

# Application management in Nokia: Getting the most from Company Apps

Case Study

Version 1.0

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## 1 Challenge

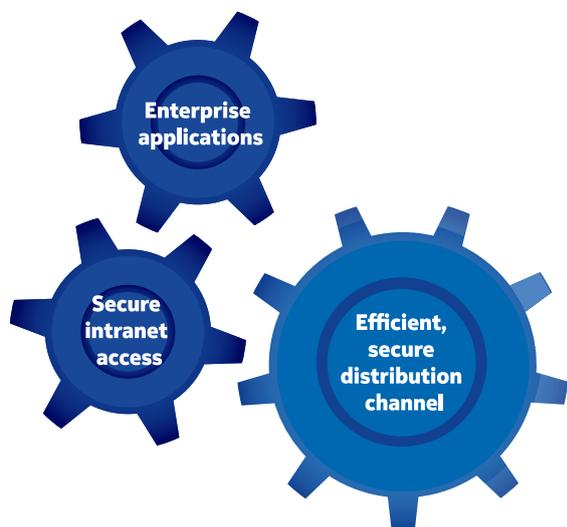
Enterprises have long sought ways to maximize productivity by mobilizing their business. Until recently, Nokia, like many enterprises, provided IT services through mobile browsers, with mixed results in terms of encouraging employees to register for, set-up, and use mobile services.

Often, low usage rates were partly a result of cumbersome enrolment and login methods and poorly designed intranet pages. More significantly, many people disliked logging in to check something, only to find nothing had changed since they last checked.

The application trend meets many of the enterprise demands on mobile device fleets by providing effective, mobile productivity tools. More enterprise applications are available each day that, for example, provide access to back-end services via a secure connection. App features such as LiveTile notifications on Lumia home screens tell, at a glance, if there's something new both improve usability and engage users.

However, without secure and efficient distribution channels, these new tools can create extra IT support costs and risks. The need for the efficient and secure installation, configuration, and troubleshooting of mobile applications is changing the way we design, develop, and deliver corporate IT solutions.

Nokia, like many enterprises has been challenged with finding ways to simultaneously meet requirements for effective, customized enterprise apps: (1) secure intranet access, (2) efficient and secure distribution channels, and (3) a portfolio of attractive, well-designed, secure apps. One component is of little value without the support of the other two, but the arguments for developing all three simultaneously are not always clear.



**Figure 1: Requirements for enterprise apps**

**Related Links**

[Enterprise Mobility: The next step in the consumerisation of IT](#)

## 2 Company Apps

Company Apps are part of the enterprise application use and distribution concept developed for Windows Phone 8.

Windows Phone 8 enables enterprises to publish and distribute Windows Phone apps directly to their employees or other users through their own distribution channels as Company Apps. Users can install apps published by their enterprise only after they enroll their phones for app distribution.

In terms of functionality, a Company App is any app an enterprise decides to distribute through its chosen distribution channels. This ranges from line of business (LOB) apps to wellness apps such as SportTracker. Unlike traditional web-based enterprise applications, Company Apps allow enterprises to take advantage of smartphone hardware features, such as the camera, when providing IT services.

The table below lists the similarities and differences between Company Apps used by enterprises and Store apps available to general consumers.

Store apps and Company Apps	Only Company Apps
All Windows Phone 8 apps have a common set of APIs and a common security model.	Created by or for an enterprise to meet specific needs. Company Apps can, for example, be developed to connect directly to back-end systems such as SAP, Salesforce.com, or SQL.
Applications are developed by either in house developers or by a 3rd party using the versatile toolset provided by Visual Studio®. C# and XAML languages.	Access is limited to certain groups, such as employees or partners.
	Choice of distribution channels: <ul style="list-style-type: none"> <li>• Consumer Apps are only available through the Store.</li> <li>• Company Apps can bypass the Store and use other managed or unmanaged distribution channels.</li> </ul>

### Related Links

[Company app distribution for Windows Phone](#)

### 2.1 Deployment options

When deploying Company Apps, IT departments can choose to make them available in the Store, perhaps as private apps, or sign the apps themselves and distribute the .xap files using either a Mobile

Device and Application Management (commonly known as MDM) solution or custom delivery system (unmanaged).

Customized and MDM deployment solutions provide enterprises with more control over who can install Company Apps.



**Figure 2: Company App deployment options**

Deployment option	Signing	Description
Private Store app	Microsoft	The app is not listed in any public catalogs. The link to the app is only available to employees. This is not currently a preferred solution.
Unmanaged delivery through a stand-alone Company Hub	Self-signed	An enterprise creates a custom deployment solution such as a stand-alone Company Hub.
Managed deployment through MDM	Self-signed	An enterprise uses the app distribution component, possibly a Company Hub, provided by their MDM solution.  This approach provides visibility over users' installed applications and application use.

