THE FOLLOWING IS AN EXECUTIVE WHITE PAPER ON:

Next Generation Rugged Handheld Device Requirements

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NEXT GENERATION RUGGED HANDHELD DEVICE REQUIREMENTS

Given today's myriad of mobile device choices for enterprises to consider when evaluating options for their mobile workforce, organizations are increasingly confused and uncertain about their investments. For existing end-users issues relate to the need or viability of an upgraded solution. For new customers questions surrounding selection of most appropriate platform, form factor, mobile OS, integration with legacy systems, etc. loom. Although the adage of *"no mobile devices are created equally"* remains true, in an age of streamlined product and component standardization, it has become increasingly difficult for end-users to discern among mobile devices. What's critical is for end-users to carefully evaluate the application readiness – in the context of deployment, operation, management and support – of their solution.

What has become increasingly evident is that end-users are not interested in purchasing a mobile device; rather the focus of their requirements center on the capability of the device within the context of the mobile solution it is designed to support. These include capabilities relating to ease of integration and support, extensibility of support and management across a platform or series of products to accommodate a growing population of mobile workers and true enterprise lifecycle support. Ultimately what this boils down to is minimizing total cost of device ownership while maximizing the ROI of the mobility solution.

GONE ARE THE DAYS OF THE ENTERPRISE MOBILITY SILO…HERE ARE THE DAYS OF CROSS-FUNCTIONAL MOBILITY STRATEGIES

Enterprise mobility solutions – whether supporting a field technician, a warehouse worker or a delivery driver – have historically been deployed as a point solution, separate from the enterprises' overall IT infrastructure. Key issues with this approach were their limitations in system scalability and manageability. Today, however, enterprises are taking a much more strategic and holistic approach to mobility investments. In fact, according to VDC's research, over the past three years CIOs and CTOs have consistently identified mobile solutions as a *'top ten'* IT investment priority. Consequently, enterprises mobility solution requirements for mission critical frontline workers have focused on mobile solution capabilities and a mobile platform that extends across a broad range of mobile workers and use cases – as opposed to just the warehouse worker or just service technician.

Critical in this deployment paradigm are the following requirements:

- Commonality across mobile architecture, software builds and application environment
- Shared peripheral portfolio
- Remote monitoring and diagnostic tools
- Out of the box provisioning
- Integrated device management and security management capabilities
- Complete enterprise lifecycle support

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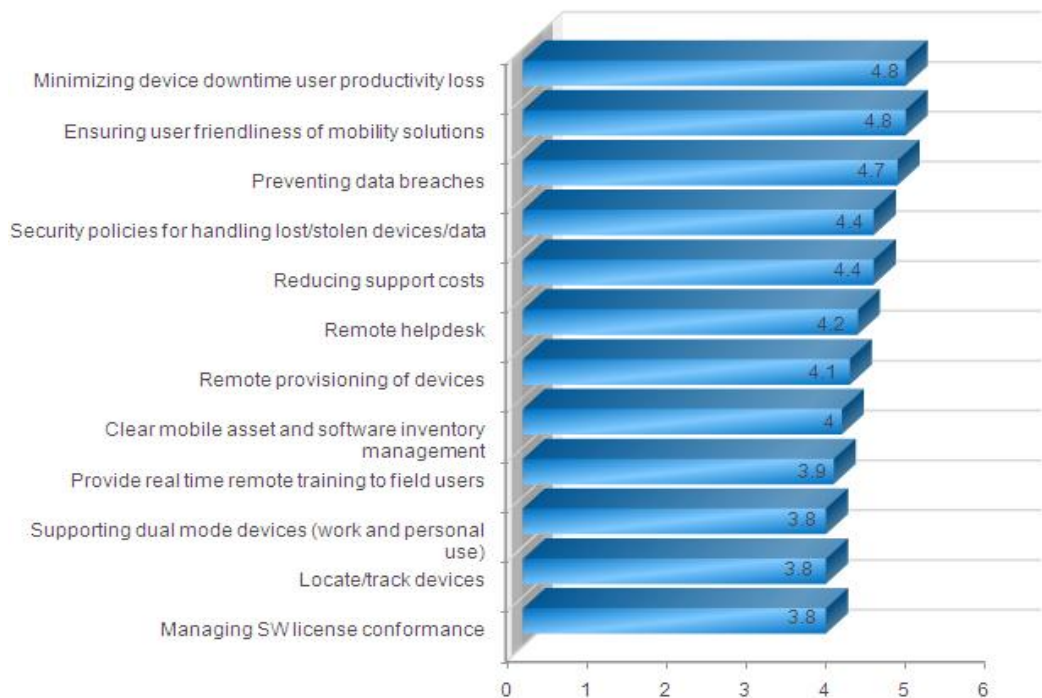
A common theme among these requirements is management of not only the mobile device, but also the deployment process, software architecture and provisioning tools and the maintenance, troubleshooting and support capabilities. What is clear based on VDC's research among enterprise mobility purchase decision makers is that organizations are increasingly concerned with the ability to effectively manage the mobile solutions portfolio.

