

THE FOLLOWING IS AN EXECUTIVE WHITE PAPER ON:

Microsoft Extends Commitment to Enterprise Handheld Device Market with Release of “Windows Embedded Handheld” Platform

Prepared by:

VDC Research Group

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Demand for handheld devices in the enterprise continues unabated as organizations look to equip their increasingly mobile workforce with the requisite tools to support real time decision making and transaction processing in distributed or remote environments. The applications supported are as varied as the device form factors, the organizations deploying them and the workers using them. As many of these solutions support mission critical applications, demand for enterprise class platforms to meet the stringent device management, security and support requirements of organizations and end users are equally critical.

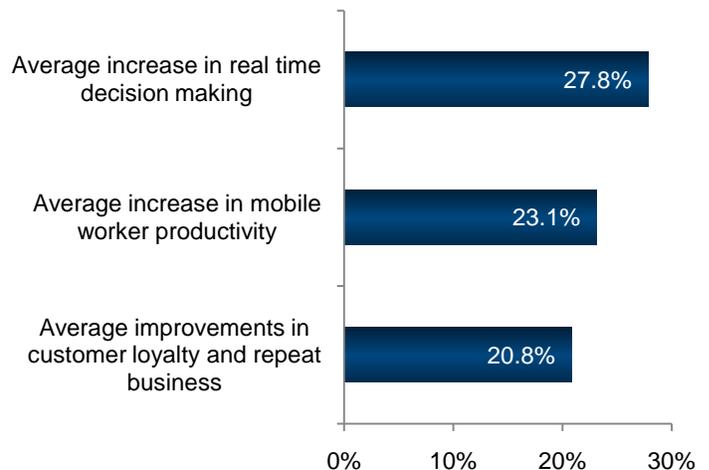
The net result is that this combination of mission critical applications and the services that are required to enable and support them is placing significant pressure on the OS platforms running these mobile devices.

APPLICATION SOPHISTICATION AND COMPLEXITY DRIVING NEXT GENERATION MOBILE PLATFORM REQUIREMENTS

The ability for mobile workers to access a variety of customer, asset and / or supply chain data repositories in real-time, while adhering to business rules and processes, transformed traditional means of conducting business. VDC's research has validated the ROI of these investments in terms of tangible improvements in areas as diverse as overall worker productivity, real time decision making capability and supply chain efficiency.

Applications for enterprise handheld devices continue to expand and are only becoming more sophisticated. Perhaps the biggest shift is rooted in the transition from those designed to 'push' information out to mobile workers in support of a specific task, to applications designed to empower mobile workers to make more informed decisions in the field through seamless access to line of business applications and the services they enable. These more sophisticated, next generation applications are placing greater demands on OS platforms across a variety of dimensions, including wireless communication support, user interface design and I/O functionality, to name a few. To meet these evolving requirements developers, end users and mobile device OEMs alike require a robust platform that not only supports development of these next generation, rich applications but also provides back-end continuity and true enterprise-class lifecycle support.

Exhibit 1: Enterprise Mobility Investment Benefits



Source: VDC Research, 2009 End User Survey

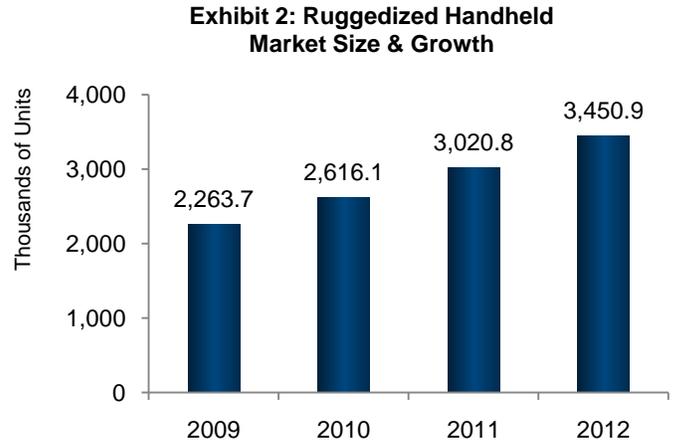
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RUGGEDIZED HANDHELD DEVICES

One class of device supporting these types of mission critical applications are ruggedized handheld devices from companies such as Motorola, Intermec, Honeywell and others. These devices are designed to sustain operations in a wide variety of inclement environments and support the functional diversity – in terms of I/O options, wireless radio support, keyboard configurations, and display sizes among others – required for many enterprise applications.

