

The logo graphic consists of several overlapping, curved lines in a light blue color, creating a sense of motion and connectivity. The word "Intermec" is written vertically in a bold, black, sans-serif font, positioned to the right of the graphic.

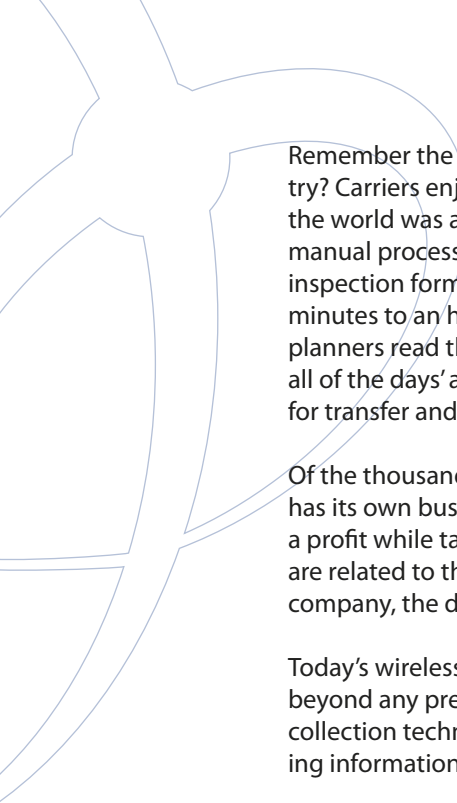
Intermec



White
Paper

THE ADVANTAGES OF MOBILITY

Intermec



Remember the good old days, before deregulation in the transportation and logistics industry? Carriers enjoyed good rates, cheap fuel, plenty of drivers, uncongested freeways -- and the world was a relatively safe place. Remember when we all had extra time for those tedious, manual processes like handwritten driver's manifests, trip reports, delivery receipts, vehicle inspection forms and bills of lading? Remember when drivers spent the first and last thirty minutes to an hour of every workday reviewing paperwork? When time dispatchers and load planners read through drivers' paperwork to make sure that it was completed properly? When all of the days' activities and shipments had to be entered manually into the company's systems for transfer and billing? Ah, the good old days!

Of the thousands of logistics carriers in the North American and global market today, each has its own business challenges, yet they share many of the same obstacles in trying to turn a profit while taking a shipment or package from point A to point B. Many of these obstacles are related to the timeliness and quality of information exchanged between the transportation company, the driver that actually picks up and delivers goods, and the shippers and receivers.

Today's wireless technologies can offer transportation and logistics companies benefits far beyond any previously available. Rugged handheld computers, wireless and automated data collection technologies bring useable information to the field and make capturing and collecting information more efficient than ever.

Here are a few scenarios that illustrate a typical day in the life of transportation and logistics (T&L) professionals, both without and with the benefits of wireless technology.

The Good Old Days? – LTL and Distribution

Dan is a driver for EZWay, an LTL carrier. Dan used to begin his day waiting in line for bills to be prepared and for his load to be readied, then waiting his turn to ask the dispatcher about customer locations and hours of operation, and then reviewing his bills to plan the day. Back then the clock ran a little more slowly, so Dan could handle the wait. Transit times were measured in business days – weekends not included – and quality of service was determined by the customer's typical 8am to 5pm receiving hours or a shipping schedule that ran Monday through Friday. Of course, as time marched on, so did customers' scheduling demands. Shipments now are measured in days or even hours, the work week runs 24 hours a day, seven days a week, and delivery times are predicated by when and where the customer wants their package delivered, no questions asked.

As technology progressed, the T&L sector adopted two-way radios and pagers. This technology gave Dan and the EZWay dispatch department a form of instant communication -- dispatch could always page Dan, or even better, call him in his truck. Although radios and pagers provided some relief from intensified customer demands, Dan and EZWay still were saddled with lots of paperwork, and if Dan wasn't in his truck or his pager's batteries were dead, dispatch just waited for Dan to call in or return to the yard.

And Then Came Wireless

Imagine the dramatic difference wireless technology can make toward improving this scenario, for EZWay's driver Dan, Dan's boss and the customers they both serve. Consider driver Dan's day when the manual and redundant processes and activities that provide Dan, his company, and their customers with little or no value are eliminated. Here is a snapshot of Dan's day with wireless technology on his side.

Dan begins by turning on his ruggedized handheld device and entering a password to sign onto the EZWay network. His route information and manifests for the day are downloaded to the handheld via the company's wireless local area network. Dan then heads to his truck and receives a prompt from the device, reminding him to record the current mileage and condition of truck before starting the day.

