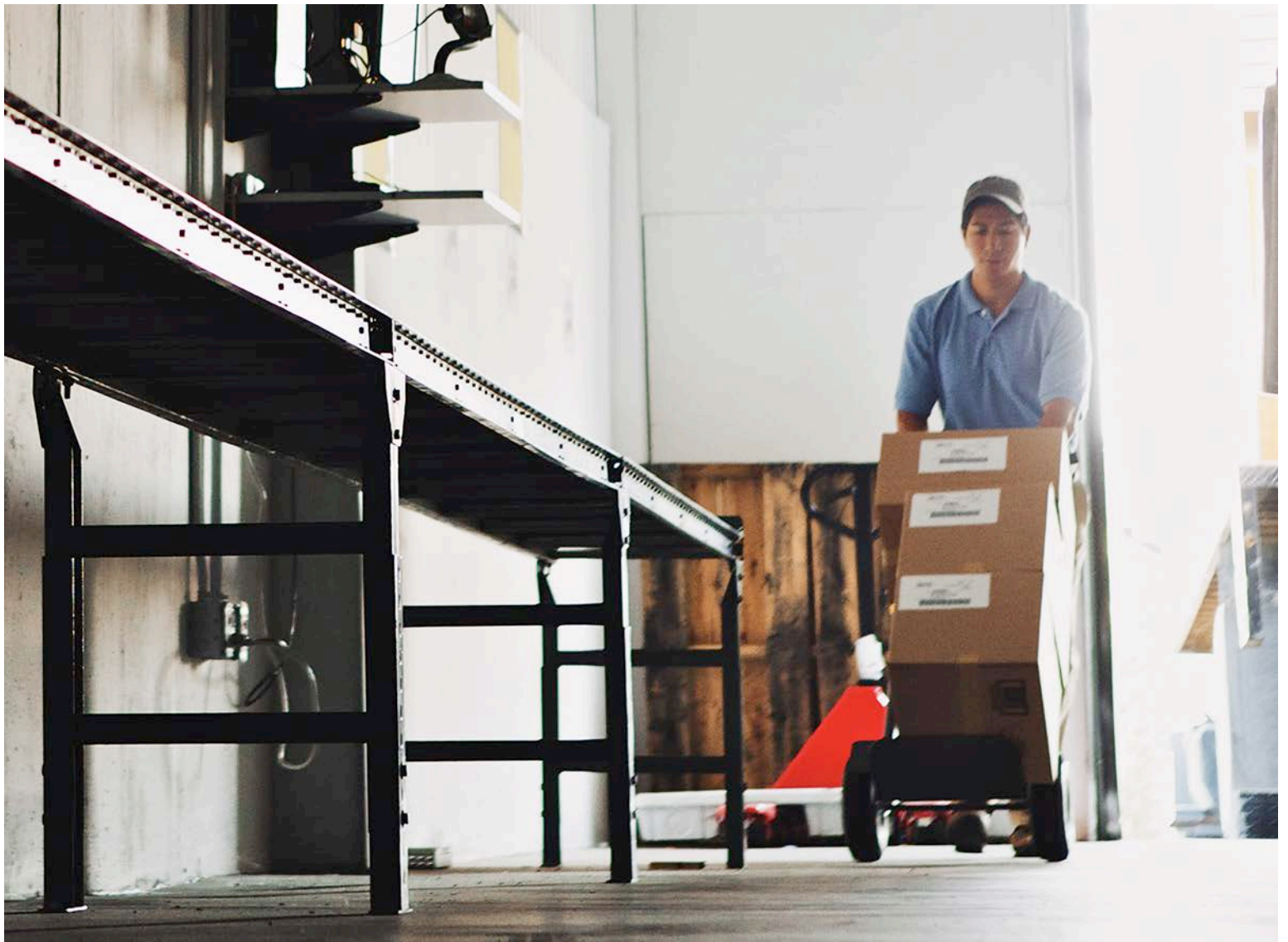# NEXT GENERATION PICKUP AND DELIVERY PUTS THE CUSTOMER IN THE DRIVER'S SEAT

NEW THINKING, NEW REGULATIONS AND NEW TECHNOLOGY ARE RE-DEFINING PICKUP AND DELIVERY BASED ON OPTIMIZING CUSTOMER SERVICE AND SATISFACTION.

