



Whitepaper

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Durable Smart Devices for Mobile Field Forces: Selection and Evaluation Criteria

A J.Gold Associates White Paper

“Companies continue to expand their mobile workforces, as increasingly capable and affordable technology becomes available in the form of high performance handheld devices connected to faster and more reliable wireless networks... And while basic communication functions still drive many users to handheld devices, we see a substantial increase in mission critical back office applications and task-specific work solutions being deployed. Mobile workers now spend as much as 25%-35% of their work day in the field interacting with their portable handheld assistants... Yet many companies still struggle with choosing and deploying the optimum devices to their field force workers... Choosing the right device will have a substantial positive impact on application capability and end user productivity, and will also dramatically affect the bottom line cost and total return on investment...”





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Durable Smart Devices for Mobile Field Forces: Selection and Evaluation Criteria

Introduction

Companies continue to expand their mobile workforces, as increasingly capable and affordable technology becomes available in the form of high performance handheld devices connected to faster and more reliable wireless networks. Indeed, current handheld devices exhibit most of the capabilities and performance of a PC of only a few years ago, but in a highly portable form factor. With this rapid advance in device capabilities, application suppliers are no longer hindered from creating and supplying highly capable on-device solutions that extend the reach of corporate mission-critical applications. Better graphics and increased processing power and memory enable users to interact with task-oriented solutions easily, thereby increasing the user's productivity dramatically. And while basic communication functions still drive many users to handheld devices (e.g., email), we see a substantial increase in mission-critical back office applications and task-specific work solutions being deployed (e.g., CRM, ERP, SFA, dispatching, sales management). Mobile workers now spend as much as 25%-35% of their work day in the field interacting with their portable handheld assistants.

Yet many companies still struggle with choosing and deploying the optimum devices to their field force workers. Indeed, with so many different styles and form factors, handheld devices have expanded from a limited number of choices just a few years ago, into a plethora of available device styles and types. Further, many users have applied pressure within their organizations to acquire and deploy the popular consumer market-driven devices almost as soon as they become available, regardless if they are optimized for the tasks at hand. It is therefore imperative for companies to step back and look at the user and business requirements so that the organization can deploy the optimum device and form factor. Choosing the right device will have a substantial positive impact on application capability and end user productivity, and will also dramatically affect the bottom line cost and total return on investment, so critical in today's highly competitive and cost-conscious business environment. Making a wrong choice will have a decidedly negative impact that companies will need to live with for an extended period of time.

What do Workers Need?

Many workers are highly in tune with the consumer-driven technology scene. They see a number of new and compelling devices being brought to market. These smart devices are functional, sleek and user friendly. Yet many of these devices are not suitable for the rigors of the field force worker. Working well for consumer usage may not be equivalent to the much more demanding and nearly continuous use of field workers. And while companies should strive to find devices that exhibit equivalence to market-leading consumer-oriented devices in features/functions, they must also balance these needs with the requirements of business users and their specialized tasks. Productivity, manageability and security are key attributes when choosing devices. Providing an optimized solution can increase field worker productivity by 5%-15% while decreasing support cost and increasing revenue.



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The specific needs of enterprise-class field workers require that device form factor selection be optimized for business-oriented work, including:

- *Capabilities that allow all day work with continuous duty use* – it is imperative that field workers be able to keep working throughout the day, and not worry about batteries that die after only a couple of hours of dedicated use. Further, workers generally are not kind to their devices and the need for durability and survivability are critical to remaining productive. Finally, how a device is carried/handled by the user should be a consideration, including how users interact with the data input/keyboard. Consumer devices generally are not meant to be in continuous use and so may not be optimized for environmental and other requirements (e.g., gloved hands).
- *Form factors optimized for field force tasks* – most field workers have significant data capture and data entry needs, not shared by many consumers. Further, they often require viewing the screen of the device in many difficult lighting conditions. Finally, many workers must employ their devices in less than optimum environmental conditions of cold, wind, rain, etc. Consumer devices are generally not optimized for these conditions, and while specialized cases and add-ons may be available, the resulting cost and complexity may be prohibitive.
- *Meeting the primary needs of data and app access, not just communications* – most field workers now require the ability to interface with existing corporate systems in addition to communicating. Specialized extensions to these apps must be available for the devices deployed, and they must be highly functional and robust. Consumer-class devices often provide email capability but may not provide a sufficient platform to meet broader application needs.
- *Being able to add peripherals* – many field workers must employ add-ons to accomplish their tasks (e.g., magnetic reader, bar code scanner, printer). Few consumer devices provide the ability to add business-class peripherals in a secure and robust framework.

