

RUGGED HANDHELDS HAVE EVOLVED INTO THE PERFECT TOOL FOR FIELD SERVICE



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Mobility has become such an integral part of field service operations across vertical markets that the value of technology is widely understood — it will make field service operations more efficient, productive, accurate, and profitable.

Where field service organizations (FSOs) can get bogged down is in the details of a mobile technology deployment. When it comes to selecting mobile hardware, the choices companies have continue to expand at a rapid pace.

In recent years, there has been a lot of buzz about larger form factors, including both rugged and consumer-grade tablet computers. Increasingly, though, there are signs that handheld computers are being reevaluated in light of new advancements in applications, cloud computing, user interfaces, and wireless communication. With the emergence of rugged smartphone-like handheld computers, a single device can now provide both voice and data services while increasing productivity and lowering the total cost of ownership (TCO).

INCREASING INTEREST IN THE HANDHELD FORM FACTOR

In [Field Technologies' Field Mobility 2017 Survey](#), more than half of the respondents said they were currently using handhelds or smartphones in their mobile applications, up from 45 percent the previous year. Data from [a recent Panasonic survey on the future of field mobility](#) also indicates a renewed interest in handheld computers. According to the survey, more than 35 percent of respondents plan to deploy handhelds during their next technology refresh or upgrade.

Before tablet devices and smartphones became so prevalent, rugged handheld computers were standard equipment for any field service mobility operation initiative. However, many older devices tended to be bulky, had limited functionality, and lacked an intuitive user interface.

The renewed interest in handhelds is in part due to improved technology — today's rugged handhelds are much more portable and mirror the user interface and application flexibility of their consumer counterparts.



IN [FIELD TECHNOLOGIES' FIELD MOBILITY 2017 SURVEY](#), MORE THAN HALF OF THE RESPONDENTS SAID THEY WERE CURRENTLY USING HANDHELDS OR SMARTPHONES IN THEIR MOBILE APPLICATIONS.



32%

OF RESPONDENTS TO THE PANASONIC SURVEY SAID THEY WERE USING A COMBINATION OF MOBILE DEVICES.

Having the option of deploying advanced rugged handheld devices — as stand-alone devices or in addition to tablets, phones, and other technology — is critical given the challenges FSOs face in maximizing productivity while also providing high levels of customer service. Field service technicians can't just use any mobile device and expect to gain benefits.

FSOs need reliable options that fit the needs of their specific applications. In many cases that may require a mix of devices; in fact, 32 percent of respondents to the [Panasonic survey](#) said they were using a combination of mobile devices.

Armed with these devices, field technicians can not only improve their own work processes, but can also directly benefit the customer as well, through increasing first-time fix rates, providing faster and more accurate responses to customer inquiries, reducing the service window, and providing more accurate billing.

HOW HANDHELDS FIT THE UNIQUE FIELD SERVICE CHALLENGE

Field service has become an important profit center for most companies, as well as a crucial customer touch point. In many industries, the field service technician is the only company representative a customer ever sees in person.

That's why mobility initiatives have steadily shifted from being primarily productivity-focused to being more customer-focused. Mobility provides point-of-activity access to customer, product, and repair data so technicians always arrive on-site with the right tools, parts, and know-how needed to complete the repair correctly the first time. Technicians can complete their work quickly, and managers have greater visibility into the status of the schedule so they can rapidly respond to any service orders that may be in danger of violating the terms of a service level agreement.

The mobile hardware necessary to provide this functionality has to be designed to meet the unique requirements of the field service environment. The devices must be durable. More than 20 percent of respondents to an IDC survey indicated that device repairs caused 4 to 8 hours of downtime and that the average cost to repair a handheld device is more than \$3,000. Device failures are unacceptable.

That means handhelds need to be weather resistant and be able to survive multiple drops to concrete and withstand the shock and vibration experienced inside a service truck. Special mounts and holsters are required so the devices can be secured in a vehicle or on a technician's tool belt, and the hardware has to offer a long battery life for workers who may not be able to plug the device in for 8 to 10 hours.

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In addition, these devices have to provide secure wireless connectivity for a far-flung workforce (via GPS, Wi-Fi, 3G/4G, and other networks) so technicians, managers, and customers can maintain visibility into the progress of every work order. Finally, the devices should be easy to use for both experienced technicians who may have started their careers working with paper forms and younger hires who are used to flexible, responsive mobile technology.

RUGGED HANDHELDS PROVIDE A FIELD SERVICE ADVANTAGE

New rugged handhelds have been designed to incorporate the best features of consumer smartphones and handhelds but are packaged in a durable form factor that can withstand the rigors of enterprise field service use.

Handhelds offer two unique advantages for field service applications: portability and multi-function capabilities.

Handhelds are smaller, lighter, and extremely portable devices when it comes to service applications that require technicians have access to the device while they are doing their jobs. They are also designed for one-handed operation (with and without gloves), which is a valuable capability for technicians who have to operate the computer while working in cramped, wet, or hazardous conditions.

Utility applications are a good example. Utility technicians frequently have to access their mobile devices while reading meters, while suspended from utility poles, or while working in cramped crawl spaces. Repair technicians in plumbing, electrical, and construction industries also benefit from a handheld's light weight and ease of use. There is an ergonomic benefit as well, as these lighter devices cause less strain on the hand and wrist during use.

