How to Maximize Trailer Utilization and Reduce Dormancy
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ADOPTION OF UNTETHERED TRAILER MANAGEMENT SYSTEMS provides a competitive advantage to carriers and vendors that rent trailers.
Executive Summary

As businesses operating in the capital-intensive, low-profit-margin trucking industry, carriers benefit financially by adopting wireless untethered trailer management systems. Without untethered systems in place, carriers face the following challenges: lack of accurate, timely information about their trailers (including lack of cargo visibility when trailers sit idle or in transit on rail cars); poor trailer utilization; excessive trailer inventories; inability to charge customers accurately for trailer detention; lost trailers; an increase in cargo theft and associated costs; reduced driver and back-office productivity; increased driver frustration and turnover; wasted resources; and poor customer service.

The number of installed untethered trailer management systems has grown rapidly—from 100,000 units in 2003 to over 415,000 units by the close of 2006 and 600,000 units expected by the end of 2009. Associated revenues are expanding as well. This rapid adoption of untethered trailer management systems is a response to widespread awareness that these systems offer the following benefits:

- Accurate and timely information (including increased knowledge of when and where trailers are dropped and unloaded)
- Reduction in the need for physical counts of trailers in a yard
- Improved trailer utilization
- Improved trailer pool sizing for each customer
- Reduction in the size of trailer fleets (capital costs)
- Improved driver productivity and safety
- Improved driver morale and retention
- Quicker detection and recovery of stolen trailers and loads
- Reduction in costs associated with theft
- Increased dispatcher productivity
- Increased ability to generate accurate reports to determine detention fees
- Improved planning
- Improved customer service

Consequently, adoption of untethered trailer management systems provides a competitive advantage to carriers and vendors that rent trailers. Concerns about investments in untethered management systems can be addressed by evaluating untethered system providers using the following criteria: adequacy of customer service resources; financial stability; ability to provide adjunct professional services (such as system integration and tailoring); track record; trucking industry knowledge and commitment; technical expertise in wireless information technologies, hardware, software, and information technology (IT); system robustness; network service availability and assurance; and a willingness to act as a trusted partner by employing suitable processes and technologies.
Introduction

Purpose
This white paper explores the application of wireless untethered trailer management systems within the trucking industry. After identifying key practices and industry challenges faced by carriers, the paper identifies the benefits obtainable by installing untethered systems.

Trucking Industry Background
The trucking industry is capital intensive, and it operates on a low profit margin. In addition to back-office expenses, which are incurred by any type of business, carriers incur significant capital costs when purchasing tractors (cabs) and cargo trailers. Most carriers own more trailers than tractors, and a 3:1 ratio of trailers to tractors is not unusual. Since most carriers have net profit margins ranging between one and 3.5 percent, the concept of trailer management—achieved through trailer tracking systems—offers solid financial benefits.

Carriers can be segmented into distinct categories, and each uses trailers differently:

- **Less than Truckload (LTL).** Trailers in these fleets usually combine a number of less-than-truckload sized loads for different customers, and the drivers pick up and drop off each of these loads in multiple locations. Drivers often make use of cross-docking facilities to distribute and collect these small loads to and from other trailers.
- **Private.** Private carriers haul their own products and trailers in such fleets are used in ways that suit their owners’ interests.
- **Truckload.** Although trailers in these fleets may serve many different customers over a period of time (regionally or nationally), each discrete truckload of cargo is carried for a single customer at a time, and the entire load is usually transported from one point to another.
- **Tanker.** These trailers haul one type of product—such as fuel or chemicals—and resemble the truckload category in some ways; however, the ratio of trailers to cabs is lower than in the truckload category (there are not as many free trailers for each cab).
- **Package.** Trailers in these fleets resemble the less-than-truckload category in some ways, but the number of pick-up and drop-off locations is much larger.

Trucking Industry Challenges
Without untethered tracking systems in place, carriers typically face the following challenges:

1. lack of cargo visibility when trailers sit idle or in transit on rail cars, lost trailers, an increase in cargo theft, reduced driver productivity while waiting for or finding an empty trailer, increased driver frustration due to time spent hunting for trailers, inability to charge customers accurately for trailer detention because carriers cannot determine when trailers are loaded or unloaded, waste of employee resources tracking down lost trailers, and the need to manually update the location of trailers on a daily basis.

