. If users have installed the Skype app, they’ll also see their Skype contacts in the list. And if users only want contacts from some of those accounts displayed in their contact lists, they’ll have that option too.

A flick of the finger pans to the “what’s new” panel, which shows recent status updates and photos that people have posted on Facebook, LinkedIn, and Twitter. Tapping someone’s name shows more updates from that person, and tapping on a thumbnail of a photo they’ve uploaded shows a larger view. Tapping the Comments button to the right of a post lets users see others’ comments, respond with a comment of their own, or Like that post.

The “recent” panel provides quick access to people whose information users have recently viewed or that they’ve recently connected with by phone or text message — complete with profile photos if they’re available and recent status updates displayed on the oversized Live Tiles, just like with any people that users have pinned to the Start screen.

The “together” panel gives users quick access to their Groups and Rooms, both of which are described in greater detail below.

Consolidated Contact Cards

Tapping on someone's name or Live Tile displays a single, consolidated contact card containing all the information the user has about that person, including all the ways to communicate, recent calls and conversations, and recent activity on Facebook, LinkedIn, and Twitter. Each contact card can have up to four panels: "profile", "what's new", "photos", and "history." *(Users may not see all these panels for each contact, however, as the "what's new" and "photos" panels are only displayed when the user have one or more relevant social networking connections to that person. Similarly, the "history" panel is only displayed when there's a history to show.)*

The "profile" panel combines information stored on the phone with content from that person's online profiles — including that person's photo and latest status update, if available. Below that, users will see the actions they can take for that person, such as making a phone call, sending an email or text message, starting a chat session, or mapping an address — all just a finger-tap away. If users have installed the Skype app and the person whose profile they're viewing is a contact on Skype, they'll see an entry for communicating in that way, too.

If the contact is a friend on Facebook, a contact on LinkedIn, or someone followed on Twitter, the user will also see a "what's new" panel that shows recent status updates and photos that person has posted. The "photos" panel provides quick access to that person's photos on Facebook, and the "history" panel shows recent conversations for that person across the many ways users can communicate on their Windows Phones, including voice calls, text messaging, email, and Messenger — including a means of searching some email accounts that support Exchange ActiveSync for messages that are no longer on users' phones. If users have linked their Microsoft accounts to Facebook Chat, they'll also see their Facebook Chats on the "history" panel too.

Groups

Groups in Windows Phone 8 let users group together their contacts in ways that match the interactions in their daily lives, such as a carpool or a collection of work colleagues. Users can communicate with the members of a Group no matter which types of phones those people have, and will have quick access to all their Groups on the "together" panel of the People Hub.

When users tap a Group, they'll see a "group" panel that shows a Live Tile for each Group member and provides one-tap access to all the ways for communicating with members of the Group, including email, text messages, and Messenger. A flick left pans to the "what's new" panel, which shows social networking updates from everyone in the Group. Another flick left displays the "photos" panel, which shows photos in which members of the Group are tagged and provides quick access to their photo albums.

Rooms

Rooms — a new feature in Windows Phone 8 — can be thought of as an improved version of Groups. Like Groups, Rooms make it easy to share social updates and communicate with multiple people at once. But with Rooms, users also get an invitation-only space where all Room members can share a common calendar, notes, and a photo/video album. In this way, Rooms are an ideal way for families, volunteer organizations, people who work together in a department or office, and other groups of people to stay in-touch and in-sync.

Capabilities provided in each Room include

- **Shared Chat.** Unlike with group texting, every Room member in a Room Chat session sees each other's messages and replies, making it easy to keep everyone in-the-loop — and only Room members can see those messages.
- **Shared Calendar.** Every Room has a shared calendar, which all Room members can view and update. If anyone adds an event or makes a change, it is automatically synced to all other Room members' phones. *(Note: The shared calendar within a Room shows only events for that Room. Tap More > Show All Calendars to go to the main calendar and view all appointments. See Calendar later in this document for more information on the calendar features of Windows Phone 8.)*
- **Shared Photo Album.** Rooms also provide a shared photo and video album — just share a photo or video with a Room and it'll be visible to all Room members. It's as easy as sharing a photo on Facebook and only takes a few taps.
- **Shared Notes.** Rooms also make it easy to share OneNote notes, which are automatically synced across all Room members' phones. It's easy to create additional notes, so users can create separate ones for different purposes, such as preparing for an audit or signing up to bring something to the annual holiday party.