At each stop on Dan's route, he is prompted to push an "arrived" key on the handheld, and upon leaving he is prompted to push "departing." This action automatically logs Dan's activities for the payroll department, sets up alerts to customers (notifying them that their package is en route) and informs the dispatcher that Dan has completed a leg of his trip and is moving on. The data also is sent to the company's route planning software so it can "learn" from actual driver performance and continuously improve scheduling.

Life As We Knew It – Private Fleets

Tom is a professional driver for Private Fleets R US. At Tom's second stop, he discovers that some of the product listed on his manifest is missing. Tom searches the truck in hopes of finding it mixed in with another shipment, and wonders if he left the freight at his first stop -- or did the warehouse just forget part of his load?

Tom adjusts the delivery document and calls in to report the shortage, spending a few minutes on hold, then a few more answering operations' questions. Now the process of re-checking the dock paperwork begins -- verifying that product was pulled, loaded or placed on another truck -- while customer service works to reconcile the order.

Tom gets back on the road once he completes the call to dispatch, running twenty minutes behind for his next delivery and hoping he can make up the lost time. Maybe at the next stop there will not be another truck in line a head of him . . .

Wireless to the Rescue

The scene improves dramatically when Tom is armed with wireless technology. Again, Tom arrives at his second stop and begins unloading, scanning each box as he completes the order. The customer's receiving clerk tells Tom he should have received twelve pieces instead of just ten. A quick check of the electronic manifest reveals that the customer's purchasing agent changed the order at 11pm -- before the dock supervisor came in that morning -- and that the delivery is correct. No time is lost in chasing down answers and the customer is relieved by the quick and accurate information.

Life As We Knew It – 3PL

Matt is a professional driver for Big 3 Logistics, which services the automotive industry. His days usually are spent making "milk runs" between suppliers and the automotive manufacturing plants. Matt is accustomed to the process of showing up at the dock and taking what ever the shipper has to send for the day, then calling in the information to dispatch. He is also used to the hold times and the dispatchers' harried questions about lost minutes, lost orders. And Matt is used to the nightly routine of checking his paperwork with dispatch to record mileage, time spent at each stop and other "critical" information the company needs to run the business.

New Efficiencies with Wireless

As Matt arrives at each stop, he consults his handheld computer to see how many pieces to pick up. If the shipper wants to send a number of pieces different than is indicated on the handheld, Matt simply adjusts the order quantity on the device and goes on about the day -- no more time on hold or battling dispatchers about arrival and departure times. At the end of the day, Matt's handheld computer prompts him to record mileage after parking the truck. His activities automatically are downloaded to Big 3's accounting system and Matt is credited a five percent bonus for achieving 100 percent accuracy and arriving at every stop within fifteen minutes of the scheduled time.

Admittedly, these stories are simplified illustrations of life at various types of transportation and logistics companies, but the facts are clear: wireless technology is a powerful tool for tracking and managing assets, drivers, the movement of goods and the flow of information. Whether for a private fleet, 3PL, LTL or a blend of transportation services, wireless mobile computing is key to revealing and eliminating business inefficiencies.

Top Five Concerns

- 1. Cost of Fuel**
Poorly planned routes and unexpected route changes, extra trips driven to make up for missed pickups and deliveries, they all add up to extra miles that inflate the company's fuel bill. An efficiently planned and communicated schedule greatly reduces the number of miles driven and gallons of fuel purchased.
- 2. Driver Compensation**
Good drivers cost good money, so get the most out of the company's investment in personnel. Armed with wireless devices, drivers will spend less time fiddling with paperwork and phone calls, more time on the road.
- 3. Vehicle Equipment Costs**
The dollars spent on purchasing and maintaining equipment continue to skyrocket. Every efficiency delivered from existing mobile assets helps to contain unnecessary fleet growth and improves profitability.
- 4. Insurance Costs**
Any expansion of fleet or staff means a proportional increase in dollars spent on insurance. Instead of adding new vehicles and new people, consider making the most of what and who is already on hand by improving workflow efficiencies with wireless technology. You'll see significant positive impact in both insurance and employee benefit costs.
- 5. Customer Satisfaction**
Quick, accurate information available to the customer on demand can have a profound impact on customer satisfaction and their overall perception of your business, ensuring repeat business and customer loyalty.

Benefits to a T&L Company

The logistics industry can not just add vehicles, people or capacity to increase profits, however, it can use better communication and better systems to create efficiencies that lead to increased profits. To achieve these new efficiencies, company executives must be able to identify, track and manage all assets touched by the company's drivers, including vehicles, inventory, information and even customers. Gathering this data need not be burdensome to the organization or to the staff. Wireless technology allows for virtually effortless mobile asset management and accountability, and the best part is, you don't have to be a UPS or FedEx to afford it.