The source of most of these challenges is a lack of detailed information about a carrier’s trailers—in particular, where they are located, whether they are loaded or empty, and if they are secure. Most of these challenges have a direct impact on productivity and the efficiency with which the trailers generate revenue.
Proven Benefits of Trailer Management Systems

Untethered trailer management systems provide a remedy for the many challenges associated with a lack of specific, timely information about trailers. The rapid adoption of untethered tracking systems is a response to widespread awareness that these systems offer proven benefits including:

- Faster detection and recovery of stolen trailers and loads and a reduction in associated insurance costs and other losses
- Increased number of loads per month carried by each trailer
- Reduction in the size of trailer fleets of up to 20% according to some estimates
- Reduction in the number of dispatchers and back-office administrative personnel needed
- Reduction in the need for physical counts of trailers in a yard
- Increased knowledge of when and where trailers are dropped and unloaded
- Increased ability to generate accurate reports to determine detention fees.

History of Trailer Management Adoption

In the 1980s, before wireless untethered trailer tracking systems were developed, tracking was limited to tethered solutions. These tethered solutions consisted of an in-cab terminal equipped with a global positioning system (GPS) receiver linked to a service provider’s network operations center. To provide a tethering function, the in-cab terminal was linked to the trailer, where sensors provided basic information about the trailer’s status. Consequently, when a trailer was unhooked from a cab, the trailer tracking function was lost.

By 2003, service providers were offering independent, untethered trailer management solutions. No longer reliant upon a tethered connection to an in-cab terminal, the untethered solutions placed all of the hardware inside the trailer itself. Equipped with an independent power source, GPS, and links to a network operations center, these untethered solutions also provided data about the status of a trailer—including whether it was loaded or unloaded, connected to the cab or disconnected, or had open or closed cargo doors.

Since there were more than 4 million trailers in the U.S. at the close of 2006 (not including owners of single trailers), trailer management systems are only beginning to have an impact on the industry.
The untethered trailer management market is expanding rapidly. From an installed base of 100,000 units in 2003, the total reached 415,000 units at the end of 2006 and is expected to reach 600,000 units by the end of 2009. Since there were more than 4 million trailers in the U.S. at the close of 2006 (not including owners of single trailers), trailer tracking systems are only beginning to have an impact on the industry.

Divergent Goals of Customers and Carriers

In the trucking industry, the divergent goals of customers and carriers are a chief source of friction. Carriers wish to maximize profits by keeping the largest possible percentage of trailers full of cargo and moving over the road. They cannot maximize profits if drivers sit idle at shipment locations while trailers are unloaded or loaded (a “live load” scenario). The detention fees charged for this waiting period do not equal the lost income that would have been generated by hauling cargo. Consequently, for carriers, an “ideal” scenario is one in which the driver (1) pulls into a customer facility to make a delivery with a trailer fully loaded with cargo, (2) unhooks the original trailer, (3) immediately hooks up a new trailer that is already loaded with cargo, and (4) pulls out of the facility to make the next delivery.

Customers wish to minimize overall shipping costs. While they may share the carriers’ favorable assessment of the ideal scenario (described above), customers sometimes unintentionally increase carrier costs. For example, a customer will receive a shipment of raw materials that must be re-distributed to several separate destinations. If the customer leaves the materials in the original trailer instead of unloading the cargo into a nearby warehouse until other trailers arrive to haul it away, the customer is—in essence—using the trailer as a warehouse. This helps the customer to eliminate the cost of unloading the trailer, but it harms the carrier because it prevents the carrier from using the trailer to maximize its profit by hauling additional cargo.
Industry Challenges in Detail

Inefficient Trailer Utilization

Trailer utilization is a measurement that helps to determine how efficiently trailers are being used to generate profits for carriers. Utilization can be measured daily or over a longer period of time, but it usually incorporates the total dollars earned annually by the trailers in a fleet divided by the original cost of the equipment. Since trailers earn maximum revenue when they are being used to haul freight, carriers naturally wish to increase this type of utilization. Similarly, carriers wish to quantify the amount of time that trailers are detained by each customer so that they can levy accurate detention fees as a second-best way to generate revenue. Finally, carriers wish to quantify the amount of time that trailers are sitting idle and unused.

One of the most important challenges to carriers is achieving the most profitable utilization profile for their trailers. It is impossible, however, to improve utilization and to determine the fleet’s return on investment (ROI) without accurate information about how the trailers are being used by every customer. Trailer utilization is an important factor in determining whether inventory is generating a sufficient ROI. An inadequate ROI means that a particular trailer or trailer pool is only covering its operating expenses—not contributing to profitability. So, in the absence of detailed information provided by untethered trailer tracking systems, carriers cannot accurately assess their ROI.