Email

Windows Phone is the only phone with Outlook Mobile, a first-class email client for both personal and business use. With Outlook Mobile, users can view emails by conversation instead of scrolling down to follow a thread; flag, move, or delete multiple messages at once; filter email by unread, flagged, or urgent status; view messages from multiple email accounts in a single Linked Inbox; and pin specific email folders to the Start screen for faster access and to know at a glance when new messages arrive in those folders. Users can also access multiple Exchange ActiveSync accounts and, when connected to Exchange Server or Office 365, can read IRM-protected email messages and attachments, search the server for old email messages, and set out-of-office notifications.

Conversation View

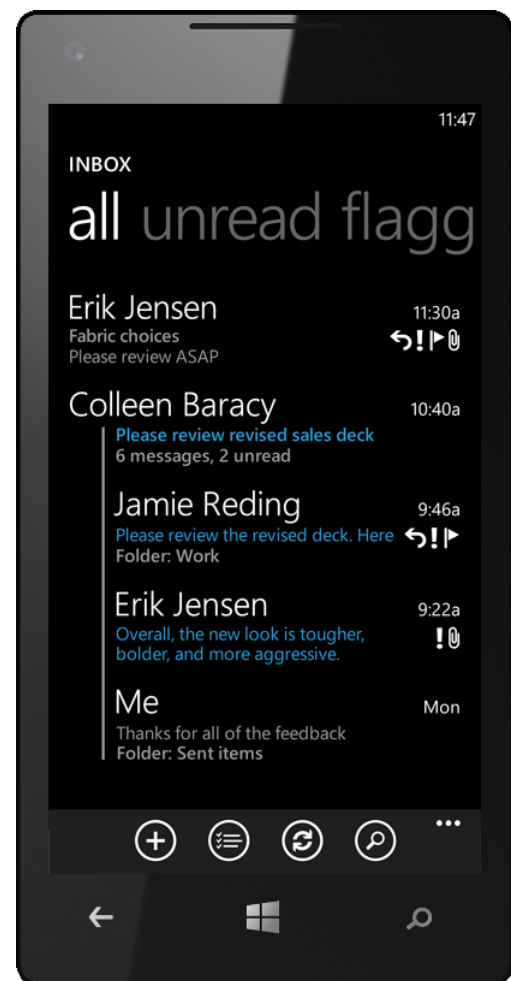
With Conversation view, users can display their email messages by conversation to make them easier to track and manage. They'll recognize messages grouped via Conversation view by the vertical bar on the left, which they can tap to expand and view all related messages — and then tap again to collapse the conversation. Deleting a conversation (or marking it as “read”) will affect all related messages, eliminating the need to apply such actions to one message at a time.

Powerful Inbox Management Tools

Outlook Mobile helps users handle work and personal email more efficiently by providing familiar features for managing and prioritizing email messages. Users can search their inboxes by keyword, flag email messages for follow-up, and filter email messages by unread, important, or flagged status. Users can also select multiple messages and then act on all of them at once, such as flagging them, deleting them, marking them as unread, or moving them to another email folder.

Linked Inboxes

Users who don't want to clutter their Start screens with Live Tiles for all their email accounts can combine email from multiple email accounts in a single Linked Inbox. Users can create multiple Linked Inboxes, give each one a unique name, and pin them to the Start screen for easy access. For example, a user may want to consolidate work email from two Exchange Server accounts into one



Linked Inbox and email from three personal accounts into a second Linked Inbox, and then pin both of them side-by-side on the Start screen to know when any new messages are received and whether they are work-related or personal.

Pinned Email Folders

Users can pin specific email folders to the Start screen, so that they can see when new messages arrive in that folder without having to manually launch Outlook Mobile and check the folder. It's handy when users have created a folder where important messages go; they can just pin it to the Start screen and they'll see at a glance when they have one or more new messages in that folder.