Among the most critical mobile solution requirements cited by end-users are capabilities relating to the overall management of the device – from minimizing device downtime to reducing overall support costs and preventing data breaches. This ultimately boils down to the application readiness of the solution. Frequently end-users – especially first time users – fail to fully assess the relative maturity of the application, the wireless networks and the process by which applications are provisioned, leading to longer and more costly deployment (and end-user adoption) cycles. Delivering these capabilities with an out of the box experience is an increasingly critical requirement.

Mobile Solutions Goals & Solution Requirements Rating
(1=Extremely Unimportant; 6=Extremely Important)

Requirement	Rating
Minimizing device downtime user productivity loss	4.8
Ensuring user friendliness of mobility solutions	4.8
Preventing data breaches	4.7
Security policies for handling lost/stolen devices/data	4.4
Reducing support costs	4.4
Remote helpdesk	4.2
Remote provisioning of devices	4.1
Clear mobile asset and software inventory management	4
Provide real time remote training to field users	3.9
Supporting dual mode devices (work and personal use)	3.8
Locate/track devices	3.8
Managing SW license conformance	3.8

Source: VDC Research End-User Survey N: 487 (Fielded June/July, 2010)

NEXT GENERATION MOBILITY APPLICATIONS DRIVING DEMAND FOR ENHANCED MOBILE PERFORMANCE

For organizations with existing installed bases of rugged mobile devices a frequent question becomes timing of the upgrade. Rugged devices are designed to withstand the rigors of everyday use in tough environments. Consequently failure rates of the devices are low and enterprises will frequently leverage these mobile assets in excess of 5+ years (it is not uncommon to hear about a deployment in its 10th year). The question of upgrade timing has become especially acute over the past 24 months as enterprises trimmed budgets in the face of severe of economic conditions.

Another factor keeping organizations from upgrading their solutions has been the fact that the applications supported by these devices have/had not changed substantially, thus the limitations of the devices processing capabilities, wireless options and other types of functionality were not tested. However, what VDC is finding through its research is that not only are enterprises again investing in rugged mobile solutions at a strong rate – 2010 investments increased substantially over 2009 levels – but their requirements for next generation solutions have evolved considerably.
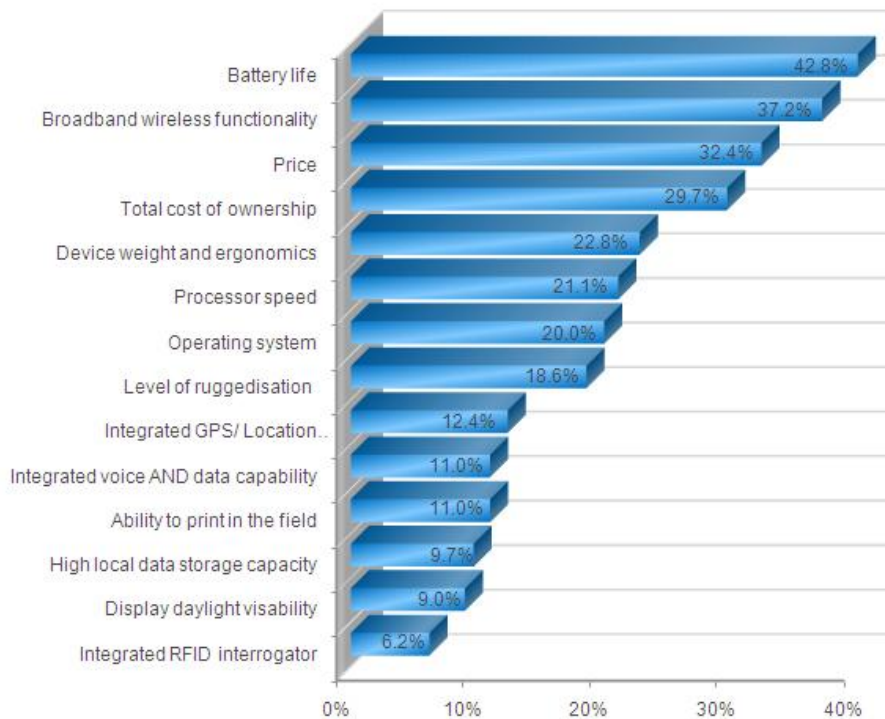
Some of the most critical requirements include:

