

Yield Management – The Next Advance in Rail Profitability

By Jason Kuehn

Over the past decade, the railroad industry has successfully focused on improving operations to increase asset utilization and service reliability—railroad operating ratios are among the lowest they've ever been. Now, post-recession railroad market share is growing again, and even the most demanding logistics companies are using rail. As a new age of railroading dawns, with it will come new challenges.

As an example, intermodal rail volumes rose 14 percent in 2010 for major US railroads, driven in part by the rising cost of fuel and other inputs to trucking. (Even carload traffic grew at twice the rate of GDP in 2010.) Double-digit gains in intermodal are potentially in the cards for this year as well, leading to concerns that service failures may be on the horizon—similar to the situation in 2007. Clearly, it's too late to build more infrastructure or order new equipment to handle the 2011 traffic tide. What's a railroad to do?

One possible answer is yield management—a strategy that has long been in use in other industries with similar needs to manage “traffic,” including airlines, cruise lines, hotels, and rental car companies. For railroads, yield management could achieve several objectives:

- Improve the ability to anticipate demand and allocate capacity
- Maximize capacity utilization
- Optimize pricing to maximize revenue and manage demand
- Manage customer expectations with regard to service levels

Railroads have done a fine job managing revenues and costs, as evidenced by their financial performance during the recent recession, but what was lacking in 2007 was sufficient capability to manage demand, closely integrate operating and commercial strategy and tactics, and meet customer expectations. When short-term capacity was exceeded, congestion increased, service performance dropped, asset utilization declined, and costs increased. And railroads battled to get their systems back under control.

With traffic volumes rising again, the key to avoiding a repeat of this scenario will be better tools to manage traffic and allocate network capacity. Not only will it make for happier customers, but railroads are going to need every extra dollar of yield they can squeeze from current capacity as future capital demands intensify, due to mandated investments in positive train control, less availability of federal and state grant money for corridor investments, and the need to fund long-term capacity expansion. Achieving this will require a much tighter linkage between the commercial and operating sides of the business.

Yield Management in the Railroad Environment

In the traditional travel industry model of yield management, pricing is transactional, as travelers book reservations in real time. There are three issues around applying the traditional yield management approach in the railroad environment:

1. Railroads lack reservation systems and the ability to accurately predict interchange volumes and times.
2. Railroads wholesale their intermodal business, have key customer relationships, and contract most of their business in advance, rather than booking and pricing it on a transactional basis.
3. Railroad capacity can, up to a point and given time frame, be reallocated across geographies and product types—locomotives, crews, and track capacity can be applied to different products/commodities and some assets such as cars and locomotives can be shifted geographically.

Oliver Wyman believes these challenges are surmountable in the railroad environment without transcontinental mergers, industry reservation systems, or other monumental changes. Intermodal traffic in particular is a good place to start, as this business is less complex than other traffic moves; it involves dedicated train service and terminals and unique car types, and has few train-to-train connections between origin and destination. Trucks also provide shippers with a ready alternative to rail, making it easy to establish the price elasticity of demand. Even most interline intermodal traffic is really a combination of independent rates and movements connected by truck hauls between carriers.

A yield management approach that is strategically focused, rather than transactional, can address issues such as:

- **Evaluating and setting future contract pricing levels:** New contracts should improve the overall yield across the railroad. Pricing must justify the capacity used at the expense of other traffic or investments to increase capacity.
- **Strategic capacity allocation by lane and product/commodity type** (unit train, carload, intermodal/automotive): Rail assets have some flexibility (Exhibit 1), which makes it difficult to set an absolute capacity threshold. Railroads must increasingly juggle resource deployment to maximize revenue generated and justify investment in new capacity. The better the tools and accuracy of inputs, the higher actual capacity utilization can be driven without sacrificing service expectations.

