Autonomous vehicles, drone deliveries and cost of delivery

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The idea of autonomous vehicles (AV) coming to some measure of practical maturity has been fascinating to observe. Six levels of driving automation have been defined, and are essentially the range of combinations that include: nothing, hands-on, hands-off, eyes-off, mind-off, and steering wheel optional. Some might argue that 'mind-off' driving was in existence long before cruise control, which begs the question: why the strong interest in AV development?

Motorist safety, increased productivity, and costs of transportation are a few among several of the arguments for autonomous vehicles. A US Department of Transportation study suggests up to 30,000 lives could be saved annually with AV technologies; Morgan Stanley estimated $507bn would be contributed to the economy since occupants could be productive during their commute rather than driving; and, overland trucking and other transportation services relying on human drivers would reduce the cost of delivery since the costs associated with human drivers could be eliminated.

While we can expect it to be some time before we see packaged gases delivered autonomously, one thing is clear when filtering through the conversations around AV: the costs associated with transportation – and deliveries – are being heavily scrutinized for the purposes of process improvement and reducing costs. Modern systems are collecting huge amounts of data, and smart operations are examining the data to improve practices and processes that have already made a significant impact to the bottom line for those willing to invest.

Is a penny saved, a penny earned? I recently witnessed the installation of an integrated delivery platform that examined several of the processes that include staging an order for delivery through collecting the AR after the delivery had been completed. The platform was capable of optimizing the right orders to the right trucks; mapping routes to enable the shortest distances between deliveries; using smart phones to electronically scan the products delivered, capture signatures, and update documents in a paperless electronic workflow; and finally, charge the customer's credit card for all charges related to the transaction. The distributor was getting more done with less, and the accumulation of savings was staggering.

Benchmarks were established before the installation, monitored and adjusted through the ramp-up, and revisited one year later for comparison purposes. Four broad categories had been established for the study: Delivery Expenses; Delivery Performance; Labor Expenses; and Other/Administrative. Truck and route optimization were the catalysts behind reduced Delivery Expenses, realizing a 20% reduction in fleet expenses (leases, registrations, and insurance), a 32% reduction in fuel expenses, and 28% reduction in related vehicle maintenance expense. Truck and route optimization also impacted Delivery Performance benchmarks. Overall, the entire fleet was able to increase the number of deliveries by 17% with the existing equipment. Many individual trucks were able to increase deliveries per day by 35% through reducing the miles between deliveries. And, there was a 29% reduction in 'hot-shot' deliveries since additional stock/inventory on trucks could be used to fulfill spot orders with trucks already dispatched.

Labor Expenses examined the before-and-after use of dispatchers, drivers, and office personnel. New system tools which provided additional and timely insight, as well as enhanced automated processes, yielded percentage changes of -65%, -22% and -85% respectively. Within the new delivery platform, nearly 70% of the total savings was directly attributable to personnel expenses. It becomes easy to understand the interest in human-free deliveries.

Since the improved processes relied heavily on smart devices at the point of delivery, a shift to a completely paperless process was achieved. The costs associated to printed orders, printed documentation, and their typical filing procedures collapsed completely. By integrating credit card payments at the POD, a significant reduction in invoicing, applying payment, and on-going collections was realized.

Smart logistics personnel are catching on to what is happening with evaluating, containing and reducing delivery costs by taking action with the technologies that exist today, not waiting for the AV of tomorrow. When the autonomous vehicles of tomorrow do arrive, delivery operations will have another occasion to evaluate and significantly reduce expenses. gw