White Paper

Utilities and Mobile Computing

Leveraging Real-Time Visibility to Drive Customer Engagement

NetMotion Wireless

ACCELA Government Software

ClickSoftware Making Service Click

Utilities and Mobile Computing: Leveraging Real-Time Visibility to Drive Customer Engagement

Mobile workers are the new frontline of mission critical computing

In today's service-driven economy, service organizations are strategically equipping their frontline workers with mobile solutions to streamline performance — and perhaps more importantly — to drive customer interactions, according to a study from the VDC Research Group (VDC), a market research and consulting services firm. In VDC's 2011 Field Mobile Solutions study, the over 1,000 respondents indicated that improvements in customer service, satisfaction and engagement was the second highest rated mobility investment driver behind workforce productivity improvements, up significantly from 2010 where customer engagement was barely a top five criteria.

The emerging demand for improved customer service is particularly evident in the utilities industry where a large majority of the workforce is in the field. Over the last decade, mobile solutions, particularly tablet PCs, have helped many utilities facilitate a more streamlined field-based workforce using mobile and specialized devices for activities that range from meter reading to mobile dispatch. More powerful, ruggedized tablet PCs, wireless connections and advanced customer service solutions create even greater opportunities for utilities to build on mobile capabilities that will drive the next generation of customer service and workforce management delivery.

For every engaged customer, there must be an engaged field worker or technician. Technicians need to be empowered to deliver highly personalized services, which begin with truly knowing customer's needs and history with the organization as well as a clear understanding of the customers' pain points, finds the VDC report.

David Krebs, vice president with VDC and lead researcher for the field mobile solutions paper, found that leveraging real-time customer information to address requirements, benchmark performance against similar customers and provide recommendations — potentially to cross and up-sell other solutions and services — is at the crux of what next generation field mobility solutions are addressing. Mobile computing solutions provide organizations with real-time visibility into field-based activities and processes. Krebs said, "Leveraging these capabilities to deliver a more personalized service experience is separating leaders from laggards."

Driving Productivity

Responding to customer engagement is a complex challenge for utilities and public agencies. Most utilities are still early in the adoption and deployment stage of mobile computing. Those that have deployed the devices are realizing significant benefits.

Lee Johnson, senior market development manager for NetMotion Wireless, says, "We recently surveyed 100 top utilities in the U.S. about the value of mobile devices. More than 70% of the respondents indicated that their field workers, particularly field technicians, became more productive and could complete more work orders per day."

NetMotion's utility survey further found that respondents expect asset management applications will double in the field and that customer relationship management (CRM) will rise from 10% to 50%.

Johnson adds, "The combination of the right mobile device, advanced software and wireless connectivity creates real-time field connections – eliminating the office -to field to office cycle. One more visit to a customer home or work site in a day can have a dramatic and positive benefit to the utilities' bottom line."

Darrell Lewis, vice president of Product Management at e-government software leader Accela, Inc., agrees, adding, "Mobility isn't just about traditional mobile workers anymore."

The new mobile workers could be functional experts accessing and sharing information with other departments on the fly or inspectors who need to avoid

multiple trips to the back-office by having the data, tools and GIS maps they need right at their fingertips.

“Solutions that keep them productive and untethered are vital to the success of these workers,” says Lewis.

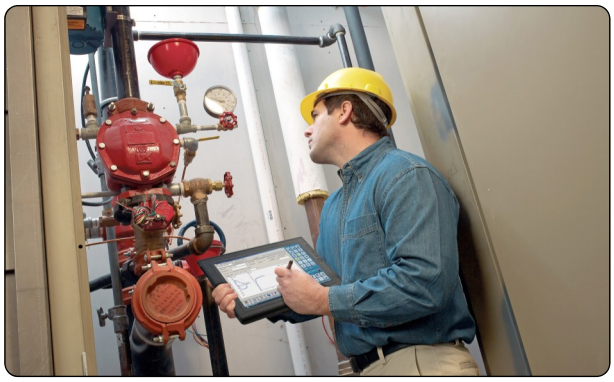
Meanwhile, citizens need to interact with their local governments on two primary levels. The first level involves service requests for things such as sewage overflows, street light malfunctions, code enforcement violations, and numerous other items that inconvenience citizens or pose safety hazards. The second level requires some business-to-government (B2G) transactions. These transaction types normally require scheduling, status updating, and in many cases, e-commerce. Business licensing, inspection scheduling and permit tracking are all examples of B2G transactions that can occur in a mobile environment.

