

VALUE OF IN-CAB WI-FI

Providing Wi-Fi Technology in the Cab Can Significantly Increase Profitability, Customer Service and Driver Satisfaction

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EXECUTIVE SUMMARY

In-cab technologies enable transportation companies to gain operational efficiencies in a market that faces many operational challenges. With Wi-Fi networks becoming more prevalent, many in-cab technology providers are adding Wi-Fi connectivity to their platforms in addition to terrestrial and satellite networks. Wi-Fi data transport enables companies to gain operational efficiencies as well as increase customer service levels for very low additional cost.

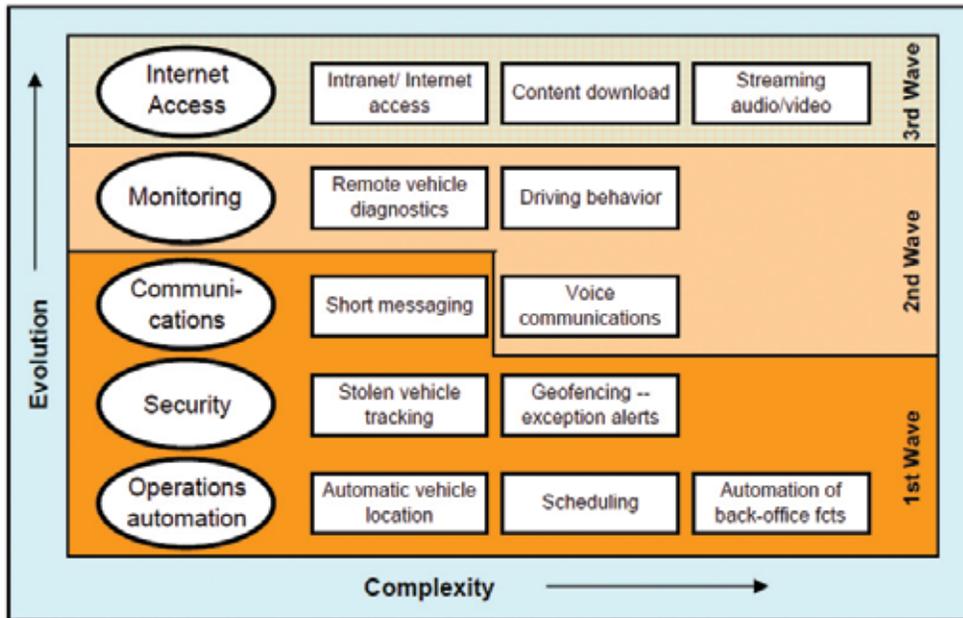
This white paper will address three challenges which affect both customer service levels and operational efficiencies:

1. Training drivers adequately to meet business requirements
2. Driver dissatisfaction leading to turnover
3. Efficiently receiving information from the driver into back-office systems

The transportation industry is fiercely competitive in many aspects of business. Managing fluctuating fuel costs, high driver turnover rates and projected shortages, specific customer requirements and compliance create complexities within the operation. Additionally, transportation companies have very tight margins and are constantly challenged for ways to maintain profitability. Mobile communication technologies, first introduced in the 1980s, changed how the transportation industry business operates. As technologies have evolved, the industry continues to capitalize on mobile computing platforms' increasing capabilities to drive efficiencies and attract and maintain profitable customers.

IN-CAB TECHNOLOGY SOLUTIONS EVOLVE TO INCLUDE INTERNET ACCESS

In-cab mobile communication technologies have evolved over the past few decades from a vehicle tracking and short message device to a voice communication, truck diagnostics and monitoring driver behavior device. These capabilities have afforded transportation companies the ability to significantly gain operational efficiency and drive down costs.



Source: Frost & Sullivan

As shown in the chart above, the third wave of mobile telematics evolution is internet access from the cab. The availability and affordability of Wi-Fi networks allow mobile computing providers to include Wi-Fi in their products. Wi-Fi access enables transportation companies to provide a much higher level of customer service and can increase driver quality of life, thereby allowing fleets the ability to both increase revenue opportunities while reducing operational costs.