Excessive Trailer Pool Size

Current Practices

Carriers typically make available to customers a pool of trailers to facilitate a smooth flow of shipments in and out of a yard. One goal is to reduce the number of instances when drivers waste time waiting for cargo to be loaded or unloaded (the live load scenario). Instead, drivers can drop off one trailer and pick up another—whether full or empty—as described previously in the ideal scenario. This allows customers to make good use of the trailers by loading some of them in preparation for pickups and unloading others after deliveries are made. As a result, customers can use their loading crews as needed throughout the day without worrying about running short of trailers.

The availability of a pool of trailers, however, does not always result in a win-win situation. If the trailer pool is too small, it will not serve its purpose, and drivers will have to wait for empty trailers upon arriving at a destination. Also, if the trailer pool, which represents a capital cost to the carrier, is too large, the carrier will suffer from a lower profit margin. In either case, it is important to determine the “right” size for a customer’s trailer pool. To do so, the carrier needs accurate, detailed information about trailer utilization. Without an untethered trailer management system, this information is difficult to obtain.
Trailer utilization is an important factor in determining whether inventory is generating a sufficient ROI. An inadequate ROI means that a particular trailer or trailer pool is only covering its operating expenses—not contributing to profitability.

**Built-In Bias “Pads” the Size of Trailer Pools**

Trailer pools made available to customers are usually too large and their size cannot be justified by the revenues they generate for the carrier. Three factors contribute to this practice:

- Customers play a role in padding the size of trailer pools. When customers need 40 trailers to accommodate their shipping volume, they typically ask for more to prevent a shortage. They may request 50 trailers instead of 40—sometimes in anticipation of short-lived business peaks that require more trailers.
- Carriers themselves are responsible for the next increment of padding. When they receive a request for 50 trailers, they may add another 10 trailers just to be sure that the needs of their customers are met—providing 60 trailers instead of 50.
- The lack of accurate information about how many trailers are located at the trailer lots of each customer contributes yet another layer to the oversupply. The number of forgotten idle trailers at any location adds up, and even if this figure is as low as 10 percent of the total, it represents an additional six trailers (in this example)—bringing the total number of available trailers to 66.

As a result, 26 of the 66 trailers cited in this example are unnecessary. These extra trailers are a drain on carrier resources because they are a capital cost that fails to generate profits—an example of poor asset utilization. Equally as bad, other customers may need these trailers. Without detailed, accurate, timely information about the location and status of every trailer, carriers cannot determine an optimal size for each customer’s trailer pool.

**Lack of Accurate, Timely Information**

**Obstacles to Manual Data Collection**

Without an untethered tracking system, manual data collection is the only way to gather information about the trailers in a yard—identification numbers, ownership, and status (full or empty). The task of gathering this information manually is fraught with obstacles:

- **Expense.** Physical checks of the trailers in a yard are labor intensive and expensive, which results with yard managers having little incentive to conduct them regularly.
- **Lack of timeliness.** Even if yard managers are diligent about conducting physical yard checks, the situation in trailer yards changes minute by minute as trailers move in and out.
- **Inaccuracy.** Manual data entry is subject to human error. If the individuals who enter data are careless or forget to make entries about trailer departures, who takes them, or their status, the information in the database becomes obsolete.
• **Lack of interest.** Independent trailer yard managers may have only a marginal interest in keeping accurate records throughout the day or when they conduct yard checks. Additionally, managers of customer-owned yards may actually have an incentive **not** to keep accurate records. After all, it may be advantageous for customers to retain more trailers than necessary. Finally, when drivers are asked to conduct yard checks, they may not be reimbursed sufficiently—leading to frustration and unwillingness to do a thorough job. For example, drivers may not wish to leave their cabs and may not see trailers parked behind other trailers which leads to under-reporting and otherwise incorrect reports.

• **Strained customer relationships.** When carriers ask customers to conduct yard checks, it can place a strain on their relationship. From the carrier’s perspective it is awkward to ask for a favor from someone who is paying you for a service. From the customer’s perspective, it is an unwanted—and unreimbursed—task, and it places the customer in a position where an accurate report may not be in his or her own best interests.

