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Top 3 Questions for Mobile Computer Purchases

What To Consider Before Choosing Devices For Your Field Workforce

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Approximately 40 percent of the average workforce today is mobile[1], and this number is rising. Researchers estimate that by 2009, 878 million workers[2]—or roughly one quarter of the entire global workforce—will be mobile. In the world's competitive markets, mobility has proven itself an essential component of business strategy, and early implementers are already enjoying measurable benefits in productivity, cost savings and overall growth.

Service organizations using mobile field service solutions are reporting meeting 22 percent more sales targets, resolving problems 21 percent faster and increasing service revenues by 18 percent[3]. The return on investment (ROI) associated with mobile device deployments has been considerable, both in time and money saved as well as the impacts on customer relationships. Studies show that the average sales or field force worker can save approximately 60 minutes each day, of what had essentially been lost time, by using a wireless mobile device to collect and channel business-critical information to a centralized database or billing system. These hourly savings equate to approximately $11,000 per mobile user per year—which for companies with mobile workers numbering in the thousands represents a significant savings[4].

Every industry stands to benefit from mobility, and for most enterprise decision-makers, the need for it is clear. The greater difficulty, now, is in choosing the right devices. Surely the number of options alone—from smartphones to PDAs, Tablet PCs and laptops—is overwhelming. And added to that, the person responsible for purchasing decisions often faces technological, cultural and administrative challenges as well.

These can include:
- ensuring that new devices are compatible with existing industry standards and business applications, and that they can work with leading enterprise information architecture (EIA) platforms;
- overseeing the cost-effectiveness and manageability of devices in the field, particularly if they're used in environments where they may be frequently dropped or exposed to rain, dust, temperature extremes or vibration;
- ensuring the ease of use and initial training factors, which can ultimately impact ROI; and
- considering the compatibility of new devices with existing and evolving wireless communications networks, ranging from 802.11 to Bluetooth® and RFID technologies.

To choose the right devices, decision-makers must maneuver past these questions as well as the challenges specific to their organizations. While there are no quick answers, there are ways to more effectively approach the challenge. We suggest considering these three critical business questions:

- What are the needs of your workforce?
- What are the goals of your enterprise?
- Is a rugged device right for the job?

The best way to arrive at the right answers is to start with the right questions. So below, we've explored these three questions to help you get started. Whether your business pertains to the supply chain, the public sector, field service, merchandising, transportation and logistics, or direct store delivery, we're confident that serious consideration of these points will lead to the right mobile technology purchasing decisions—and from there to successful deployments.

1. What Are the Needs of Your Workforce?
Consider the ways your mobile workers go about a typical day from beginning to end—the interactions they have with customers or coworkers, the decisions they make as they go, the environments they're working in. Are there opportunities for them to be more efficient or better prepared by sending and receiving real-time information to colleagues or company databases?

As the enablers of these activities, voice and data services top nearly every list of requirements, and certainly there is no shortage of devices for meeting these popular demands. However, if your workers are spread across the country—or even a single county with uneven cellular coverage— you could begin narrowing your options by choosing a device that includes GSM/EDGE technology as well as CDMA/EV-DO. The alternative to this could be purchasing multiple devices, each catering to the cellular coverage area where it's most often used; keep in mind, though, that even two sets of devices instantly doubles the burden of support.

Could your team also benefit from clear information about the location of cargo, or instant driving directions? How about the ability to electronically collect and forward a signature, print a receipt, scan a package, check inventory or place an order in real time? If so, then consider a device that includes GPS; signature capture; Bluetooth or infrared technology for wirelessly connecting to a mobile printer; and a built-in RFID scanner. Plus, they'll need the ability to wireless communicate (via cellular networks or with voice over IP over WLANs—which is particularly ideal for contained areas such as warehouses, retail environments or shipping areas); and also the capability to connect to backend databases.

Advances in wireless local area networks (or WLANs, such as 802.11 and metro-scale WiFi®), wide area networks (such as cellular and the long-awaited WiMAX) and highly localized wireless networks (Bluetooth, 802.15.4 and even ultra-wide band technologies) are revolutionizing the way workers collect, aggregate and share information from the field. For example, mobile and wireless systems are enabling mobile workers to additionally:
- receive and update customer leads and work order information, and then use the mobile system to prioritize leads;
- check the status of pending orders and provide timely reports to customers at the point of contact;
- collect electronic signatures from customers, ultimately speeding billing and providing instant feedback on order status;
- check inventory for parts and products, and then order necessary items in real time at the customer or work site;

1 *Securing the Anywhere Enterprise,* Yankee Group, December 2006.
2 *Worldwide Mobile Worker Population 2005-2009 Forecast and Analysis*, IDC, October 2005.
3 *Mobile Field Service Update: 2007 and Beyond*, Aberdeen Group, January 2007.
4 *2005 Mobile User Survey*, Frost & Sullivan.

