



Empowering Transportation and Logistics with Digital Technology

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The world is getting smaller. Globalization has brought buyers and sellers closer together than ever, opening up new frontiers for commerce. The movement of goods is crucial for today's smaller, more interconnected world, which means big growth potential for the transportation and logistics (T&L) industry.

But new growth comes hand-in-hand with new challenges. The T&L industry faces a number of disruptive global trends, such as the shift in geographic growth to emerging markets, the impact of digitization on venerable business models, overregulation, volatility in exchange rates and geopolitical uncertainty.



Challenges plaguing the Transportation and Logistics industry

The T&L industry is grappling with a trio of major business challenges:

Visibility

The supply chain addressed by transportation and logistics companies is massive and complicated. From delivery of raw materials to a manufacturing plant to stocking finished products on a retailer's shelf, carriers must contend with diverse transportation modes and a number of transfer points. Achieving full visibility into this complex supply chain is challenging, but it's critically important for T&L companies that want to manage their business efficiently.

Equally important to the logistics customer: visibility. In fact, customers of logistics and transportation services are much more demanding now than they've ever been—they want near real-time status of the shipments and materials they entrust to the T&L industry.

Asset usage

The T&L industry depends on getting high usage from expensive, complex and relatively scarce assets—everything from freight trains to oceangoing container vessels to the skilled personnel who plan and execute day-to-day operations.

Ensuring peak performance and maximum revenue generation from these physical assets is crucial for any business that wants to operate profitably. In an industry that scales globally, improving the availability of assets by even a small amount can yield a benefit of millions of dollars in incremental revenue.

Technology adoption

In some ways, the T&L industry lags behind its customers when it comes to adopting new technology—in part because of the complexity of the industry, and in part due to the proliferation of legacy solutions that have outlived their usefulness.

Whether by adopting digital efficiencies, leveraging analytical insights or embracing Agile software delivery methodologies, logistics companies can improve their own operations while simultaneously providing better customer service.

Targeted upgrades based on leading-edge technology can improve time to market, provide greater insights into customer behavior and enable more efficient operation through business-to-employee digital applications.

Maintaining equipment and orchestrating resource deployment are enormous undertakings for T&L providers. In order to transform, these organizations must consider each step of the value chain: acquiring new customers, improving customer experience across all channels, optimizing availability of assets, increasing operational efficiency and beyond.

Meanwhile, mountains of structured and unstructured data are created by customers using digital platforms and mobile devices. Vehicles, sensors and transaction systems generate even more data. The challenge lies in harnessing all this data and deriving actionable insights that will help improve business results.



How technology makes a difference

Digital technology, the Internet of Things (IoT) and advanced analytics can help T&L providers gather meaningful insights, foster innovation and create solutions that deliver results in the five following areas:

Marketing and sales: Modern tools help T&L companies discover actionable insights into the customer experience across all channels, converting more sales and improving service.

Maintenance: Analytics solutions help engineers predict equipment performance based on sensor data, context and the history of similar equipment.

Forecasting: T&L providers that can analyze a multitude of variables to predict demand can align their capacity and manage their complex operations better.

Route planning: By analyzing historical data and gathering info from the IoT, carriers can make informed decisions about the best routes and the most efficient asset use.

Safety: IoT sensors on goods, vehicles and infrastructure enable inspectors to monitor the supply chain in real time.



Transformative technologies for T&L

T&L companies are adopting new technologies and strategies to tackle the major challenges outlined in the initial section of this paper. Fortunately, there is help offered by Digital technologies.

Digital and the IoT

The global supply chain is an immense, complex fusion of raw materials, finished products, multiple transportation modes and storage options. T&L providers must manage this ever changing supply network in an environment of uncertainty, volatility, risk, regulation and competition. It's no easy task.

Digital and the IoT can help bring order to the chaos by leveraging mobile applications, smart devices and sensor analytics to monitor and regulate an Internet of Things, providing visibility and control for all stakeholders.

With the IoT, transportation and logistics service providers can ensure visibility, initiate replenishment, anticipate maintenance requirements, replan as business conditions change, and react to external events with speed and certainty. When the IoT is adopted in concert with data analytics tools, operational efficiency and the availability of revenue-generating assets can be improved dramatically.

Big data and analytics

From the intake of raw materials to the delivery of final products, the global supply chain generates vast quantities of data in myriad forms from a huge array of sources. Logistics service providers accrue data from internal systems and sensors, as well as from customers and partners.

But all too often, all that data is ignored, misunderstood or analyzed in a contextual vacuum. Poor data analysis can lead to gross inefficiencies in planning, operations and business development.

Today's big data analytics solutions help the T&L industry derive meaningful inferences from the onslaught of information through all steps of the process, including collection, harmonization, action and reporting. The right tools can assess data in any format and be configured to adapt to shifting business conditions. As these solutions become more widespread, industry-specific techniques and models are developed, planning improves and near-term decisions are made with greater certainty.

Cloud and infrastructure management

T&L companies that plan to evolve from their legacy IT environments seek value, performance, scalability, interoperability and scalability from their new IT solutions. Modern cloud infrastructure tools are the answer.

Database management tools such as SAP HANA enable transportation and logistics companies to access and analyze data, disseminate the results through a private cloud and enable action via mobile devices. In fact, solutions such as SAP HANA can help T&L providers modernize their core capabilities, including:

- Transportation capacity and demand
- Transportation requirements management
- Freight planning and optimization
- Interactive freight tendering
- Freight and forwarding settlement

All kinds of industries are riding the crest of digital technology to boost performance and profitability in our interconnected global marketplace, and the T&L sector is no different.

To stay competitive, modern T&L companies must think strategically about how and where to leverage digital, the IoT, advanced analytics solutions and transportation management tools.

About the author

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Srini has a successful 20+ years of track record serving clients across several Travel Transportation & Hospitality industry segments, driving transformations of their enterprise applications, data and analytics landscapes, and their customer's digital, mobile, and social experiences.

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