Telematics and beyond: Maximizing the value of an all-in-one in-cab solution

EXECUTIVE SUMMARY

Telematics can give transportation and logistics (T&L) providers a competitive edge by increasing efficiency and reducing costs — which is especially critical in the face of volatile diesel fuel prices that threaten profitability. However, until now, telematics solutions have only been available as proprietary 'point-style' applications, presenting control, manageability and flexibility issues. To address these concerns, Motorola brings new value and versatility to telematics applications with the introduction of the VC6096, an open and expandable mobile computing platform that supports telematics, voice and data communications, GPS, fleet management applications and more, in a single, all-in-one in-cab device. This white paper explores the architecture of this new open standards-based solution and the many benefits it can provide.

The business issue: obtaining maximum value from telematics investments

The introduction of telematics has had a profound impact on the transportation and logistics industry, enabling providers to: automate the collection and creation of required documentation for compliance with government regulations; control fuel and maintenance costs; and gain visibility into the driving habits of individual drivers.

However, until today, obtaining telematics information required the deployment of a proprietary point solution, usually consisting of pre-bundled hardware and software. Transportation and logistics companies have little ability to control, customize or build on any aspect of these closed systems — from functionality and new feature development to how data is processed and where data is stored. In addition, typical 'closed' point solutions offer limited expandability, restricting future growth and hampering the ability to utilize this investment to achieve incremental operational efficiencies — critical in the face of today's rising fuel, insurance and labor costs. And the inability to directly and remotely manage the hardware out in the field can contribute to increased yet unnecessary driver and vehicle downtime.

The next generation of in-the-cab mobility solutions

To address these issues, Motorola has introduced an open standards-based platform designed to support telematics and much more, providing transportation and logistics (T&L) providers with a mobile in-cab solution that offers greater versatility and value. The VC6096 WWAN In-Vehicle/Fixed Mount Mobile Computer offers the robust hardware platform required to turn any truck into a truly mobile office, equipped with all the voice and data services required to streamline any in-the-truck application. Companies are now free to select the best-of-breed components and applications required to best meet business needs. Designed to handle Less Than Truckload (LTL) — Line Haul Operations, Truckload (TL), Over the Road (OTR) and Transport/Bulk operations, this all-in-one device offers simultaneous support for 3.5G HSDPA wireless WAN (WWAN), wireless LAN (WLAN), Bluetooth®, GPS and telematics support,

providing the real-time tools and data required to achieve cost-effective compliance, maximize driver productivity, improve safety and vehicle utilization and reduce costs.

This single flexible platform offers support for a full range of applications:

- Robust telematics support provides real-time visibility into driver and vehicle performance, in addition to automating hours of service reporting and more.

- Location-based services that enable:

    - the ability to track the truck and provide real-time load status to customers

    - dynamic routing, route optimization and real-time navigation to help ensure that deliveries are received on-time every time, while reducing mileage and the associated fuel costs

- Cell phone functionality keeps drivers connected to dispatch, emergency services and more. The integrated internal speaker and microphone combine with Bluetooth, allowing drivers to choose their preferred hands-free voice mode: a wireless Bluetooth headset or speakerphone.

- Bluetooth enables the deployment of a handheld mobile computer than can be utilized to streamline a multitude of processes outside the truck. Bar code scanning and image capture can enable the automatic and error-proof collection of data in the back of the truck and at the loading dock. And when the driver returns to the cab, the handheld device can automatically connect to the VC6096 and instantly transmit the captured data back to your business systems — no driver action required.

- Personal productivity applications that can be enabled for drivers include the ability to:

    - send and receive email on the road to cost-effectively stay in touch with the office — friends and family

    - get real-time weather and traffic updates to eliminate delays

    - receive updates from dispatch

…and more.