In today's world, the customer is king. It's becoming increasingly important to keep your customers satisfied and loyal by providing more efficient, more visible, more predictable, more cost effective supply chain operations. That's especially true for the ultimate start and end points in the supply chain, which occur at pickup and delivery. Whether your customer is shipping or expecting to receive raw materials, raw silk or raw oysters, they want and need to know everything about their shipment. When it was shipped. Where it is now. When it will be delivered.

In addition, customers are demanding a higher level of service. Next-day delivery is fast becoming a push for same-day delivery. They also continue to ask for shorter lead times and lower rates. You should enable your employees to provide this insight to enhance customer service levels. At the same time, you should ensure that they (and the fleet they operate) are working productively, safely and effectively in order to protect competitive differentiation and, as a result, your profitability.

PICKUP AND DELIVERY EVOLUTION

With this increased scrutiny and need for real-time information, it's no surprise that pickup and delivery are rapidly evolving. It wasn't long ago that pickup and delivery were primarily manual and paper-based operations, with reams of paper forms and reports to create, track and store, all prone to human error. Driver logs. Inspection reports. Bills of lading. Customer signatures for proof of delivery. Fuel receipts. But paper-based systems are notoriously inefficient. They've been consistently plagued by inefficient operations, inaccurate shipments, unsatisfactory delivery performance and escalating costs. At the vital pickup and delivery links in the supply chain, these issues all too often result in subpar service, unhappy customers, avoidable and unnecessary costs and ultimately, lost revenues.

As a result, some carriers and service providers have over the last decade adopted and deployed mobile technology-based solutions to help overcome these challenges. In many cases, however, these technologies were purpose-built for one use case or to solve a single problem. This often resulted in siloed systems that weren't user friendly and couldn't deliver the comprehensive benefits required in an increasingly complex and volatile supply chain.

THE INTEGRATED SUPPLY CHAIN

The good news is that, although some paper-based or siloed mobile systems still remain in use, things are changing rapidly. The key driver of change? The customer-centric marketplace. The solution? Technology, which has already begun transforming pickup and delivery operations in a growing number of organizations. Purpose-built mobile computers help improve service by providing carriers and shippers alike with the business-critical platform to unlock visibility and control across the entire distribution and delivery network, providing comprehensive, accurate and actionable information in real time. In addition, innovative applications ensure increased pickup and delivery efficiency, accountability and integration with all the elements of the Transportation Management System (TMS). The result of this supply chain integration—supported by greater levels of collaboration across fleet-ready devices and application suites— is faster, smarter, more efficient and less costly operations.

REGULATORY COMPLIANCE

There's also another significant driver in the use of technology: the evolving regulatory environment. One of the prime motivators for technology adoption in the supply chain is the need to comply with a growing number of government and industry regulations. These new regulations are aimed at increasing safety and providing operational and environmental oversight to increase fleet efficiency. Compliance will require further adoption of sophisticated technologies and applications in support of the mandate for automated data capture and electronic record keeping in the field.

In the United States, regulations include the 2012 Moving Ahead for Progress in the 21st Century (MAP21) highway bill that mandates automated processes such as electronic driver logs and inspection reports. Drivers are also a major consideration. The FMCSA (Federal Motor Carrier Safety Administration) is focused on driver performance and safety issues such as Hours-of-Service (HOS) guidelines, which determine how many hours drivers can safely be behind the wheel over various time periods. Additionally, the organization has banned the use of mobile telephones in cabs of commercial vehicles. Other agencies are establishing regulations for fuel tax data collection and reporting.

