



Maximize the value of your field workforce with the Motorola MC55



The MC55 provides your field service teams with the real-time voice and data connection required to strip inefficiencies and errors out of your day-to-day business processes — all in a single lightweight easy-to-carry device truly built for life beyond the enterprise walls.


Today's field service operational issues

Many of today's field service teams are burdened with manual processes that reduce efficiency as well as customer service levels. Without real-time access to business systems, paper forms must be utilized out in the field, creating processes that are not only time consuming, but also error-prone. Information must be touched twice — captured manually in the field via pen and paper and then entered into the computer at the end of the day, either by the technician or administrative staff. Legibility issues related to handwriting and keying mistakes can lead to a high volume of errors that can impact the accuracy of customer information as well as the billing cycle times. In addition, the slow movement of information throughout the business makes it difficult to manage the workforce — managers cannot see up-to-the-minute work orders and work order status, and are unable to determine if the workforce is keeping pace with the workload — or if additional workers are required to ensure service level agreements (SLAs) are met. Without real-time vehicle location status, dispatch may inadvertently select driver routes that add mileage, further reducing driver productivity, as well as increasing fuel costs and vehicle wear and tear. And a lack of real-time access to information back in the office — such as updated work order information, service history and product manuals — can result in multiple trips to the customer site to complete a repair, adding cost and reducing the quality of your service.

Regardless of whether your field service workforce is repairing equipment in homes or businesses, reading meters or involved in the delivery of services, such as pest control and carpet cleaning, the negative effects of the disconnected field service workforce can be felt throughout business operations in the form of reduced employee productivity, reduced customer satisfaction, higher operational costs — and reduced profitability.

KEY BENEFITS

- Improves customer service with real-time access to the information required to best serve the customer, from warranty and SLA level to repair history, repair routines and product experts.
- Reduces costs:
 - Increased productivity helps reduce and contain staffing costs
 - Access to a wealth of information improves first time fix rates
 - Real-time inventory visibility helps reduce stocking levels and inventory costs
 - Better route planning reduces mileage, translating into lower fuel costs and less vehicle wear and tear
 - Reduced mobility costs — one device replaces a cell phone, bar code scanner, camera, walkie-talkie and mobile computer
 - Improves data accuracy through automated data capture, reducing the high cost of errors
- Increases revenues by ensuring accurate capture of all charges on site — from parts utilized to actual time spent on the job
- Improves cashflow with real-time on site processing of credit cards (available late 2009)



The solution: maximize the efficiency and effectiveness of field service operations with the Motorola MC55

Motorola's MC55 Enterprise Digital Assistant (EDA) packs all the features and functionality required to automate and error-proof field service operations into a small, lightweight pocketable device that is truly built for life in the field. Offering maximum functionality yet priced in the mid-range of the rugged EDA product category, the MC55 makes mobility a cost-effective reality for any size workforce — from tens to thousands of workers. Technicians out in the field enjoy real-time access to the same tools that are on the desk, back in the office — from business applications and email to the deskphone and its complete feature set. In addition, managers have the real-time visibility required to better manage the field workforce and improve utilization of your vehicle fleet.

Designed to meet the needs of the field service workforce, the MC55 provides:

- **The perfect blend of form and function.** The MC55 combines leading ergonomics, a full feature set and rugged design into one of the smallest and lightest devices on the market today, providing ease of use as well as the durability required to handle all-day, everyday use.
- **True inside-outside wireless voice and data.** No matter where your field workers are, the MC55 delivers continual mobile voice and data access, with a wireless WAN (WWAN) radio for cellular connectivity out in the field as well as a Wi-Fi wireless LAN (WLAN) radio for more cost-effective connectivity inside the office walls and in hotspots. Since the 2.5G GSM/GPRS/EDGE broadband cellular connection offers the world's broadest voice and data footprint, more of your workers are connected in more areas throughout the business day. The result is a robust data connection to the wealth of information and back-end business applications in the office, as well as a robust voice connection to customers, dispatch, product experts, co-workers and more.
- **The power to support virtually any business application.** The MC55 offers the latest mobility architecture, providing support for the most demanding applications — including video, voice and large database applications. The powerful XScale™ PXA 270 520 MHz processor combines with a powerful memory architecture that includes 128 MB SDRAM and 256 MB Flash (with a 512 MB

Flash configuration available on some models later in 2009), plus a MicroSD slot for up to 8 GB of expanded storage.