HOW THE TRANSPORTATION MARKET HAS EVOLVED

The key to profitability is two-fold:

1. The ability for a transportation company to maintain its profitable customers and attract new customers
2. The ability to gain operational efficiencies to lower costs

Customer service is a key component in both maintaining and attracting customers. As transportation services get commoditized, companies with higher service levels can offer differentiation and justify higher rates. On-time delivery, equipment availability, properly trained and informed drivers are customer service factors that enable transportation companies to deliver high levels of customer service.

In a study conducted by the National Private Trucking Council (NPTC), 70% of respondents stated that they maintained a fleet in order to ensure that their customer service needs would be met². Service level guarantees are one tool to attract new customers. To deliver on this promise, transportation companies must be able to perform consistently throughout their operations. Tools enabling transportation companies to raise service levels allow such companies to attract and retain customers as well as lower operational costs.

Long-haul transportation typically has net margins of less than 4%³. Improvement in operational efficiency has a drastic effect on overall profitability as these savings drop directly to the bottom line.

The driver plays a critical role in:

1. Customer service levels that transportation companies provide
2. Operational efficiency

A seasoned driver will communicate factors that could cause service failures early so that these risks can be mitigated, or so that the customers are informed of a potential service outage. Drivers are a critical customer touch point; therefore, it is important that they have access to pertinent customer information when they need it as well as proper training for the account.

TRANSPORTATION INDUSTRY CHALLENGES

This white paper will address three challenges which affect both customer service levels and operational efficiencies:

1. Training drivers adequately to meet business requirements
2. Driver dissatisfaction leading to turnover
3. Efficiently receiving information from the driver into back-office systems

DRIVER TRAINING

Drivers must be current on many training programs in order to be on the road. Some examples of such training include:

1. Mandatory safety training in order to maintain compliance
2. Company policy and benefits training
3. Seasonal training courses that provide drivers with important safety and operational information
4. Customer specific driver training with critical customer information such as handling procedures, special arrival procedures, as well as insights into how to best service the customer

Delivering driver training is a costly proposition. Drivers are scheduled for training at a training site or will utilize a company kiosk site if available. The training center must be staffed and maintained, and all these overhead costs reduce a transportation company's profit. The driver must travel to the training center. Drivers must use DOT (service) hours to travel and complete training on their days off. This leads to driver dissatisfaction as drivers are typically not paid as much for training time, and they don't like to give up already limited family time to travel to a training center.

Another challenge arises when a driver needs immediate training to satisfy a last minute customer need. It is very difficult to deliver specific, targeted training on very short notice. Therefore, fleets tend to barrage drivers with many different, customer-specific training modules to ensure that when a customer calls they have a driver that is qualified to transport the load. This often means that many drivers are trained on materials they will never use.

One training mechanism many large transportation companies utilize are training kiosks located in truck stops and terminals throughout the United States. This strategy lowers the cost of utilizing drivers' service hours; however, companies must maintain kiosks, which can be expensive and difficult to support.

WI-FI ENABLES A MORE TIMELY DELIVERY OF TRAINING

Wi-Fi internet access enables transportation companies to offer in-cab driver training allowing these companies to better service their customers and reduce training costs. By making mandatory safety and customer-required training available on a driver portal or company intranet site, a driver with in-cab internet access can complete training in the cab. Driver tests can also be completed in-cab and recorded in the company's back-office training system.

Training drivers on the road via the internet allows for a more flexible training model. Ultimately, this reduces costs and raises driver satisfaction as all customer-required training delivered will be utilized by the drivers. Companies can now service customers with specific site requirement on short notice because they can require the driver to complete customer-specific training requirements as they are dispatched, but before they arrive at the customer pick-up site. This enables companies to put the closest available driver on a hot customer load instead of searching for a driver that has the mandatory training that may be many miles from the customer pick-up location.