ELECTRONIC BUSINESS BENEFITS

But the new pickup and delivery technologies are much more than simply reactive or driven by external legislative demands. They increasingly emerge from innovations or requirements within the carrier or shipper ecosystem, efficiently and proactively providing an array of business-critical benefits. Real-time, end-to-end inventory and supply chain visibility. Load and route optimization. Successful driver recruitment and retention. Real-time driver management. Tighter delivery windows. And, most important, keeping today's savvy, connected and demanding customers satisfied in an increasingly capacity-constrained and competitively-heightened marketplace. Many organizations are finding that the technology deployed across their fleet has become a key differentiator for their business, enhancing service, creating leverageable competitive edge, increasing customer loyalty and lowering costs.

DRIVERS AS TECHNOLOGY DRIVERS

While technology is becoming increasingly crucial to supply chain operations, in pickup and delivery there's obviously also an important human element: the driver. Organizations need to optimize not only the costs of driving—using technologies like GPS, Electronic Logging Devices (ELD) and telematics—but also the costs of the drivers themselves. In today's customer-centric supply chain, technology-driven driver efficiency and performance are also vital for optimizing customer satisfaction and loyalty. In addition, with today's serious driver shortages, sophisticated technology that makes their jobs easier also helps in the recruitment and retention of good drivers.
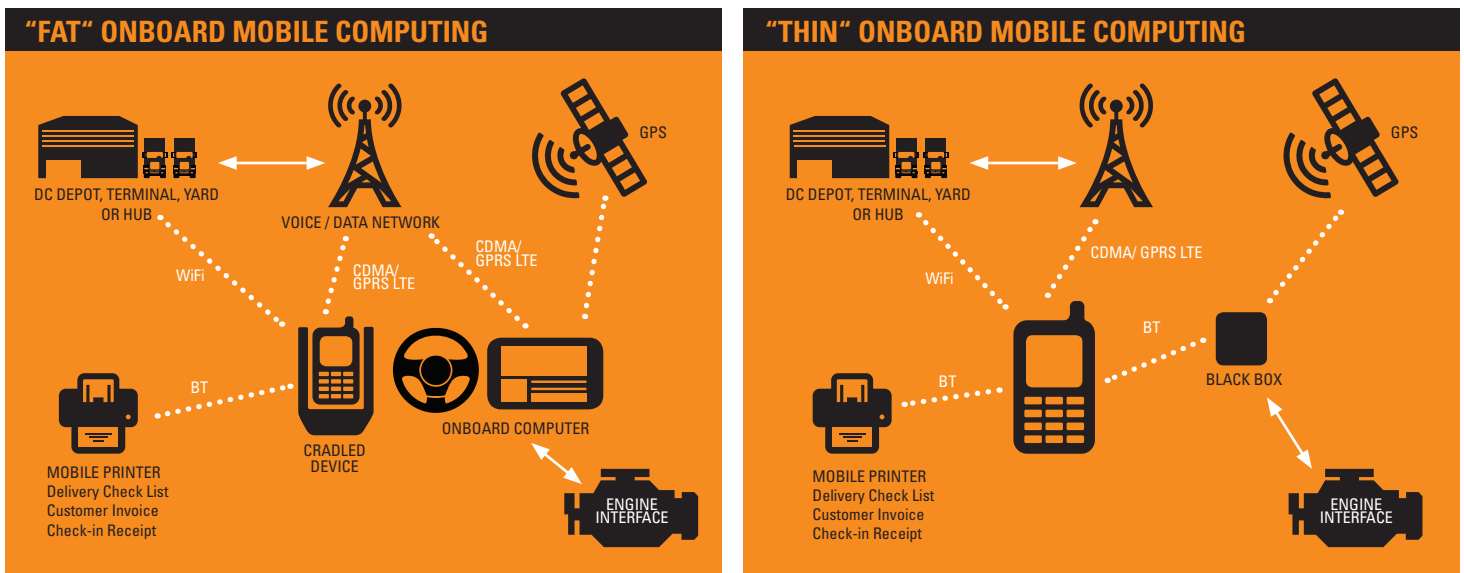
DRIVER RESPONSIBILITY

Being a professional driver is a tough job. You're responsible and accountable for a wide range of critical processes and activities. Vehicle inspection. Driving and road safety. Route optimization and fuel economy. Delivery within tight time windows. Proof of Delivery. Proper exception handling for OS&D (overage, shortage, and damage), should it occur. Documentation and reporting that's up-to-date, accurate and instantly accessible. In an increasingly complex industry, how are drivers going to accomplish all this? Not with the paper of old, nor with the siloed and disparate pieces of technology of the recent past, but instead with an increasingly integrated technology solution which helps them perform their jobs more effectively, both inside and outside of the cab. Today's sophisticated communications technology connects drivers with all the information and communications they need to succeed, which makes them more confident, more efficient and more productive.