Multiple Exchange Server Accounts

Windows Phone supports multiple Microsoft Exchange ActiveSync (EAS) accounts, which can be useful to consultants or subcontractors who stay in touch with both their own organizations and with client organizations. Similarly, access to multiple EAS accounts can enable users to more easily support multiple roles within an organization. For example, a user can receive and send email messages using sales@contoso.com and info@contoso.com accounts at the same time.

Access to IRM-protected Email Messages and Attachments

As described earlier under Security, Windows Phone enables users to read email messages protected using Information Rights Management (IRM), which controls such functionality as Edit, Reply, Forward, and Add Recipients. Users read IRM-protected emails while online or offline and can reply to or forward IRM email messages when policy permits, but are not allowed to copy or paste from an IRM-protected message to another message or document. Users can also open and read IRM documents that are attached to email messages — all without having to take any special steps to set up IRM on their phones.⁵

Search the Email Server for Messages

Users who connect to Exchange Server or Office 365 can search their email server for messages that aren't stored on their phones — including the ability to search for fully indexed email content and attachments, not just by sender or subject line. Users can then further refine search results by date range and folder.

Set Out-of-Office Notifications

Users who connect to Exchange Server or Office 365 can be more productive by configuring their Out of Office status directly from their phones.

⁵ Support for IRM in Windows Phone 8 is based on Windows Rights Management Services in Windows Server, which must be configured by an IT professional. IRM is available to users only if they are connected to Exchange Server 14.1 or later.

Calendar

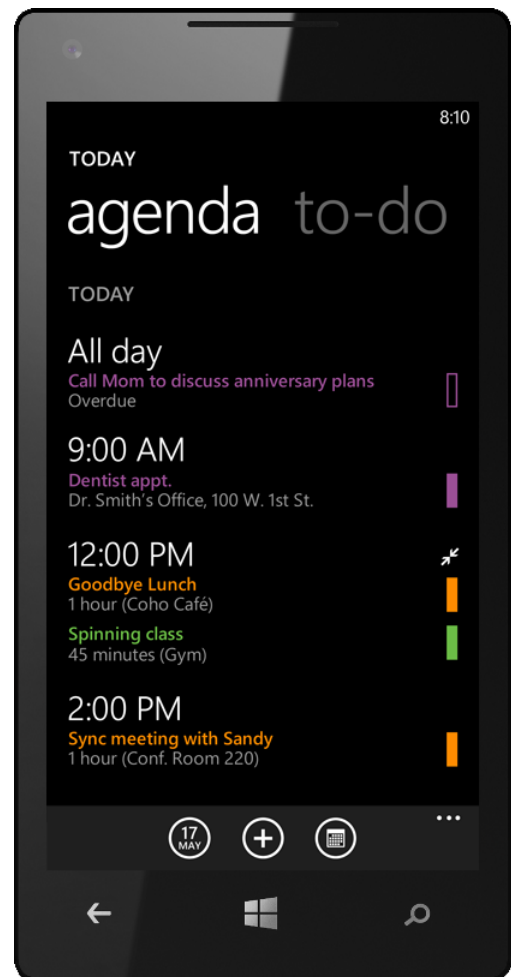
Outlook Mobile on Windows Phone 8 also provides integrated calendar functionality, providing an experience that's similar to using Outlook on Windows-based PCs. Windows Phone readily displays the user's next appointment on the phone's Lock screen and as a large, readable Live Tile on the Start screen — showing at a glance where the user needs to be next. Users can see their appointments across multiple calendars in a consolidated, color-coded view; can respond to new meeting requests directly from their inboxes, with any conflicts shown at a glance; and can flick between a “day” view for finding an open timeslot and an “agenda” view that shows what's already scheduled. Users can also schedule new appointments with just a few taps; can choose whether to view Facebook events on their calendar; and, with just two or three taps, can send an email message to let others know they're running late.

Multiple Calendars In One View

Windows Phone 8 supports multiple calendars, including those from Hotmail, Outlook.com, Google, Yahoo, Exchange Server, Facebook, and any Rooms the user has set up, with the ability to turn each calendar on or off at any time. Users will see appointments across all their calendars in a single view, with appointments from each calendar color coded to help them differentiate between personal and work commitments at a glance. Users also can sync and view multiple calendars for Exchange ActiveSync-enabled accounts.

