

The case for ERP and TMS integration

Four reasons why Enterprise Resource
Planning (ERP) systems fall short in
Transportation Management

Introduction

Discover why ERP systems fail to deliver the value required for transportation management and the four reasons why integrating a Transportation Management System (TMS) with an ERP can help you keep up with the speed that modern commerce demands.

ERP + TMS: The best of both worlds

Over the last 30 years, Enterprise Resourcing Planning (ERP) systems have evolved into the large-scale systems that form the foundation for most modern businesses. The ERP is a nearly ubiquitous system used by thousands of organizations to manage business information, providing a high-level view of company activity and performance. While ERPs are great at managing core business functions, they often fail to keep up with complex transportation models in an increasingly challenging supply chain environment.

This paper explores how the transportation management capabilities in ERPs typically lack the functionality to address complex requirements in

managing shipping, logistics and transportation, and illustrates the compelling need to integrate a Transportation Management System (TMS) with existing ERPs.

Working together, an ERP and TMS combination can deliver the best possible technology infrastructure to leverage data from both systems, gain greater visibility, and to ultimately drive better, faster decisions and keep up with the speed that modern commerce demands.



Transportation capabilities: The difference between ERP and TMS

It's clear that there is some confusion among buyers in regards to selecting the right technology to support their transportation management activities. The primary reason for this confusion is that ERP system vendors often tout ERP systems as “one-stop-shops” with a multitude of capabilities, including transportation management. While the promise of a do-it-all ERP may get the short-term attention of a company's finance department as an easy, low-cost alternative to a dedicated TMS, the realities of the overall cost, project length, lack of necessary functionality, and poor adoption by the supply chain department, make this a suboptimal decision.

Mainstream ERP systems have noticeable and well-documented gaps in transportation management function, which is why they have traditionally failed to deliver the magnitude of value demonstrated with a dedicated TMS.

A dedicated TMS helps in enhancing logistics optimization, providing real-time dashboards, enabling better decision-making, and handling numerous tasks that cannot be addressed by ERP systems.

With that in mind, there are four main reasons why integrating a standalone TMS with an ERP gets you the best of both worlds:

1. Accelerates implementation to realize ROI faster
2. Provides visibility across the transportation network
3. Achieves unrealized value, cost savings, and ROI
4. Delivers critical transportation-specific functionality

Looking at these areas in detail we can understand the advantages of a stand-alone TMS versus the embedded functionality in an ERP system.

1. Accelerates implementation to realize ROI faster

Businesses often spend weeks, if not months, identifying criteria for ERP evaluation and selection. ERPs are transformational projects and can cost hundreds of thousands to millions of dollars depending on the complexity and size of the business—so ERP purchases must be carefully considered.

When selecting a new enterprise business system, two criteria to keep in mind are:

- **Time to implement**—Time until the system is operational and providing value to the business.
- **Time to break even**—Time until the costs of the solution and implementation equal the business benefits.

The average ERP implementation takes between 14 and 21 months, and 75 percent of implementation projects exceed their initial timeline. By comparison, a TMS implementation typically takes 3 to 6 months.

For organizations that want to address transportation management issues and optimize logistics operations, ERPs alone likely will not provide the best solutions for several key reasons:

- **ERPs are complex systems tailored to the needs of finance and accounting departments** who take ownership of the ERP system and its implementation. Transportation functions and features in the context of an ERP are often overlooked or misunderstood by these teams.
- **ERP choice and direction is finance-driven** which means transportation management typically is a lower priority for integration, installation, and enhancement requests.
- **Adoption of an ERP's transportation management functions may be limited.** Departments like to be in control of the solutions they use, and logistics teams are no different. They may be slow to adopt ERPs with limited transportation functions and modifications. SaaS-based TMS integrations offer simple configuration abilities to customize the transportation management experience and enhance adoption.

2. Provides visibility across the transportation network

Companies that are looking to gain greater visibility into their transportation network are limited by static information within ERPs, which typically fail to provide real-time data on freight movements. This is particularly detrimental in the increasingly volatile post-COVID freight market, where unexpected port closures and other delays can severely impact supply chain continuity. An integrated TMS alleviates this issue by linking shipment-level updates and data directly into the ERP, providing logistics teams with control tower visibility over their shipments and the ability to manage exceptions proactively.