INSIDE AND OUTSIDE THE CAB

For most drivers, the cab is both office and command center. As operations become more complex and more technology-driven, drivers have to have high-speed connectivity to information, whether they're inside or outside the cab. Inside, the focus is on driving efficiency: providing safe, timely and regulatory-approved access to up-to-the-minute data on metrics, routes, schedules, deliveries and much more. Outside, the focus is on enhanced customer service. Drivers must be able to intuitively and seamlessly document deliveries and service and interact with suppliers and customers. The question is, what's the best way of ensuring this inside-and-out connectivity?

Today, there are basically two models for onboard mobile computing: a "fat" model and a "thin" model. In the former, network and vehicle connectivity and computing power are centered on onboard mobile or vehicle-mounted computers for things like telematics and navigation, augmented by portable handheld computing devices for outside-the-cab activities such as proof of pickup and delivery and completion of Driver Vehicle Inspection Reports (DVIR).

"FAT" ONBOARD MOBILE COMPUTING

DC DEPOT, TERMINAL, YARD OR HUB
VOICE / DATA NETWORK
GPS
WiFi
CDMA/ GPRS LTE
CDMA/ GPRS LTE
BT
CRADLED DEVICE
ONBOARD COMPUTER
ENGINE INTERFACE
MOBILE PRINTER
Delivery Check List
Customer Invoice
Check-in Receipt

"THIN" ONBOARD MOBILE COMPUTING

DC DEPOT, TERMINAL, YARD OR HUB
GPS
WiFi
CDMA/ GPRS LTE
BT
BT
BLACK BOX
ENGINE INTERFACE
MOBILE PRINTER
Delivery Check List
Customer Invoice
Check-in Receipt

•••••• Wireless connection
◄─► Direct Line (wire) connection

As companies focus on reducing cost and improving productivity, however, many are choosing to consolidate and streamline the in-cab environment with a "thin" configuration. In this model, network and vehicle connectivity and computing power are provided by innovative new handheld devices that consolidate both functionalities (in-cab and out) in a single portable unit. These ruggedized devices are capable of running powerful applications, providing instantaneous access to the cloud and the TMS and enabling real-time visibility and accurate business-critical communications throughout all aspects of fleet management.

Which model is best for you? That's both a strategic and tactical decision to be made in the context of your overall supply chain vision, network and system. Whichever model you select, it's clear that mobile computing devices and next-generation applications will play an increasingly important role in helping you provide not only accurate pickup and delivery services to inspire customer confidence and loyalty, but also enhancing the efficiency and cost effectiveness of how you manage your workforce, maintain your fleet, and optimize your routes.

THE CONNECTED DRIVER

WHEN A DRIVER SLIDES INTO THE CAB EACH MORNING, THE INFORMATION HE'LL NEED FOR THE DAY IS IMMEDIATELY AVAILABLE WHEN HE TURNS ON HIS IN-VEHICLE OR HANDHELD COMPUTING DEVICE AND LOGS INTO HIS APPLICATION(S). HIS DEVICE HAS ALREADY BEEN PROGRAMMED WITH THE UP-TO-DATE INFORMATION NEEDED TO MAXIMIZE HIS PRODUCTIVITY FROM THE BEGINNING OF THE DAY TO THE END, HELPING HIM WITH LEADING-EDGE APPLICATIONS THAT MONITOR AND OPTIMIZE HIS PERFORMANCE IN A VARIETY OF WAYS.