In addition, to better service customers, training has become more efficient and effective. Today, companies are able to monitor driver behavior and push additional targeted safety training to drivers. For example, a driver with a tendency to follow too closely might be sent a training video on avoiding rear-end collisions before he has one. Over time, companies with in-cab training can administer targeted safety training in a more immediate fashion, which may result in a reduced accident rate. Proactive training should also result in reduced liability costs.

DRIVER SATISFACTION

The transportation industry historically has had very high driver turnover. Unpredictable time at home is one of the top reasons for driver turnover. In a study conducted by the ATA, it was concluded, "Although competitive wages are a major factor in attracting workers to the trucking occupation, quality of life issues are more frequently cited as the primary factor for worker retention. The major irritants for drivers are extended periods on the road away from home and unpredictable schedules for getting home."⁴

Turnover not only affects operational costs, according to a Federal Motor Carrier Safety Administration (FMCSA) study, which reported that it typically costs \$8,000 to replace a driver,⁵ but it also affects a transportation company's ability to provide customer service. High turnover rates force companies to give all drivers additional training so that they will be able to service a customer in case a driver with specific customer training chooses to leave. Training is generally conducted at a training center requiring a driver to use service hours or be away from family during his time off. Fleets must balance business-driven over-training against driver retention.

Another driver dis-satisfier is a lack of consistent information from driver managers. With driver manager to driver ratios often being 40-50 to 1, driver managers are very busy and may not have access to the most up-to-date information. This leads to drivers getting different answers to the same question depending on which driver manager answers the question.

TIMELY ACCESS TO CRITICAL INFORMATION INCREASES DRIVER SATISFACTION

Using Wi-Fi to give drivers access to critical business information and training enable them to be more effective and may result increased overall job satisfaction. By allowing drivers to complete mandatory safety training during periods of downtime, they eliminate the need to give up hours of service time or time at home to meet training requirements. It also enables email access which gives drivers another avenue to stay connected with family while on the road.

Drivers will be able to:

1. Capitalize on loads where they can complete customer-required training in a timely fashion
2. Complete commodity-specific training such as hazardous material or high value rules giving them a higher level of competency and confidence
3. Receive load diagrams enabling them to load correctly and avoid axle overweight conditions

All of the above benefits increase satisfaction in that they can now have more loaded miles. Transportation companies can send specific customer refresher training to the driver along with the load assignment to ensure that drivers remember and follow customer-specific requirements, resulting in a higher level of service as if the driver had been there many times before.

By allowing drivers to access driver portals from the cab, the driver will be able to access information such as payroll. Driver portals can also have HR information such as driver or benefits manuals available giving the drivers the ability to self-serve information. This not only can increase driver satisfaction by getting the right answer at the time that he needs it, but also reduces costs in printing and distributing time sensitive materials that quickly become outdated.

Similarly, many drivers are frustrated by the lack of consistency between fleet/driver managers. By making frequently requested information accessible through a secure website via the cab, drivers can get the right answer in a timely fashion.

DRIVING BACK OFFICE EFFICIENCIES

Significant paperwork gets generated during a route: bills of lading, freight handling reports, driver expenses, and driver logs are sent to transportation company headquarters for processing. Truck stop scanning and document handling services are available today for drivers to send in paperwork. For a driver with multiple stops, ensuring that the right expenses are matched to the right account can be time consuming, and accuracy is often an issue.

Many consignees require a copy of the signed bill of lading as a part of the billing process. Therefore, delays associated with paperwork create longer accounts receivable time. Delays can also lead to driver dissatisfaction for those who pay expenses out of pocket.

BACK OFFICE EFFICIENCY GAINS

Wi-Fi technology provides a cost effective means for getting load information to the back office. Ruggedized scanners are now available that can withstand the harsh in-cab environment. Scanned documents can be sent over Wi-Fi networks and the information can be integrated directly to the back office. By providing the fleet with in-cab scanning capability, the driver can send receipts with signed bills of lading eliminating the need for personnel to scan these documents at the home office.

Receipts can be automatically indexed to a specific load at the time of transmittal. Such efficiency gains allow fleets to cut accounts receivable days as well as back office overhead. It also allows driver expenses to be reimbursed in a more timely fashion and increase driver satisfaction.

