

Case Study

Application Development, Managed IT, and IT Outsourcing Services Enable a Transportation Brokerage Firm to Boost Business Efficiency and Increase Customer Satisfaction



Customer Overview

Customer

A non-asset transportation brokerage firm

Profile

The firm offers full-service, multi-modal logistics solutions to meet the demands of the transportation industry.

Industry

Transportation

Services

Application Development, Business Intelligence, Managed Services, and IT Outsourcing

Business Need

The brokerage firm invests heavily in cutting-edge technology and experienced logistics professionals to deliver superior client service. As a service-centric logistics company that provides accurate data, visibility of shipments, and timely services to its customers, the firm acts as a bridge that connects carriers and customers based on market requirements.

With a deep focus on managing carriers, customers, shipment tracking, shipment exceptions, and accounting functions, it is one of the most trusted freight brokers in the industry. It is well known for its customer-centric services.

However, as the business grew, the existing Transport Management System (TMS) could not keep up with increasing needs, which led to many challenges in scaling operations:

- Manual tracking of shipments led to poor visibility, untimely updates, and lower service delight.
- Multiple inefficient tools were being used for cross-border logistics, leading to issues in freight compliance management.
- The absence of data analytics led to limited visibility into the market landscape, which made competitive pricing challenging and often resulted in loss of business or profits.
- Disorganised contract management due to poor integration and visibility into downstream processes resulted in several challenges in catering to RFPs and loss of expected business from customers and carriers.

- Extracting critical data from different parts of a legacy system was highly labor-intensive.
- The reliance on data from different sources reduced the time to produce accurate reports and constricted scalability.
- Clunky spreadsheet-based manual reporting limited the firm's ability to conduct historical analysis and generate accurate reports.

The firm wanted to replace its legacy TMS to sustainably accelerate the rapid evolution of the business and ensure it remains at the top of the freight industry. It was looking to invest in a modern business solution with a functional, proactive, and friendly customer experience for all its customers and seamlessly hire independent contractor motor carriers and employees. Key requirements included:

- A better UI/UX that would be user-friendly and efficient for day-to-day use.
- Built-in functions necessary to achieve business goals or objectives seamlessly.
- Advanced workflows designed to meet KPI goals, resulting in increased productivity and customer satisfaction.
- The ability to add use cases with automated workflows that will allow users to multi-task and increase productivity, e.g., exception management, tracking exceptions, auto invoicing, etc.

The firm also wanted to outsource its critical IT functions to leverage shared services, fractional specialized resources, and global delivery. Main objectives included:

- Optimize IT delivery via application rationalization and consolidation.
- Accelerate feature delivery and optimize engineering labor costs by increasing release cadence.
- Reduce technical debt by optimizing costs and resources.
- Enhance efficiency by automating core business processes for better productivity and cost savings.
- Allow internal resources to focus on strategic initiatives and core competencies while getting end-to-end support for handling non-core IT functions.
- Scale IT services up or down based on business needs and quickly adapt to changing market conditions.

Approach and Solution

To overcome the brokerage firm's challenges and replace the current TMS, Synoptek began the engagement by conducting a thorough review and analysis of its existing technology ecosystem. We assessed the products and processes across logistics brokerage through detailed discovery sessions with key stakeholders.

Based on several onshore and offshore discovery sessions, we outlined the product backlog and designed an MVP for an integrated platform for all transportation management requirements. It was an ecosystem, including a TMS encompassing various workflows for customer, carrier, and shipment management and integrations for shipment tracking, capacity planning, accounting, and associated reports. The platform included EDI (Electronic Data Interchange) integrations to facilitate seamless data exchange with carriers and shippers, ensuring efficient order processing, shipment updates, and invoicing.

This was achieved by preparing extensive functional documentation, reviewing it with the stakeholders, and offering a comprehensive suite of Digital Transformation Services encompassing application development, business intelligence, cloud computing, and managed services.

Application Development

Synoptek proposed a TMS ecosystem with third-party integrations to build a custom TMS catering to the firm's business processes and needs. This solution will allow users to manage shipments, customers, and carriers using a single application and streamline shipment lifecycle management. It will also offer essential operational features such as shipment, procurement, operations, accounting, and exception management and act as a source of truth for any transactional information. It also introduced a robust carrier load board to publish available loads, allow carriers to self-assign jobs, and improve load-to-carrier matching efficiency.

