



Digital Transformation Guide for Logistics





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The Value of Supply Chain Visibility

When you look beyond fleet tracking and tracing to get a broad picture of supply chain visibility, it becomes clear there is so much more to it. Supply chain visibility covers everything from the terminal to the nozzle and requires a holistic approach to ensuring transparency. Visibility at every stage is critical to optimizing operations, beginning with sourcing and inventory availability through route planning to delivery and invoicing. Information at each touchpoint between suppliers, carriers, haulers, and customers should flow and provide insights everyone can leverage.

Logistics companies have been on this journey to get end-to-end visibility for years. Faced with key challenges such as oil supply disruptions, a global pandemic, driver shortages, and ongoing macroeconomic uncertainty, many businesses have invested in digital transformation initiatives. This has helped to improve supply chain visibility and data flow, allowing them to gain insights to be more agile. Innovations in Big Data and artificial intelligence (AI) automate workflows and help the industry overcome the age-old supply chain visibility challenge.



The Case for Digital Transformation

Historically, the logistics industry has faced some obstacles to improving supply chain visibility. Four areas top the list: information silos, disparate systems, manual processes, and older technology. Combined, these limitations inhibit real-time visibility and, over time, degrade operational excellence for any business. A lack of automation and too many manual processes adds complexity, increases risk, and limits transparency among customers, carriers, and suppliers. The opportunity costs to the business go beyond the bottom line and impact customer satisfaction as well.

That's why it's important to turn to a digital-first approach, remove barriers that prevent information flow, and leverage technology that optimizes data captured throughout the supply chain.



Today, achieving end-to-end visibility across the supply chain and logistics workflows is well within reach with a well-orchestrated digital transformation plan. Although there's still some debate surrounding the definition of digital transformation, one thing is clear. Digital transformation isn't just on the way—it's already here. As a result, operators of all sizes must transform how they do business in order to thrive.

Confronting Industry Headwinds

Historically, the petroleum industry has dealt with more than its fair share of crises. From the 1973 oil crisis to the Saudi Aramco fire in September 2019, sudden, unpredictable disruptions of the fuel supply chain have always been an aspect of its volatile nature.

On January 15, 2020, the World Economic Forum published its "2020 Global Risks Report." In the survey's decade outlook, infectious diseases didn't make the list of top 10 likely global risks. It was also listed last in terms of impact. Shortly thereafter, an infectious disease dramatically changed how people work, shop, travel, and spend their leisure time.

In just a few months, companies across the globe witnessed the immediate, and clearly unprecedented, decrease in fuel sales. On a global scale, there was a 35 percent decline in fuel demand in April 2020, but some regions were impacted with declines up to a staggering 65%, based on PDI data analysis.

Fast-forward to 2022 (and what appeared to be the end of the pandemic), and businesses had to deal with the start of a war in the heart of Europe and its domino effects on the cost of living. The fluctuating market dynamics and the need to adapt faster has raised the stakes for digital transformation as a way to fundamentally improve business performance.



Truck Driver Shortage: A Global Problem

- UK:** 67% higher need than pre-pandemic
- US:** 160,000 drivers needed by 2028
- Germany:** Up to 80,000 vacancies in 2023
- Australia:** Average industry worker's age is 45+

Not so long ago, growing a business in the fuel industry usually meant increasing revenues by increasing volumes. Companies would purchase as many new trucks as possible and hire more drivers to increase their transportation and workload capacity. With a global driver shortage, numerous policy shifts favoring EVs and green energy, seismic changes in consumption patterns, and significant economical uncertainty, businesses should reconsider how to enable sustainable long-term growth.

Ask yourself three questions when deciding where to focus your digital transformation efforts:

- Does my current technology landscape help me reduce friction and information silos while providing me one version of the truth and end-to-end visibility?
- Do my people have the tools they need to maximize productivity, or are they wasting time on mundane tasks that can be automated?
- Are my processes optimized to deliver the best possible results with the least possible cost?

Optimization Is Key to Making Every Drop of Fuel Count

Some 40 years ago, telling a dispatcher that you could put their maps, hand-written notes, and calculations on a computer screen would make their eyes shine with excitement. Today, applications that act as mere data loggers are far from extraordinary.

