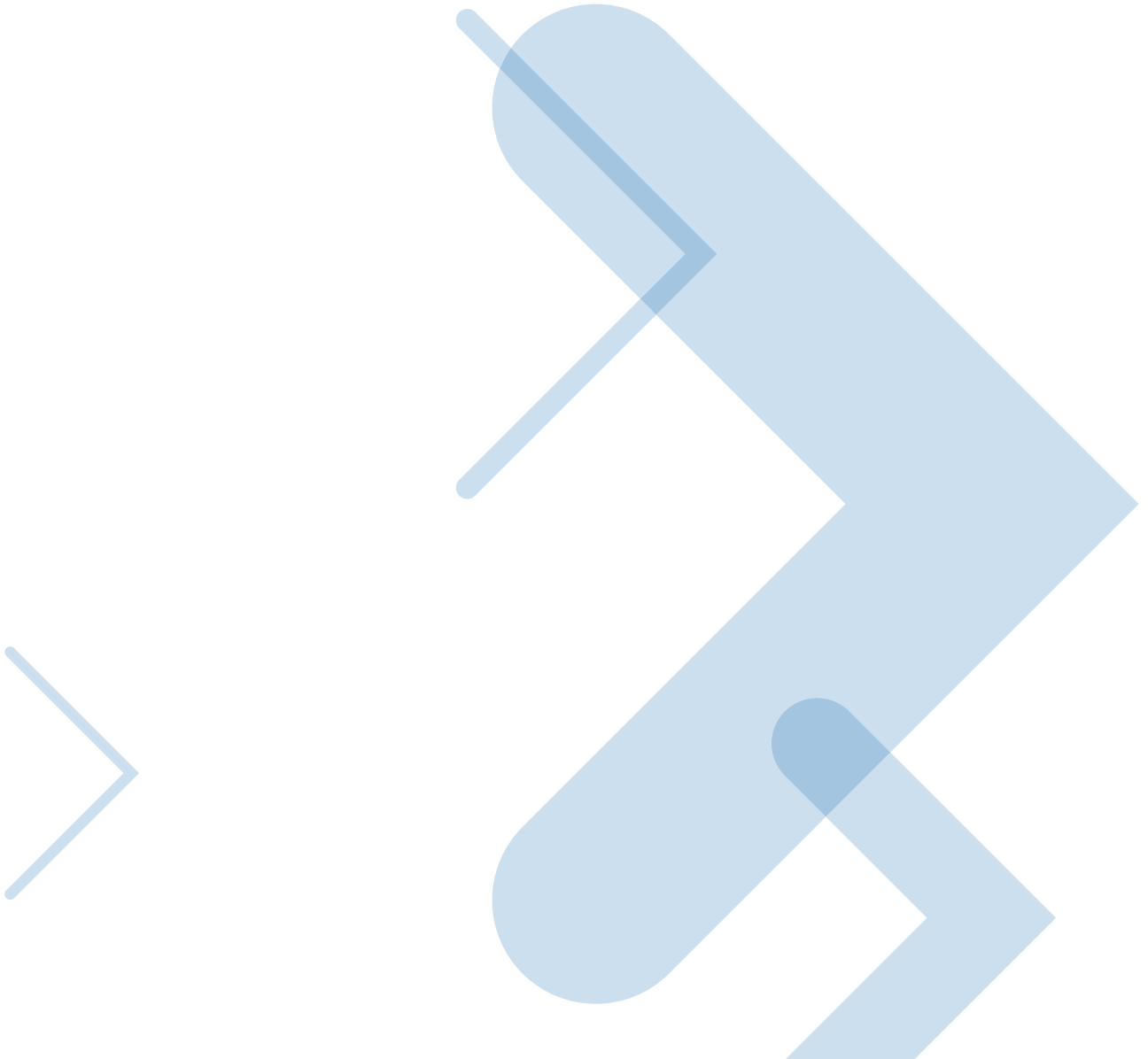


The Mobility Advantage:

Improving operational efficiency and
accountability in federal agencies



Executive summary

The federal government is responsible for protecting the health and safety of its citizens. Every day, employees in a wide range of agencies must make on-the-spot mission critical decisions to protect the nation's food supply, borders, and the health of the public, military personnel and veterans, as well as provide aid to disaster victims, apprehend criminals and more. Yet paper-based and other manual processes impede the movement of information, reducing employee productivity and inviting error.

In this white paper, we will explore how mobility can dramatically improve the efficiency of federal agencies. With a mobile voice and data device in hand, workers have instant access to the most up-to-date information possible for better decision making, along with the tools needed to take immediate action. The result is improved operational efficiency, accountability and accuracy.