Synoptek followed a hybrid agile approach in the first phase of system development to deliver high-quality software within decided timeframes. We used a program and project management methodology to ensure results within the planned timeframe and budget.

Automated Workflows: Crafted an always-on, exception-based, state-of-the-art tracking board that automates workflows and enables real-time visibility and 24/7 updates from users and third-party apps.

Cross-Border Logistics: Created a load management platform with robust capabilities to handle and cater to domestic and cross-border loads.

Compliance Management: Automated and simplified compliance management for rate confirmations, customs documentation, and other regulatory requirements for safe and hassle-free transportation of goods.

Advanced Analytics: Created capabilities for reps to perform pricing based on advanced analytics using real-time market analysis, trends, and historical data for pricing shipments and services.

Contract Management: Built a solution for strategically managing business relationships, delivering RFPs and awards through a streamlined workflow, and ensuring seamless transfer and handling of continuous business from customers.

We also supported waterfall workflow patterns for award management — where loads cascade through prioritized carrier tiers — to improve first-time tender acceptance and minimize fallback loops.

Business Intelligence

Synoptek enabled independent Power BI reporting within the TMS application, generating various reports daily. This included setting up an independent data warehouse to deliver customer reports, carrier reports, shipment statistics, and other key accounting reports.

- **Advanced Datawarehouse:** Created a centralized repository for all data, ensuring secure and easy access, retaining historical data, enabling the generation of past reports, and facilitating trend analysis.
- **BI Integration:** Integrated the data warehouse solution with BI, powered by the following tech stack:
 - Azure Synapse: For powerful data integration and analytics.
 - Azure SQL Dedicated Pool: For robust and scalable data storage.
 - Azure Blob Storage: For secure and scalable data storage.
 - Azure DevOps: For streamlined development and deployment processes.
 - Microsoft Power BI: For advanced data visualization and reporting.
- **Quick Insights:** Adopted the Common Semantic Model approach to ensure consistent and shared business logic across all reporting processes, facilitating quick insights for complex queries and maintaining robust data integrity and security throughout the system

- **Power BI Reports:** Crafted a series of visually creative and user-friendly Power BI charts and other cohesive reporting to enable data-driven strategic decisions across all business users.

Cloud Computing

Synoptek leveraged a range of cloud products to build and scale the TMS solution.

- **Azure SQL Managed Instance:** Used as the primary database platform to store and manage application data.
- **Azure Container Registry:** Served as the repository for storing private Docker images of various application components, including front-end web applications, back-end services, and background jobs.
- **Azure Key Vault:** Served as the secure storage solution for sensitive data, including database connection strings, API keys, configuration settings, and third-party integration details.
- **Azure Redis Cache:** Leveraged to store and serve commonly accessed master data, configuration settings, or other static data shared across multiple components or microservices within the application.
- **Azure Blob Storage:** Utilized as a document management solution to store and manage critical documents such as bills of lading, customs documents, invoices, facility access logs, and delivery receipts.
- **Azure Service Bus:** Used as a messaging service to enable the decoupling of application components through asynchronous communication in the transportation one architecture.
- **Azure SignalR Service:** Used to send push notifications to clients in real-time and provide users with important updates and notifications related to their shipments.
- **Azure Monitor:** Utilized to enable real-time insights into the performance, availability, and health of various components and services within the TMS application.

Additionally, facility management capabilities were introduced to track and manage operational workflows within docks and yards, including gate entry, dock availability, and carrier turnaround metrics.

Managed Services

Enabling access to a broad talent pool, Synoptek provided a range of Managed Services for Application Support using the Global Delivery Support Platform, enabling the firm to scale operations and manage additional workloads efficiently:

- **Managed Application Support**
 - Reviewed and confirmed all the proposed build components and detailed specifications to confirm alignment.
 - Set up and deployed network and security components, App Services, Functions, API Management, Azure DevOps, etc.
 - Provided proactive application monitoring of the critical processes of the TMS application with notification for alarms and events according to a pre-defined escalation matrix assigned to each item being monitored.
 - Ensured existing TMS functionality works as is, and the application remains secure, stable, and reliable.