- **Best-in-class data capture technology.** When you choose Motorola, you get technology you can count on:
 - World-class bar code scanning. With either a 1D laser or a 2D imager from the company that invented the bar code scanner in hand, your employees enjoy features that deliver true point-and-shoot scanning simplicity — including patterns that enable easy and accurate aiming as well as omnidirectional scanning, which eliminates the need to align both bar code and scanner.
 - A high-resolution color camera with autofocus and flash. The MC55 is the only device in its class to offer a 2 megapixel color autofocus flash-enabled camera, enabling your workforce to capture a very diverse set of images — including close-up and scenic photos, video, signatures and documents as large as 8.5 in. x 11 in. with legible fine print.
 - World-class GPS functionality. The SiRFstarIII GSC3ef/LP GPS chipset combines with assisted GPS capability (aGPS), providing your workers with GPS connectivity in more areas — even where signals are typically weak, such as urban canyons and heavy foliage — increasing the availability and value of your location-based applications.
- **Outstanding voice quality and functionality.** The MC55 is designed from the ground up for voice as well as data — unlike many other integrated voice and data mobile computers that are designed primarily for data, with voice as an afterthought. The result is a difference your workers can hear. Exceptional audio quality provides a voice experience equal to that of the deskphone. In addition, you can count on all the latest voice features. Motorola's TEAM Express Solution allows enterprises to quickly and easily enable secure push-to-talk (PTT) walkie-talkie style calls inside the four walls, providing cost-effective instant voice access to groups as well as individuals. IP telephony support enables integration with your existing PBX, allowing businesses to fully leverage existing telephony investments — and extend the deskphone and its feature set right to the MC55. Additionally, workers enjoy the same flexible voice modes found on a typical cell phone — handset, speakerphone and the convenience of wireless Bluetooth® headsets.

- Motorola's signature rugged design.** The MC55 offers an industrial rugged design that delivers a lifespan two to three times that of a consumer grade PDA. The patented Monocoque 'unibody' housing replaces the traditional two-piece clamshell design, providing a huge gain in torsional rigidity and greatly improving structural stability. Improved shock absorption better protects sensitive internal electronics in the event of a drop. The patented new I/O connector — the critical point of interface with chargers, vehicle cradles and other accessories — provides several advantages. The new connectors reduce 'chatter' — the loss of connectivity often experienced when heavy vibrations are present, such as those in a vehicle. The 'pogos' in the I/O connector are now spring-loaded, acting as shock absorbers to reduce the risk of damage in the event the MC55 is dropped while coupled to an accessory. Last but not least, it meets or exceeds military design specifications (MIL-STD 810F), offers IP54 sealing and passes two industry leading impact tests — drop and tumble — ensuring dependable operation, despite exposure to the elements or the inevitable everyday drops and spills.

The MC55 in action: the impact of real-time voice and data in the field

The MC55 provides all the tools you need to re-engineer your field service business processes to eliminate inefficiencies as well as errors. But do you really need all those features? And what can this feature set do for your business?

The following is a look at how your field service workforce can benefit from each of the many tools in the Motorola MC55.

Real-time data

A real-time data connection empowers your field workforce with a wide variety of new applications:

Electronic work orders

The ability to extend application access beyond your four walls right to the point of work out in the field allows businesses to replace paper forms with electronic work orders, greatly reducing administrative requirements and data errors. Where every field on a paper form must be completed by hand, fields on the electronic form can be automatically populated with appropriate information, such as customer name, address, warranty information and a detailed description of the issue.

Work orders can be submitted the moment the job is completed, instead of at the end of the workday or even later in the week. Management now has an accurate view of how well the division is handling the workload and invoicing cycle times are substantially reduced — invoices can now be issued within hours of job completion.

On demand maintenance and repair routines

Routines for repair and standard maintenance can be accessed on the handheld computer. Drop down menus enable technicians to easily navigate to the right routine, for example, by selecting manufacturer and model number. All the steps in a given process can be presented in order, complete with check boxes, ensuring that every step is completed, increasing worker accountability. As a result, consistency and quality of service are improved — while training requirements are reduced.



With a mobile computer in hand, service technicians can access detailed checklists for maintenance and repair routines as well as electronic product manuals, parts pricing, service level agreements and more. First time fix rates are increased, the quality and consistency of service is improved, charges are more accurate and customers receive the service levels defined in their contract.