The Motorola VC6096
A platform for telematics and more

With its open extensible platform, the VC6096 from Motorola allows transportation and logistics providers to leverage the telematics platform to create a comprehensive mobile office capable of supporting a wide range of fleet management and in-cab communications applications. The VC6096 enables transportation and logistics providers to:

- Automate time card, driver logs, fuel tax reporting and other compliance activities

- Monitor and correct individual driver performance variables like excessive speeds, unnecessary idling or improper shifting to improve fuel efficiency and road safety

- Monitor engine fault codes and engine performance in real-time to protect vehicle utilization and lifecycle

- Identify routes and drivers that yield more billable miles — and revenue

- Enable in-cab email and messaging

  - Provide real-time traffic and weather reports

  - Provide real-time turn-by-turn navigation

- Provide real-time visibility into driver delays to protect customer satisfaction — and productivity and performance of overall operations

- Enable real-time fleet location for route optimization and dynamic routing

- Provide a real-time voice connection to dispatch

- Leverage the VC6096 to further automate processes outside the cab of the truck: A handheld mobile computer that connects wirelessly to the VC6096 via Bluetooth (when the driver enters the truck) can provide new capabilities, such as bar code scanning and electronic signature capture, enabling the transmission of real-time proof of delivery and order reconciliation as well as alternate payment methods for cash-on-delivery (COD) orders.

The business benefits of an open platform in-cab solution

Due to the ability to support a multitude of voice and data services, the Motorola VC6096 easily replaces multiple point solutions — for example, there is no need to invest in a cell phone for voice communications, a GPS unit for location-based applications and a telematics solution. Now, a single piece of hardware — the VC6096 — provides all this functionality and more, effectively:

- Reducing capital costs associated with purchasing multiple devices per vehicle

- Reducing operational costs — there are fewer devices in the truck to monitor and manage

- Enabling rapid and cost-effective deployment of future applications — the company is more agile, able to better respond to changing company needs

- Making the best use of the available space in tightly constrained cabs

- The company enjoys real value — an integrated in-the-cab solution that delivers financial and strategic benefits:

  - Financial:
    The ability to condense multiple technology solutions into a single platform delivers an outstanding low total cost of ownership and a rapid return on investment

  - Strategic:
    The ability to support all the crucial in-the-truck voice and data applications maximizes compliance cost-efficiency, driver productivity, driver safety, and fuel efficiency as well as vehicle utilization and lifecycle.

The technical advantages of Motorola's open-platform in-cab solution

The architecture of Motorola's open-platform 'telemetry and more' solution offers a number of technical advantages over traditional proprietary point-solutions, including:

A simpler telematics interface

Proprietary 'point' telematics solutions may require a unit in between the engine bus and the display. Depending upon the solution, displays may be 'dumb' terminals as well as semi-intelligent or intelligent mobile computers.

The VC6096 mobile computer is highly intelligent and connects directly to the engine bus, eliminating the need for additional

components as well as cables to connect the component to the display and to the engine. As a result, this 'in-cab network' is simplified — there is less equipment required in the space-constrained cab of the truck. There are fewer parts to malfunction, fewer cables to fail and fewer spares pools to purchase and maintain. As a result, this simplified architecture increases uptime and reduces capital and operational expenditures.

Beyond compliance: the freedom to customize applications…and fully control data

Unlike proprietary telematics solutions, Motorola's VC6096 is built on an industry standards-based hardware platform that allows T&L providers to choose the applications that best suit their business requirements. The VC6096 enables a collection of a wealth of real-time data — from mileage, location, driver performance and vehicle metrics to hours of service and arrival and departure times. Organizations now have the freedom to deploy the applications that can maximize that data — selecting either third-party applications of their choice or developing their own applications. New features and enhancements can be developed and added at any time — the company is no longer bound to a vendor's development schedule and strategy. And while proprietary systems store data in their own servers and data houses, the VC6096 gives companies complete control over where and how their data is stored, maintained and backed-up.

Now, T&L providers can easily leverage telematics data throughout the business, enhancing fleet management. For example, dispatchers with visibility into real-time telematics data can spot drivers who are speeding, shifting improperly, allowing the vehicle to idle for an extended period of time and more — all in real time. This 'window' into driving behavior allows dispatchers to correct driver performance, improving safety, reducing vehicle wear and tear and protecting against unnecessary fuel usage.