Agenda and Day Views

Windows Phone gives users multiple ways to view their calendar, depending on whether they're making a new appointment or working their way through an already packed day. The traditional “day” view helps them spot free time by showing an hour-by-hour “grid” view of the day, and the “agenda” view lists only future appointments to help them focus on what's already scheduled. The calendar also includes a “to-do” panel, which is discussed in greater detail below.



Email/Calendar Integration

Email on Windows Phone 8 works hand in hand with its calendar to help users be more productive. For example, users can view and respond to meeting requests directly from their inboxes, just like with their PCs. Windows Phone will even tell users if there's a conflict, take them to their calendars for that time, and show them the meeting invitees and their responses, giving them all the information they need to decide what to do and enabling them to easily take action.

Quick Events

Quick Events in Windows Phone 8 let users create appointments faster by typing the subject from directly within the calendar's day view — they can just tap the time for the appointment in the displayed grid and start typing.

Facebook Events

Windows Phone 8 brings Facebook Events directly into users' calendars. They can view the details on the event, see the guest list, accept or decline the event, and view and post comments. Users can also filter to view only the Facebook Events they've accepted.

One-Tap "I'll Be Late"

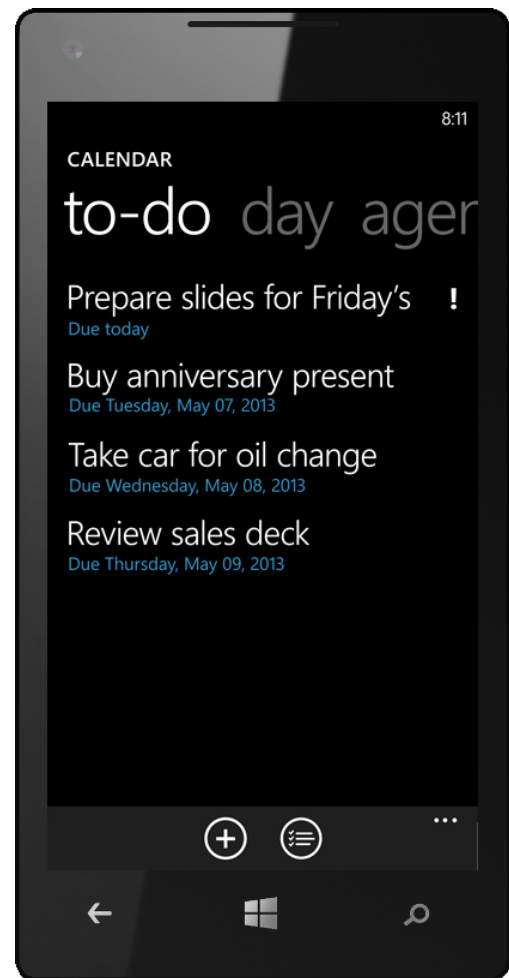
We've also provided other calendar features to help users stay on top of a busy day. For example, if users are going to be late for a meeting, they can just open the appointment and tap the button that looks like a running figure to send an email telling everyone that they're running late. If the meeting has an address, a quick tap will show a map. And because Windows Phone is location-aware, it can even provide directions on how to get there.

Tasks

Windows Phone 8 is the only smartphone with integrated Outlook tasks. The To-Do List — always just a flick away from the calendar's "day" and "agenda" views — provides the following capabilities:

- Create new tasks and edit existing tasks.
- Assign (or edit) due dates, set reminders, set importance, and capture notes.
- Display active tasks and sort them by due date or by priority.
- Delete a task, postpone it a day, mark it to complete today, or mark it as completed.
- Display completed tasks, sorted by their completion date.
- Choose whether to display To-Do List items displayed on the calendar's "day" and "agenda" views. (Users can find this option alongside other calendar settings).

By default, the To-Do List on a Windows Phone is automatically synced with the Microsoft account used to set up that phone, enabling users to get to it just as easily from the Web on Hotmail or Outlook.com. If users are connected to Exchange Server, they can also sync with their Outlook tasks for access on their phones.