On-site mobile payment

With a snap-on credit card magnetic stripe reader (available late 2009) attached to the MC55 and a third party compact mobile printer, field workers have the tools required to provide a true end-to-end service call. Field service technicians can easily accept credit card payments — bank authorization and customer signature can be obtained in real time, and the customer can be presented with a printed and signed receipt. The need to process the paper work order and send a physical invoice is eliminated, dramatically reducing administrative costs, increasing the velocity of the invoicing process — and improving cash flow.

Real-time pricing and inventory information

With a real-time connection to your inventory application, technicians can simply scan parts as they are used to autofill pricing information and update inventory, which in turn:

- Protects against the loss of revenue associated with pricing errors and parts that were inadvertently not captured on the invoice
- Provides the real-time parts and tools inventory visibility required to reduce inventory stocking levels, reducing capital outlay as well as the required warehouse space

On-demand product manuals

Field service representatives frequently need to carry many manuals the size of large telephone directories in their trucks. With mobility, those manuals can be accessed on line or as a PDF file stored on the mobile computer. The searchable electronic documents enable technicians to locate needed information more rapidly. And valuable space is freed up in the truck to carry additional parts and tools.

Up-to-date service level agreements (SLAs) and warranty information

Mobility allows field workers to check service level agreement and warranty information with just a few keystrokes, protecting customer service levels and your profitability. Customers are not inadvertently charged for covered services, and alternatively, charges are captured for all services that are outside the scope of the SLA or warranty.

Cross-selling

The field workforce is typically a cost center, not a revenue center. But with a mobile computer in hand, you can automatically present a list of appropriate

items and services to cross sell — from a peripheral to an extended or upgraded service plan. As a result, the field workforce transforms into a combination sales and service team that is able to maximize 'face time' with your most valuable asset — your customers.

Bar code scanning

Bar code scanning enables the automatic and rapid capture of highly accurate information, not only improving productivity, but also providing technicians and other areas of the business with access to new information that can improve field service operations.

Real-time truck inventory visibility

With an MC55 in hand, field workers can scan all the tools and parts in the truck at the beginning of the shift. Now:

- Technicians can quickly spot needed tools and parts before leaving the depot, ensuring that everything is on board to complete service calls the first time out — eliminating the high cost of a return trip to the office for needed tools or parts.
- Truck inventory is available for other applications, such as dispatch, ensuring that the right worker with the right tools and parts is dispatched to address a new work order.

Rapid error-free data entry

The ability to press a single button to scan a bar code label can eliminate many manual steps, improving productivity. In addition, the opportunity for technicians to write down or key in the wrong information is eliminated. For example, a quick scan of a bar code label on an air conditioning unit can instantly return the entire service history — no need to hunt through the office at the beginning of the workday to locate a physical file with historical information. The ability to scan parts as they are utilized eliminates the need to locate and write down lengthy part numbers and hunt through pricing books to determine the cost of the part.

GPS

Do you know where your technicians are? And do your technicians know where they are going? With integrated GPS, the answer to both questions is 'yes'. Driver applications include:

Real-time navigation

Turn-by-turn directions ensure prompt arrival, even in the event of a traffic jam or new roadwork.

When technicians can scan parts and tools in the truck before leaving the depot, dispatch can easily locate the closest technician with the needed materials already on board to answer a new call for service, reducing mileage and increasing first time fix rates. Integrated GPS allows drivers to quickly locate a gas station, directions around a traffic jam or a store for needed parts, helping drivers remain productive throughout the workday — and arrive on time at customer sites.



Real-time resource location

Drivers can instantly locate needed resources — such as a gas station, a store to purchase needed supplies or a restaurant for lunch.

Dispatcher applications include:

Improved route efficiency

With integrated GPS, dispatch can view the real-time location of all technicians. By correlating GPS data with other available information, such as worker skill level and vehicle inventory, dispatch can instantly locate the closest truck with the technician that has the right product expertise and the right parts and tools on board to respond to an urgent call for service. The enterprise can:

- Respond promptly to service calls within SLA defined response times, protecting customer service and satisfaction levels
- Minimize mileage, fuel costs and vehicle wear and tear
- Protect technician productivity

Digital camera

The MC55's high-resolution auto-focus digital color camera enables enterprises to leverage the value of high-resolution image capture in field service operations, proving the old saying that a picture really is worth a thousand words:

Proof of asset condition

Field service teams for cable or telephone service providers that inspect assets in the field can snap a picture to document asset condition. Inspectors can instantly transmit the picture to dispatch, ensuring that the right person is immediately dispatched for an emergency repair.