ERPs limit overall transportation visibility in several critical ways:

- **ERPs fail to produce complete transportation lifecycle visibility**, since freight updates are scattered across multiple ERP subsystems or managed in manual spreadsheets.
- **ERPs don't offer a dynamic, 360-degree view of a carrier's performance**. Dedicated TMSs focus specifically on transportation and provide insights that are integral to a logistics department, including a full view of carrier performance. These types of analytics can also be used as predictive functions that compare what-if scenarios against known carrier patterns to achieve desired outcomes.
- **ERPs currently don't support all modes of transport**. Utilizing an ERP for transportation management often means limiting mode and carrier options, since they have limited capabilities for network optimization. Stand-alone TMS solutions, on the other hand, employ advanced automation to optimize multimodal freight networks based on individual shipment requirements.
- **Most ERPs are not accessible from outside the company's network**, meaning internal users and the carriers, brokers, and freight forwarders cannot interact easily on the platform. Conversely, cloud-based enterprise TMS solutions allow seamless communication between parties for real-time shipment updates.



The key to controlling freight operations is having end-to-end visibility over every shipment in the network. Dedicated TMS solutions deliver top-down visibility of individual shipments and bottom-up visibility of SKUs, going well beyond the capabilities of a typical ERP.

3. Achieves unrealized value, cost savings and ROI

Every successful technology implementation begins with a business case outlining the benefits of a given system and a forecast of when the business will be able to show a return on its investment (ROI). Given that the average ERP implementation costs \$9,000 per user and takes between 14 and 21 months to roll out, ROI on the system is likely years away. Conversely, the Ohio State study found that 89 percent of companies that implemented a TMS system were able to get to their break even point between months 6 and 18.

TMSs are specifically designed to meet a company's unique logistics needs by facilitating an optimized workflow for operations teams. TMSs often rely on intuitive user interfaces that can be easily understood by transportation experts, but configured to line up with terms that other departments within the organization can understand and relate to as well. This simplifies conversations between departments and helps ensure that larger business goals are kept at the forefront.

Other factors to consider when evaluating the unrealized value of a TMS integration include:

- **ERP user adoption of TMS functions is very low** due to non-friendly and overly complex processes that aren't compatible with other operational processes. Internal adoption of an ERP-driven transportation management function fails to realize the savings and value proven possible with TMS capabilities. A stand-alone TMS provides configurable workflows that adapt to an organization's operational challenges of moving freight in a complex market.
- **ERP system focus is mainly on the transactional** where TMS focus on both transactional and strategic. ERPs often view the cost of transport as something as simple as freight costs, while logistics and transportation management will include the "soft" costs and other non-cost variables.

For example, a low-cost carrier may appear to be the best option from a transactional standpoint, but if that carrier rates poorly on tender acceptance or on-time-delivery the actual costs may be much higher. A TMS can capture the nuances of transportation and logistics KPIs to better predict costs and guide strategic decision making toward an optimized network.

- **Missing or manual functions in the ERP's transportation management negatively impact ROI.** Most ERPs lack the transportation-specific automation functions that are inherent to a standalone TMS. This includes such critical functions as requesting and collecting freight quotes, waterfall tendering, integrated shipment tracking, and claims management. When these functions are missing, they must be managed manually—taking up valuable labor hours and leading to a significantly slower ROI.

4. Delivers critical transportation-specific functionality

An ERP and a TMS offer different and complementary benefits to an organization due to their unique functionalities. The ERP is designed to manage overall business information, including finance, procurement, and inventory. The TMS ties into your full transportation lifecycle, including information on carrier performance, rate bid optimization and freight pay. TMS also provides the ability to plan shipments dynamically, allowing organizations to pivot quickly in response to market disruption.