- **Managed Azure Services**
 - Ensured service management aligns with Information Technology Infrastructure Library (ITIL) frameworks.
 - Ensured 24/7 operations of Azure services across
 - Cloud Management Platform & Governance
 - Cloud Managed Services
 - Service Management
 - Security & Compliance
 - PaaS Management
 - Application Centric
 - Disaster Recovery
 - Client Engagement
- Overall Product Management and Governance
 - Established overall product planning and management processes, including taking in strategic vision-driven features, end-user-identified features, technology-enabled opportunities, and ongoing routine changes.
 - Continuously tracked and managed the release and made dynamic updates to maximize value delivery and leverage development operations processes to execute at an enterprise-caliber level.
 - Enabled continuous improvements to the TMS applications by incorporating real-world customer, user, and stakeholder feedback.

Business Benefits

An underlying set of processes, tools, automation, and AI-enabled development enabled Synoptek to deliver more features, application changes, and value than can otherwise be achieved with a pure staffing model.

To meet the brokerage firm's 200+ requirements, Synoptek developed 500+ prototypes, built 450+ user stories, provided 15+ demos, and constantly incorporated user feedback to enhance performance and functionality. In addition, through comprehensive IT outsourcing and managed support, we enabled significant improvements in delivery excellence, responsiveness, scalability, and flexibility.

- Developing the custom TMS solution and associated integrations and reports causes zero performance issues and zero downtime, enabling the logistics brokerage firm to enjoy several business benefits.
- Automated workflows result in timely updates from users and third-party apps and proactive issue resolution.
- The state-of-the-art tracking board enhances visibility of shipment status, improving punctuality and customer satisfaction.
- Simplified cross-border logistics results in expanded business capabilities and seamless and hassle-free compliance with international regulations.
- Transition to a streamlined IT outsourcing model enhanced productivity by utilizing specialized resources and global delivery capabilities.
- Consolidating the application environment helped streamline operational processes, eliminating unnecessary licensing costs and operational support costs.
- Standardized processes and best practices implementation helped improve overall IT service delivery and operational efficiency.

- Global 24/7 delivery centers allow for accelerated feature delivery and optimized engineering labor costs.
- Automated compliance management reduces compliance risks, enabling the brokerage firm to not only be a top-quality practitioner of compliance benchmarks but also a pioneer in setting benchmarks.
- Advanced analytics allows for optimization and unity in pricing strategies, increasing profitability and competitive advantage.
- Robust contract management allows for efficient long-term planning, smooth business operations, and reliable capacity sourcing, enhancing carrier relations by delivering on expectations.
- Streamlined data management and reduced risk of data loss enhance decision-making by providing a comprehensive capability that uses historical trends and patterns. Removed worries about growing data volumes and optimal performance for reporting processes.
- The common semantic model ensures consistency and efficiency across reporting processes, allowing for rapid analysis of intricate data sets and top-notch data integrity and compliance with robust security measures.
- Standardized reporting processes reduce manual effort and free up resources for strategic activities.
- Power BI reports provide up-to-the-minute information for informed decision-making, enhancing responsiveness to market changes.
- Implementing IT service delivery best practices help improve productivity, focus, and profitability.
- Comprehensive managed services capabilities enable the firm to drive future growth and optimization initiatives while minimizing operational disruptions.
- Retrospective examination for trend identification and performance evaluation helps uncover patterns and opportunities across profit and loss, regional freights, latest trends, etc., allowing users to take corrective actions based on sales, procurement KPIs, etc.





TMS builds are complicated. Logistics is complicated. In my experience, working with Synoptek has been very positive. Everybody at Synoptek has helped to accommodate our needs and provided solutions that have allowed us to build a wonderful product. I look forward to improving that product with the team and to years of shared success with our new TMS solution and the many wonderful things that will build and come of it.

- Chief Operating Officer



The architecture and system performance of the new TMS system have been above expectations. Synoptek has been more than wonderful in accommodating every request and working with our reps to ensure the product rollout is smooth and successful. While there have been some bumps along the way, it's nothing that the offshore team hasn't been able to handle for us. They've been working tirelessly through the night to assist us. On behalf of the team here, I want to say that we incredibly appreciate the work Synoptek has been doing for us.

- Sr. Product Manager



56% increase in On-time pick



58% increase in On-time Delivery



Prebook of Loads up by **63%**



E-Track increased to **81%**



Carrier Utilization increased by **20%**



Average processing time for load tenders reduced to under **~2 days**

About Synoptek

Synoptek delivers accelerated business results through advisory-led, transformative full-life-cycle systems integration and managed services. We partner with organizations worldwide to help them navigate the ever-changing business and technology landscape, build solid foundations for their business, and achieve their business goals.