“In summary, mobility must support various job functions, work patterns, and user audiences,” adds Lewis. “For governments, mobility should take into account the needs of both office and field-based workers. For citizens, it should ease their interactions with government, while helping government workers to better manage citizen requests.”

More and more people across the organization are accessing back-end data from mobile devices such as rugged tablets with the expectation that every back-end system is available from an office network. Mobile workers expect seamless IT support for these devices as well as others they choose to add in the future.

Tablet PCs speed the work process, creating opportunities for improved customer satisfaction. In the competitive world of utilities, the added edge is a key game changing opportunity, providing utilities with instant information at the point of service, and providing a higher level of service to make customers feel comfortable and satisfied.

Mike Karlskind, vice president of Service Optimization Strategies for ClickSoftware, says, “As consumer technology for mobile devices proliferates, enterprise users have come to expect ever-increasing functionality from enterprise mobility. These user demands drive requirements for robust and device agnostic mobile solutions, such as rugged tablets, for the utility enterprise.”



Long-Term Reliability, Viability

While many utilities and public agencies are still early in the adoption and deployment of mobile devices, the number of tablet PC users is on the rise. The rugged tablet market reached $370 million in 2011, according to VDC researchers, and is forecast to exceed $550 million by 2012, growing by 12.5% compounded annually. Unit shipments will grow from 180,000 units to 330,000 units. VDC’s Krebs says, “Tablets represent a strong form factor for customer facing and service applications. The large display and portable ergonomic design are an ideal combination for many field applications.”

Another advantage is life-cycle cost benefit. The deployment or replacement cycle of computers for a utility or public agency is often double what it might be in the private sector where companies can make quicker turns.

Accela’s Lewis adds, “Municipal utilities are willing to make the investments in a mobile workforce due to the benefits of improved productivity and customer service, but are cost conscious. So their decisions are often driven by the long-term reliability of the devices, by the cost of integration and deployment, and by their ability to reduce costs in other areas.”

VDC’s Field Mobile Solutions report confirms Lewis’s statement, saying that while the selection of non-rugged mobile devices to support field mobile applications over rugged devices has increased, end users frequently fail to realize the impact of device failure on mobile solution cost of ownership. According to VDC’s research on field mobile total cost of ownership, failure rates of non-rugged devices can be prohibitively high, contributing significantly to the total cost of ownership, especially concerning lost worker productivity and lost revenue.

"In many of these environments, rugged design is critical as these devices are exposed to extreme conditions," says Krebs. "Critical considerations include temperature exposure (high/low), drop capabilities, vibration protection, etc."

VDC defines rugged mobile tablets as devices that have been designed to withstand harsh environmental conditions including exposure to water, extreme temperatures, humidity and altitude and drops from at least 3 feet. These devices conform to Ingress Protection (IP) ratings (5X minimum) and MIL STD 810-F or 810-G. Some rugged tablets also incorporate a shock mounted hard drive and combined accelerometer designed to detect drops and shocks in order to reduce the possibility of data loss.

Mobility in a Smart World

The importance of mobile technology is likely a business imperative considering the emerging Smart Grid initiatives. According to ClickSoftware's January 2012 Mobility Innovations for the Next Generation Utility, "The future is expected to bring dramatic changes in the volume of data collected due to the recent upswing in Smart Grid implementations."

The paper's authors further find that for every million smart meters served, a utility will receive over 97 million daily meter reads, over 10,000 missing reads a day, and 20 meter failures a day. (Source: Sierra Energy Group research, January 2011.) Distribution automation and substation automation initiatives will result in an exponential increase in the information from grid assets.