**Related Links**

[Mobile Device Management and Windows Phone 8](#)

## 2.2 App security and authentication

Enterprises must create a Company Account with Microsoft in order to provide security and authentication for Company Apps. A Company Account can offer Company policies, Company Apps, or a Company Hub.

Before an enterprise can distribute Company Apps, they must create an application enrollment token (AET), which is used when enrolling phones to the Company Account. Each enterprise has one Company Account with one AET. The AET must be renewed periodically.

Companies may choose to distribute their Company Account AET using their own deployment solutions:

- **Stand-alone Company Hub:** In custom deployment environments, enterprises must use their own mechanisms, such as email, to distribute updated AETs to enrolled devices.
- **Application distribution with MDM:** The application management component provided by most MDM solutions provides tools that can be used to deploy, update, or delete AETs on enrolled devices.

Only phones enrolled in a Company Account can use that enterprise's Company Apps. A phone can only be enrolled in one Company Account at a time.

Regardless of the chosen deployment solution, enterprises must define their own, internal processes and responsibilities for signing and distributing Company Apps. Enterprises must ensure that those processes are as efficient as possible without compromising app usability or security.

### Related Links

[What is a company account?](#)

[How to generate an application enrollment token](#)

## 2.3 Nokia Company Apps

In Nokia, Company App requirement definition and development is led by a team of experts. Established in the beginning of 2012, the small *Centre of Excellence* helps solution teams mobilize their services and promote business mobility both inside and outside Nokia, with a particular focus on developing services and solutions for Windows Phone.

### Internal apps

Nokia has developed internally a number of Company Apps:

- **Nokia Approve:** Reminds managers when they have new HR or Travel approvals waiting and allows them to approve or reject them on move.
- **Nokia Meet:** Enables employees to arrange meetings and reserve meeting rooms both in very immediate (I want the closest meeting room available now) and advance meeting reservations with several participants.

- **Nokia News and Views:** Mobilizes internal news by enabling reading, commenting on, and discussing news items on Nokia Lumia.
- **Nokia Report:** Brings up-to-date information to those in need, such as how many devices we have produced in a factory during the day, how many devices we have sold through a specific outlet or globally or how many tickets a specific IT service has received and solved during the past hour, day or week.
- **Nokia Sell:** Mobilizes Salesforce.com content in order to provide Nokia sales personnel with visibility to sales opportunities, tasks, customers, and related information.

### Third party apps

Nokia also distributes third party Company Apps. After establishing exclusive deals with the application vendor and receiving the application binary files without a license key, the same Company App distribution channels are available as for internal apps.



Note: In order to distribute third-party apps, you must have the application binary files.

## 3 Company Hub

The Company Hub option is part of the expanded device and application management capabilities provided by Windows Phone 8.

A Company Hub is an application that provides a portal to an enterprise's IT services by enabling the publication and distribution of Company Apps directly to employees or other users. Enterprises can also use their Company Hub to share information, such as news and IT alerts .



**Figure 3: Basic Company Hub functionality**

### Company Hub API

Microsoft provides all the tools you need to get started. The Windows Phone SDK 8.0 provides a Company Hub API with methods for determining which Company Apps are already installed on the phone, installing Company Apps, and launching Company Apps after they are installed.

The API allows for many ways of implementing how a Company Hub determines which apps are available for users to install — depending on how the enterprise chooses to host its apps for distribution. For example:

1. An enterprise hosts its apps on a server that also provides the app files and metadata for all available Company Apps (such as the URL for each .xap file and the name, description, and version number for each app) through a web service.
2. When a phone user launches the Company Hub, the hub:

- Uses metadata to display a list of available Company Apps.
  - Determines what Company Apps are already installed on the phone.
3. When a phone user taps an app that is not yet installed, the Company Hub starts the app installation.
  4. When a phone user taps an app that is already installed, the Company Hub launches the app.