**Data Reliability**

Manually recorded data is most accurate when it involves trailers that are currently attached to tractors, when trailers are in the shop for repairs or maintenance, and when they are being transported on rail cars. Otherwise, the data is subject to the limitations described earlier.

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<th>Location of Trailer When Data is Collected</th>
<th>Data Accuracy</th>
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<td>Accurate</td>
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<td>In a carrier lot</td>
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<td>In a customer lot</td>
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<td>In a rent-based storage yard</td>
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<tr>
<td>Hooked to a tractor (cab)</td>
<td>x</td>
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<tr>
<td>In the shop for repairs or maintenance</td>
<td>x</td>
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<tr>
<td>On a rail car</td>
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**Summary of Manually Recorded Data Reliability**
Poor Driver Productivity and Safety
After making a delivery to a customer, the driver must find an empty trailer to replace the one that was dropped off. If there is no untethered tracking system in place or if the manual system is not accurate, the driver must engage in a time-consuming hunt—physically checking each trailer in the lot until an empty one is found. If an empty trailer cannot be found there, the driver may repeat the hunt in another lot—perhaps discovering much later that an empty trailer had been waiting at a third location all along. During this hunt, the driver does not generate any revenue for the carrier and burns expensive fuel. If the trailer hunt consumes as little as two hours per week during a 48-week year, the lost time accumulates at a rate of $13.80 per week per truck (assuming carrier charges of $1.50 per mile at 45 miles per hour and a driver pay scale of $0.33 to $0.50 per mile)—reaching $662 in lost revenue each year. This amount is compounded for every driver in a fleet and must be subtracted from the carrier’s gross profit margin, which is usually about 10 percent.

In addition to lost revenue, the time spent hunting for trailers has other implications. For example, while the time spent hunting may not always be subject to Federal Motor Carrier Safety Administration (FMCSA) regulations that govern hours of service, the drivers could have been resting instead of hunting. The resultant fatigue may have a negative impact on driving performance for the remainder of the work shift.

Low Driver Morale and High Turnover
Because they are paid only for each cargo-hauling mile, drivers are acutely aware of the efficiency of carriers’ business operations. When sidetracked by hunts for trailers, they know that they are not earning money. As a result, they may feel that they are paying a personal price for a carrier’s lack of efficiency—undermining morale. Just as important, it is natural for drivers to resent chronic situations over which they have no control but for which they pay a price. Under such circumstances, it is not surprising that they keep track of which carriers enable them to earn the most money in the least amount of time. They understand which carriers make the best employers, expressed in statements such as, “Carrier A will keep me moving.” Consequently, carriers that do not use untethered tracking systems may face higher driver turnover rates.

Increased Theft
Shippers of every type are concerned about cargo theft, and truck fleets bear 85 percent of this burden among all shipping modes. While most theft is unreported, the International Cargo Security Council estimates that more than $10 billion in merchandise is stolen each year. When unreported theft and indirect costs including damaged or missing assets, lost productivity, and higher insurance premiums are factored in, estimates range between $20 billion and $60 billion lost annually. In addition to these costs, cargo theft represents a significant customer service failure, and it affects customers that ship high-value cargo to a greater degree. In the absence of untethered tracking systems, a prompt response to theft is unlikely.
Poor Back-Office, Field Staff, and Fuel Efficiency

Without untethered trailer management systems, carriers must resort to inefficient manual systems that are neither timely nor accurate. Therefore, back-office management systems cannot efficiently integrate the information with maintenance and dispatch software. In the field, for example, valuable resources are wasted on labor-intensive yard counts and on drivers’ hunts for empty trailers. Every minute of engine operation that does not contribute to the hauling of cargo—whether it is spent hunting for empty trailers or idling while cargo is loaded—represents a waste of expensive fuel. All of these resource misallocations erode bottom-line profitability, and can be reduced by implementing untethered systems.

Trailer Tracking as a Solution to Industry Challenges

Improved Trailer Utilization

By obtaining accurate information about trailer utilization, carriers can bill customers accurately, and they can devise strategies to maximize profits while maintaining customer service. Strategies may include (1) reducing or expanding the size of the trailer pool made available to any single customer and (2) building incentives into the negotiated fee structure (tariff) so that profitable utilization is maximized and less profitable utilization is minimized.

