Wireless Route Accounting Technology Enables a New Kind of Road Warrior

There has been a lot of commentary recently in the press and corporate boardrooms about "road warriors" and the productivity benefits that can be attained by giving traveling executives and salesrepresentatives wireless access to e -mail and corporate databases. Nowadays, when walking down the street, sitting in a meeting or relaxing in a restaurant, one notices the expanding number ofpeople poised in the "chat position" -- heads dipped, tiny screens held about a foot and a half from their noses, thumbs tapping away on the tiny keyboards of cell phones and messaging devices.

If you lift your head up for a moment, you may just notice another popular mass of mobile office workers. These workers hold positions just as critical to their company's success as executives andsalespeople, and the latest wireless handheld computing technology is just as necessary to improve their efficiency and effectiveness. These often overlooked, largely invisible road warriors areknown as package delivery drivers, field service technicians, and route sales representatives.

The Route Accounting Process

One of the most ubiquitous business functions already benefiting from mobile technology is commonly called route accounting or direct store delivery (DSD) -- that is, the regular delivery of a vastarray of consumer package goods (CPG) to retail stores around the world. Soft drinks, beer, bottled water, potato chips, bread, cigarettes, magazines, and newspapers all have to be delivered andaccounted for, often on a daily basis. A sizable percentage of the Fortune 500 are CPG companies who depend on handheld computers to keep track of this part of their global operations. With thedramatic advancement of today's wireless handheld computing systems, a new wave of sophisticated route accounting systems are about to be deployed to gain a new edge in this hyper -competitiveindustry.

For the past 20 years, route accounting has been performed in the following fashion: Each morning, often well before dawn, drivers arrive at a local distribution center or warehouse. They pick up aspecially designed rugged handheld computer and log in with a PIN code. The drivers place the device into a cradle to download that day's route, inventory, and pricing information -- a process thatmay take 2 -5 minutes per person (and there are often 50 or more drivers sharing a small number of cradles at each warehouse). While waiting for their turn or for the information to download intothe device, drivers remain idle and unproductive. Next, they head to the truck, where they hand -count their load to be sure the proper inventory is aboard for that day's deliveries. Then, they headout on the road to make their rounds

At each store, they hand-count and unload the prescribed number of units ordered, and accept any returns. The driver then keys this information into the handheld device, confirming the delivery. Animmediate invoice may be printed out as well. In large retail operations, the device may be physically cabled to a special "DEX" computer in the back of the store in order to electronically invoicethe store. If another delivery person is already there, the driver needs to wait their turn. In smaller operations, like a local delicatessen, which may be a single store "cash and carry" account,the driver must collect cash or credit card payments. Again, all information about each stop needs to be manually entered into their handheld device to ensure proper accounting of billing andpayments.

At the end of the day, the handheld device is returned to its cradle, where the accumulated, or "batched," route data is uploaded to the CPG company's inventory and ordering systems. At this pointthe master distribution control software can begin the process of figuring out the final order/route adjustments to make for the next day. The next morning, the daily ritual of drivers queuing upat the syncing cradles repeats itself again.

Improving The Current Process

One of the most commonly noted bottlenecks in the process just described is the driver queue at the start and end of day. It turns out that industry -standard wireless Local Area Network (WLAN), or802.11b, radio technology can easily eliminate this problem.

In the new scenario, the handheld computers can either be left in the vehicle cradle in the truck each night, or they can be brought into the depot for storage and recharging. Each driver simplygets into their truck or picks up a recharging handheld and keys in their PIN number as usual, but now the day's information is rapidly transmitted wirelessly to the handheld, whether it's insidethe warehouse or in the driver's hand while he's inspecting his daily load. The morning line -up is completely eliminated.

Since this line -up problem is also eliminated at the end of the shift, the total time savings can easily add up to an extra delivery stop per day per driver. Since many drivers are paid to useevery extra minute to talk with storeowners and managers about expanding the range of the company's product line that they sell, even a few extra minutes a day can quickly be converted into largerorders for existing customers, as well. One properly positioned WLAN access point (like a tower in a cellular phone network) can support the upload and download of information to 100 or morehandheld devices. If centralized cradles inside the warehouse are going to still be used, they can be less expensive "recharge -only" cradles, since they no longer need to provide for datacommunications. The new WLAN technology quickly pays for itself.

Wireless also has the potential to eliminate the time -consuming electronic invoicing, or DEX, process. Instead of lining up to plug in a DEX cable for invoicing, standard wireless communicationscan be used here. Since the majority of all major retail locations already have WLANs in place for their own inventory tracking and other productivity -enhancing applications, it is now possible towirelessly transmit these invoices directly from the handheld. Access agreements are now being developed to support this in major chains. This industry -standard wireless radio in the handheld canalso support cordless, belt -mounted printers, which are now coming to market.

Cash collection and credit authentication are two other parts of the route accounting process that can be assisted by wireless connectivity -- this time via wireless Wide Area Networks (WWAN) suchas CDPD, CDMA, and GSM/GPRS. The availability of WWAN connectivity makes it possible for the route driver to immediately obtain credit authentication from their handheld device after swiping thecustomer's credit card through a reader mounted directly on the handheld or in the truck. This process speeds up cash flow and minimizes any second billing process, should there be a problem withthe payment.

Expanding Capabilities Of The Handheld Device

The newest handheld computing architectures available today, such as Microsoft's Pocket PC offering, can deliver tremendous computing power, while carefully sipping battery power. Therefore, farmore capable software solutions can now be delivered.

In the past, route accounting devices had small, black and white screens and ran closed, proprietary operating systems and single -vendor software. This was great for the handheld vendor because CPGcompanies were tightly tied to that single vendor once they made their initial selection. There was little incentive for hardware and software prices to decline over time in this scenario, and somevendors took advantage of this situation. Just recently, this entire marketplace has demanded a switch to more open, and more capable industry -standard platforms to allow for greater choice andmore flexibility in choosing hardware and software vendors. Several major handheld computing vendors have been happy to jump in to offer much stronger competition to the older, less progressivevendors. Most of the specialized route accounting software vendors have also enthusiastically responded by porting their code over to these newer, open architectures.

Today's handheld designs now support options such as high -resolution color screens and integrated bar code scanners. The more capable screens driven by Microsoft Pocket PC can now play thecompany's current TV commercial or radio jingle to help educate the store managers about the newest promotions. Bar code scanning capabilities eliminate hand counting entirely, and ensure fargreater accuracy. Some new handheld devices even incorporate image capture capabilities. Imagine snapping images of the competition's new package or display designs to send back to the corporatemarketing department for analysis.

Many experienced route accounting software suppliers feel a new sense of freedom to use their imaginations to their fullest extent when designing their solutions, and they don't feel trapped by asingle vendor's handheld designs in the process. These higher levels of flexibility, freedom and capabilities are good for all parties involved -- vendor, developer and the CPG buyer.

Improving Route Accounting's ROI

The key to route accounting system ROI is speed and effectiveness, without increasing costs. It is about how fast a driver can complete the basics of their delivery process so that they can eithermake an extra stop or two each day, or take more time expanding the line of merchandise carried by their existing accounts. The newest breed of wireless technologies, handheld devices, andapplication software makes this all possible.

Jim Hilton is Route Accounting Solutions Executive for Symbol Technologies. To learn more about how Symbol's industrial -strength handheld computers, wireless LANtechnology, and bar code scanning systems are being used to improve operational productivity in a wide array of markets ranging from manufacturing, transportation, logistics, retailing, healthcare,government and education, visit www.symbol.com .