Lync Mobile

Windows Phone users can communicate with co-workers in real time by using the Lync 2010 Mobile app, which provides presence information and instant messaging. It works with Lync Server 2010 deployed on-premises or with Lync Server in the cloud as part of Office 365 to enable users to do the following:

- View the availability of work colleagues and chat with them through instant messaging, including multiparty chat.
- Search for corporate contacts
- Update their status to indicate their availability to colleagues.
- Join a Lync meeting directly from the phone's calendar, with just one tap.

As previously noted, when users set up an Office 365 account on Windows Phone, they will be directed to the Windows Phone Store to download the Lync 2010 Mobile app, which is available at no charge and can be installed during or after the initial setup process.

A new Lync app, to be released at a later date, will take advantage of new and improved capabilities in Windows Phone 8, such as background execution for VoIP apps. With this new app, users will be able to do the following:

- Make VoIP and video calls using Lync Mobile and receive Lync calls just like standard mobile calls, including the ability to answer a call by just tapping Answer — it works even when the phone is locked.
- Multitask during a Lync call — including the ability to browse the Internet, read email, use other apps, or privately communicate with others via Lync instant messaging during a conference call.

Skype

Users can download the new Skype app for Windows Phone 8 from the Windows Phone Store to stay connected wherever they are. They'll get free calling to over 250 million Skype users, including video calling and instant messaging. In addition to free member-to-member calling, they'll also get low-cost domestic and international calling to any number. (Cellular data charges may apply, but users also have the option to connect over Wi-Fi.)

No other service offers a full suite of communication all in one application. And unlike many other services, Skype works across all major platforms, making it possible to interact with people on a broad range of devices — from TVs and PCs to mobile phones and gaming consoles.

Always Reachable

Skype keeps users signed in even when the app is closed, so they'll always be reachable. Skype calls will stay active when users navigate away from the Skype app, and users can easily switch between regular and Skype calls. Users can even receive Skype calls while their phones are locked — the incoming call screen is the same as for a regular call. The Skype app stays 'asleep' in the background until it's woken up by an incoming chat or call, so users won't have to worry about it draining their batteries.

Centered Around Your People

When users download the Skype app, they'll see their Skype contacts on the consolidated contact list in the People Hub. Users can start a conversation on Skype directly from the contact card by just choosing Skype from the list of ways to communicate with that person. Users can even set their most important contacts as Favorites for easy access. And with a Skype ID connected to a Microsoft account, users can communicate and share with all the most important people in their lives, regardless of whether they are on Skype or Messenger.

Faster and Easier to Use

Skype makes it easy to stay on top of recent messages. Chat updates appear on the Start screen in real-time via resizable Live Tiles; the small and medium Live Tiles show the number of unread messages while the large Live Tile provides a preview of the most recent message. Users will see a small "toast" notification on the top of the screen when new messages arrive, including when they're in other apps. Users can even add a Skype notification to the Lock screen to view their unread message count at a glance.

Fast and Easy Collaboration

Windows Phone 8 supports fast and easy collaboration by enabling users to access, edit, and share Microsoft Office documents and OneNote notes stored on Office 365, SharePoint Server, and SkyDrive. The Office Hub in Windows Phone 8 handles all synchronization and lets users quickly find their documents based on where they're located or when they were last accessed. The Office Hub also includes the latest mobile versions of Word, Excel, and PowerPoint, each of which includes improvements designed to help users do more and work more quickly on their phones. And with OneNote Mobile, users will have all that they need to easily capture those away-from-the-desk "Aha!" moments while on the go. Windows Phone 8 delivers all this while building on existing collaboration services that organizations already own, and that IT departments and end users already know and trust.

Access to Documents Across Phones and PCs

With Windows Phone 8, users can access their Office documents and OneNote notebooks from SkyDrive, SharePoint, and Office 365. If they're also using Office 2013 on their PCs, they can synchronize recently accessed documents and notes across their Windows Phones and PCs, and can also resume editing documents where they left off, even across devices.

Office 365

Windows Phone 8 works seamlessly with Office 365. Users can simply add an Office 365 account like they would any other account and, they enter their credentials, their Office 365 email accounts and team sites will automatically be configured on their phones and they'll be asked if they want to download the Lync 2010 Mobile app.