Untethered trailer management systems offer a number of advantages. First, these systems record trailer locations whenever they are dropped or hooked, and they report these locations on a regular basis. As a result, carriers can maintain accurate trailer inventories without conducting physical yard counts. Since these systems also send status-change messages when trailers are loaded and unloaded, carriers always know the status of each trailer and can pass the information to nearby drivers. Carriers can monitor trailer dwell times on a per-customer basis to determine if trailers are being used to their fullest potential.

In summary, carriers enjoy the following benefits from untethered trailer tracking:

- Accurate, up-to-date trailer inventories
- Reduced labor costs when collecting trailer pool data
- Substantiated customer loading and unloading times for trailer detention billing
- Historical detention information for use in contract negotiations
- Ability to renegotiate trailer pool commitments based on actual usage by customers
- Identification of demand trends versus supply over time and by location
- Ability to redeploy trailers from low-utilization customers to customers that need more trailers—without purchasing additional trailers
- Ability to reduce trailer inventories reduce capital expenditures
Optimal Trailer Pool Size

Optimizing the size of a trailer pool has a direct impact on reducing capital costs. To determine the optimal trailer pool size for each customer, carriers need up-to-date, detailed information that only untethered tracking systems can provide. As noted previously, the built-in bias that pads the size of trailer pools causes carriers to wonder if customers are abusing them and, correspondingly, if some customers are being underserved by trailer pools that are too small. It is important to remember, however, that the objective is not to bill detention fees or to provide on-site storage for customers. Carriers are in the cargo-hauling business, and they must maximize profits by hauling cargo.

Best-in-class untethered trailer management data typically includes the location of each trailer, drop and hook times, connection and disconnection events, dwell times, and trailer status (loaded or unloaded). This data also enables carriers to engage in trailer-pool optimization tasks so that they can avoid the twin problems of providing too few trailers to customers that need them and, conversely, too many to customers that don’t. These tasks include:

- Determining if trailer pool commitments are being observed by customers
- Obtaining historical detention information for use in contract negotiations
- Identifying demand trends versus supply over time by location
- Renegotiating trailer-pool commitments based on actual customer usage—offering price breaks to customers that have too many trailers
- Improving customer service by redeploying trailers from low-utilization customers to customers that need more trailers—without purchasing additional trailers

Accurate, Timely Information

Untethered trailer management systems resolve the obstacles presented by manual data-collection techniques—the expense, inefficiency, lack of timeliness, inaccuracy, and unavailability as a result of the lack of interest in collecting it.

As a result of these conveniences, carrier benefits include the ability to:

- Monitor details about the status and location of trailers and containers in near-real time
- Increase driver, tractor, field staff, dispatch, and back-office productivity
- Optimize asset utilization and trailer pool inventories
- Enhance detention billing
• Increase trailer and cargo security
• Create valuable reports for operations and planning
• Improve customer service with accurate, timely information
• Maintain visibility in harsh environments

Improved Driver Productivity and Safety

Untethered trailer management systems resolve driver productivity and safety problems related to the hunt for empty trailers. Armed with detailed information about the trailer inventory, dispatchers can provide drivers with the specific location of empty trailers. This improves driver productivity because it:

• Eliminates driver hunts for empty trailers—either within a yard or between different yards
• Eliminates instances in which drivers are sent to a yard to pick up a trailer only to discover that no trailer is available
• Improves safety by providing opportunities for drivers to rest if necessary instead of hunting for trailers

Improved Driver Morale and Retention

With untethered trailer management systems, drivers no longer waste valuable income-generating time on hunts for trailers. This can help eliminate resentment toward their employers and improve morale. Just as important, carriers that use untethered trailer tracking systems gain reputations among drivers as carriers that keep drivers moving. In addition to reducing driver turnover rates for these carriers, untethered tracking systems can act as recruitment devices to attract new drivers.

In summary, untethered management systems help carriers accomplish the following goals:

• Improve driver morale
• Reduce driver turnover
• Increase the earning potential of drivers by reducing their idle time
• Help recruit new drivers by attracting them as a result of improved carrier reputations

Reduced Losses from Theft

Untethered trailer management systems play a role in promptly recovering stolen cargo and trailers as well as in preventing cargo theft. Because untethered systems can alert carriers when trailer doors are opened or if trailers move beyond pre-set boundaries, carriers can respond quickly to theft. Carriers can begin by querying drivers and yard personnel to determine if a situation merits the involvement of law enforcement authorities. Quick action can prevent the removal of cargo from trailers that are still in the yard.
When trailers are stolen, untethered systems keep carriers and police informed about their locations, and trailers can be identified more quickly on the road. As a result, trailers can be recovered with the cargo intact in many cases, and in some instances thieves can be apprehended. Furthermore, when carriers build a reputation for combating theft, it acts as a deterrent to experienced thieves, who will move on to more vulnerable targets. Untethered tracking systems also minimize the ancillary costs of theft by reducing insurance claims, loss of the trailer and cargo, time spent by employees on asset recovery, and customer service failures.