A comprehensive fuel logistics solution's real value is its ability to leverage end-to-end visibility to optimize every step of the process on multiple levels. A solution that offers sophisticated, industry-specific optimization can prove to be an irreplaceable tool for dispatchers, drivers, and stakeholders. In cases where the vendor manages the customer's inventory (VMI), optimization begins with forecasting and inventory management. Vendors and their customers can benefit from technology that uses sophisticated forecasting algorithms that process supply chain data. Historical data and real-time trends need to be accessible and continuously updated to predict demand and propose order items and quantities accurately.

Advanced inventory management is even more beneficial to operators. Not all products are sold at the same rate, and an unbalanced tank replenishment process can lead to inefficiencies, such as idle capital, unnecessary trips, and



higher administrative costs. Balanced inventory management ensures product availability to avoid brand-damaging stockouts until it's time for the next delivery.

Once the planning stage is optimized, it's time to consider the VMI and non-VMI customers' dispatch process. The dispatcher drags and drops the orders to assign them to a truck. Orders should be further adjusted to combine truck capacity and stock needs into the optimal order quantity. Then it's time to determine the best trip sequence and available route. Subsequently, the load needs to be allocated to the truck's compartments as efficiently as possible, to ensure maximum payload utilization while adhering to all regulatory and contractual rules.

After the plan is executed, a reconciliation needs to take place. Automating that process allows you to manage by exception, and facilitate accurate and timely billing, substantially reducing your order-to-cash cycle.



Digitalization Improves Transparency, Compliance, and Cost Savings

While the concept of converting manual processes to digital is not new, operators must make sure they have digitalized every possible aspect of the supply chain to enable end-to-end visibility. When done right, a comprehensive digitalization strategy can reduce friction and information silos, improve operational transparency, and help manage the unexpected.

Eliminating manual processes can be particularly significant for the mobile part of your workforce: your drivers.

Automating processes using mobile applications allows you to increase driver productivity, simplify your billing, and improve customer service while minimizing human error. Even the smallest decrease in driver administration time per delivery can easily save numerous hours. But paperless dispatch is more than meets the eye. Apart from the benefits of embracing a more sustainable model for your business, it provides administrative ease, flexibility on the go, security, and reliability.

Being able to centrally and digitally handle the shift, trip, loading, and delivery processes also enables real-time dynamic adjustments to the initial plan, prevents or manages unexpected returns and runouts, and helps deal with other emergencies. Electronic proof of delivery simplifies billing and saves your drivers and accounting staff valuable time that they would have otherwise wasted trying to read through hand-written or badly scanned notes on printed documents. A fully digitalized supply chain helps you achieve end-to-end visibility, while also increasing transparency and keeping all parties informed with status updates, alerts, and access to their data at any time. Real-time communication is a prerequisite for reaping the benefits of digitalization and paperless dispatch.

Data should flow with speed and accuracy:

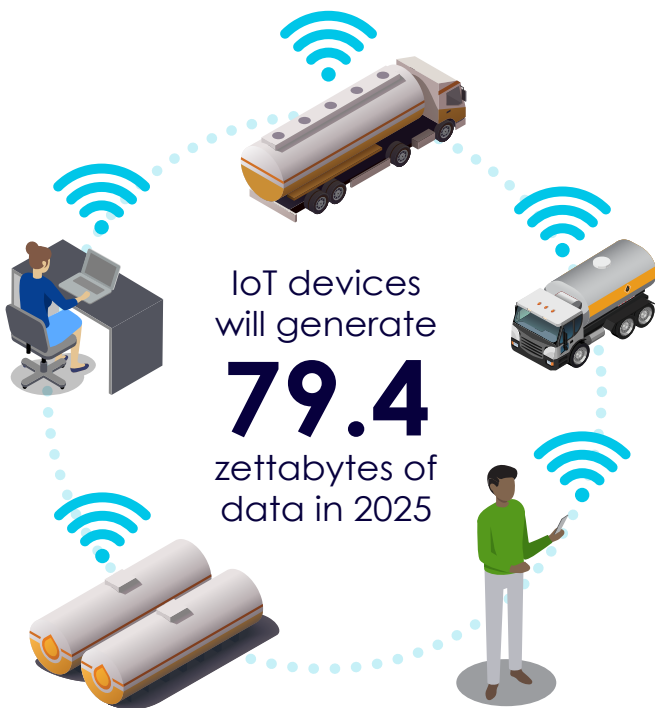
- From the truck and trailer electronics to the in-truck solution
- Between the in-truck solution and the dispatch office
- From the loading and delivery points
- Between the dispatch office and the accounting and finance department
- From the vendor's systems to the client and back

That's why a seamless integration between the dispatch solution and all systems involved in the supply chain is essential. But it doesn't need to be cumbersome and time-consuming. Powerful APIs allow for a standardized and accessible integration of the dispatch solution to any third-party system, including business intelligence (BI) systems that measure performance across various business branches.