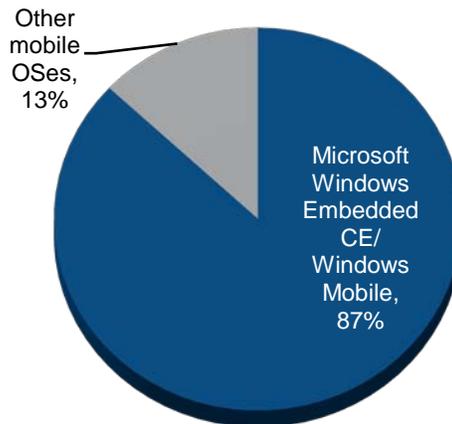
VDC Research estimates that in 2009 2.3 million ruggedized handheld devices shipped and that this market is expected to exceed 4.3 million units by 2014, representing a CAGR (Compound Annual Growth Rate) of 13.8%. The global installed base of these devices is estimated at 11.9 million units with the typical replacement or upgrade cycle of the device averaging 4.5 years

Microsoft, through its Windows Embedded CE and Windows Mobile operating systems, has a long history supporting this class of device and is firmly established as the leading ruggedized handheld mobile OS platform. According to VDC Research, ruggedized handheld devices running Microsoft Windows Embedded CE/Windows Mobile represents 87% of total ruggedized handheld units shipped in 2009.



Source: VDC Research, 2010

Exhibit 3: Ruggedized Handheld OS Market Share



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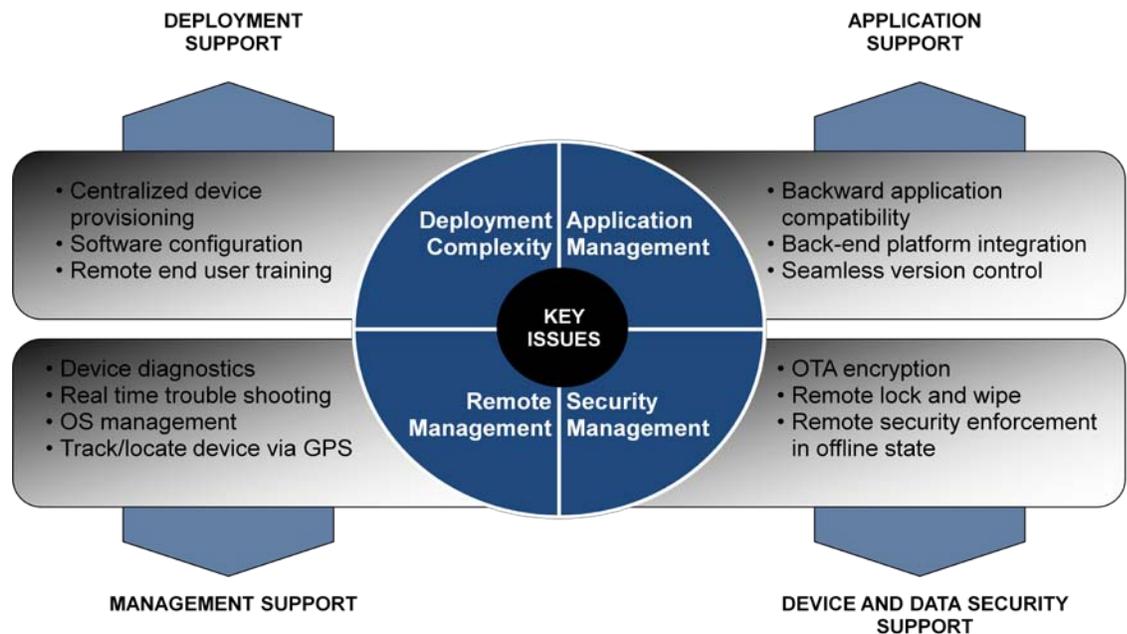
MICROSOFT'S WINDOWS EMBEDDED CE & WINDOWS MOBILE SOLUTIONS – STRONG ADHERENCE TO ENTERPRISE NEEDS

Microsoft's success in the enterprise handheld device market is tied to a number of factors, including the strong support of ruggedized device OEMs. Perhaps none of these factors is more important than Microsoft's recognition that enterprise needs are unique and differ markedly to that of the broader consumer market. More specifically, the needs of both OEMs and end users of ruggedized handheld devices differ significantly to those of consumer-class mobile device OEMs and end users. These needs are confirmed by VDC's research and include elements such as:

1. Enterprise lifecycle support
2. Application development tools and application portability
3. Integration with backend enterprise platforms
4. Device and security management
5. Data capture (scanning / imaging, RFID)
6. Running Enterprise LOB applications and data processing
7. Multiple data input methods (stylus, keyboard, touch)
8. Broad range of peripheral support for specific applications

However, the enterprise handheld device/ OS market is undergoing significant change. End user's expectations in terms of device design and user interface are increasingly being driven by experiences on consumer devices.

Exhibit 4: Enterprise Mobility Investment Requirements



Based on the broad installed base of Microsoft-powered rugged handheld devices and strong ties to the rugged handheld device OEM community, Microsoft remains well positioned to continue to support this segment. However, the enterprise handheld device/ OS market is undergoing significant change. End user's expectations in terms of device design and user interface are increasingly being driven by experiences on consumer devices. Furthermore, the needs of enterprises to deploy advanced applications in support of their mobile workforce continue to mount.