Understanding end user tasks and interactions with the device are imperative if users are to remain productive and able to access and operate with a variety of corporate systems. Companies should optimize user needs by selecting a device after a complete work assessment, rather than trying to force fit the user needs onto a pre-selected device.

What do Companies Need?

Just as with end user needs, companies should choose the device to reflect the organizational needs of deploying enterprise-class solutions to field workers, including:

- *Devices that are durable and maximize value* – devices selected for field workers must be durable and not cause added expense through excessive failures and support burdens. But devices should also be selected that do not become obsolete after a few months' availability. Most organizations focus on long term deployments of 3+ years, unlike consumer markets which move rapidly to the next best thing and are often not



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concerned with backwards compatibility. Devices should be acquired from vendors with a disclosed roadmap to the next generation and a longer term commitment to a platform to prevent handhelds and apps from becoming obsolete with newer generations of devices.

- *Devices that can be easily deployed and managed* – consumer oriented devices do not generally include capabilities for easily provisioning, managing and deploying fleets of devices to a large number of users. Yet that is precisely what many organizations need to do when extending apps to mobile workers. Implementing critical remote device manageability features (e.g., automated configuration, asset monitoring, remote control, provisioning, user profiles) has a substantial positive effect on TCO and end user satisfaction and productivity. Companies must choose devices that ease the burden of deployment, app provisioning and manageability, or risk having an unacceptably high cost of support. This is best done by selecting handhelds that are supported by high quality remote management solutions.
- *Corporate sponsored devices without compromise to esthetics and functionality* – while many enterprise-class devices were considered “dinosaurs” in the past when compared to consumer class devices for their lack of modern features and functions, this is generally no longer the case. Many field-worker-class devices now incorporate consumer-class features (e.g., browser, IM, email, media player), although many companies choose to disable some of these functions. The ability to set user profiles for allowed/disabled functionality should be a requirement when choosing a device.
- *Data-centric devices, not data as an afterthought* – requiring safe data transport and handling of corporate data (e.g., file and data encryption) and protected access to company assets and networks (e.g., VPN) are unique enterprise requirements often not supported by consumer-class devices.
- *Support and repair* – Most corporate users require a level of support and repair service that is not available with traditional consumer-class devices. Further, most consumer-class devices do not carry the level and duration of warranty most industrial use devices do and that companies expect. Few smart devices in corporate settings can be considered “throw away” if they break. Further, companies must be able to get support on a number of device issues (e.g., spare parts, internal workings, app support and compatibility) in an accelerated timeframe if device Total Cost of Ownership (TCO) is not to spiral out of control.

Devices should be selected that strike a balance between the end user community and its desire to obtain the latest and greatest features, and the enterprise’s need to deploy manageable, secure, easily deployable and robust devices.

Maximizing ROI by Minimizing TCO

To maximize end user productivity, enable an optimized ROI, and minimize TCO, organizations should focus on the following criteria:



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- *Lifecycle TCO vs. acquisition costs* – Many companies emphasize upfront acquisition costs when evaluating devices without looking at the overall TCO. This is often a false economy, as higher upfront costs may actually reduce TCO over the lifecycle of the device and decrease the total ROI.
- *Minimizing support and maximizing manageability* – these are two of the largest components of TCO, and should be included in any evaluation and selection criteria. Most companies underestimate the support costs associated with field deployments, and many totally ignore it in their initial project plans. Failure to include analysis of these costs will inevitably lead to poor performance, limited end user productivity, and out of control support costs.
- *Selecting for durability and repairability* – even assuming that organizations can obtain lower cost consumer-class devices and save upfront costs, the need to repair and replace a large number of devices will likely overwhelm the support organization, cause tremendous increase in call volumes to the help desk, and significantly stress the technical staff's ability to cope with the solution. Further, “throw away” devices may actually end up being more expensive in TCO than devices that can be repaired.