ClickSoftware's Karlskind says, "Managing and leveraging this influx of information is critical to realizing full benefits from the new technology. The greatest challenges for utilities of breaking down the walls between the field and the back office now can be overcome because of the rapid advancement of mobility. This substantially advances the ability of IT to deliver on mobile business requirements that have existed for years — and many new capabilities that were never thought possible outside of the office. Utilities will be able to manage and reduce risk due to collection of frequent, current, and accurate data."

Electronic mobile dispatch of work is not new to utilities. However, says Karlskind of ClickSoftware, "The ability to easily create mobile applications that can replace the entire "paper packet" for a job, going into and returning from the field, has only recently become possible — and is emerging in an increasing number of production operations worldwide. Many more advantages are available today beyond the reduction of asset paperwork and manual reporting."

The convergence of mobile and wireless technology will extend beyond common access to mobile technology, evolving into a philosophy of the entire enterprise operating on a common data model. Ultimately, improved flow of common data within the utility will provide better service to its traditional energy customers, as well as meeting expectations or requirements of its public and regulatory consumers of information.

Karlskind adds, "As mobile devices proliferate, convergence will be the wave of the future. Putting mobile applications in the hands of field staff provides a significant benefit for the utility, but other participants in enterprisewide mobility stand to gain as well."

Accela's Lewis adds, "As with municipal utilities, we believe other public agencies will see an exponential increase in mobile deployment. Mobility is a given with consumers. Often employees have little concept of a desktop device. While public agencies are sometimes much slower to adopt due to limited funds and the economic challenges, there is genuine interest in catching up."

Given the intersection of rapid change in the utility industry and in mobile technology, it is realistic to envision a future when every application is mobile and a reference to field mobility within utilities becomes redundant. As the work of running a utility increases, and the margin decreases, the shareholders may be looking as much to the technology that is in the workers' hands as to the technology connected to the grid.

Mobility Solutions in Action

El Paso Empowers Mobile Workforce

For the City of El Paso, Texas, improving productivity, documentation quality, and team satisfaction across all departments is an ongoing goal – and empowering its mobile workers with the latest technology was an important step in that direction. The city serves a growing population of more than 650,000. Various service agencies within the city looked to extend processing capabilities to the field for inspections, code enforcement, and work orders.

El Paso deployed Accela Mobile Office, running on Motion F5 and J3400 rugged tablet PCs, among the Public Health, Parks, and Engineering & Construction Management departments, the Fire Marshall's office, and the Environmental Services Department's Solid Waste, Vector Control, and Code Enforcement divisions.

The combined solution has provided field-based workers on these teams with direct access to the same data, GIS maps and tools as backoffice staff, while delivering capabilities that are critical to teams on the go, such as GIS/GPS routing, broadcast messaging, and easy navigation.

Since El Paso's mountainous terrain often causes lost wireless connectivity during transactions, Accela Mobile Office's create-and-store capability, which permits delayed data synchronization, was also critical. Today, El Paso's office and mobile teams are closely connected with anytime-anywhere information at their fingertips, and revenues across the deployed departments are markedly higher.

Utility Drives Productivity and Emergency Service Response

JEA (formerly known as Jacksonville Electric Authority) is the eighth-largest community-owned utility in the United States, providing electricity, water and sewer services to more than 750,000 accounts in northeast Florida. Its 600 field technicians are tightly scheduled, and reliable access to applications is essential to expediting task completion and serving customers responsively. The Mobility XE mobile VPN from NetMotion Wireless running on a Motion Tablet PC is the vital link that maintains data connections to applications, maximizing worker productivity.

When problems arise, JEA's field technicians are the first responders for the utility. They are busy year-round, but the urgency goes up several notches during hurricane season. Technicians are called on to handle breaks in water and sewage mains, fix meters, respond to power outages, and turn service on and off. They rely on access to a mix of off-the-shelf and custom software including e-mail, dispatch, CRM and GIS. In addition, electrical service-delivery applications assist in locating equipment, especially underground. With 800 square miles of territory to roam, workers need to connect via multiple cellular carriers to cover the entire service area.

Before adopting Mobility XE, field workers reported that they were losing valuable time with the wireless system whenever they were forced to switch to a new network. As they drove between locations and experienced connection loss, they had to pull over to the side of the road and log back in to the system.

