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Optimizing Supply Chains With Big Data Insights

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Visibility is the Holy Grail of supply chain logistics. Being able to follow shipments hour by hour, or even minute by minute, lets managers at distribution centers, stores, production lines, loading docks, and other critical locations fine tune processes, prevent bottlenecks, and ultimately save money.

It's now easier than ever to achieve almost crystal clear supply chain visibility, thanks to RFID systems, vehicle-mounted transponders, tablets, and a variety of other technologies. The data created by all these systems (and many others) allows shipments to be tracked precisely in real-time, creating virtually continuous visibility.

Awakening power
As they awaken to the power hidden inside big data, shippers, carriers, and third-party logistics services providers are turning to analytics tools to gain enhanced insight into transportation and distribution center assets, as well as the people who work with them. Adopters can adapt to critical fluctuations in demand and capacity in real-time. Fresh and reliable insights into customer buying patterns is yet another important capability provided by big data analytics.

All of this big data-supplied power is giving supply chain players a great deal of control over their logistics infrastructures. Shipping patterns lurking within big data can help users monitor and respond dynamically to shipping quote requests, load types, and origin-destination pairs, adding a new dimension to confirmed bookings. Other insights, including container transit and dwell times, temperature variations, and load integrity, can be used to fine tune supply chain performance, ensure quality, optimize maintenance schedules, and cut costs.

The list of useful items you can pull out of logistics big data is almost endless, including transit and dwell times from source to destination, load/unload times, and driver hours. Big data analytics can provide insights into mobile application use by customers, partners, and employees. Finally, there are customer insights tucked inside unstructured social media data -- who likes specific products, who has advocated for them in reviews and discussions, who has issues with them, and what issues are most prevalent.

Vendor support
Getting a handle on logistics big data is easier than many supply chain participants think. Structured data collected from sensors and RFID tags can be painlessly merged into information stored inside enterprise resource planning, warehouse management, and transportation management systems, creating a common pool of analysis-ready information.

Meanwhile, a growing number of big data analytics vendors are beginning to address the needs of logistics customers. IBM and SAP are developing pioneering applications in the field, as are newcomers

like DreamOrbit, Opera Solutions and PatternBuilders.

All these vendors understand that big data is giving logistics players a highly detailed roadmap to success.

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— John Edwards, *Technology Journalist*