Carriers can differentiate themselves from competitors by installing trailer tracking on the portion of the fleet that hauls high-value or high-risk cargo. This can attract additional business from customers who have suffered a high degree of cargo loss when using carriers not equipped with trailer tracking. Some customers are now requiring that fleets be equipped with trailer tracking in their requests for proposal (RFPs).

In summary, untethered tracking systems can reduce theft-related expenses and differentiate carrier services in the following ways:

- Alert carriers promptly about unauthorized door openings, unexpected trailer movements, and the unloading of trailers at unplanned locations
- Alert carriers if trailers fail to report their locations according to schedule (the tracking system may have been disabled, and the carrier will not otherwise realize that the trailer is missing)
- Enable carriers to proactively manage missing trailers instead of waiting for reports of missed deliveries as a basis for determining that trailers have been stolen
- Enable faster recovery of stolen trailers and cargo by supplying trailer location data
- Minimize the ancillary costs of theft including insurance, cargo and trailer loss, employee time, and customer service failures
- Act as a deterrent to prevent cargo theft
- Minimize theft of high-value cargo when applied to a portion of the trailer fleet
- Differentiate carriers in ways that attract new business from customers that are sensitive to theft or retain the business of customers that require trailer tracking in their RFPs
Improved Back-Office and Field Staff Efficiency

The variety of information made available by untethered trailer tracking systems has a direct impact on the efficiency of back-office and field personnel. In the field, untethered systems eliminate the need for yard counts and other error-prone, labor-intensive methods of tracking inventories. There is less scrambling to find missing trailers and fewer chances to disappoint customers. In the office, armed with the new information, tasks such as inventory management, dispatch, responses to unexpected shipment opportunities, utilization analysis, and planning based on trend data are easier to conduct and more reliable. As a result, carriers can do more with fewer resources, and customers enjoy better service.

To summarize, carriers benefit in the following ways:

- Eliminate unnecessary, error-prone, labor-intensive tasks
- Eliminate scrambling and backtracking to locate “missing” trailers
- Improve the efficiency and accuracy of inventory management and dispatch operations
- Enable quick responses to unexpected shipment opportunities that can win new customers
- Conduct utilization analyses, trend spotting, and long-term management more easily
- Improve customer service

The Impact on Trailer Rentals to Carriers

As the number of trailers equipped with untethered trailer management systems increases, industry expectations will rise. Not surprisingly, the criteria by which carriers select vendors of rented trailers will reflect this trend. As a consequence, vendors that equip their trailers with untethered tracking systems will enjoy a competitive edge when seeking customers. In particular, carriers that already have upgraded their operational systems to incorporate the new tracking technologies will be unlikely to rent trailers from vendors that do not support untethered tracking. They are unlikely to take a step backward after institutionalizing these technological changes. Finally, the widespread practice of carriers keeping rented trailers longer than originally planned will cease to be the norm. Instead, carriers will be able to locate and return rented trailers more quickly to their vendors.
How to Evaluate Trailer Management Providers

The telematics industry has experienced consolidation in recent years, and some providers have abandoned the industry. As a result, some customers have been left with antiquated equipment and interoperability challenges. To address these concerns, carriers that are considering an investment in untethered systems should evaluate potential providers by drawing up a list of assessment criteria. These should include the following elements:

- **Adequate resources to respond.** An untethered tracking system provider should have adequate customer service resources to respond quickly and effectively to questions and problem situations from customers in a wide geographical area at any time of day.

- **Financial stability.** Business stability is an important element in purchase decisions and untethered tracking providers should be able to demonstrate a longstanding commitment to serving their customers. Providers should have adequate financial resources to weather general marketplace fluctuations and periods of industry retrenchment.

- **Availability of professional services.** Customers that use untethered tracking systems may require various types of technical and professional assistance. These services may include assessment capabilities, the ability to integrate the new systems with other products and systems that are already in use by customers, training services, and custom development and programming services to add specific features or otherwise tailor system performance.