As Bonnie Anderson, JEA systems administrator, explains, "Often, multiple attempts were made until reconnection, a process that could take twenty minutes. Additionally, service operators had to connect to applications via the network, which would also fail when out of range. They would have to reopen applications and retype data that had been lost." This was an unacceptable loss of productivity, not to mention a source of irritation.

After a thorough RFP process, JEA deployed Mobility XE and the problems disappeared. Workers log in one time, at the start of their session, and remain connected throughout the workday with no need to re-authenticate when a connection goes down. Today, utility workers, construction crew leaders and engineers, as well as some administrators, are using Mobility XE.

"Maintaining a persistent connection lets JEA workers get more work accomplished and greatly reduces the complexity of mobile computing," summarizes Anderson.

In five years since implementing Mobility XE, JEA has noted a 30% increase in daily productivity for its field workers, more home service completed, and more trouble tickets resolved. They expect even greater increases in productivity and completion rates as they deploy Smart Grid, a new initiative that uses two-way digital technology to control appliances in consumers' homes. Smart Grid promises to save energy, reduce costs and increase service reliability, and the wireless initiative keyed by Mobility XE is poised to play a leading role in assuring an efficient rollout.

Mobile Benefits for Utilities

Mobile technology enables utilities to eliminate much of the cost and lag time typically associated with job paperwork. Field automation solutions can improve workforce performance, SLA compliance and real-time decision making. To achieve these benefits and more, the entire mobile solution — hardware, software and services — must be tightly aligned with, and map to, the target users. It's critical that the solution address the key questions regarding desired functionality, target applications, use-case environments, support requirements, and training requirements up front. Once developed, an advanced, well-aligned mobile solution can help:

- Improve response times and productivity with real-time access to updated scheduling information and service orders
- Enhance customer service and rapid issue resolution with remote access to ticket information and parts availability
- Provide more effective management of the complex environment of field personnel, crews, vehicles and tools
- Improve utilization of employee resources with real-time access to project status, technician availability and project completion times
- Enable service workers who can resolve new problems on site with real-time access to issue resolution information
- Minimize paper-based processes to help reduce project delays and errors
- Reduce billing latencies by electronically capturing customer signatures and immediately submitting invoices after each work order
- Improve communications with field workers to monitor operational logistics and equip them to resolve service emergencies

About Motion and its Partners

ACCELA Government Software

Accela, Inc. is the leading provider of mobile, web, and cloud-based software applications that make government easier, faster and more accessible for local, state and Federal agency workers, and the citizens they serve. The company's flagship product, Accela Automation, is deployed by hundreds of governments of all sizes as a complete solution for automating critical tasks associated with permitting, licensing, code enforcement, community development and planning, inspections and investigations, infrastructure asset management, emergency response, and more. Accela is headquartered in San Ramon, Calif., with offices in Australia and the United Arab Emirates. Additional information is available at www.accela.com.

ClickSoftware
Making Service Click

ClickSoftware is the leading provider of automated workforce management and optimization solutions for every size of service business. ClickSoftware's solutions manage hundreds of thousands of resources in service businesses across a variety of industries and geographies. Our flexible deployment approach, breadth and depth of solutions and strong partnerships with leading CRM/ERP vendors and system integrators makes us the number one choice to deliver superb business performance to any organization. For more information, please visit www.clicksoftware.com.

NETMOTION® WIRELESS

NetMotion Wireless develops software to manage and secure wireless data deployments for organizations with mobile field workers. Their products address the unique challenges introduced by the use of wireless, enabling customers to maximize their return on investment in workforce automation. More than 2,000 of the world's most respected organizations across multiple industries including utilities, healthcare, telecommunications, public safety, government, insurance, and manufacturing are current customers.

Motion

Headquartered in Austin, Texas, Motion Computing is a leading global provider of tablet PCs and supporting mobility solutions for vertical markets, including healthcare, construction, field service and retail. Rugged, lightweight and highly mobile, Motion Tablet PCs are designed for mobile professionals who require real-time computing at the point of service. Users can gather, access, analyze and transmit the critical information they need in order to be productive in today's decentralized work environments.