Improve productivity and accuracy and reduce inefficiencies in day-to-day processes with access to real time information

Every day, thousands of departments and numerous agencies in the Federal government work to serve and protect citizens. Civil agencies protect the food supply and public health, ensure safe air travel, provide aid to victims of disasters and much more. The armed services help protect and restore peace throughout the world, ensuring the safety of people everywhere. And federal healthcare agencies deliver crucial healthcare services to active military personnel as well as veterans.

To accomplish these initiatives, agencies and their workers need to access secure, real-time information to ensure better decision making and better outcomes for a countless number of duties—including border patrol units who need to validate identities; field service personnel inspecting and maintaining buildings, infrastructure, trucks, planes and ships; warehouse workers involved in inventory management and distribution; healthcare workers dispensing medication and the many workers involved in tracking millions of assets—from evidence, supplies and vehicles to equipment, people and other crucial resources.

But the paper-based processes prevalent in many federal agencies are not only prone to error, they negatively impact worker productivity and decision making. Information must be touched at least

twice—gathered first on paper and then entered into a computer—multiplying the opportunity for data errors. The lag time between when information is collected and when it is entered and visible in your systems combines with the inability to access information out in the field, often resulting in less-than-optimal decision making that can threaten everything from the health of a patient to national security.

Mobility: Enable the utmost in efficiency, accuracy and accountability with real-time voice and data access

Through the power of mobility, agencies can put the tools of the desktop in the hands of mobile workers everywhere, all in a single rugged handheld device. Whether your workers are inside the four walls or out in the field, mobility will enable the completion of virtually any task, right on the spot. Efficiency and accuracy are maximized through real-time secure access to virtually any application, intranet sites and the Internet as well as real-time voice—including the virtual extension of the deskphone and all its features. Up-to-the-minute data now flows easily throughout and across agencies in real-time, ultimately providing the information needed to ensure the right action is taken at the right time, every time.

With the power of mobility, federal agencies of all types and sizes can:

Improve operational efficiency

The power to perform virtually any task, anywhere and anytime, drives wasted time out of everyday processes. Now, workers in the field can enter information directly into the appropriate computer system, completely eliminating ‘double processing’. Paper is replaced with an electronic form. Drop down menus, checkboxes and auto-fill fields dramatically reduce data entry requirements. Additional features such as bar code scanning, DPM (Direct Parts Marks) readers, RFID and a high resolution color digital camera not only automate data capture, but also enrich available data stores. Information is instantly and automatically transmitted to your back-end application the moment the electronic form is completed, complete with signatures, photographs and other incremental electronic data—no need to enter handwritten information into the computer or manage additional documentation. Time spent on administrative tasks is reduced, freeing up more time for workers to handle more tasks—ultimately increasing staff utilization and helping agencies contain staffing costs.

Improve data and process accuracy

The automation of data collection and elimination of paper forms reduce errors associated with legibility and manual data entry. The result is more accurate data, reducing risk as well as the high cost of errors. For example, accurate inventory and asset location data ensures timely delivery of supplies and equipment, while scanning bar codes on a patient’s wristband and medication ensures that the right patient is about to receive the right medication—before medication is administered.

Improve accountability

Since information collected in the field is now instantly visible in your business systems, the lag time between when information is collected and when it is available is eliminated. A granular audit trail—complete with dates, times and location stamps—provides a real-time visibility into who is doing what, improving accountability throughout the chain of management.

By leveraging the power of mobility, federal agencies can put better information at worker fingertips, enabling better decision making for better outcomes.

Applications: Mobility at work in federal government agencies

While there are as many mobility applications as there are agencies, the following is a look at how some of the primary mobility solutions can transform major processes in federal governments—and the benefits that can be easily achieved.

Mobile Identity Management

Without the ability to positively identify people in real-time, facility and border security can be easily compromised, and criminals can more easily slip through a surveillance ‘net’. For example, if border patrols or federal law enforcement agencies carry a compact rugged Motorola handheld computer equipped with a FIPS 201 certified fingerprint reader attachment, a fingerprint can be captured and transmitted over a wireless network to various databases, such as a Biometric Identification System (BIS), to verify identity in seconds.