Recognizing the shifting landscape and affirming its commitment, Microsoft recently transitioned its approach by announcing the Windows Embedded Business will have a dedicated focus on building software platforms and providing customer support to enterprise handheld devices. This effort included:

- Aligning future feature development on Windows Mobile software;
- Implementing a comprehensive platform roadmap for the enterprise handheld market under Windows Embedded; and
- Providing a single organization focused on the current and future needs of its OEM partners, including Motorola, Honeywell, Intermec and others.

This reorganization was a significant move, and a necessary one –the Windows Embedded Business has diverse, extensive experience in building software and services platforms for specialized devices, making the business the ideal organization to lead Microsoft’s strategic investment in the enterprise handheld device market. Moreover, the componentized Windows Embedded CE platform and the next generation of this platform, Windows Embedded Compact 7 have a longstanding history in the market, and, along with the Windows Mobile platform, plays a critical role to enable mission critical business mobility in several key vertical sectors.

WHAT’S NEXT? WINDOWS EMBEDDED HANDHELD

During Motorola’s June 17 launch event for its ES400 enterprise digital assistant (EDA), Microsoft CEO Steve Ballmer announced several strategic investments in the enterprise handheld device market, including a comprehensive roadmap of platforms and technologies delivered under the new *Windows Embedded Handheld* brand. This movement by Microsoft acknowledges the unique needs of ruggedized handheld device OEMs and ends users by providing a solid foundation for future innovation tied directly to the market. The first release will come this calendar year and will build on the Windows Mobile 6.5 platform.

Although the initial version of Windows Embedded Handheld is not expected to differ markedly from the current Windows Mobile 6.5, its relevance is tied not only to the future roadmap, but also – and perhaps more importantly – Microsoft’s commitment to provide an extension of the OS support lifecycle to more closely align with the typical lifecycle of devices in the enterprise. Similarly, Microsoft will continue support and investment in a platform that utilizes the tools and developer paradigms used in building applications and experiences, including Visual Studio 2008 and Windows Forms. These moves to extend familiar security, manageability and connectivity solutions with the Windows Mobile platform coupled with enhanced lifecycle support will help instill confidence Microsoft is committed to protecting existing investments over as new software platforms are released.

Regarding the future roadmap, an updated Windows Embedded Handheld platform based on Windows 7 technologies will be released in the second half of calendar year 2011. This expanded platform will build on Windows Mobile 6.5’s proven manageability and security features by incorporating additional technologies from Windows Embedded Compact 7, including updated kernel and memory models, browser, and input methods, such as multitouch. Additionally, the platform will feature the Silverlight for Windows Embedded user interface framework to help OEMs, developers and designers implement immersive user interfaces on enterprise handheld devices. Microsoft will also include a migration path for existing applications to a new application platform based on Microsoft Silverlight and Microsoft XNA with Visual Studio 2010.

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CONCLUSIONS

Microsoft's recent moves regarding the transition of its enterprise handheld device business to Windows Embedded and the introduction of a comprehensive roadmap under the Windows Embedded Handheld brand are strong statements of Microsoft's ongoing commitment to this market. Microsoft's history of supporting mission critical enterprise devices and ruggedized handheld markets – and the vast installed base of devices running Microsoft platforms – position the company as the clear leader in this segment. Furthermore, VDC Research does not envision any other mobile platform to critically challenge this position in the near term. However, especially considering the increasingly challenging competitive landscape, the key for Microsoft moving forward will be its ability to balance its support for legacy solutions and platforms while introducing the next generation functionality and development tools enterprise handheld device OEMs, developers and end users are demanding to support more sophisticated and intuitive next generation enterprise mobility applications. Its collaboration with Motorola for the ES400 EDA is a strong example of this direction, where the device will help drive productivity by moving enterprise users beyond merely being informed to being empowered through direct access to line of business applications.

ABOUT VDC RESEARCH GROUP

VDC Research Group (VDC) is a technology market research and strategy consulting firm that advises clients in a number of technology markets including: Automatic Identification and Data Collection, Embedded Hardware and Systems, Embedded Software and Tools, Industrial Automation and Control, Mobile and Wireless, and Power Conversion and Control. Using rigorous primary research and analysis techniques, the firm helps its clients identify, plan for, and capitalize on current and emerging market opportunities. We strive to deliver exceptional value to our clients by leveraging the considerable technical, operational, educational and professional experience of our research and consulting staff. During our nearly four decades of ongoing operation, we have had the pleasure of serving most of the world's leading technology companies, many high-profile start-ups, and numerous blue-chip early and later stage investors. Our products and services consist of research reports, annual research programs, and custom research and consulting services. Founded in 1971, the firm is located in the Boston area.

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