A Smart Guide to

Upgrading Your Enterprise OS & Apps



Extended Support for Windows Embedded is ending very soon.
Do you have a plan for choosing a new Enterprise OS?

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What You'll Learn

This eBook from AppwareSolutions.com will help breakdown the challenges and opportunities related to what many are calling the Enterprise Mobility Revolution. **Support for Windows CE and Windows Embedded mobile platforms is ceasing in 2020**. We'll breakdown your options moving forward from an OS, device, and application migration standpoint, clearly laying out the elements to consider and next steps to take.

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THE CHANGING ENTERPRISE MOBILE LANDSCAPE

Rugged enterprise devices have come a long way in terms of usability and functionality. Your enterprise has new choices of modern operating systems that your workforce is already using in their personal lives. **Support for Windows CE and Windows Mobile is coming to an end in 2020**, which means enterprises need to take action to migrate their devices and apps to operating systems that will be supported in the future.

12 BILLION

Dollars Worth of **MOBILE DEVICES &** **Need to be Migrated** **By 2020**

Choosing a new OS, finding the right devices and modernizing your apps before the 2020 end of extended support will have huge productivity and cost advantages.

To help you through this critical juncture, Zebra Technologies has launched a comprehensive set of Software Application Services that offers end-to-end help on IT issues such as: **modernizing legacy applications to support the latest mobile operating systems and developing next generation mobility strategies.**

Zebra is committed to helping companies like yours navigate this transition related to your OS and device options. Zebra offers the strongest portfolio of enterprise-ready Android and Windows 10 Mobile devices on the market today.



JOINING THE WORKFORCE MOBILITY REVOLUTION

Some companies may choose to postpone migrating their devices and apps, exposing themselves to some unintended negative effects. For those who are preparing themselves to join the workforce mobility revolution, there are 3 key factors to consider:

1. Choosing the Right Operating System (OS)
2. Finding the Right Next Generation Devices
3. Modernizing and Re-Writing Their Apps

Negative Effects of Postponing Migration



Failure Rates Increase with Age

Even though durability and strong life-cycle support are benefits of using ruggedized devices, companies are seeing an increase in the average age of installed mobile devices due to uncertainty related to OS upgrade options. Although they are intended and designed to withstand harsh environments and normal wear and tear, failure rates increase as devices age.



Higher Total Cost of Ownership

According to VDC Research, each 1% increase in device failure equates to a 5% increase in Total Cost of Ownership. Therefore, postponing the decision to upgrade one's installed base of enterprise rugged handheld devices can lead to significantly higher cost for support and ownerships of these solutions.

In 2010, approximately 36% of the installed base of rugged handheld devices were four years or older. By 2014, that ratio had jumped to 42% of rugged handheld devices.

Source: Migrating Legacy Enterprise Mobile Applications, 2015, VDC Research



Decreases Levels of Satisfaction

In addition to increased TCO issues enterprises face when extending the lifecycle of their mobile solutions, it is also increasingly evident that satisfaction with legacy enterprise mobility applications is declining. The usability of legacy apps are not meeting the expectations of today's younger workforce.



Limited Usability & Productivity

Beyond falling short of worker expectations on the user interface side, legacy mobile applications are not taking full advantage of new functionality available to modern enterprise mobile devices. Older interfaces often require more steps to complete a simple tasks--resulting in lowered productivity.



Extended Trainings Times

Many warehouse and distribution centers are staffed with part-time seasonal workers. Training temporary workers on keyboard-based interfaces can take anywhere from 2-4 days. Comparatively, training them on modern, touch-centric applications they're familiar with can be accomplished in a matter of minutes.

Android

Android is the leading smartphone OS with approximately 80% market share. While its origins are rooted in consumer mobile devices, over the past couple of years Android has made significant strides as an enterprise mobile platform suitable for business-critical mobile applications. Initiatives such as **Android for Work** and framework's such as Zebra's **Lifeguard™ for Android** are introducing a new level of control and security.



Implementing LifeGuard™ for Android™ is another best practice for enhancing OS security. Unlike consumer OS security support, which typically ends after 36 months, LifeGuard extends it for an additional two years.