Handhelds are also the device of choice for applications that rely on frequent bar code label or RFID tag scanning (such as inventory or delivery) and in scenarios with limited manual data entry. They have smaller screens but are easily carried. In addition to utility meter reading, police departments sometimes use them (in conjunction with a mobile printer) for ticketing applications.

Handheld devices can also provide an all-in-one approach to data and voice applications that makes it easier for FSOs to consolidate to a single device. For example, the Panasonic Toughbook FZ-N1 provides both voice and data over 4G LTE networks, so technicians can use the device as a mobile phone while also having access to their service applications.

In addition, handhelds provide the following capabilities:

- Capture customer signatures on-site
- Manage and monitor inventory using the built-in bar code scanner
- Access and update work orders
- Access product information and repair instructions
- Quickly reference service history and warranty information
- Use the built-in camera to document their work
- Complete information and data collection tasks

HOW TO SELECT YOUR RUGGED HANDHELD COMPUTER

Once you've identified handheld computers as an optimal fit for your field service application, you still have to choose from hundreds of different possibilities. Each deployment will have its own unique requirements, but for most field service companies there are common features and functions that will help narrow the field.

Durability: First and foremost, field service applications require a rugged device. While consumer-style phones are less expensive, their high failure rates (and frequent OS upgrades) will ultimately lead to a higher total cost of ownership. FSOs are especially hard on mobile devices, so rugged is usually the best choice.

The degree of ruggedization required will depend on the environment. For applications where devices will be frequently dropped, handhelds are slightly more durable than their tablet and notebook counterparts — according to the IDC survey, handhelds had a slightly lower failure rate than other mobile devices.

Truly rugged devices meet ingress protection (IP) and/or MIL-STD-810G specifications to validate their durability relative to extreme temperatures, drops, water resistance, dust intake, and high altitudes.

The MIL-STD testing is performed by each individual manufacturer, and there are a wide variety of tests that can be performed. Before buying a device, ensure the asserted MIL-STD claims have been validated by a third party using a reputable testing facility, and understand which tests were conducted. Ask to see the test results.

Handheld devices are more likely to sport IP ratings. These two-digit ratings provide information about both dust and water protection. The Toughpad FZ line of devices, for example, are IP65 and IP67 rated and also have a MIL-STD-810G rating for drops, along with 10 other durability tests.

Ask the device manufacturer for the typical failure rate of the devices in comparable applications as well. This can help you set a budget for spares or replacement devices.

Displays: Handheld computers used to be hampered by small greenscreen displays. Newer devices not only offer larger full-color displays, they also have touch screens. Make sure the display can match the requirements of your software's user interface. For field service applications, a touch screen should be designed to accommodate users wearing gloves. Devices in the Toughpad FZ line include a glove touch-enabled screen capable of working in rainy conditions.

Security: Your field service data is valuable and should be protected, especially if you are accepting customer payments in the field. In addition to the encryption or authentication capabilities integrated into your applications and network, you should protect the physical device. The handheld should include features like fingerprint or smart card access, hard drive encryption, BIOS-level passwords, and remote-wipe or bricking support should it get lost or stolen.

Battery Life: Handhelds tend to be more energy efficient than larger mobile devices, so the one you select should provide at least 8 hours of continuous use so employees can have

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access to their mobile applications for a full shift. Look for a handheld with advanced power management capabilities and hot-swappable batteries. This is another area where consumer phones are at a disadvantage, as they have a shorter battery life and the batteries themselves can't be removed.

Operating System: For users with existing mobile deployments, transitioning to a new handheld platform may require an application upgrade, especially if you are moving to a new operating system. Past versions of Microsoft's mobile Windows OS are being phased out in favor of Windows 10, while other users are switching to Android-based devices. Look for a device vendor that supports both major enterprise mobile operating platforms and that can provide forward compatibility with your application set.

Accessories and Mounting Options: Depending on your application needs, you may require specific holsters, vehicle mounts, cases, and other accessories or peripherals. Find a manufacturer that can meet your needs. For example, Panasonic and its partners provide heavy-duty docks, mounts, and peripherals (like mag-stripe readers and mobile printers) for its Toughbook line.

Warranty and Service: What type of warranty is available, and what type of support does the manufacturer provide? You will likely need 24/7 support if your mobile application is mission critical. If there are service plans available, find out how quickly a technician or replacement unit can be dispatched when a device fails. Even with the lowest rugged device failure rates in the industry, Panasonic backs its mobile devices with a three-year warranty with business-class support.

CONCLUSION

Rugged handheld mobile devices are an excellent fit for field service applications that require a high degree of portability, single-handed operation, light data entry, bar code scanning, and/or all-in-one voice capabilities. These devices combine the application and data access of a tablet, familiar interface of a smartphone, and the ruggedness to withstand harsh field service environments.

Devices like the Panasonic Toughbook FZ-F1 and Toughbook FZ-N1 — used on their own or in combination with rugged tablets or notebooks — can provide the right mix of visibility, connectivity, and durability to enable new levels of productivity and customer service.

ABOUT PANASONIC

Panasonic Toughbook® laptops and tablets are purpose built mobile devices engineered to withstand the harshest environments. With 4G LTE built in, workers have anytime access to critical data helping them work more efficiently. Not only is a Toughbook built to withstand the challenges of unforgiving environments, but it has the exclusive ProServices team standing behind it.

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