SharePoint

Users at organizations that take advantage of SharePoint Server (or equivalent functionality in Office 365) can use the Office Hub to access Microsoft Office documents and lists stored on a SharePoint site and save to those locations from their phones. The Office Hub automatically handles the synchronization, helping users to stay productive by ensuring that they will always have access to the latest version of shared documents while on the go.

SkyDrive

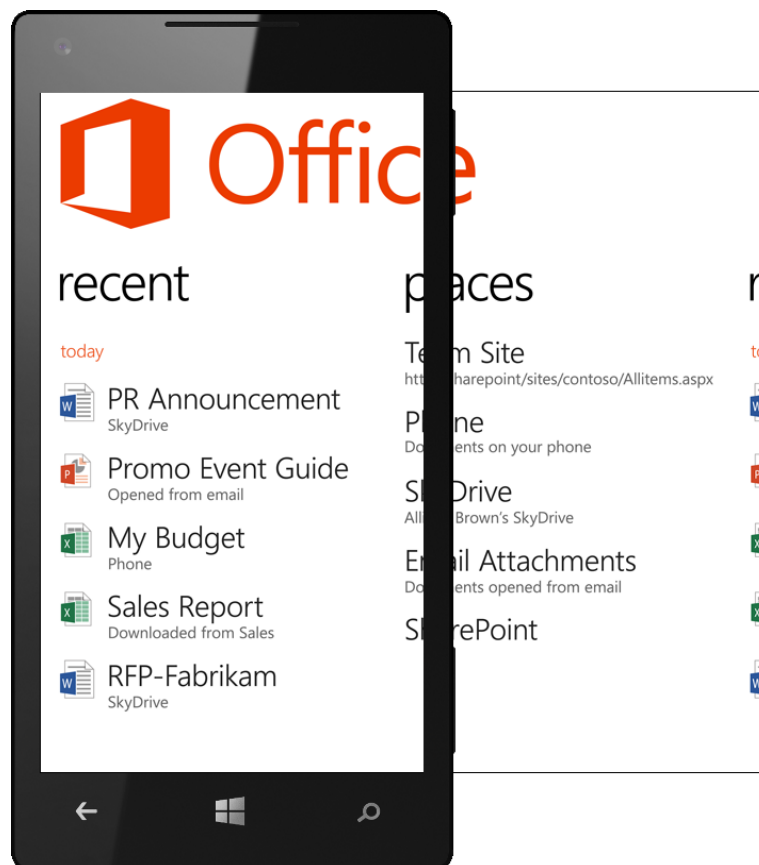
If users have a Microsoft account, they already have access to SkyDrive, where they can store documents, OneNote notes, and photos in the cloud — it's included with every Microsoft account and ready to access from Windows Phone. Users will appreciate at how easy it is to work on a

document stored on SkyDrive using their phones, and then pick up where they left off when they're back at the computer. They won't have to worry about multiple copies of a document on multiple devices, or which device has the latest version.

Users can access all types of Office documents in their personal and shared SkyDrive folders, and can also access documents in SkyDrive folders that others have shared with them. And with 7GB of free storage, SkyDrive provides plenty of space for users' documents.

Office Hub

The Office Hub in Windows Phone 8 makes it easier than ever to stay productive on the go, providing access to Microsoft Office documents on SkyDrive, SharePoint, and Office 365 — all in a single place. Documents that users have received as email attachments and opened on their phones will show up in the Office Hub too, so users won't need to open Outlook and find the right email message to view those documents again later. The Office Hub also includes the latest mobile versions of Microsoft Word, Excel, and PowerPoint, each of which has new features to help users get stuff done more quickly on their phones.



Fast Access to Documents

In Windows Phone 8, we redesigned and simplified the Office Hub to make it easier for users to find their documents. We also moved OneNote Mobile (discussed next) out of the Office Hub, providing direct access to it as an app — including a Live Tile for it on the Start screen.