Proof of work order completion

The integrated camera allows service technicians in the field to take a photograph, complete with a geostamp as well as the date and time, providing proof that the work was completed. This indisputable evidence is ideal for customers who are not available to sign for completed work, and helps supervisors better manage a workforce that is responsible for the daily maintenance and repair of company infrastructure (such as telephone or cable service providers).

Improved collaboration

When technicians need help with a repair, a technician can take a picture and transmit it in real time to another co-worker or product expert who can provide assistance, in seconds. Service quality is protected and the quality of on-the-job training is improved.

Improved risk management

In the event of a field worker involved in a traffic accident, the MC55's integrated camera allows field workers to document a scene, damage to vehicles, general environmental conditions and more. In addition, the detailed photographs can also contain the date, time and a geostamp for proof of location. The physical evidence can help reduce liability, risk, and even insurance premiums over time.

Voice

The MC55 allows enterprises to provide field service technicians with a single device for both mobile voice and mobile data, simplifying life in the field and reducing costs. Field technicians have only one device to learn how to use, one device to manage, and one set of batteries and accessories. Additionally, there are fewer devices for IT to purchase and manage. Voice capabilities include:

Push-to-talk (PTT) walkie-talkie style communications

'Single-button' PTT voice communications (via Motorola's TEAM Express Solution or other third party solutions) improve collaboration and availability:

- Dispatch and managers can reach one person, a specific group of workers or all field workers.
- Workers out in the field can reach their entire workgroup for backup or the answer to a technical question.

PBX integration: put a deskphone in the pocket of your technicians

The MC55 allows enterprises to fully leverage existing telephony investments. The ability to integrate with the existing PBX enables the extension of the deskphone and its productivity-enhancing feature set directly to the MC55 out in the field. Now, calls to the deskphone ring through to the MC55, providing a true one-number reach and giving enterprises complete control over that phone number — unlike a personal cell phone. All voicemail messages are in a single voicemail box. Workers no longer need to check two voicemail boxes — one at the office and one associated with a cell phone. Life in the field is simplified, and customers and co-workers can reach technicians faster and easier.

In addition, field technicians enjoy the familiarity of the phone interface, able to utilize the same keystrokes to initiate a conference call, place a caller on hold, transfer a call and more. The company phone can be directly accessed, complete with convenient 4-digit dialing for internal extensions. The ability to leverage PBX functionality, such as Call Detail Recording (CDR) enables the enterprise to automatically record the specifics of each call — required in certain industries, such as insurance — dramatically reducing paperwork for the technician. And other features, such as Least Cost Routing, help control telecommunications costs.

The benefits of the real-time field service workforce

With mobility in the hands of your field workforce, the enterprise reaps big business benefits:

Improved customer service

Technicians now have access to all the information required to best serve the customer, from warranty and SLA level to repair history, repair routines and instant access to product experts. In addition, technicians are only dispatched to service calls where they have the right product expertise as well as the tools and parts required to do the job. As a result, technicians have everything they need to complete the repair promptly and accurately, on the first visit — increasing customer satisfaction, loyalty and retention.

Reduced costs

The MC55 has what it takes to help businesses reduce capital and operational costs in numerous areas:

- **Reduce and contain staffing costs.** The increase in productivity allows your existing technicians to handle more service calls, without the need or the high cost associated with hiring additional staff. And the elimination of paper forms also eliminates the daily mountain of data entry, reducing administrative staff requirements.
- **Improved service metrics.** In addition to faster response times, the ability to ensure that technicians have access to all pertinent information as well as the right tools and parts improves first time fix rates.
- **Reduction in inventory-related costs.** Real-time inventory visibility helps reduce stocking levels, which in turn reduces capital outlay for inventory. Lower inventory also translates into a reduction in warehouse space requirements, freeing valuable square footage that can be re-appropriated to meet other business needs.
- **Reduction in hardware costs.** Since the MC55 packs the power of cell phone, bar code scanner, camera, walkie-talkie and mobile computer into a single device, there are fewer devices to purchase.
- **Reduction in management time.** One of the largest costs associated with mobility solutions is the ongoing day-to-day management. The MC55 is compatible with Motorola's Mobility Services

Platform, a powerful mobility management solution that provides complete, centralized and remote control over all your MC55 devices, regardless of where they are located. Now IT can press a single button to automatically stage thousands of devices out in the field for first time use. Another press of a button can send out a firmware or operating system update — and a new application. The ability to take control of the device and view many device metrics enables IT to identify and resolve most device-related issues over-the-air — no need for the technician to return to the office. The result is a substantial reduction in management time — as well as the overall cost of your mobility solution.