Criminal Market		ID Management (Civil) Market	
Law Enforcement	Criminal Justice	Immigration & Travel	Civil Government
Wants & Warrants	Identity at Booking	Border Crossing	Voting
Citations	Jail Movement	Travel Manifests	ID Cards
Field Interrogations	Commissary & Medical	Trusted Traveler	PIV/TWIC
Identity & Records	Identity for Court	US VISIT Entry/Exit	Social Service Benefits
		Immigration Spot Checks	Gun Purchase Registration

When the Veterans Administration began utilizing wireless bar code scanning, the resulting ability to positively identify patient and medicine prior to the administration of medication eliminated 86 percent of medication-related errors.¹



Since high-powered mobile computing devices offer a rich display and a best-in-class processing and memory architecture, the query can return a wealth of information—including a photo and criminal history, immigration status, warrants and more. Immediate ‘anywhere anytime’ access to essential identification and verification tools—even in outlying and other remote locations—provides officials with the ability to rapidly establish identity right on the spot, during face-to-face contact. As a result, agency workers involved in protecting the borders have the information they need to better prevent criminals and terrorists from entering the country, and federal law enforcement agents have the information needed to immediately identify and apprehend suspects.

In addition to securing borders, biometric solutions that also offer an integrated smart card and RFID reader can help agencies improve facility security. Whether your security officers are in the guard station or on rounds, they have the tools they need in hand to verify access privileges—a quick scan of an RFID or ‘smart’ badge can provide detailed information, including employment data and security clearances. As a result, your officers can better prevent intruders from entering your facility as well as employees from accessing areas for which they do not have clearance.

Mobile Inspections and Maintenance

Paper-based work orders in inspections and maintenance operations translate into high costs and low productivity. Workers must physically drive to the dispatch location to pick up inspection or maintenance work orders, carry all related information in the vehicle—from maintenance manuals and history to code listings and more; complete paperwork after every job is completed, and finally return to the office and either enter the data or deliver the completed paper forms to administrative staff for data entry. The result is a heavy hit on productivity—workers can easily spend as much as a third of the day on administrative duties.

When workers are armed with a rugged handheld mobile computer with a wireless voice and data connection to back-end applications, they have everything they need to get the job done, right in the palm of their hands. Electronic work orders replace paper work orders—and drop down menus, check boxes and bar code scanning automate and error-proof data capture. Embedded links to electronic files with inspection and maintenance history not only eliminate the need to carry physical files, but also ensure that technicians have all the information they need on hand to do the best job. And integrated GPS provides workers with real-time turn-by-turn directions, ensuring employees arrive at worksites on time—while dispatchers can see the real-time location of all workers, increasing security and enabling better management of this highly mobile workforce.

As a result, productivity and the quality of work are increased. Workers now have more time to spend on tasks instead of on paperwork, allowing your staff to handle more work orders per day. Access to complete inspection and maintenance history and related information improves decision making, ensuring the right maintenance routines are performed on the right equipment at the right time. Automated data capture protects the accuracy of inspection and maintenance histories. The resulting timely execution of inspections and maintenance better protects the lifecycle of these high-dollar assets—and the safety of the workers who utilize them.

Military Medical Care

The men and women serving in armed forces—as well as many who have served in the past—look to the federal government to provide numerous health-related services. For doctors and nurses in military

¹ *Demonstrating Benefits in a Community Hospital Through the Use of Wireless, Mobile Barcode Technology in Medication Administration: A Case Study*; Mitch Work/The Work Group, Inc.

Mobility can enable a dramatic improvement in productivity for caseworkers, who often spend more than 50 percent of their workday collecting and processing the data—substantially reducing the number of possible client visits and available time to spend with clients in any given day.



and Veterans Affairs (VA) hospitals as well as medics in-theatre, a pocketable and rugged handheld mobile computer can provide the tools required to deliver extraordinary patient care.

Access to up-to-the-minute patient records as well as intranet and Internet-based medical libraries and research centers provide healthcare professionals with information needed to give the best care possible. The ability to order tests and view test results in real-time as well as order medication improves the speed of care. Bar code scanning and mobile printing improve accuracy. Nurses can scan patient wristbands, their own badges and medication or transfusion bags to ensure that the right medicine or blood products are administered to the right person at the right time. Technicians can also carry a mobile printer to print and scan specimen container labels right in the patient's room, ensuring that the right specimen is placed in the right container—so the right patient receives the right diagnosis. And finally, nurses can receive calls, monitor patient vital signs and adjust medical equipment (such as medication pumps) while literally on the run—the need to visit the patient room or nursing station for information or to locate a deskphone to answer a page is eliminated.

For medics in tactical medical forces out in the battlefield, a rugged handheld mobile computer provides access to the electronic medical record for service personnel, providing the crucial knowledge required to enable better decisions and better care—such as a complete medical history, blood type, allergies and current medications. And the ability to capture and transfer critical information at the point of injury to the point of care provides a more complete history for future caregivers.