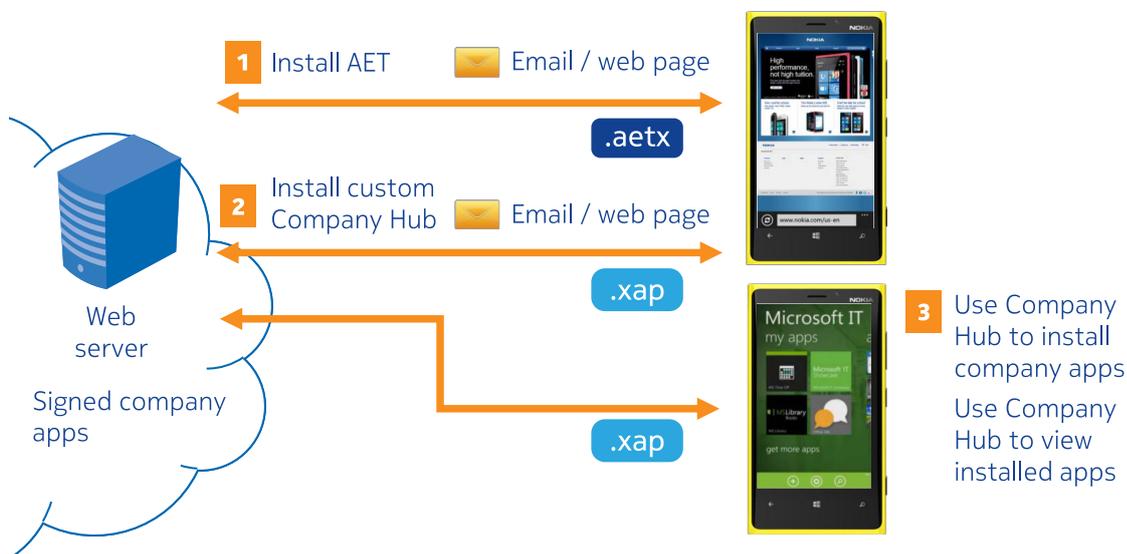
### Related Links

[Company app distribution for Windows Phone](#)

[Developing a Company Hub app](#)

## 3.1 Stand-alone Company Hub

At a minimum, a Company Hub is a stand-alone, web-based solution that enables users to discover, install, and optionally run apps published by an enterprise. Phone users can install Company Apps published by their enterprise only after they enroll their phones in the Company Account. During enrolment, the AET is installed on the user's phone.



**Figure 4: Unmanaged app deployment with a Company Hub**

While developing and maintaining a stand-alone Company Hub still requires internal or third party resources, it provides an app distribution solution that is more efficient than deploying each application separately.

However, larger enterprises such as Nokia often need a more secure, usable, and comprehensive solution provided by an MDM environment in order to maximize security, authentication, and application visibility.

### 3.1.1 Windows Phone App Manager

One alternative to using the Company Hub API included in the Windows Phone SDK 8.0 is the [Windows Phone App Manager](#) application, which provides functionality for both creating and signing apps.

Windows Phone App Manager is easy and quick to use. For the cost of only a certificate, you can create a Company Hub, skin it with your own logo for a tailored look and feel, and insert apps into the hub. Final deployment of the application is dependent on the type of certificate you use.

Windows Phone App Manager allows you to manage your Company Hub by:

- Adding websites, feeds and office locations
- Specifying organisation and app data

#### Related Links

[Create a Company Hub for Nokia Lumia phones with Windows Phone App Manager](#)

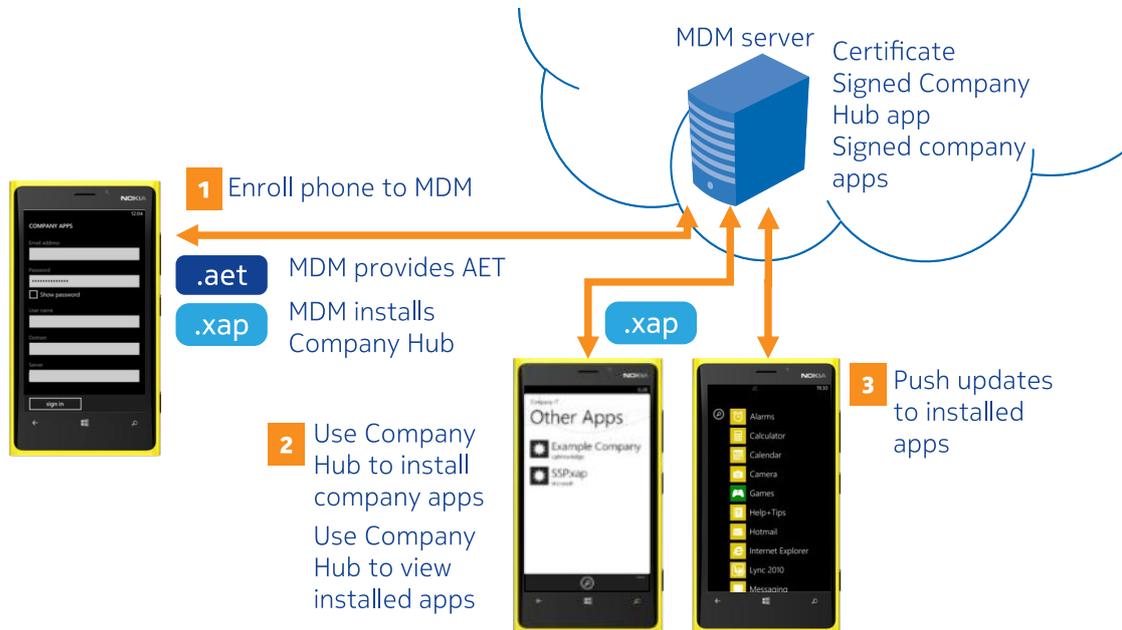
## 3.2 Application distribution with MDM

Many leading MDM solutions contain application management and distribution capabilities that provide control and visibility over installed apps. However, these solutions do not typically offer other Company Hub features.