Exhibit 1: Railroad Asset Flexibility

Asset	Geographic Flexibility?	Product Flexibility?
Railcars	Yes	Limited
Locomotives	Yes	Yes
Crews	Limited	Yes
Track	Only where corridors overlap	Yes
Terminals	Only where lanes share an end point	Little to none
Yards	Only where corridors overlap	Yes

- **Differentiating premium service for a premium price:** A relatively traditional yield management approach of premium price for priority access to train capacity often has been applied to the freight business, including railroad intermodal traffic. Holding shipments complicates terminal management, however, and offsets some of the valuable terminal capacity which railroads have recently worked hard to reclaim from shippers by squeezing free time for boxes awaiting pick up by customers. The loss of terminal capacity and trailer/container utilization needs to be netted out against gains from improving train capacity utilization. And with this approach, lower-rated, lower-priority shipments end up with higher costs and significantly lower margins than higher-rated premium shipments. This actually aligns with one of the fundamental principles behind the scheduled railway: better service leads to lower costs, higher revenues, and better margins overall. Thus, due to the linear way in which rail yards (especially hump yards) work, this approach to premium pricing, while feasible for intermodal traffic, is probably not feasible for carload traffic.

Implementing Intermodal Yield Management

To effectively adopt yield management for intermodal traffic, railroads will have to revise their current approach to pricing and commercial activities. Step one involves realizing that the market has changed: After decades of intense focus on productivity, rail costs are firmly below truck costs. As a result, rail, with its volume-driven economies of scale, has become a preferred mode of transport for intermodal, with trucking increasingly relegated to handling smaller volumes on shorter lanes or overflow business. It is far easier to apply yield management techniques to preferred transport modes.

Step two requires recognizing that, given market realities, conventional railroad marketing practices are out of sync: The traditional focus of marketing has been on adding volume to a largely under-utilized fixed-cost base. But this is no longer the case: capacity constraints are much more likely to be the problem rather than under-utilization.

Given that volumes are likely to climb higher than available capacity in the next year or two, a new paradigm that better fits the economics of railroading would be to build a stable base of business and then “price away” remaining capacity to the highest bidders. Baseline traffic would be built through contracts that “lock in” base volume commitments in specific lanes through lower rates. Any additional capacity in a lane would then be “priced away” for incre-

mental, volume-variable traffic in such a way as to both maximize revenues and better manage demand.

“Strategically important” customers would be able to lock-in rates for their base traffic volumes, but protection of volume variations would become more problematic. The use of contract rates for daily volume commitments and higher tariff rates for additional traffic may make sense to allocate the increment of capacity not contracted under base rates to those customers that cannot easily move incremental shipments by truck.

In the intermodal business, it is relatively easy to measure market share, and with higher rates for incremental traffic indicating price elasticity, it should become clear when a lane would support additional capacity while also maximizing revenue in that lane.

Railroads historically have been loath to turn away volume. Usually, the operational arm seeks to accommodate commercial opportunities turned up by marketing and sales. In a yield-driven organization, however, the focus must shift to capacity allocation to maximize contribution, and then managing commercial activities around these parameters. Commercial functions would work to fill identified capacity by product and service lane, and then review commercial opportunities to drive up the revenue per unit in each lane until additional capacity allocation could be justified either through reallocation of assets or investment in new capacity. Yield management metrics must become a key driver of commercial performance.

Making Yield Management Work: Tools and Options

In summary, since rail carriers do not deal directly with intermodal shippers, how can they effectively implement yield management systems?

- Typically, railroad commercial contracts offer rate incentives to encourage volume. But in capacity constrained lanes, minimum daily volume commitments for up to 75 percent of train capacity might be sold in blocks at contract rates to justify the service, and then higher tariff rates (higher than the highest contract rates) would apply above contracted base volumes to maximize revenue on the remaining capacity.
- Block rates for base volumes tend to shift some of the benefits of price elasticity from the wholesaler to the retailer, but railroads can then leave it to intermodal marketing companies to manage real-time yield management processes and the mix of truck versus rail movements.
- “Strategically important” customers can still be prioritized, by offering them first option on base volume requirements, and preferential base contract rates.
- Yield-driven commercial activities would first sell the allocated capacity for a product and service lane and then maximize yield up to price points which would first allow reallocation of capacity across service lanes, and then eventually justify the investment to create additional capacity.

Initially, these practices could be applied just to intermodal, and perhaps even just to specific capacity-constrained lanes. But eventually, as capacity constraints begin to surface throughout the network, they could be expanded to cover all product areas and all lanes in a more

complex system that optimizes returns across the entire network and all key assets. A range of existing tools can be readily adapted to support such rail yield management (Exhibit 2).