SELECTING THE RIGHT IN-CAB TECHNOLOGY

To reap the benefits of Wi-Fi in the cab, it is essential to select an in-cab mobile computing technology with the following design considerations:

1. Ability to withstand harsh in-cab environment
2. Ease of use for drivers
3. Highly secure platform
4. Cost effectively access large files

ABILITY TO WITHSTAND HARSH IN-CAB ENVIRONMENT

In the US, transportation of goods requires trucks to go from sub-zero winter temperatures in the North to over 120 degree outdoor temperatures in the summer desert. While a truck is in-motion, there is significant vibration within the truck. Additionally, the cab interior becomes dirty when the truck is on the road for extended periods of time. Since mobile computing has become a mission critical system, it is important that the components are designed with industrial grade, extended temperature range components in sealed casings. Also, companies should look for computing platforms that minimize the number of moving parts. While these design features add to the initial cost of the platform, the reliability of such systems are much higher than designs that do not take the truck environment into account.

EASE OF USE FOR DRIVERS

While there are many back office benefits, the software design on the computing platform should be centered around the driver since he is the one who must interface with the unit. Safety and ease of use are two key factors in order to minimize driver distraction and increase driver productivity. Many operational enhancing software applications available today intend for the driver to use them while the vehicle is in-motion. Some such applications include navigation programs, automated hours of service, safety warnings and messaging. These need to be to work in concert so that the drivers focus can remain on the road, but get critical information in a non-intrusive manner at the time that he needs it.

The platform user interface must be intuitive. While many younger drivers are computer savvy, the majority of the US driver population is aging and may struggle with or even fear technology. Therefore, companies should look for easy-to-use platforms and applications that do not overwhelm the driver with excess information and instructions. It is also advisable to include on-board, interactive help so that a driver can get his questions answered rather than look for a user's manual.

HIGHLY SECURE PLATFORM

Since the on-board computer is a mission critical system for trucking companies, it is important that the security of the system cannot be breached. Therefore, choosing a system that gives companies flexibility to create software and have the software tested before deployment is a must. Also, while internet access will improve driver quality of life, companies should be wary not to allow drivers to download any file from the internet. Having appropriate security protocol will allow companies to safely give drivers more information.

Wi-Fi enables the transfer of larger sized documents to and from the cab and back office. Larger sized files such as bills of lading, operational or training documents, as well as to access company information for payroll or other administrative functions are an important feature. Sending large files over Wi-Fi provide trucking companies with significant cost savings over alternative communication networks.

QUALCOMM MOBILE COMPUTING PLATFORM 200 SERIES BRINGS THE OFFICE TO THE CAB

The Qualcomm Mobile Computing Platform 200 Series (MCP200) is an end-to-end solution that enables transportation companies to transform the cab into a mobile Operations Center. The advanced solution offers Wi-Fi technology in addition to terrestrial and optional satellite networks enables transportation companies to realize efficiency, customer service and driver satisfaction gains.

DESIGNED FOR TRANSPORTATION ENVIRONMENT

MCP200 is a fully ruggedized system and uses components that operate in a minimum of -30C to 70C (-22F to 158F) operating temperature range. Additionally, it features highly reliable technology available to withstand the harsh trucking environment.

DRIVER EXPERIENCE

Qualcomm conducted extensive driver experience research when designing the MCP200. The Display Interface Unit 200 (DIU200) is a WVGA color graphical display that can be dash mounted. Its sliding keyboard integrates touch-screen functionality with an intuitive user interface making it easy for drivers to use. Its form factor takes up only a small portion of the dash board.

The MCP200 allows drivers internet access while in Wi-Fi coverage and complete training anywhere within the cab by removing the DIU200 from the dash. The high resolution display and 1.3GHz processor allows the driver a great video experience. Accessing the internet and web-based email programs is another avenue for drivers to connect with company as well as family while on the road.