1. **Application sophistication**. A clear trend for mobility solutions has been the increase in the average number of mobile applications supported per mobile worker/per device. Currently frontline workers support an average of 4-5 mobile applications on their device (up from 2-3 applications 36 months prior). This has only accelerated over the past year as enterprises have trimmed workforces and are looking to workers to take on more responsibilities. However, the functionality (processing speed; memory configuration; etc.) of many deployed devices cannot meet these new requirements. As a result, processing power has increased in importance for many enterprise end-users.

2. **Battery performance**. One caveat in application sophistication and processing performance is in the context of battery life. Battery life remains the most critical requirement for many mobile solutions. It is in this scenario that we foresee multi-core architectures becoming more critical as enterprises look to balance more functional and sophisticated solutions while maintaining traditional battery performance benchmarks. Beyond battery performance, demand for remote management and diagnostics associated specifically with the battery is a growing requirement among end-users.

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3. **Embedded wireless options**. From Bluetooth to WiFi to WWAN and GPS enterprises are not without options when it comes to wireless capabilities. Although embedded Bluetooth and WiFi functionality are virtually standard features for rugged mobile devices, not all radios are created equally. Inexpensive 'consumer-class' radios have flooded the market, however, miss the mark when it comes to true enterprise-class performance, radio management utilities and security capabilities. Beyond personal and local area networks, enterprises are beginning to more fully leverage the benefits of 'always-on' connectivity for their field workers through the use of WWAN and GPS technology. While some mobile applications have been slow to leverage wide area wireless capabilities and location-based functionality (consider, for example, DSD) what enterprises need is the ability to future proof their investments to avoid obsolescence and account for tomorrow's needs.

4. **Commonality across user groups**. This relates to the desire for enterprises to evolve from their historical point solution deployment models to a more comprehensive model that spans multiple user groups and workflows. Key to the seamless execution of this requirement will be commonality spanning multiple mobile solution elements including, but not limited to, mobile platform and core architecture, application environment and software build (including development libraries and tool kits) and a shared peripheral eco-system (charging docks, holsters, mobile printers, etc.).

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Mobile Device Selection Criteria
(Percentage)

Criteria	Percentage
Battery life	42.8%
Broadband wireless functionality	37.2%
Price	32.4%
Total cost of ownership	29.7%
Device weight and ergonomics	22.8%
Processor speed	21.1%
Operating system	20.0%
Level of ruggedisation	18.6%
Integrated GPS/ Location..	12.4%
Integrated voice AND data capability	11.0%
Ability to print in the field	11.0%
High local data storage capacity	9.7%
Display daylight visability	9.0%
Integrated RFID interrogator	6.2%

Source: VDC Research End-User Survey N: 487 (Fielded June/July, 2010)

INTERMEC'S 70 SERIES: MEETING TODAY'S REQUIREMENTS AND TOMORROW'S CHALLENGES

Intermec, one of the leading vendors of rugged mobile solutions, has recognized many of these current and emerging requirements and has integrated them as part of the design of their next generation mobile platform: the 70 Series. From the CN70 targeting field mobility and logistics applications to the CK71 targeting manufacturing and warehousing applications the development of this portfolio of products evidences a commitment to a platform-based design strategy that should translate into significant deployment, support and operational benefits among their target enterprise clients.

ABOUT VDC RESEARCH

VDC Research (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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