And since the VC6096 supports GPS as well as voice, the same platform that provides support for telematics can also provide the data required to optimize routes, enable dynamic routing and provide wireless voice services. Mileage is minimized, reducing fuel costs as well as ensuring on-time pick-up and delivery. Dispatch can instantly identify trucks in the vicinity of a new call for pick-up, enabling the business to achieve cost-efficient routing as well as meet customer service expectations. And the need and cost associated with purchasing and maintaining cell phones for drivers is eliminated.

Enterprise manageability

As in-cab mobile computers play a larger role in collecting data and documenting hours of service and miles traveled for state fuel tax computations and other regulations, the management of these devices becomes critical. Out on the road, device failure or malfunction can have serious ramifications, as drivers must revert back to paper forms for days until they return to their home base and can have the device repaired. This downtime not only reduces driver productivity, but also opens your organization up to the risk of incomplete or inaccurate reporting to government agencies.

With tens of thousands of mobile computers distributed in trucks across the country or around the globe, tracking and supporting these devices can become a time consuming and expensive proposition — one that has the potential to significantly erode the overall return on investment (ROI) of the mobility solution. The need to physically touch each device to load software or troubleshoot requires a great deal of human capital that can reduce the efficiency and effectiveness of any IT department.

To address this management challenge, the VC6096 offers compatibility with Motorola's best-in-class remote management system — Mobility Services Platform (MSP). With the addition of MSP, T&L providers can completely and remotely track and control all VC6096 and other Motorola mobile computers over the air, anywhere in the world, all from a central location — bringing an unparalleled level of simplicity and cost efficiency to the management of mobile devices. By remotely monitoring devices, IT can identify potential performance issues, often long before they actually surface. Over-the-air update capabilities enable IT staff to keep all applications, device settings and firmware up-to-date on all VC6096 mobile computers with minimal effort. If a new version of an application is released to fix a software bug, it can be instantly deployed to all VC6096 devices in the field without waiting for each driver to return.

In the event of a malfunction, MSP enables your IT administrators to take control of a device in seconds, instantly viewing a wide range of information — from the health of the wireless connection and device settings to software versions and storage status. Right from the Network Operations Center (NOC), support personnel can upload a new configuration file or a completely new application, change a device setting or restore a component of an application that may have been corrupted. This

superior manageability protects your investment by protecting uptime for the device and your drivers — providing the control you need to keep your drivers out on the road.

Improve the ROI of existing applications

Part of Motorola's leading rugged mobile computer line, the VC6096 offers the shared hardware and software architecture to integrate seamlessly into your existing Motorola mobility infrastructure. Applications developed for other Motorola rugged computers — for example, for direct store delivery, proof of condition or proof of delivery applications — can be easily ported to the VC6096, dramatically reducing software development requirements and improving the return on investment for your existing application investments. The ability to extend a familiar interface helps minimize training requirements and reduce the learning curve — helping to further improve the speed of deployment and enable you to realize the benefits of mobility faster.

Extensible platform for maximum driver efficiency

With its extensible platform, transportation and logistics providers are able to build upon the VC6096 as needed to automate and improve accuracy for a broad range of driver activities – from loading to delivery. Integrated Bluetooth connectivity enables the easy addition of peripherals, such as handheld mobile computers and printers that can streamline processes outside the vehicle — from the customer's doorstep to the loading dock. For

example, equipped with a rugged handheld computer, drivers can automatically reconcile shipments to the bill of lading by scanning the bar codes on pallets and individual boxes or items as they are loaded onto or removed from the truck. In addition, drivers can electronically capture customer signatures, process payments and take a photo right at the customer's doorstep to automate proof of delivery, charge on delivery and proof of condition procedures.