In analyzing the optimum solution, organizations should look beyond acquisition cost of a device and concentrate on discovering the true lifecycle costs of the entire solution. Only then can the organization maximize its ROI.

TCO Comparison of Consumer-grade vs. Durable Smart Devices

In a study¹ comparing the TCO of durable handheld devices with those of commercial off-the-shelf devices deployed to field workers, we found that:

- A durable enterprise-class handheld device has a 3 year TCO of \$1294, compared to a 3 year TCO for a consumer-class device of \$1819.
- The enterprise-class device represents a 3 year lifecycle savings of \$525
- This savings will often cover the premium price of the durable device
- In a 500 user organization, the total cost savings is more than \$262K over 3 years.

Further, if enterprise-class devices provide a 2% productivity improvement over their consumer-class rivals, companies can generate an additional \$3,000 per user per year, or \$9,000 over the expected 3 year life of the device². This revenue enhancement potential more than makes up for the premium costs associated with business-class handheld devices. It may also enable companies to scale back on personnel and/or support costs and do more with less, which is highly valued in the current business climate. Our research also indicates that support and technical staff burdens can increase by as much as 3%-12% when consumer-class devices and their associated costs are evaluated compared to business-class handhelds deployed in field worker situations.

Overall TCO is usually higher for consumer-class devices. They can cause excessive user down time associated with device failures and a subsequent substantial reduction in



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productivity through business interruptions and user frustration. And with a projected life cycle of 3 years for an enterprise-class handheld vs. 1 year for a consumer-class device, the need to purchase and replace the devices is substantially reduced, saving not only device cost, but support costs as well.

Figure 1: Three Year Cost Comparison of Consumer-grade vs. Durable Smart Devices

<i>3 Year TCO of Consumer-grade Device</i>	<i>\$1818.80</i>
<i>3 Year TCO of Durable Device</i>	<i>\$1294.07</i>
3 Year TCO Difference	\$ 524.73
Overall Cost Benefit for a 500-user Enterprise	\$262,367

Conclusions

Selecting and deploying enterprise-class durable handheld devices represents a significant savings over deployment of consumer-class devices for mission critical field workers. They should be the product of choice in most situations where end user productivity is important. Companies should evaluate the overall TCO and ROI before deploying any handheld devices that empower a field worker solution. Choosing the proper field force smart device requires a detailed analysis as making the wrong choice will have major negative implications for the organization for an extended period of time. Maximizing field worker productivity is imperative and choosing wisely is critical. Organizations must focus their evaluation criteria not primarily on acquisition costs, but on maximizing ROI and minimizing TCO. Selection should not be driven solely by end user preferences and market pressures, although user preferences should be considered. Keeping overall lifecycle costs low is imperative and selecting an optimized smart device form factor that will provide durability without trade-offs must be the highest priority.

Bottom Line: Companies should focus on total costs, not purchase costs and consumer market forces, when evaluating potential handheld solutions. This includes selecting the most appropriate device for the task based on sound analysis, and not based on consumer trends and/or end user pressure. Failure to do so will result in substantially increased costs, lower end user productivity and dissatisfaction with the final field force solution deployed.

References:

- 1- *A 3 Year Cost Comparison of Consumer-grade vs. Durable Smart Devices*, © Copyright 2010 J.Gold Associates. Available by request from www.jgoldassociates.com
- 2- *Based on an employee fully burdened rate of \$150K per year, including salary, benefits and overhead*



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