The Android ecosystem also benefits from an ever-growing community of software developers, some of which had previously built businesses around developing solutions for legacy Windows platforms. At the beginning of 2016, 20% of rugged handheld unit shipments were running on Android. Momentum has definitely shifted towards Android as a clear favorite to replace devices running legacy Windows operating systems.

THE BENEFITS OF BUILT-FOR ENTERPRISE OS

- Application Sandboxing
- Resource Access Permissions
- Data Encryption
- Secure Access to Zebra AppGallery
- Application Lockdown Features
- Extended Security Support
- Predictable Security Updates Schedule
- Multi-User Log On Capability

Microsoft (Windows 8.1/10 IoT)

Microsoft's answer to the next gen platform for rugged handheld devices is Windows Embedded Handheld 8.1. and Windows 10 IoT. Although the platforms have been adopted by a small number of developers, the actual number of devices available supporting this platform is limited.

While Microsoft has stated it will provide support for this platform through 2019, its true focus has shifted towards Windows 10. While adoption of Windows 10 on PCs has been very well received, it is in the rugged handheld market that we still do not know the full extent to what impact it will have.

Apple (iOS)

Unlike Android or legacy Windows embedded OS platforms, Apple's iOS is tightly controlled with Apple being the only supplier of mobile devices for their operating system. Like Android, Apple has long been developing consumer devices first and foremost. They have, however, been shifting more attention to enterprise and have been actively engaging leading enterprise integrators and solution providers.

However, Apple finds themselves lagging behind Android in the way of enterprise rugged devices, because they do not manufacture enterprise rugged devices. Although iPhones and iPads can be accessorized with protective cases and scanner sleds to enable some of the enterprise functionality required for rugged applications, the final solution often reflects a series of compromises. Furthermore, due to OS security expiring on most consumer devices after 36 months and without an end of lifecycle security option, enterprises find themselves forced to purchase new mobile computers.



Nearly half (46.5%) of the companies surveyed reported a data or security breach as a result of an employee-owned device accessing the corporate network.

Source: Mobile Consumerization Trends & Perceptions IT Executive and CEO Survey
Link: http://www.trendmicro.com/cloud-content/us/pdfs/business/white-papers/wp_decisive-analytics-consumerization-surveys.pdf

CONCLUSION

There are a number of factors to consider when making your OS, app, and device migration decision. Ultimately, the right decision will be based on a combination of important factors, such as: software application and development support, availability of third-party applications for your chosen OS, and options related to mobile devices to select from that best meet your business needs.

FINDING THE RIGHT DEVICES

With a plethora of models, suppliers, configurations and operating systems to choose from, deciding on the right devices to meet your needs can be tricky. Below are the top 10 considerations to keep in mind when it comes to evaluating enterprise-class mobile devices.

RUGGEDNESS



Look for a device that meets the needs of your applications and won't fall in the face of drops, spills, extreme temperatures, or dust and dirt.

CONNECTIVITY



When peopled need access to data on the go, the extent of WAN/WLAN connections and seamless roaming can make all the difference in productivity.

DOES IT NEED TO SCAN?



If workers need to scan barcodes, you need rapid scanning ability. Also, check whether you need signature capture and card payment capabilities.

DEPLOYMENT & SUPPORT



The ability to centrally and remotely manage your device fleet is critical to everything from staging to pushing upgrades to troubleshooting.

BATTERY LIFE



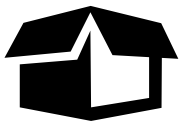
If your team is always on the move and using their device all day without access to a charging point, you will need a device with good power management, not just a big battery.

COST OF SUPPORT



Evaluate how likely you will experience device failures and what these will mean to your business. This will help you decide which support coverage offers the best value.

EASE OF USE



Operating system familiarity and ergonomics will increase user adoption and eliminate workarounds. Leverage purpose-built utilities to enhance the experience.

DEVICE LIFE CYCLE



Having to constantly replace or upgrade your devices and accessories can mean the use of many different models, higher capital outlay and significant support complexities.

