

ON THE RIGHT TRACK

Enhancing Operational Efficiency and Customer Satisfaction



Norfolk Southern Corporation is

one of the premier transportation companies in the United States. With a reputation as the “Thoroughbred of Transportation,” its Norfolk Southern Railway subsidiary operates approximately 20,000 route miles, which crisscross 22 states and the District of Columbia.

But Norfolk Southern is not content to reflect on its rich 182-year rail industry history. Working to achieve its vision of being “the safest, most customer-focused and successful transportation company in the world,” the company is galloping ahead of the competition with new business models and supporting technology.

Headquartered in Norfolk, Virginia, Norfolk Southern is a \$11.2 billion transportation giant, which operates one of the four largest Class I railroads in the country, moving about 1800 freight trains daily. The company operates the most extensive intermodal network in the East. With more than 30,000 employees, the carrier manages more than \$28 billion in assets.

Rail industry deregulation in 1980 created new challenges and opportunities for Norfolk Southern. Becoming a scheduled railroad and negotiating rates directly with customers, the company needed to find new ways to compete based on service. Customers began to demand intermodal transportation to meet their shipping needs.

Operating efficiently and promoting service excellence became an even greater priority for Norfolk Southern.

Meeting these needs required more information – accurate, comprehensive operational data that could be used to optimize Norfolk Southern’s operations and allow customers to serve themselves. Although it had transactional information technology systems, the railway needed a new solution: one that could serve as an engine of change.

Norfolk Southern deployed an integrated data warehouse solution from Teradata. Over nearly two decades, the company has used the technology to support innovative applications, most of which were years ahead of the competition. From early marketing and costing solutions to today’s advanced customer service and support tools, Norfolk Southern continues to set the standard in the use of data warehousing, business intelligence (BI), and data mining technologies to meet its business goals.

The original 1TB warehouse has grown to a 34TB warehouse with four-hour disaster recovery capabilities. A solution that once supported only a few analysts is now used by thousands of Norfolk Southern employees, from field workers and business users to executives. More than 14,500 users from 8,000 Norfolk Southern customer organizations access the solution, which delivers 4,500 reports daily.

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The benefits derived from these solutions are significant. Quantifiable savings – measured in the millions of dollars annually – have been realized from new efficiencies and reduced errors. Competitive advantages – such as enhanced customer service and satisfaction, improvements in decision making and support for strategic goals – are more difficult to measure but important nonetheless.

Several programs and business areas have delivered the most notable value. This case study focuses on these programs and their results:

- > **Early marketing and costing** efforts helped the company understand customer requirements and transportation costs.
- > **Analytics, modeling and BI** solutions enable optimization of rail car movements and supported a new business operating plan.
- > **Operational effectiveness** applications enhance car management, empty rail car distribution, operational performance, and transportation modeling.
- > **Customer service and support** applications are used to optimize trip plans, enable self-service customer information, and deliver real-time shipment alerts.

“We have mountains of data in our Teradata warehouse, and we’re using NSBI to mine and find gold nuggets, quickly and efficiently. With the success of our projects so far and the interest in new areas of exploration, we’ll never be able to stop the growth!”

Mark Myers, IT Manager for Business Intelligence and Data Warehouse Development, Norfolk Southern

AT A GLANCE

Company

Norfolk Southern Railway Company is a leading transportation provider, with 20,000 miles of railway and 30,000 employees. The \$11.2 billion company moves some 1800 freight trains daily and operates the most extensive intermodal network in the eastern United States.

Challenge

To compete more effectively in the post-deregulation railway industry, Norfolk Southern needed more accurate and comprehensive decision support information. For example, executives wanted to improve service by managing trains and cars more effectively, provide real-time shipment information to customers, and improve workforce productivity.

Solution

Norfolk Southern deployed a succession of data warehousing and business intelligence solutions with support from Teradata. The current 34TB warehouse includes 4-hour disaster recovery capabilities, delivers 4,500 reports daily, and is accessed by more than 14,500 customers.

Results

Norfolk Southern realized quantifiable benefits. Some of the highlights include:

- > Created \$2.8 million in held-train savings
- > Decreased missed connections by 60%
- > Improved car connections from 80% to 92%
- > Decreased rail car cycle time by a full day
- > Reduced financial penalties for late deliveries
- > Eliminated the need to hire 47 workers to generate customer reports

The company also increased operational efficiencies, enhanced customer service and satisfaction, and improved decision-making speed and quality.

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