- collect information at the point of productivity, without delays or the need to deal with paper forms;
- request approvals on work orders, or check customer credit authorizations;
- track deliveries worldwide via communications networks and localized RFID and Bluetooth technologies; and
- file customer updates and perform administrative tasks such as filing expense reports, reporting customer call updates and performing other routines that usually take place at the end of the day but with a wireless device can be done on-the-fly.

Make a list of the tasks your workers perform—or better still, spend a day with them and witness them first hand—and then break down those tasks to their simplest, most logistical requirements.

Is one-handed operation more practical than two-handed? How important is screen size? Is a touch-sensitive screen a necessity? A worker handling frozen foods in a cold-room warehouse, for example, would fare far better with a touchscreen and a stylus than with a phone-style keypad, for the simple reason that he wears bulky gloves all day—a fact that an off-site decisionmaker might mistakenly overlook.

An excellent rule of thumb is that the better you understand your workers' challenges and environments, the more likely you are to choose the right device for their needs.

2. What Are the Goals of Your Enterprise?

The long- and short-term goals of most enterprises include improving customer service, reducing costs, increasing profits, staying competitive and maximizing efficiency—all of which is attainable with the right mobile tools. A study by eyefortransport[5], a research organization group focused on the logistics and transportation industry, found that fleet managers' top two reasons for deploying wireless and mobile technology were to improve internal efficiencies (such as reducing errors and improving fuel route management) and to improve customer service. Each of these goals—which together could be considered the return on investment, or ROI, of a mobile deployment—can only be realized, however, when those tools are fully functional and in workers' hands.

The first step to ensuring this is choosing a device that's easy to use and requires minimal training—it should be quickly apparent to your employees that they can work more easily, quickly and efficiently with the new device than without it.

In the same vein, it's important to choose a device that's built for the rigors of the job. Even a very sturdy device will eventually need support, and so it's crucial to consider the support structure the device manufacturer has in place. How quickly can it respond to a service request? Will it need several days to order parts? For each day that a worker is without his or her device, ROI is compromised and customers are inconvenienced.

And lastly, to this point, it's important to choose a vendor partner that's reliable, reputable and can be trusted to remain in business and producing parts, to ensure that your in-house IT staff can effectively support field workers for the long term. Devices with the built-in capability to be

remotely supported by IT staff—to receive over-the-air security patches, software updates or to be accessed by a technician for immediate repair—will further increase uptime.

It's also important to your ROI to choose a device with technological longevity. In the case of large deployments, it's common to roll out devices in several stages, outfitting and training one portion of the workforce at a time. Be sure to choose a device that will be as relevant when it reaches the final group as it was for the initial group. The best choice is a device that's flexible (offering several options for communication and connectivity), forward-looking in the technology it contains and adaptable to easy upgrades.

The total cost of ownership, for an enterprise, can also be lowered through the use of converged devices—devices that combine multiple functionalities. This pays dividends not simply by reducing the number of devices that must be purchased, supported and serviced over time, but in many cases also by further increasing efficiencies. A device that combines emailing capabilities with phone features is convenient, but the feature combination itself does not deliver any additional benefits. By contrast, a device that enables a worker to scan a package and then easily forward that information to colleagues, delivers an entirely new capability that two devices would not provide separately.

If, as suggested in the section above, you've considered your workers' needs and the functionalities they'd benefit from, consider a single device that brings together all of these. It's possible, for example, for one converged device to offer:

- high-speed connectivity options for integrating with enterprise applications and/or accessing backend resources such as contact databases and inventory information;
- a flash-equipped camera—in the supply chain, for example, delivery drivers often rely on digital photos for proof of service or to document the condition of a package on arrival;
- a global positioning system (GPS) for turn-by-turn directions and route optimization, and even more importantly, asset tracking—in the eyefortransport study mentioned above, 52 percent of participants reported that their highest ROI came from their track-and-trace solutions;
- an area imager—this scanning feature offers clear benefits in retail, delivery and warehousing; it also makes it possible to capture (and forward) signatures, whether in retail, delivery, utilities or government.

5 *The Use of Wireless & Mobile Technology in Fleet Operations, Comparative Analysis 2006/2007*, eyefortransport, August 2006.