The Office Hub has the following two panes:

- **The “recent” pane** provides users with access to all the documents they’ve recently accessed — and not just on their phones. When users have Microsoft Office 2013 on their PCs, the Word, PowerPoint, and Excel documents on their recent document list are automatically synchronized across devices on which they use Office — regardless of whether it’s Office 2013 on the PC, Office Web Apps via the browser, or Office Mobile on Windows Phone. Word documents will even open to the same page as when they were last saved, with the cursor in the exact same place, so that users can resume their work immediately. Similarly, when users open a workbook they’ve saved with Excel 2013, they’ll see the same worksheet and zoom level from when the workbook was last saved. With PowerPoint, they’ll see the same slide.
- **The “places” panel** lets users browse their documents by where they’re stored: on their phones, attached to email messages, on SkyDrive, on SharePoint, or on Office 365. These locations are sorted by when the user last accessed them.

Users can pin their favorite document libraries and lists to the Office Hub for quick and easy access, and can choose to store important documents on their Windows Phones so that they’re readily accessible when offline.

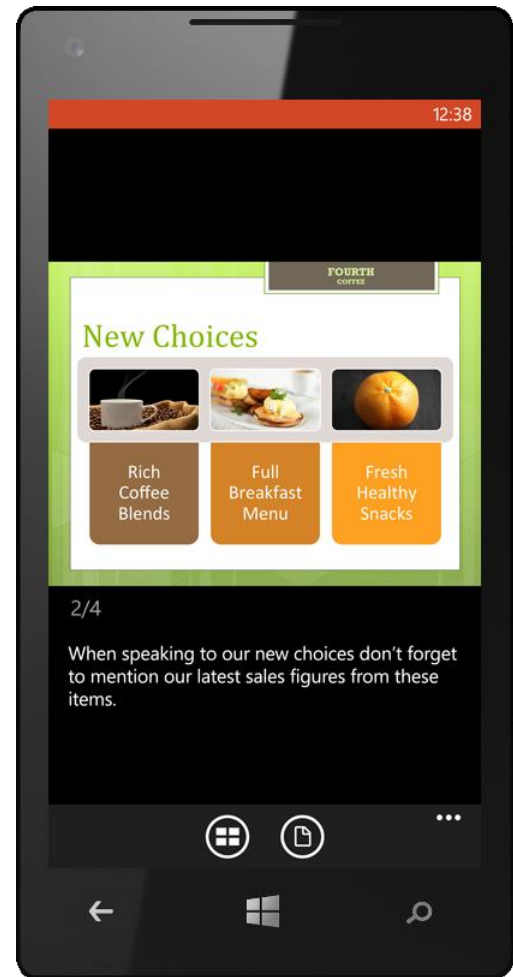
Office Mobile: Easily View, Edit, and Comment On Files

The Office Hub also includes the latest mobile versions of Microsoft Word, Excel, and PowerPoint, each of which has new features to help users work more quickly on their phones when viewing, editing, and commenting on documents. Documents on users’ phones will look like the originals and, when users make edits or add comments, document formatting and content will remain intact. These apps are built-into every Windows Phone, so there’s no need to purchase or install additional apps for users to work with Microsoft Office documents.

The latest mobile versions of Word, Excel, and PowerPoint all include new features designed to increase productivity for users working on their phones. Word Mobile includes a new full-screen reading mode. PowerPoint lets users view slide decks in either portrait or landscape mode, includes a new thumbnail view that makes it easy to visually navigate a long slide deck, and provides a new slide view that shows editable speaker notes below the slide, on one screen. Excel includes support for charts, smoother navigation, and improved cell selection — including new

grab-handles that make it easy to select a range or resize a row or column. Excel also has a new, smooth-floating grid UI that no longer snaps to gridlines, and an advanced “sticky” mode that makes it easier to navigate and read cells with lots of text.

All Office Mobile apps let users send a copy of a document to others via email, from directly within the app. We also included a few document templates to jump-start creation of a new Word or Excel document. And finally, as previously mentioned, all Office Mobile apps support Information Rights Management, enabling users to access and collaborate on IRM-protected documents using their phones.



