Mobile Technology and Transportation Management

Achieve continuous connectivity with your drivers, assets and cargo



It's no secret that anything "mobile" is all the rage today. However, mobile technology is not new to the transportation world. In fact, the introduction of Qualcomm's OmniTracs™ in 1988 and UPS' roll-out of the DIAD (Delivery Information Acquisition Device) four years later are prime examples of pioneering companies investing in mobile technology as a means to drive efficiencies and create competitive advantage.

Author Malcolm Gladwell defined a "tipping point" as "the moment of critical mass, the threshold, the boiling point." For mobile technology and transport, the theoretical tipping point is in our rearview mirror.

Price points for hardware and communications have fallen, and the reliability and capabilities of mobile technologies for transportation have vastly improved. So, fleet managers need to ask a fundamental question, "What does it mean if my drivers, assets and cargo are ***continuously connected*** to the enterprise and how can I leverage this fact to create value for my organization?"

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Technology Maturity

The early adopters of mobile technology in transportation had deep pockets along with the patience required to work through the inherent challenges associated with implementing a burgeoning technology. Now we can reap the benefits of their diligence and the maturing of these technologies. With the knowledge we've gained and the right tools in place, we can enable virtually any fleet to take advantage of the "continuous connection" paradigm.

And the mobile landscape continues to evolve. Advances in disparate technologies have converged to push us past the tipping point, opening an opportunity for fleet managers to develop new, differentiating capabilities to further reduce costs and enable enhanced services. These advances have occurred in the areas outlined on the following pages.

Low cost yet powerful mobile devices ranging from ruggedized handhelds to smart phones to tablets—running customizable pickup and delivery applications—enable processes to be automated and digitized.

Communications

The cost, speed and reliability of mobile communications networks have improved greatly in the past decade. Driven by consumer adoption of mobile technologies and relentless competition amongst wireless providers, we now have low-cost networks capable of delivering vast amounts of data cheaply, quickly and reliably.

Vehicle Telematics

Sensors located throughout a vehicle now capture and communicate a wide array of data to back-office systems. Examples of how these data can be used include:

- GPS information tells dispatch where the vehicle is located and is the basis for providing accurate ETA information. It can be used to notify if a driver is off route or has otherwise deviated from plan.
- Engine diagnostics provide insight into both power unit and driver performance. Information such as idle time, fuel usage and driver shift patterns can be analyzed to determine how well the driver is adhering to standard operating procedures and "best practices." These data can also serve as the foundation for a vehicle maintenance program based on operational need versus a fixed maintenance schedule.
- Trailer sensors enable un-tethered trailer tracking, multi-compartment temperature monitoring and alerting when a trailer door has been opened at an unauthorized location.



Geographic Information Systems (GIS) data

The underlying quality of the geographic information used to calculate travel times and optimize travel paths has greatly improved in the last 20 years. Leading providers now offer mapping solutions that are tailored toward freight operations and include information such as truck restricted routes, bridge height and weight limits, tolls and time of day/day of week cognizant travel times.

Dynamic Content

Content providers now capture and disseminate real-time and predictive traffic information captured from en-route vehicles. These data can be used to provide more accurate ETA information or even re-route vehicles around traffic incidents. Additionally, dynamic content such as weather, fuel prices and third-party loads can be integrated into back-office systems to enable more accurate and efficient dispatch and route planning decision support.

Mobile Computing

Low cost yet powerful mobile devices ranging from ruggedized handhelds to smart phones to tablets—running customizable pickup and delivery applications—enable processes to be automated and digitized. Information that captures the essence of a customer interaction can then be communicated back to the enterprise in real time and disseminated to the appropriate resource.

By effectively orchestrating the vast information captured in the field, an enterprise can gain a better understanding of freight operations, enable more effective planning, develop and monitor driver standards, and get a more accurate picture of the true transportation costs associated with servicing a customer.



Examples of how this technology can improve operations include:

- Capture of the consignee signature at point of delivery
- Identify OS&D situations and initiate claims process
- Scan product off the vehicle to eliminate delivery failures
- Codify and standardize communications to enable reporting and analysis
- Manage regulatory compliance

Back-end Information Orchestration and Analysis

By merging and synchronizing the above technologies into a single freight and mobile asset management system, an enterprise now has unprecedented visibility into their shipping activities. However, enterprises need to be able to effectively manage vast amounts of disparate data that are now flowing into the enterprise. To do so, the back-end system must offer the ability to interrogate and direct data based on pre-configured rules. A specific datum received by the system may represent information about a shipment, asset, driver or any combination of the above. The orchestration layer is responsible for identifying the type and criticality of the data, which will then determine how it is to be handled.

Key capabilities required by an orchestration and analysis layer are:

- Exception Management – The ability of the application to identify exceptions as they occur and initiate the appropriate issue resolution steps
- Data Accessibility – The ability for stakeholders to gain real-time, on-demand access to data
- Planning – The ability to use historic data as a means to influence future planning
- Reporting/Analytics – The ability to find insights that can be used to drive operational or strategic change

Summary

Fleet managers have long been tasked with balancing the competing objectives of minimizing costs and maximizing service. In addition, fleet operators must deal with historically high diesel prices, an impending driver shortage, increased highway congestion and green initiatives designed to decrease energy consumption and CO2 emissions.

However, mobile technologies offer fleet managers an advantage that their predecessors did not have. Namely, enterprises now have the advantage of continuous connectivity with their drivers, assets and cargo. The ability to harness this technology in a manner that adds value to your enterprise and your customers will separate the winners from the losers.

For more information on how Manhattan can help you leverage today's mobile technology to help solve your transportation issues, please contact us at 1-800-661-4872 or visit http://www.manh.com/solutions/transportation-lifecycle-management.



About the Author:

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Mike Mulqueen joined Manhattan Associates in December 2010 as Sr. Director of Product Management with responsibility for the company's Transportation product line. He comes to Manhattan with over 20 years experience designing and implementing logistics-focused supply chain solutions. Most recently, Mike was with Accenture, where he served as the firm's Logistics Business Area Lead for the US Postal Service. Prior to Accenture, Mike held transportation systems leadership positions with JDA/Manugistics, UPS Logistics Technologies and C&S Wholesale Grocers.

Mike holds a BS degree from the University of Maryland, College Park, and a Master of Engineering degree in Supply Chain Management from the Massachusetts Institute of Technology.

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