SECURITY



To avoid mobile attacks, look for application white-listing, AD/LDAP authentication, and key management among other features.

COST OF OWNERSHIP



When you calculate TCO, include potential costs for workers downtime, device replacement, accessories, and support.



MODERNIZING YOUR APPS

To help you navigate through all of the complexities of choosing the right OS Strategy, **Zebra offers Software Application Migration Services**.

Zebra and Legacy Technology Services provides a wide range of custom and pre-packaged services while addressing the challenges of migrating from legacy Windows Mobile and Windows CE to modern OS's such as Android or Windows 10.

There are four key planning steps to initiating the app migration process.

1	2	3	4
Assess your mobility apps	Determine migration goals for each app	Choose the new OS for each app	Determine the best approach for each ap

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1 IN 6
IT PROJECTS WERE OVER BUDGET BY
200%

AND OVER TIME BY ALMOST
70%



MIGRATION RECOMMENDATION BASED ON APP FRAMEWORK

The best migration option for your company depends on the nature of your current mobility apps. Below we've outlined our recommended approach based on how your current apps were built:

TERMINAL EMULATION OR "GREEN SCREEN" APP

Port via All-Touch TE Utility

Utilizing Zebra's **All-Touch TE utility**, you can easily port legacy TE apps to a modern OS such as Android.

- Easily Portable to modern OS
- Low cost, low risk
- Updated screens for touch-enabled devices

Project Cost:	■□□□
Migration Complexity:	■□□□
Project Duration:	■■□□
Compatible OS:	**Agnostic**

NATIVE WINDOWS MOBILE APP

Modernization via Compact Framework

If business operations haven't significantly changed, this is our recommended option for native applications.

- Re-use existing code
- Project completed in less than a month
- Modern UI placed on top of existing app

Project Cost:	■■□□
Migration Complexity:	■□□□
Project Duration:	■■□□
Compatible OS:	**Android**

WEB APP MIGRATION

Port via Zebra Enterprise Browser

Zebra's Enteprise Browser enables you to port web apps while tweaking the user interface as needed.

- OS Agnostic
- Integrates native device peripherals into app
- Enables barcode scanning, signature capture and more

Project Cost:	■□□□
Migration Complexity:	■■□□
Project Duration:	■■□□
Compatible OS:	**Agnostic**



AVAILABLE ZEBRA SERVICES

Zebra Technologies can serve in a consultative capacity, in a support role to your internal development team, or, they can offer holistic strategic and technical services to ensure a smooth and cost-effective execution of your legay app migration.

ASSESSMENT SERVICES

Zebra can analyze and assess your current app landscape to help formulate a holistic migration plan related to: OS, devices, and applications.

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APP MIGRATION SERVICES

Zebra can help make the process of migrating your business apps to a new OS simple through the use of an approach that enable maximum code re-use.

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USER INTERFACE SERVICES

Zebra will consult with your internal dev team to optimize your app UI for ease-of-use, helping your company to realize additional ROI from your efforts.

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LEARNING SERVICES

Zebra can provide both onsite and remote training to get your team up-to-speed on modern operating systems, apps, and enterprise mobile devices.

LEARN MORE



LOOKING FOR A PARTNER TO HELP NAVIGATE THE MOBILITY WORKFORCE REVOLUTION?

LEGACY
TECHNOLOGY SERVICES

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Legacy Technology Services is a leading nationwide provider of mobile computing, barcode, and point of sale equipment and services. For over 17 years, clients across North America have trusted Legacy to provide equipment and services from leading manufacturers as well as the technical and managed services to support their technology solutions.

About Appware Solutions

Appware Solutions is a free service that connects businesses with technology solutions. We know that technology can make a business better.

How we help:

We simplify the research and selection process with our free, comprehensive directory of hardware, software, and bundled solutions for popular applications like point of sale, digital signage, asset tracking, inventory control, mobility, and payment processing

- We provide free resources including articles, eBooks, and guides that are designed to help educate and inform technology buyers.
- We do the product research to identify proven solutions that have been tested, certified, and can be bundled to provide best of breed solutions that integrate seamlessly.

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