SMART SENSORS AND TLD: THE NEW POWER COUPLE

MAY 2018 TECH BRIEF FOR THE TRANSPORTATION, LOGISTICS AND DISTRIBUTION INDUSTRY

Leveraging Technology to Meet Industry Demands

Many professionals in the Transportation, Logistics, and Distribution industry are hearing a lot of buzz about new tracking devices and "smart sensors". This brief is designed to give an overview of this new and potentially revolutionary technology of smart sensors: what they are, how they work, why we need them, and some advantages and benefits associated with using them.

Labor Force Takeaway

As with many technology initiatives, job creation typically shifts to different areas of the business, as data management moves from manual to digital. While sensors will be deployed to generate and send big data, software will be deployed to capture, normalize and group it.

Analysts will be needed to evaluate data trends and create actionable plans to address and mitigate shortfalls, damage and risk. Titles like Business Data Analyst, Manager – Risk and Analytics, and Manager – Reporting Analytics will all have critical roles to play in the new business data hierarchy. The upskilling of associates will be essential to this industry.

Data analysis training, specifically Business Data Science, and key software certifications, will be essential to meet the growing need. Certificates in SQL reporting, Crystal Reports, and Data Mining and Analysis will be especially useful to logistics practitioners seeking to group and trend large volumes of data to identify and screen out risk elements in the product chain of control.

Coding skills will also prove especially useful, to bridge systems and prevent data reentry work. Knowledge of HTML5, CSS3, JavaScript, Java, MySQL, and others will be useful, not only in assisting with data manipulation, but for crossover functions in web development and support as well.

Smart Sensors to Drive Bottom Line Results

Asset management and tracking has long been a core function in the TLD industry. Employees, transportation vehicles, and cargo are each considered highly-valued corporate "assets" (in the case of cargo, at least for the duration of time the shipper retains physical control of the product), and every good company steward is highly vested in the current status and ongoing maintenance of their distribution network, as well at the shipped payload. The purposes of gathering such data are typically to conduct responsible cost management, and/or regulatory requirements, including one or more of the following - evaluate associate work performance, productivity, monitor shipment progress (speed, distance, routes), monitor vehicles (safety, fuel, maintenance), and monitor cargo environments (temperature, humidity)

There are other accretive benefits to the monitoring of the supply chain. These usually include associate coaching for best practices, planned vehicle maintenance, fuel monitoring, and timely and accurate client billing.

Historically, much of this "tracking" was conducted by manual log sheets, bills of lading, and invoices. The use of three part forms, outdoor printers, and pens/pencils in sometimes hostile weather environments have caused lost or illegible data. Signoff levels required to ensure accuracy many times slowed progress.

Smart Sensor technology can improve your ability to ship timely and efficiently, as well as to optimize the customer experience and drive the bottom line.

Frequently, the timing or receipt of data was too late to offer management the opportunity to address with rerouting. Finally, the sheer volume of data was large, and cumbersome to manage. Data reentry by clerks took time and keystroke errors could render data incorrect. This data, although critical to operations management, proved very cumbersome and error prone. What to do?

Enter the age of the Internet of Things. Very small "chips" (think mobile phone SIM card) can be mapped and placed on boxes, trucks, almost anything, and can monitor and scan, providing a constant stream of data wirelessly. These "smart sensors", paired with a complementary software program at a designated cloud-based server site can, with no human intervention in the field, send massive amounts of data to be crunched and reported on real time, giving management deep visibility into areas of concern they define at system implementation.

What kinds of questions should be asked before selecting a smart sensor solution for your fleet? You should first and foremost be asking quality questions – things like, what concerns can fleet tracking with smart sensors help me address? What kinds of features are available? And most importantly, what kind of vendor support post sale is provided? You will want to know budgetary costs and implementation timelines, so you can plan for your implementation to allow for easy transition into the wireless tracking environment.

There are numerous features these smart sensor product bundles can provide, that may surprise you. Things like reports, trend charts, benchmarking, trending, and alerts push notifications –that can intrusively tell you when something or someone needs your attention. This can potentially save you unnecessary expense, or, on

the other side of the balance sheet, allow you to realize revenue faster. You should also look for a tool that provides you with a single interface, and preferably a single pane activity view, so you don't have to go searching for the status you need. Scheduled reports, export features, and easy setup are also important options you'll want to ask for. FMS Logistics Software, Tailwinds, and FACTS are some of the many available software packages available off the shelf today to help track and manage cargo.

Demos are invaluable, and most vendors are happy to provide them as often as needed, at no cost. In addition, you'll clearly want a bottom line cost estimate, with all taxes and fees disclosed from the outset. You should also have the vendors provide SLA's (service level agreements) on warranty, service, training, upgrades, patches, and API availability.

Classic mobile providers like Verizon Wireless and AT&T Wireless provide smart sensors, as do less well known vendors like Ripple, National Instruments and TPMS. Ideally you should investigate at least three vendors to get the best view of the available landscape before making a decision.

Once contracts are authorized, and implementation begins, your vendor will want to get some information from you regarding your environment, so they can recommend/propose a configuration that will work best for you. Information such as the number of vehicles, number of drivers/technicians, average overtime/hourly, average stops per day, pain points, and budget should be provided, as a poorly designed system can cause more problems than it alleviates.