DRIVER VEHICLE INSPECTION REPORT (DVIR).
For virtually all drivers, the day's first task is to visually and physically inspect the vehicle, and compile the DVIR. Today, instead of having to laboriously fill out paper forms, drivers simply input information—like tire pressure and fuel levels—into handheld computers, which automatically make reports available. If there's a physical issue with vehicle or load, he uses his device's camera to take a photo and add it to the report. Benefits are not only safety-related; proper conditions-based maintenance can also drive significant cost and customer service benefits vs. failure-based strategies.

LOAD PLANNING.
Drivers can be confident that their trucks have been loaded for maximum efficiency using the latest imaging technology for pallet and package dimensioning and sophisticated load optimization applications, ensuring that deliveries will be accurate and in the proper order for the route plan.

THE CONNECTED DRIVER (CONTINUED)

ROUTE OPTIMIZATION.

With the high cost of fuel and vehicle maintenance, it's critical to make certain that drivers use the most cost-effective and efficient routes. To that end, the driver's handheld or in-vehicle computer provides him with dynamic up-to-the-minute route optimization, helping him meet tight delivery windows and fulfill expedited or emergency pickup and delivery requests. Results include enhanced customer satisfaction and maximized fuel efficiency.

FLEET MANAGEMENT & TELEMATICS.

As mandated by U.S. regulations, each vehicle must have an Electronic Logging Device to automatically read and update engine and vehicle safety and performance telematics. The ELD provides a variety of data reports—ranging from oil pressure to speed history to idle time to fuel economy data and more—to dispatch, enabling increased operational oversight and regulatory compliance. These reports help improve driver performance, as well as ensure that the fleet of vehicles is being operated safely and running smoothly. Additional capabilities, such as automatic calculation of fuel tax for fleets that cross state borders, are also possible.

TURN-BY-TURN NAVIGATION.

The vehicle's GPS system guides the driver along his route in real time, providing up-to-the-minute audio or map-based turn-by-turn navigation assistance, ensuring the on-time deliveries that enhance customer satisfaction. In a high turnover workforce and in fleet operations with high day-to-day or week-to-week variability in pickup and delivery locations, this is incredibly important.

DOCUMENT CAPTURE.

Applications on their handheld computers help your drivers avoid the pitfalls of paper-based documentation, providing fast, efficient customer service with sophisticated document capture functionality. Proof of delivery, for example, is quickly and simply established through electronic signature capture, while new functionality available in some of today's purpose-built mobile computers can assist with streamlining proof of pickup through accurate bill of lading (BOL) scanning and processing. Both of these capabilities help eliminate the delays and inaccuracies caused by paper in the fleet or in the terminal, allowing for increased cross-dock utilization, expedited accounting, and greater driver productivity (e.g. more stops per day).

THE VALUE OF ENTERPRISE-GRADE DEVICES

No matter which mobile computing model your company chooses, key to its success are innovative, rugged computers that enable drivers to be connected inside and outside the cab. In most cases, an organization has two choices: consumer-grade devices like smartphones and tablets, or enterprise-grade devices purpose-built for the harsher, more demanding fleet environment.

Some see the fundamental difference between the two as one of cost; typically, consumer devices are initially less expensive than enterprise-grade devices. Some also fear that enterprise devices have proprietary, hard-to-learn operating systems. They think that because consumer devices are so ubiquitous and based on popular open platforms like Android, they'll be easier to use. So what's the issue? Toughness.

The reality is, in difficult, rugged environments like pickup and delivery, consumer-grade devices tend to break and break down. In a recent VDC Research report*, non-rugged device failure rates were shown to be at least twice, and often four or five times, higher than enterprise-grade devices. It's not surprising that, from an ROI standpoint, a growing number of pickup and delivery operations are opting for powerful, ruggedized, enterprise-grade handhelds.