- **Proven track record.** Past performance often provides evidence of an organization’s commitment to its customers. Untethered tracking system providers should be able to demonstrate a record of longstanding customer service, product support, update assistance, technological expertise and leadership, and a history of product improvement.

- **Industry knowledge.** Untethered tracking system providers should be able to demonstrate a thorough understanding of the transportation industry, its chief challenges, and the needs of its participants.

- **Technical expertise.** Since technology lies at the heart of untethered tracking systems, a provider should be able to demonstrate knowledge and awareness of a range of wireless information technologies, system hardware, information technology (IT) issues, and software integration and development practices.

- **System robustness.** For each system being evaluated, customers should be able to verify the likelihood of long-term reliability and performance in the operating environment. This should include both the trailer management system discussed here and
the communications network discussed below. A key aspect of system robustness is the ability of the application to utilize, operate in, and build upon the advantages of multiple communication technologies and frequencies to send and receive data—in other words, demonstrate mode diversity. For example, it should be able to apply a variety of satellite, cellular, and Wi-Fi (IEEE 802.11) communication technologies.

- **Network service availability and assurance.** The wireless network that is paired with the untethered trailer management application must also be a good match. Since the wireless network provider must be able to serve the functions supplied by the tracking system, carriers should consider the “5 Cs” of capacity, coverage, continuity, cost effectiveness, and consistency when evaluating network service. Does the network have the bandwidth to handle the number of users, the traffic volume, and services used by the application (capacity)? Can it provide all of its communication, reporting, and alert functions throughout the entire geographical area where it will be put into service (coverage)? Does the network have a longstanding record of performance in data transmission and a history of network availability (continuity)? Does the network offer lowest total cost—including hardware and messaging—from among the many solutions available (cost effectiveness)? Within the framework of long-term continuity of service described earlier, does the network provide consistent service regardless of location, application type, or mode of operation so that the untethered application can deliver the expected benefits (consistency)? Not all applications—in this case, an untethered tracking application—place the same burdens on the wireless network. Consequently, the same wireless provider may not be the best choice in all cases.

- **Partnership approach.** The transportation industry presents complex challenges. These involve the nature of the business itself, common practices, employee issues, and competitive pressures. Untethered management system providers should demonstrate a willingness to understand customer concerns and objectives and act as a trusted partner and advisor to develop solutions that incorporate the most suitable processes and technologies for the challenges faced. They should also be able to demonstrate a knowledge of best practices and have the resources to train a customer’s staff to obtain optimal results from the system.
Conclusion

By adopting wireless untethered trailer management systems, carriers, private fleets and trailer rental vendors can address the key challenges that erode profitability and competitive standing. The key benefits provided by untethered tracking systems are based on the superiority of the information supplied by these systems and its easy integration with trailer management practices and strategies. The chief benefits of employing untethered tracking systems include more efficient trailer utilization, optimal trailer pool sizing for each customer, reduction in capital costs, improved billing accuracy, the provision of accurate and timely information for effective management of trailer inventories, improved driver productivity and safety, improved driver morale and retention rates, a reduction in losses from cargo and trailer theft, improved back-office and field staff efficiency, and improved customer service.
References


5 An Omnitracs estimate.

6 Omnitracs, internal derived estimate based on industry sources, (San Diego, CA: Omnitracs Enterprise Services, January 11, 2007).


ABOUT OMNITRACS, LLC

Omnitracs, LLC has provided integrated fleet management applications, services, and platforms to transportation and logistics companies around the world for 25 years. As the most experienced provider in the industry, Omnitrac delivers end-to-end solutions to help fleets improve safety and compliance, fuel management, mobile asset management, operational efficiency, driver retention, and customer service. It tailors fleet management solutions to meet the needs of for-hire and private fleet operations of all sizes and with requirements ranging from basic compliance management to the most sophisticated business intelligence. Omnitrac is uniquely positioned to innovate fleet management solutions that benefit from the company’s deep knowledge of mobile wireless technology and solutions. Backed by a global, 24/7, world-class technology infrastructure, Omnitrac has established an unrivaled track record of award-winning customer service that extends long past the initial sale. For more information, please visit the Omnitrac website (www.omnitracs.com), “Omnitracs Road Ahead” blog (www.omnitracs.com/blog) the YouTube Channel: Driving Ahead (www.omnitracs.com/youtube) and LinkedIn page (www.omnitracs.com/linkedin).