All MCP200 applications are designed to operate with one another in a highly safe manner when the vehicle is in-motion. The system includes text-to-speech functionality and all incoming messages will be presented audibly to the driver while the vehicle is in-motion. Drivers can repeat and skip messages at the touch of a button.

The applications are designed to give drivers the most critical information while the vehicle is in-motion. So, if navigation is running while a driver is listening to an incoming message and a turn direction needs to be given, the system will stop reading the message and give the driver the audible direction. Upon completing the navigation instruction, the driver will hear the message at the place where it was interrupted. Similarly, MCP200 system will audibly notify the driver when his allowable hours of service are nearing an end.

MCP200 includes on-board contextual training making it easy for drivers to find answers to questions about applications and use of the hardware.

TRANSPORTATION COMPANIES CONTROL AND SECURITY

MCP200 is built on an industry standard operating system, which allows fleets the flexibility of creating custom applications. Qualcomm expects that fleets will want to create applications that will capitalize on Wi-Fi networks and the MCP200 design allows for such applications. Qualcomm works with fleets to certify these applications and deploy them quickly utilizing the over-the-air upgrade process. In addition, Qualcomm will continue to internally develop or work with leading third-party partners to bring new applications to the platform.

Transportation companies determine the level of driver internet access through providing secure website. When a driver launches the browser application, they are redirected to the company designated website, such as a driver portal. Companies can place streaming video content, payroll information, web or company-based email, as well as specific website access on the driver portal to give drivers access to this information.

For usage based applications such as Qualcomm's In-cab Scanning, companies will be able to designate the mode by which scans are transmitted. Since the costs are significantly lower using Wi-Fi, companies can choose for the MCP200 to attempt sending scans over Wi-Fi networks for a specified duration before transmitting over terrestrial or satellite networks.

CONCLUSION

Wi-Fi enabled in-cab computing platforms such as Qualcomm's MCP200 allows companies to give drivers critical customer information, which can increase operational efficiency and improve driver quality of life. For a demonstration of MCP200 advanced technology, contact your Sales Representative or 800-348-7227.

ABOUT THE AUTHOR



Monica Wyly, senior product marketing manager for Qualcomm, has a unique background combining logistics management, technology, and relationships with industry-leading transportation companies, giving her a significant understanding of the challenges facing the transportation market. At Qualcomm Enterprise Services, Ms. Wyly utilizes her market knowledge when working with Product Management and Engineering teams to determine which product and service innovations will most benefit Qualcomm customers.

Prior to joining Qualcomm in 2002, Ms. Wyly held engineering and management positions at Procter and Gamble and Hewlett-Packard. She holds a B.S. in Chemical Engineering from MIT and an M.B.A. from Harvard University.

Footnotes

¹ "Trucking Industry Challenges and Emerging Multimode Network Architectures" Whitepaper, Frost & Sullivan; <http://www.frost.com/prod/servlet/cpo/77958079.pdf>

² "2008 Benchmarking Report, Final Report of Key Metrics", Moore, Tom, National Private Truck Council p.5

³ "Trucking Industry Challenges and Emerging Multimode Network Architectures" Whitepaper, Frost & Sullivan; <http://www.frost.com/prod/servlet/cpo/77958079.pdf>

⁴ "The US Truck Driver Shortage: Analysis and Forecasts", May 2005 prepared by Global Insights for the American Trucking Association, pg. 2

⁵ "Motor Carrier Efficiency Study Phase I", February 2009 prepared by Declean Corporation for the Federal Motor Carrier Safety Administration, pg. 136





About Qualcomm Enterprise Services

Since 1988, Qualcomm Enterprise Services™ has provided integrated wireless systems and services to transportation and logistics companies around the world. With more than 1.3 million mobile units shipped to businesses in 39 countries on four continents, Qualcomm Enterprise Services delivers the business insight these companies need in order to operate at peak performance and provide superior customer service. Backed by a global, 24x7, world-class technology infrastructure, customer care and professional services, QES is positioned to meet and exceed the increasingly complex and business-critical needs of its more than 2,500 clients.

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