OneNote Mobile

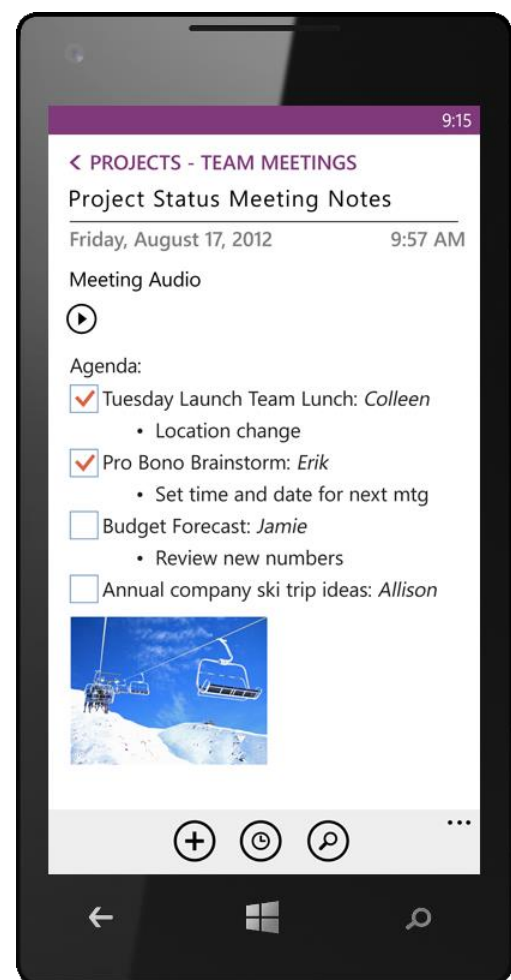
Good ideas don't always wait until users get back to the office. Often, the best ideas come when workers are away from their desks, having access to only their phone. With Microsoft OneNote Mobile, which is now a separate app on the Start screen, users have all that they need to easily capture notes, ideas, and other away-from-the-desk "Aha!" moments while on the go. OneNote is always ready to take user input and, through automatic synchronization with SkyDrive (or SkyDrive Pro on Office 365), to give users access to their notes on their phones and on their PCs.

Now on the Start Screen

OneNote is now a separate app on the Start screen, enabling users to get to it even faster than before. The OneNote Live Tile on the Start screen will show which note was updated last, and users can also pin individual notes to the Start screen for faster access. By default, users will see any existing notebooks on SkyDrive that are tied to the Microsoft account they used to set up their phones, as well as a new one that was created during the setup process. Users will also see a shared notebook for each Room they've created.

Automatic Sync with SkyDrive and Office 365

By default, all OneNote notebooks on Windows Phone are automatically synced with SkyDrive or SkyDrive Pro on Office 365, making it easy to create a to-do list on the PC and then check off items as they're completed on the phone. It works the other way, too, so a user could capture a photo of a whiteboard on Windows Phone and then view it on a PC using the desktop version of OneNote or the OneNote Web App. Of course, users have complete control over which notebooks or pages in a notebook are synced. (Not all notebooks or pages are synced, only the ones users access.)



Easy Information Capture and Rich Formatting

Users can input text notes by typing on Word Flow Keyboard, which can help correct and predict their typing. Below the keyboard are buttons for inserting a To-Do item with checkbox, creating a

bulleted list, inserting an existing photo (or capturing and inserting a new one), and capturing audio using the phone's microphone. Tapping More to the right of those buttons provides options for sharing a note, pinning it to Start, creating a numbered list, adjusting text indent, and formatting options that include bold, italics, underlined, and highlighting.

Users can also send photos to OneNote when doing other things on their phones. All they need to do is tap and hold the photo, tap Share, and choose OneNote.

Capture Notes by Voice

Users can also dictate their notes and have them automatically transcribed and added to OneNote, without having to type them in by hand. It'll work regardless of what users are doing on their phones — including when the phone is locked, provided users have enabled the use of Speech⁶ at those times. *(Note: This setting is turned off by default. It can be turned on under Settings > Speech. Speech can also be used in SMS text messaging and search.)*

⁶ Speech is only available in English, French, Italian, German, and Spanish.

Additional Resources

For more information on why Windows Phone 8 is the right choice for business, visit the website at: <http://www.windowsphone.com/en-US/business/for-business>

For information on how to use the various features in Windows Phone 8, visit the website at: <http://www.windowsphone.com/en-us/how-to/wp8>

Note: Unless otherwise noted, all features are available in all countries in which Windows Phone 8 is available. Screen layouts may vary in some Asian countries.