Some MDM solutions incorporate a Company Hub app using the API provided by Microsoft. When used with a Company Hub, MDM manages the full Company Account AET lifecycle from enrolment and deployment, to update, to deletion. Once enrolled, a self-signed Company Hub app can be automatically installed to the phone, when a device is unenrolled, the app is automatically deleted by MDM.

A Company Hub provides a number of enhancements to the typical MDM application management tools:

- **Usability:** With an integrated Company Hub, users only need to go through the one UI portal to access Company Apps, rather than jump between one UI for installing apps and another for using apps.
- **Enterprise wipe:** If an account is deleted because, for example, an employee leaves the company, all Company Apps, including the Company Hub are deleted from the user's phone. That is, once the MDM deletes the AET provided by the Company Account from the phone, all Company Apps are automatically removed as well.



**Figure 5: Managed app deployment with a Company Hub**

### 3.2.1 MDM-managed deployment at Nokia

Application distribution and management is a central component of Nokia's AirWatch MDM solution. In this solution, optimized, internally developed applications can be distributed securely without the risk of the installation file leaking outside the enterprise. In addition, Nokia has implemented separate apps to cover functions such as news.

In terms of usability, the Windows Phone Modern UI offers ways of arranging Company Apps as LiveTiles with notification information, a feature Nokia uses in its continuing application development programmes.

In 2012, Nokia implemented AirWatch MDM to support both application installation and configuration. This solution was chosen in part to reduce the effort required to enable and support increasingly complex mobile application-based IT services by providing:

- Secure, easy application distribution and installation for both internal and public apps
- Security enforcements including encryption, remote wipe, and enterprise wipe
- Push notification
- License management

#### Company Hub

The latest version of Nokia's AirWatch MDM solution provides a full Company Hub. After a user enrolls in MDM, the Company Hub app is pushed to mobile devices automatically.

The Company Hub improves application management by including, for example:

- User-prompted Company App installation, on-screen real time installation status, and direct launching of installed Company Apps.
- Store-like user experience with app rating and review capabilities, including the option for viewing other user reviews.

This feedback provides valuable information during the user testing phasing of application development.

- App distribution based on AD (Active Directory) groups allows applications to be distributed to meet the needs of different teams or locales.

Group-based distribution also allows Nokia to test and unroll new applications in a controlled manner.

#### Related Links

[Case Study: How Nokia deployed AirWatch MDM for Nokia Lumia](#)

### 3.2.2 Authentication with Nokia APS

Today, preferred authentication solutions use tiered access and confidentiality models to allow for “security on demand”, depending upon the sensitivity of the data in question. This is an improvement over traditional “all or nothing” VPN-based approaches, which do not fit well with the new purpose-specific application- and user-driven-based approaches to security.

Nokia’s security solution is based on the Nokia Authentication and Proxy Server (Nokia APS). Nokia APS provides granular levels of security depending upon specific security requirements for different applications and conditions.

#### Related Links

[Secure access to enterprise solutions with Nokia Lumia](#)

## 4 Evaluation

Company Apps deployed through a Company Hub in an MDM solution provide enterprises with tools for maximizing business mobility — more specifically, tools maximizing the potential of mobile device fleets by improving employee satisfaction and productivity while still ensuring security.

Nokia's experience illustrates that developing apps is not enough on its own. Any consideration of enterprise applications must also include consideration of secure and efficient distribution channels.

In Nokia, solution teams have been successfully using internally developed applications, Company Apps, to mobilize their services and promote business mobility both inside and outside Nokia, with a particular focus on developing services and solutions for Windows Phone.

Company App deployment using a Company Hub is a part of the Nokia's AirWatch MDM solution. This solution provides benefits to multiple user groups within Nokia:

- Phone users can take advantage of user-friendly, effective apps in their day-to-day work.
- Nokia IT has a high degree of visibility and control over Nokia's Company Apps, both during deployment and after they are stored on employee devices .
- Development teams can take advantage of powerful feedback mechanisms during testing and after full deployment.

In future, Nokia will continue focusing on app development and distribution by adding more apps to the enterprise app portfolio and by improving usability and security with additional application management features. Nokia's application management solution will continue to evolve its solution as the Windows Phone feature set improves.