Whether doctors and nurses are in a permanent hospital or out in the field, a handheld mobile computing solution can help improve data accuracy, decision making and the speed of care, ultimately improving patient safety and the quality of medical services.

Case Management

The Department of Veterans Affairs is responsible for the care of the many veterans who sustained injuries and any resulting disabilities as a result of their tenure in the military. Each veteran who applies for services is assigned a caseworker—and the quality of care is very closely tied to the quality of the management of each case.

Case management is an extraordinarily data-intensive function, requiring the collection and dissemination of a vast amount of information. Detailed documentation must be captured for each and every action performed in each and every case—including every phone call and every client visit—translating into volumes of handwritten information that must then be entered into the appropriate computer system.

A mobile computer can completely overhaul the case management process, greatly improving the delivery of VA services. A single centralized electronic record replaces the paper form and duplicate records that may exist for veterans who are receiving multiple services from different agencies. Collecting and securely transmitting sensitive data in real time helps ensure the swift delivery of services, better protecting the health and well being of clients. With a fully featured mobile computer, caseworkers can choose their preferred method of data entry for text intensive entries—Bluetooth® can provide a convenient wireless connection to a full-size keyboard and speech-to-text can enable users to record narrative that can then be automatically converted to text.

In addition, integrated GPS enables a wide range of location-based applications that reduce administrative load and provide additional case documentation. For example, photographs can be appended with a geo-stamp, providing proof that the caseworker was at the right location at the right time. Real-time directions ensure prompt arrival for client visits—in spite of a new traffic jam. Mileage

RFID and GPS can allow armed forces to automatically track many high dollar assets in real time—including trucks, tanks, planes, helicopters and ships. The cost to track and manage these assets is greatly reduced. And real-time visibility into vehicle location helps ensure timely maintenance, increase utilization and improve the total cost of ownership (TCO) as well as the return on investment (ROI) for these substantial investments.



can be automatically tracked, eliminating the need for caseworkers to prepare tedious weekly mileage reports. Tracking caseworker location in the field helps improve security—supervisors can determine if a worker has been in a location too long and may have encountered trouble.

As a result, caseworkers are safer, more productive, able to handle a heavier case load yet deliver better service, ultimately improving the client experience, client satisfaction—and most importantly, client care.

Asset Management

Throughout federal government agencies, there are literally millions of assets to track—from IT assets, office supplies, food stores for military bases and retail exchanges and employees to evidence for the FBI and other law-enforcement agencies, fleets of vehicles and a wide range of equipment. Mobile asset management technologies enable the real-time tracking of all these assets—with very little if any human intervention.

RFID and Wi-Fi real-time locationing solutions (RTLs) as well as bar code scanning help agencies heavily automate and reduce the cost of asset tracking:

- **Employees:** When RFID or Wi-Fi tags are embedded into employee badges, worker location is recorded whenever they pass an RFID reader or a Wi-Fi access port or point, improving worker safety as well as facility security.
- **IT assets:** When RFID tags are placed on IT assets, information on the tags is automatically captured when items such as servers, hard drives and media tapes are in the vicinity of fixed RFID readers. And when employee badges are also enabled with RFID chips, the result is a real-time audit trail that improves accountability as well as the security of data embedded on these assets—you can see every movement of every asset, as well as the identity of the employee who moved it. In addition, mobile RFID readers enable rapid and highly accurate inventory takes, while handheld readers enable workers to quickly locate misplaced items.
- **Evidence tracking:** When evidence from a crime scene is bagged and tagged with an RFID or Wi-Fi enabled tag or bar code label, every movement of that item can be easily recorded, ensuring the availability of evidence when needed. And when locationing technology is also embedded in employee badges, agencies can automatically track each person who moves the evidence, improving accountability and ensuring a proper chain of custody.
- **Equipment and supplies:** RFID can completely automate the tracking of a wide range of equipment and supplies, from munitions and other sensitive military materials to medical equipment in a hospital or in-theater to equipment and supplies in a warehouse as well as food and other commodities in military base kitchens and retail exchanges. As a result, agencies have the information needed to mobilize quickly in the event of an emergency as well as better manage inventory. For example, equipment needed to respond to a national emergency can be located in seconds. In addition, bar code scanning can completely streamline warehouse processes from dock-to-dock, enabling a new level of efficiency and accuracy in the warehouse through:
 - Instant paperless reconciliation with purchase orders
 - Delivery of the exact location for put-away to the worker's mobile device, complete with directions for the fastest route to that location
 - Enabling workers to double check location prior to storing items on the warehouse shelves
 - Accurate recording of the exact shelf location where specific items were placed, as well as when items were picked from the shelves and where they were shipped
- **Fleet tracking:** The federal government is responsible for tracking many different types of vehicle fleets—from trucks and tanks to planes, helicopters and ships. A number of different technologies can automate tracking of these high dollar assets, including RFID as well as GPS.