Wireless-enabled handheld computers also allow T&L companies to gather customer, route and accounting information right at the customer's door, in real-time, as goods are picked up and delivered. This instantly available information means faster invoicing, more accurate route planning, scheduling and dispatching and less time in the cab for drivers.

Some wireless handheld computers also can be managed and updated remotely on demand – no need for docking. Through remote device management, handheld computers may be updated through a "one-to-many" broadcast. These broadcasts "push" new software, updated training manuals and company procedures so that all drivers receive the most up-to-date versions – all on the same day at the same time. Every time a driver logs on to his handheld computer he is assured to be using the newest software, and the company doesn't waste money and time updating the devices one by one.

Benefits to the Business Owner or Operations Manager

Those who oversee the day to day operations of a logistics company need wireless technology to stay competitive. As previously outlined, implementing wireless helps companies achieve greater efficiencies in overall operations and increases workflow through distribution systems, shipping and receiving docks and yard management. And by making the movement of drivers and packages more efficient, deliveries and timing are tighter.

The availability of real-time information from the road also improves planning and scheduling of operations on all fronts. Today's advanced operations are hungry for data. Smart wireless handheld devices allow users to collect data and transmit it, in real-time to management and optimization systems.

Additionally, mobile computers allow drivers to alert the office immediately when things don't go as planned – they get a flat tire or a customer adds a large package to their pickup order. Changes in schedule, freight and route then are absorbed by the dispatch department, which can quickly plan a new route or call in a different driver. All of these changes can be communicated via data transfer, so drivers do not have to pull over and break from the schedule to make or receive a phone call.

Handheld devices also inform the central office when a driver is – or isn't – working as scheduled. If a driver does not indicate arrivals and departures throughout the day, it is assumed he is not working and corrective action can be taken.

Alternatively, doing business without wireless can be a real nightmare for T&L operations managers. Inefficiencies such as double handling of goods (which mean more opportunities to cause damage or make mistakes), staged pickups and a general start-and-stop, hurry-up-and-wait pace are common, especially when drivers and dispatchers must rely on handwritten or radioed information, or if they have to wait until the end of the day to report information they have known since early morning.

Benefits to the Dispatcher and Driver


Drivers have enough to worry about between traffic, customers and ever-changing regulations. And since laws in many states prohibit drivers from using a phone when the truck is in motion, talk time costs valuable road time. Although we all love our cell phones, voice communication can get in the way of driver efficiency and should only be used as a fallback position in case of emergency.

Transferring route information wirelessly allows drivers to focus on the task at hand -- driving the truck and making deliveries. Those equipped with wirelessly enabled handheld computers can receive messages from the home office, delivered automatically via GPRS or CDMA technologies, all without touching the device. When the driver stops, his or her device already has been updated in the background.

Drivers who use handheld computers and report their progress throughout the day become more valued employees; the information they provide is vital to the planning processes that decide the direction of the company. Wireless communication also makes drivers more efficient, cuts down on paper work and mistakes, and eliminates time consuming chores such as handwriting and re-entering reported information.

Drivers know that, with increasingly tighter schedules, their time at the customer's dock is valuable. If a driver misses a scheduled delivery, he may have to wait a considerable amount of time until another opportunity arises to make the delivery. If the driver knows he is going to miss a delivery window, he can call or send a message ahead to reschedule, thereby allowing the retailer to reschedule its dock crew to receive the shipment later.

Dispatchers also benefit greatly when drivers carry wireless handheld devices. Messages sent out to alert the fleet of schedule changes or updates are sent immediately – no phone calls necessary. Once the driver reads the message, the dispatcher receives an electronic acknowledgement of receipt. Dispatching via phone can be a time consuming and repetitive chore and therefore requires more labor, whereas a wirelessly enabled fleet can be handled by fewer dispatchers.



David L. Cunningham Jr., President of Asia Pacific FedEx Express, had this to say about his company's experience using wireless technology for pick up and delivery. "With real-time information provided by the new system, we expect to reduce pickup response time from one and a half hours to one hour. The significant increase in customer satisfaction is as important as the cost efficiencies of this (wireless) system. With real-time information, we're able to 'push' the work out to our couriers and proactively dispatch them as needed."

The Right Handheld Device for Your Driver, Your Business

When equipping drivers with wireless handheld devices, consider their daily tasks, environment and how the information they collect will be used within the company. Here are some specific wireless device features that can benefit the T&L sector:

- *Ruggedized* – A truck driver's job is physically demanding, so his handheld computer should be able to hold up under tough conditions. Devices used by truck drivers will be left in a hot or cold truck cab, accidentally dropped to concrete, even stepped on. Traditional PDAs and computers cannot withstand this kind of abuse -- they break easily and must be replaced often. A handheld computer designed to withstand tough environments will keep working shift after shift, and save the company money in the long run.