3. Is a Rugged Device Right for the Job?
It used to be that a handful of specific markets (military, construction, etc.) relied on rugged devices, which were as well known for the audacious abuse they could withstand (one early commercial showed an elephant balancing on a device) as for their cinder block–like appearances. Today, however, the line between consumer and rugged devices has thoroughly blurred. Manufacturers are combining sophisticated office features (push email, Web, phone, wireless connectivity, etc.) with next-generation technologies (such as multiple radios and cellular 3G and RFID technologies) and putting them into packaging that's as resilient as ever but also as slim and good looking as a device that can be destroyed by a glass of spring water.

Businesses that once wouldn't have considered themselves a fit for rugged are discovering that:

- Rugged devices reduce the total cost of ownership. Research from Venture Development Corp. (VDC) shows that in industries such as field service, transportation and public safety, the annual TCO of a rugged device can be as much as 35 percent lower than that of non-rugged devices.
- Rugged devices increase ROI by reducing revenue lost to downtime and repairs. VDC[6] cites the average monthly failure rate for rugged mobile computers as approximately 1.5 percent, while the failure rate for non-rugged hardware is nearly double, at 3 percent. It also estimates that each failure results in an average loss of 71 minutes, which for larger deployments can translate to losses of hundreds of thousands of dollars each year.
- The support associated with rugged devices is often superior to that of commercial devices, as well as longer-term.
- Rugged devices often have very high-quality parts and battery lives that exceed those of commercial devices.
- The lifetime of commercial devices ranges from 12 to 18 months, while the lifespan of rugged devices is closer to three to six years.

For these reasons and more, analysts are confirming the value of rugged devices as true enterprise tools. Francis Rabuck, president of enterprise consultancy Rabuck and Associates, predicts that the future will lend itself to converged, rugged mobile devices. The combination of GPS, RFID technology and powerful cellular and WiFi networks is poised to drive location-based services beyond the mostly consumer applications that have grabbed headlines to date, Rabuck asserts. He further believes that tracking people, assets and goods will be increasingly important in coming years, due to government mandates and market drivers.

Several forces are driving the changing landscape that will lead more IT directors to consider rugged devices. Field service workers in particular will need their mobile devices to be reliable, always on, connecting them to their enterprise data and peers, built to handle changing environments and capable of handling new technology upgrades.

Mobility has increased what were already fiercely competitive markets, and today more than ever before decision-makers charged with purchasing initiatives are faced with the seeming contradiction of witnessing the rapid pace of technological advancements while needing to acquire long-term solutions. Rugged, mobile devices—in their adaptability, forward-looking capabilities and quick, proven returns—represent a way for businesses to not only keep pace but to lead the competition.

Real-World Benefits of Convergence
An example of how these capabilities can work together to best effect is the City of San Jose, Calif, which deployed mobile devices to its police officers with the goal of enabling them to complete traffic citations faster and more efficiently.

The city's considerable requirements included an integrated magnetic strip reader, so that officers could swipe a driver license and instantly capture the information (saving time and reducing errors); a touchscreen with signature capture so that drivers could sign directly on the device; secure, high-speed connectivity options, so that officers could instantly upload information to the city court system's database (speeding processing times and again reducing errors); Bluetooth technology, to let officers instantly connect to mobile printers and print tickets in real time; and voice and data capabilities, so that officers could connect to and transfer data from anywhere, enabling them to be more flexible about where they worked and so more productive. And lastly, the devices needed to be able to survive summers in a hot car, the occasional splash from a coffee cup and accidental drops to concrete.

City officials chose the CN3 from Intermec because it met each of these demands, and today the city is collecting 100 percent of its traffic citation revenue. Added to that clear ROI is the benefit of improved worker safety; by expediting procedures, the amount of time each officer stands on a highway shoulder with gusts of traffic at his back has been reduced. Savings are also realized by minimal downtime for updates and repairs—or looked at another way, an increase in the time the device is active in an officer's hands, enforcing safety and increasing city revenue.

About Intermec
If the benefits of a rugged mobile computer fit the needs of your workforce, consider the Intermec CN3 - the smallest, most advanced rugged mobile computer in the world. The CN3 features integrated GPS and powerful voice and data connectivity including Cisco® Compatible WiFi, Bluetooth, as well as a choice of GSM/EDGE or CDMA/EVDO, so your workers can be well connected where ever they go. Choice of high quality color camera (with flash) or area imager enables users to scan and decode any kind of barcode, or capture still or video images, and then store them for later use or email them anywhere in the world.

Intermec, Inc. (NYSE:IN) develops, manufactures and integrates technologies that identify, track and manage supply chain assets. Core technologies include RFID, mobile computing and data collection systems, bar code printers and label media. The company's products and services are used by customers in many industries worldwide to improve the productivity, quality and responsiveness of business operations.

For more information, please visit www.intermec.com/cn3 or call 800-347-2636.

6 *Mobile and Wireless Practice–Project Status Report*, Venture Development Corporation, February 2007.

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