Data Is the Most Sought-After Currency

The International Data Corporation (IDC) predicts that connected Internet of Things (IoT) devices will generate 79.4 zettabytes of data in 2025. A few decades ago, most technology initiatives focused on producing data for all aspects of an operation. Today's challenges have shifted towards capturing, storing, and processing the data in a way that delivers real-time insights to influence business performance and enhance decision making. IoT devices revolutionized the data capture process and are found throughout the fuel logistics industry today. From automatic tank gauges (ATG) to terminal automation systems (TAS), all the way to truck and trailer electronics, metering systems, and even POS systems, digitally conscious operators benefit from access to various sources of data in the supply ecosystem.



Turning data into profitable insights requires a thoughtful approach to storing it in a secure, scalable, and shareable way. Cloud solutions provide very flexible models (private, public, hybrid) that combine best-of-breed technologies while making sure unauthorized parties do not access your data. For large organizations, a central data lake connecting multiple systems used to manage everyday operations can complement end-to-end visibility requirements and provide one version of the truth.

Finally, a refined approach to Big Data directly impacts your ability to achieve end-to-end visibility, make informed decisions to fine-tune business processes, and enable your organization's digital transformation.

A comprehensive fuel logistics software solution streamlines operations and uses data in meaningful ways to provide actionable insights, real-time updates, and predictive analytics. Along the way, the business can achieve a deeper level of supply chain optimization, improved accuracy, and increased customer satisfaction.

Innovation and Exploring the Art of the Possible

We often talk about the future and what’s in store for the petroleum industry. And while looking ahead is vital to make your business thrive in the long run, one must not forget the here-and-now. Fuel logistics operators should employ solutions that allow them to realize immediate gains and achieve the expected ROI by improving key performance indicators while leaving room to explore what’s possible through innovation. From capturing data via IoT devices like ATGs to using artificial intelligence (AI) like machine learning and chatbots, the latest digital technologies are enabling greater visibility and predictability throughout the fuel supply chain. Innovation and the digitalization of logistics workflows improve operational efficiency, reduce costs, enhance supply chain visibility, and ultimately keep drivers safe.

For much of the last decade, innovation centered around moving to the cloud and mobile. The innovations of this next decade will likely encompass data, analytics, AI, automation, and robotics.

A fuel logistics solution that is suitable for forward-thinking oil or transportation companies should be built on a solid, state-of-the-art and future-proof technology core. Its functionality and user interface needs to be sophisticated enough to address the complex needs of the distribution process, yet intuitive enough to allow for uninhibited productivity. By connecting all the dots and automating workflows you gain clarity, agility, and flexibility.

Better understand how end-to-end visibility and digital transformation can affect your bottom line by [contacting us](#) for a non-binding conversation.



Embracing Digital Transformation

The new normal is shaped by a great deal of uncertainty and fluctuation. That’s why it’s important for logistics providers to optimize their processes to make sure that every drop of fuel is distributed in the most efficient way. They also need to take full advantage of the benefits that digitalization can offer by approaching innovation in a manner that solidifies their presence while safeguarding their future. The benefits can be felt directly at the bottom line: decreased returns and runouts, reduced mileage and on-site stock levels, increased productivity, and maximized payload usage combined with compliance across the board.

Modern technology solutions that enable end-to-end visibility and accelerate digital transformation produce better outcomes for your business—and PDI can help you get there faster.

About PDI

With 40 years of industry leadership, PDI Technologies, Inc. resides at the intersection of productivity and sales growth, delivering powerful solutions that serve as the backbone of the convenience retail and petroleum wholesale ecosystem. By “Connecting Convenience” across the globe, we empower businesses to increase productivity, make informed decisions, and engage faster with their customers. From large-scale ERP and logistics operations to loyalty programs and cybersecurity, we’re simplifying the industry supply chain for whatever comes next.

For more information about PDI, visit

www.pditechnologies.com



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Annotation: Insights from the World Economic Forum's 2020 Global Risks Report <https://www.weforum.org/reports/the-global-risks-report-2020>

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