Ruggedized handheld computers also benefit the business itself, earning their keep many times over. Total cost of ownership studies conducted and published by the Venture Development Corporation (VDC) show a substantial savings over a three to five year period when fully ruggedized devices are used in the transportation and logistics space

- *Multiple radios* – Handheld computers equipped with local area wireless, wide area wireless and Bluetooth radios accomplish multiple tasks in one device – data exchange within the physical facility, data and voice communication while out on the road, wireless printing within the truck cab. Devices with multiple radios also require less training and allow drivers to carry fewer devices to get the job done
- *Long battery life* – Time spent changing out batteries is time better and more profitably spent on the road. Choose a device that holds a charge throughout a full shift so drivers can keep rolling
- *Scanning capabilities* – Although many devices are capable of scanning, not all scanning mechanisms are created equal. Devices equipped with high quality scanning capabilities ensure data accuracy, even when reading partially damaged barcodes
- *RFID* – The future of data collection is RFID. Consider implementing this technology now to improve fleet and inventory control, track valuable company assets and to protect your company's present and future client relationships
- *Portable printing* – Bluetooth technology allows drivers to wirelessly print a receipt at the site of delivery. This feature is especially helpful when delivering to customers that require a hard copy receipts
- *GPS* – Devices equipped with global positioning capabilities allow companies to pinpoint drivers' exact locations and track their activities throughout the day. This information is extremely valuable for managing employee productivity and improving operational efficiency
- *Signature Capture* – Handheld devices equipped with signature capture automate the proof of delivery process and speed collections, shortening your company's days sales outstanding.

Benefits to the End Customer

Perhaps the most valuable benefit of wireless data communication is the positive messages to the end customer that result from its use. The real-time reporting afforded by wireless technology enables customers to check on shipments, verify charges and request changes to shipments quickly and easily, making them feel comfortable, assured and prepared for the arrival of their package.

Wireless handheld devices also open up simple, direct and efficient paths of communication with valued customers, improving working conditions for the driver, information flow for the company and most importantly, improving customer satisfaction.

The quality and availability of information wireless delivers also allows companies to provide better service, resulting in happy, repeat customers. Today's customers expect near flawless management and tracking of their orders. Data collection and networking are critical to providing package visibility and elevating the total customer experience.

Conclusion

Businesses must evolve, progress and find new ways of differentiating themselves or they run the risk of extinction. Transportation and logistics companies cannot meet the challenges of today's competitive environment by simply hiring more drivers and buying more trucks, but must seek out new efficiencies within their existing systems.

Equipping drivers with wireless technology brings immediate, valuable new efficiency to the pickup and delivery process, as drivers collect valuable data and it is delivered in real time to critical business processes. Wireless mobile computing is essential to succeed in today's competitive and information driven world of transportation and logistics.

North America

Corporate Headquarters
6001 36th Avenue West
Everett, Washington 98203
tel: 425.348.2600
fax: 425.355.9551

550 2nd Street S.E.
Cedar Rapids, Iowa 52401
tel: 319.369.3100
fax: 319.369.3453

Media Supplies
9290 Le Saint Drive
Fairfield, Ohio 45014
tel: 513.874.5882
fax: 513.874.8487

Canada

7065 Tranmere Drive
Mississauga, Ontario
L5S 1M2 Canada
tel: 905.673.9333
fax: 905.673.3974

Europe/ Middle East & Africa Headquarters

Sovereign House
Vastern Road
Reading RG1 8BT
United Kingdom
tel: 44.118.987.9400
fax: 44.118.987.9401

Asia Asia Regional Office

26-16 International Plaza
10 Anson Road
Singapore 079903
tel: 65.6324.8391
fax: 65.6324.8393

Beijing Representative Office

29 FL, Unit A1, China Merchant Tower
118 Jian Guo Road
Chaoyang District, Beijing 100022
Tel: 86 10.5165.5922
Fax: 86 10.6567.6778

Australia

Level 7, 200 Pacific Highway
Crows Nest, NSW 2065
Australia
tel: 61.2.9492.4400
fax: 61.2.9954.6300

**South America & Mexico
Intermec South America Ltda.**
Rua Samuel Morse 120 9 andar
Brooklin CEP04576-060
São Paulo, SP
Brazil
tel: 55.11.5502.6770

Intermec Technologies de Mexico
Av Tamaulipas #141, Primer Piso
Col. Hipodromo Condesa
Mexico, DF, 06140 Mexico
tel: 525.55.241.4800
fax: 525.55.211.8121

Internet

www.intermec.com

Sales

800.347.2636
(toll free in N.A.)
tel: 425.348.2726

Service and Support

800.755.5505
(toll free in N.A.)
tel: 425.356.1799

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