The additional peripherals are easy for drivers to manage — the integrated Bluetooth connection in the VC6096 provides a convenient wire-free connection to handheld mobile computers, printers and more. When the driver enters the truck, the handheld computer can automatically and wirelessly connect to the VC6096, which can, in turn, instantly transmit the data over the cellular network to back office systems — no driver action required. The ability to leverage the wireless connection of the VC6096 eliminates the need to purchase handheld mobile computers with a WWAN connection, effectively reducing mobile device costs — only a Bluetooth connection is required.

The ability to extend data capture to points of activity outside the vehicle and transmit that data instantaneously through the supply chain can result in dramatic improvements in cycle times — for example, the reduction in the invoicing cycle can easily reduce days sales outstanding (DSO), improving cash flow. In addition, by replacing paper forms with electronic forms, the data entry

requirements inside the company is reduced, and data accuracy in increased. Administrators are now free to handle more work. The increased opportunity for errors inherent in the translation of handwritten data and the 'double-touch' of data (first handwritten, then entered into the computer) is eliminated. And the general automation of the many processes outside the truck further improves driver productivity.

Comprehensive direct-from-the-manufacturer 'no questions asked' service

When you purchase a VC6096, you get Motorola's unparalleled direct-from-the manufacturer support. Access to world-class support offerings ensures access to a product expert, when you need it. Motorola's unique all-inclusive Service from the Start with Comprehensive Coverage programs are designed to truly maximize uptime and keep your device in peak operating condition, offering coverage for normal wear and tear, as well as accidental damage to displays, keypads and internal components. You can choose the level of service and options you need to match the level of service with your business needs — for example, overnight shipment of a replacement unit truly ensures minimal downtime in the unlikely event a device must be shipped to a depot for repair. And a commissioning option ensures that devices are fully loaded with your software and tested, so the VC6096 is ready to plug into the truck, right out of the box.

This comprehensive 'no questions asked' service plan delivers real value in the transportation and logistics world. No matter how the damage occurred, you have peace of mind in knowing the device will be repaired at no extra cost — virtually eliminating surprise repair costs and reducing the total cost of ownership. And defined device replacement and service turnaround times ensure minimal downtime.

Unlocking the value of the telematics platform

To date, the value of a telematics platform investment has been limited to the corresponding value of the telematics data. Motorola's VC6096 allows T&L providers to break through this value barrier. Just as the desktop PC and the deskphone combine to provide the many voice and data services required to maximize the efficiency for non-mobile

workers inside the four walls, the VC6096 provides support for the many voice and data services required to maximize driver efficiency and vehicle utilization. Instead of a dedicated standalone telematics application with a defined set of features, the open platform and industry standard Windows® Mobile operating system enable the deployment of multiple applications, greatly improving the TCO and ROI of in-cab mobility solutions.

For more information on how VC6096 can maximize the value of your in-the-truck mobility solutions, please visit us on the Web at www.motorola.com/VC6096 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

About Motorola Enterprise Mobility Solutions

When you choose Motorola for your mobility solutions, you get the peace of mind that comes with choosing an industry leader as your technology partner. Motorola offers the proven expertise and technology you need to achieve maximum value and a fast return on investment — as well as first hand experience in virtually every size business in nearly every major industry. Every day, businesses of all sizes all over the world in all types of industries count on Motorola enterprise mobility solutions to maximize employee effectiveness, improve customer service and increase supply chain efficiency.

Our broad technology portfolio and world-class partnerships enable us to offer true end-to-end solutions that offer the simplicity of a single accountable source — regardless of the number of vendors involved. Our comprehensive product offering includes: rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; business-class smartphones; handheld, mobile and fixed RFID readers; rugged two-way radios for always on voice communications; private wide area and local area wireless network infrastructure to deliver wireless connectivity to workers inside and outside the four walls — and to network multiple business locations; a partner channel delivering best-in class applications; a suite of software applications for central and remote management of every aspect of your mobility solution; and a complete range of pre-and post-deployment services to help get and keep your mobile automation system solution running at peak performance every day of the year.

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