Next generation applications increasingly integrate proof of delivery and proof of pickup workflows as part of a larger holistic solution. Off-the-shelf consumer-grade devices—which on their own may be able to support basic standalone DVIR, turn-by-turn navigation or telematics applications—will be challenged in an integrated approach. In today's more integrated fleet operations, the enhanced benefits of modern enterprise-grade approaches are becoming more essential for all types of fleet operations. Enterprise-grade devices not only enjoy all the benefits of consumer-grade devices—such as sleek design, familiar OS and intuitive interfaces—but also provide for enhanced durability and improved scanning performance, power management, security and manageability.

CONVERGED INNOVATION

There's no question about the ruggedness and reliability benefits of enterprise-grade devices. Drop a consumer-grade device on a busy loading dock and it breaks; drop a rugged handheld, pick it up and keep using it. They're also just as intuitive and easy to use as consumer-grade units. Offering what can be called "converged innovation," today's enterprise-grade devices combine the best of both types. They can use open, non-proprietary platforms, such as Android, and offer the full range of functions, tools and applications, available in both native applications and those developed in HTML5. They can also provide additional manageability and security features that are purpose-built for the needs of harsher, more mission-critical in-cab and out-of-cab environments. All of these benefits translate into a lower total cost of ownership (TCO) for the execution of your fleet's mobility strategy, which ultimately translates into a higher ROI for your business.

MAXIMIZING ROI: MANAGEMENT AND LIFECYCLE SERVICES

Yesterday, pickup and delivery were relatively simple and straightforward. Today, they've never been more complex and more dependent upon—and integrated with—other business-critical fleet management and customer service activities. Balancing ROI considerations with operational efficiency, supply chain management, customer satisfaction, driver productivity and sophisticated technology can be a challenge. That's why more and more organizations are considering the benefits of working with a committed, transportation industry-savvy partner to help them manage their assets—including critical communications technology and devices—from a cost-effective lifecycle perspective. Based on the importance of significantly reducing TCO and optimizing ROI, it's an option growing in popularity, not just for pickup and delivery operations, but for the entire integrated supply chain.

BEYOND SCAN-ON, SCAN-OFF

Not so many years ago, pickup and delivery operations technology could be described in four words: "scan-on, scan-off." The new generation of pickup and delivery technology has come a long way in a short time, and the industry—and its all-important customers—are benefitting greatly. Today's next generation, technology-based pickup and delivery—delivered by sophisticated applications and ruggedized handheld devices—is fulfilling an increasingly critical role in optimizing customer service and maximizing ROI.

INTEGRATION OF SYSTEMS

Next generation pickup and delivery is an evolving world of change and complexity. It's a fast-paced environment of innovative new technologies, stringent new regulations and increasingly critical business objectives. The question is: How do you bring all these components together to deliver next generation customer service? The answer is an integrated mobile computing system that connects the entire supply chain, creating end-to-end visibility and control that promote the overarching goal: creating more loyal, more profitable customers.

Motorola Solutions has been a transportation and logistics industry communications leader for more than 85 years, offering hardware and software solutions, as well as technology consulting and management services designed to help supply chain operators optimize productivity, enhance customer satisfaction and maximize the ROI of their investments in mobile technology.

For details, visit us on the web at
www.motorolasolutions.com/logistics

* VDC Research: Mobility in Manufacturing and Logistics.

THE INS-AND-OUTS OF DRIVER COMMUNICATIONS

A large east coast-based provider of truckload and LTL (less than truckload) regional and nationwide services depends on a powerful integrated telematics and proof-of-delivery system to improve efficiency and productivity. The company, with a fleet of 900 power units and 2000 trailers, deployed the system to accomplish a number of specific goals:

- Enable drivers to work outside the cab
- Provide drivers with signature capture, barcode scanning, imaging and photographs
- Monitor driver behavior with metrics and reporting
- Eliminate paper whenever possible
- Comply with electronic hours-of-service mandates
- Increase data accuracy by decreasing keystrokes
- Provide an open, flexible, scalable solution

Components of the solution include high-speed communications connectivity; Motorola MC65; handheld devices; ELD for HOS, vehicle diagnostics and driver behavior data; turn-by-turn directions; and mobile proof-of-delivery.

Bottom line, the solution is enabling the company to achieve its near-term and long-term mobile computing vision.

For details, visit us on the web at
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