Exhibit 2: Yield Management Tools

Type of Tool	Usage
Evaluation and simulation tools	Review scenarios to evaluate different pricing and asset deployment strategies
Bid evaluation tools	Review contracts against the current book of business to determine whether proposed rates and volumes actually improve overall system yields or not
Tracking tools	Track historical bid wins/losses to gain market intelligence, determine potential price elasticity, and market rates
Capacity allocation tools	Clearly allocate the capacity offered on each train and in each lane, and analyze marginal returns from reallocation of additional capacity in each lane
Forecasting tool or reservations system	Accurately pinpoint anticipated demand by lane

In addition, a more traditional transactional reservation system could allow railroads to price dynamically, maximizing capacity utilization and revenue per train on a real-time basis, but this would require a dramatic shift in railroad business strategies away from large customers and a wholesale environment to a retail transactional environment.

It is true that railroads are complex systems on which to manage capacity, due to the interaction of infrastructure, equipment, crews, and lines of business. Eventually, however, the industry needs to be able to manage all of these parameters well to maximize the contribution from its capital-intensive network. Intermodal is the best place to stick a toe in the water, and is the market where demand is most likely to outpace capacity in the immediate future. Once yield management systems are implemented and working well in the comparatively simple intermodal business environment, the lessons learned from this endeavor can be a valuable tool in expanding yield management techniques to encompass the complexity of the full railroad network.

Oliver Wyman’s Approach to Yield Management: Intermodal Case Example

Oliver Wyman has successfully developed yield management strategies and tools for railroads and other network-based freight transportation providers. As an example, Oliver Wyman worked with a freight railroad to develop a pilot yield management program in its intermodal business, as a means of testing the applicability of yield management concepts to rail.

As shown in Exhibit 3, we first developed screening criteria and identified a list of six high-potential opportunities. Through more detailed analysis, we then recommended pursuing two opportunities for the pilot: intermodal day-of-week/directional pricing and empty car repositioning.

Exhibit 3: Case Example: Railroad Yield Management Opportunity Identification

Yield Management Technique	Business Team		
	Agricultural Products	Industrial Products	Intermodal
Cross-marketing		✓	✓
Directional pricing		✓	✓
Empty car repositioning	✓	✓	
Car bidding	✓	✓	
Time-based pricing	✓		✓
Slot allocation	✓		✓

- Intermodal day-of-week and directional pricing
- Empty car repositioning
- Car bidding
- Intermodal slot allocation
- Premium manifest ag. products train
- Cross-market flow balancing

The returns from the pilot (the first of its kind in the freight rail industry) were compelling—yield management for one corridor alone generated more than \$1.3 million in incremental contribution over six months. Oliver Wyman then worked with the railroad to expand the program to the entire intermodal network and to plan for full yield management capabilities, including a complete suite of yield management applications, a new yield management organization, and new business process. The railroad credits the program with a significant part of the \$112 million improvement in annual contribution from its \$1.9 billion intermodal business.

For more information about Oliver Wyman’s perspectives on yield management for railroads, please contact your account representative or one of the following partners:

Gilles Roucolle
 +33 1 45 02 33 48
 gilles.roucolle@oliverwyman.com

Jason Kuehn
 +1.609.419.9800
 jason.kuehn@oliverwyman.com

Scot Hornick
 +1.312.345.3355
 scot.hornick@oliverwyman.com

About Oliver Wyman

Oliver Wyman combines deep industry knowledge with specialized expertise in strategy, operations, risk management, organizational transformation, and leadership development. The firm works with clients to deliver sustained shareholder value growth. We help managers to anticipate changes in customer priorities and the competitive environment, and then design their businesses, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities. We have more than 35 years experience serving Global 1000 clients. Our staff of 2,900 operates from offices in more than 40 cities in 16 countries. Oliver Wyman is part of Marsh & McLennan Companies [NYSE: MMC]. For more information, visit www.oliverwyman.com.

Oliver Wyman's Surface Transportation Practice

Oliver Wyman's Surface Transportation Practice, with a professional staff of more than 100 partners and consultants worldwide, is one of the largest consultancies in the world dedicated to the transportation industry. It provides a comprehensive set of services and capabilities to transportation carriers, and to the users and regulators of transportation services, across the full range of the transportation sector. The Surface Transportation Practice also offers capabilities in international market research, evaluating new business opportunities, developing strategic and marketing plans, organizational and process redesign, and implementing transportation services.

www.oliverwyman.com