When rugged cargo tags are installed on trailers, trucks and more, the location, time and date are automatically recorded when the asset passes through an RFID-enabled checkpoint. When a rugged vehicle mounted mobile computer with integrated GPS is mounted in the asset, agencies enjoy effortless and constant real-time asset visibility. When telematics is integrated into the truck fleet, agencies have the visibility into real-time driving behavior and routes required to minimize fuel use and vehicle wear and tear. The result is the ability to monitor the condition and location of these valuable fleets in real time, helping agencies improve utilization, the total cost of ownership (TCO) and the return on investment (ROI).

A solid and quantifiable return-on-investment (ROI)

While you may be sold on the benefits of mobility, in the face of ever-tighter budget constraints, you need to be able to cost-justify the investment. In combination with the benefits discussed above, the technology itself offers a number of other distinct advantages that provide an extremely rapid return on investment:

- Low total cost of ownership (TCO) – Today, your field workers likely carry consumer-class devices, such as cell phones, Personal Digital Assistants (PDAs) and cameras. Today's rugged mobile devices are well proven, offering the rugged specifications required to ensure dependable operation despite exposure to the extreme environments—including heat and cold, rain and snow, dust, sand, beverage spills and the inevitable drops and bumps. These rugged devices offer a four year lifecycle—several times that of the average consumer grade PDA. As a result, according to a VDC Research report, the total cost of ownership of a consumer-grade PDA is nearly double that of a rugged device.² When a centralized mobile device management solution is also deployed, remote management capabilities can be combined with business-class support services such as overnight device replacement and coverage for loss, further improving uptime and reducing the TCO of your rugged mobile computers.
- Reduced capital expenditures – Chances are today's workers have a notebook computer and a personal digital assistant (PDA) as well as a digital

camera. Replacing multiple devices with one substantially reduces device purchasing budgets—and the related capital expenditures.

- Reduced management costs – Fewer devices translates into less management time. But in addition, centralized and remote management solutions are available for rugged handheld mobile computers, enabling IT to initially configure, update, monitor and troubleshoot devices regardless of where they are—something that is not possible with PDAs, cameras and even many cell phones. Workers enjoy a substantial increase in functionality and device uptime. And IT enjoys a substantial decrease in device management time, freeing IT staff to focus on more strategic business initiatives.
- Improved protection against loss of data – Eliminating paper also eliminates the opportunity for paper forms to be misplaced, lost or inadvertently damaged—a high risk event that could potentially threaten human lives. In addition, the ability to remotely lock or wipe devices that are missing or stolen helps ensure the security of sensitive data—and prevent unauthorized personnel from using the device to gain access to your network and applications.

Advantage: mobility

Mobility is a superb enabler for federal government deployments, allowing agencies to streamline and reduce errors in processes, enable real-time track and trace of virtually every asset and give workers real-time access to the information required to make the best decisions. And in the face of ever shrinking budgets, an investment in mobility is easy to justify. The integration of many technologies into a single rugged device—including a phone functionality, bar code scanner, RFID, GPS and image capture—allows agencies to significantly reduce the number of mobile devices while increasing the types of intelligence that can be captured. The result is real value—a reduction in capital and operational expenses and a new level of efficiency, data accuracy and accountability.

For more information on how your agency can benefit from the power of mobility, please visit us on the web at www.motorola.com/mobilecomputers or call 800-367-2346.

² Government TCO Analysis, *Total Cost of Ownership Models for Mobile Computing and Communications Platforms*, pp. 278-279, VDC Research Group, 2007

Nearly 85 Years of Understanding the Needs of Government Agencies

Motorola seamlessly and securely connects people, assets and information to help both civilian and military agencies achieve true enterprise mobility.

Our comprehensive portfolio expands the mobile edge by providing the devices, networks, applications and services you need to ensure that information is always available - and always secure - to support critical decisions anywhere, any time.

For nearly 85 years, Motorola has provided the federal government with the most reliable and innovative wireless solutions that help to save lives and accomplish missions.

To learn more about Motorola's full range of products and services, please visit our website: www.motorola.com/federal.



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