- **Reduced vehicle costs.** Better route planning reduces mileage, translating into lower fuel costs and less vehicle wear and tear. The ability to ensure regular maintenance is scheduled and performed on time helps prevent more expensive repairs. The result is better vehicle utilization, lower vehicle operating costs and a longer vehicle lifecycle, significantly reducing the overall total cost of ownership (TCO) for these costly investments.

Increased revenues and profitability

The MC55 helps improve revenue and profits in a number of different ways. First, the ability to enable technicians to cross-sell allows this typical cost center to generate revenue. In addition, lost revenue is recaptured, now that all parts and time on-the-job are easily and accurately captured. Parts are scanned as they are utilized on site. The ability to effectively 'punch in and punch out' at each job site provides a detailed and accurate record of the time spent on each specific job, ensuring all time is properly billed. Finally, whether your workers collect payment on site or submit the completed work orders instantly for invoicing, billing cycle times are reduced, improving cash flow.

Improved data accuracy — and a reduction in the high cost of errors

The ability to automate data capture with bar code scanning, auto-fill of fields, drop down menus and more helps protect against the high cost of errors that result in multiple trips to complete a repair, a billing mistake that delays payment, an error in the repair routine that results in continued equipment failure, a lost customer and more.

The MC55 — an exceptional mobile computer...for exceptional value

Today's field service organizations are facing rising costs for fuel, overtime, vehicle maintenance and more. Aberdeen Research reported that between 2006 and 2008, the average cost of a single dispatch rose from \$209 to \$263 — an increase of 26 percent.¹

Mobility can help enterprises address rising costs — and more. Regardless of whether your field workforce is small or large, the MC55 makes mobility a cost-effective reality. It provides all the features and functionality your workforce requires to achieve optimum efficiency and deliver superior customer service while reducing the cost of doing business. The standards-based device integrates easily into your existing technology environment — and enables the rapid development of feature-rich mobile applications.

The wealth of benefits provides a rapid return on investment (ROI), while the long lifecycle of this built-for-business mobile computer combines with Motorola's unique support plan to deliver an extraordinarily low TCO — Service from the Start with Comprehensive Coverage. This service plan sets the standard for post deployment support by covering normal wear and tear as well as internal and external components damaged through accidental breakage from the date of purchase, providing the peace-of-mind you need to ensure maximum uptime — and protect against unforeseen repair expenditures.

And finally, when you choose Motorola for your mobility solution, you enjoy the advantages of a true end-to-end solutions provider, a single source that can provide everything you need to go mobile — from a wide range of mobile devices to wireless networks and RFID solutions to pre- and post-support services to help you get and keep your mobility solution up and running at peak performance.

Turn your field workforce into a competitive advantage — with the Motorola MC55.

For more information

For more information on how the Motorola MC55 EDA can turn your field operations into a competitive advantage, please visit us on the web at www.motorola.com/MC55 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

About Motorola Enterprise Mobility Solutions

When you choose Motorola for your mobility solution, you get the peace of mind that comes with choosing an industry leader as your technology partner. Motorola offers the proven expertise and technology you need to achieve maximum value and a fast return on investment — as well as first hand experience in virtually every size business in nearly every major industry. Every day, businesses of all sizes all over the world count on Motorola enterprise mobility solutions to maximize employee effectiveness, improve customer service and increase supply chain efficiency.

Our broad technology portfolio and world-class partnerships enable us to offer true end-to-end solutions that offer the simplicity of a single accountable source — regardless of the number of vendors involved. Our comprehensive product offering includes: rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; business-class smartphones; rugged two-way radios for always on voice communications; private wide area and local area wireless network infrastructure to deliver wireless connectivity to workers inside and outside the four walls — and to network multiple business locations; comprehensive RFID infrastructure, including fixed, mobile and handheld RFID readers; a partner channel delivering best-in class applications; software products for central and remote management of every aspect of your mobility solution; and a complete range of pre-and post-deployment services to help get and keep your mobile automation system solution running at peak performance every day of the year.

1. Rising Service Costs Drive Mobile Device Adoption; Aberdeen Research; Sumair Dutta; October 29, 2008; <http://research.aberdeen.com/index.php/service-management/91-service-management/303-rising-service-costs-drive-mobile-device-adoption>



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