The advantages of integrating a TMS with an existing ERP include:

- **SaaS-based TMSs allow modifications through simple configuration,** and workflow changes that can be done very quickly. ERPs offer limited logistics-centric workflow processes, while a TMS is designed to identify inefficiencies in complex transportation processes. A standalone TMS delivers better workflows with minimal oversight of day-to-day functions, allowing logistics teams to focus on strategic projects and minimizing risks.
- **TMS solutions allow for management by exception.** A TMS allows for more nimble and flexible responses when disruptive events put shipments at risk. A TMS can model what-if scenarios, identify threats to inventory levels, create alternate transportation plans, and automate shipment rerouting when necessary—allowing logistics teams to proactively manage exceptions and keep freight moving.

- **Transportation optimization is complex programming.** The permutations in transportation data become exponentially complex so quickly that conventional programs in ERPs often fail to capture them all. In addition to route planning, this may also impact carrier selection, multimodal planning, and driver routing. Integrating a complete TMS delivers the specific functionality required to alleviate these issues and optimize transportation planning.
- **Infios's TMS allows access to a centralized network that includes tens of thousands of supply chain partners,** without the need to integrate with each provider individually. Access to an integrated digital freight network provides complete supply chain information in a centralized location. This means users can more easily manage logistics spend, foster optimization, and improve supply chain productivity.
- **TMSs have flexible models that can be changed to adapt for new processes.** ERPs are known to have inflexible data models that were not designed around the needs of transportation management.

The bottom line

Integrating ERP and TMS solutions offers the most comprehensive functionality to ensure supply chain continuity and faster ROI. In addition to reducing direct freight costs, a TMS adds value in increased customer satisfaction, improved supply chain visibility, and enhanced operational efficiencies. A TMS integration improves daily workflows for logistics teams, as well as other departments that rely on transportation data accuracy. Undoubtedly, the initial costs of a robust transportation management system will be realized on several fronts, delivering [substantial ROI](#).

Business needs change rapidly and the rigid transportation processes within an ERP inhibit organization growth and optimization. Conversely, a [dynamic TMS solution](#) allows rapid change of the transportation model in response to real-time disruption, enabling the business to adapt and thrive in changing environments. A dedicated TMS stands as the only “one-stop” shop for real-time visibility of shipments across trading partners, and across the breadth of the supply chain, putting organizations back in control of their business.



Give your ERP a boost with transportation management

The Infios TMS is ready to integrate with your existing ERP to deliver the functionality you need to optimize operations and freight networks. We have two decades of experience in developing the right architecture and expertise to make your integrations happen smoothly and successfully.

Every integration project starts with understanding the customer's unique workflow and full system architecture. We spend time understanding the full data landscape. With that knowledge, we can plug in Transportation Management to pull and push data from the correct systems. Taking the time upfront to understand the data flow creates greater efficiencies once the connections are in place.

The open architecture of Infios Transportation Management System makes it simple to integrate transportation planning, execution and settlement with any external system, including ERPs.

Integrating with ERPs is often required to provide the company with an efficient means for sharing data and for providing a clear and reliable view of the entire fulfillment process. Infios has interfaced its TMS to common commercially available ERP systems, including:

- Microsoft Dynamics ERP
- SAP
- Oracle
- JD Edwards
- NetSuite
- Infor
- Epicor

The more information you can exchange, and the more systems you can put together, the more visibility you have in your workflow. It is more true today than ever that nothing happens without information, and the more data you are exchanging the better.

ABOUT INFIOS

Infios is a global leader in supply chain execution, relentlessly making supply chains better every single day. With a portfolio of adaptable, best-of-breed technologies—including TMS, OMS, AMR, simulation, voice, FAP and slotting—we help businesses simplify operations, optimize efficiency and drive measurable impact.

Serving more than 5,000 customers across 70 countries, Infios delivers innovative technologies that evolve with changing business needs. Our deep expertise and commitment to purposeful innovation help businesses turn their supply chains into a competitive advantage—building resilience and shaping a more sustainable future.

Infios is a joint venture between international technology provider Körber and global investment firm KKR.

Ready for a supply chain that works relentlessly for you?

Connect with Infios to start your journey—no matter your industry, size or complexity, we're built to scale with you.

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