

The Evolution of Intermodal Terminals

By Theodore Prince

In its formative years, intermodal terminal development was “make-do” and took the shape of whatever was available. Since the land was “already there,” all that was needed were several loading tracks and some parking. As intermodal grew, the number of intermodal ramps proliferated.

Herein was born the challenge that still exists today: every small town – and even some factories – wanted their own ramp as a way to obtain a perceived advantage, however small. What these “circus” ramps saved in capital expense, they more than consumed in operating expenses. The oversupply of low volume piggyback ramps led to poor service and high costs. Over time, railroads condensed the network with dedicated trains, which generated increased density, requiring more efficient – but fewer terminals.

The second generation of intermodal terminals became converted rail yards that were “mechanized” with lift equipment. However, the continued growth of intermodal – along with railroad mergers – required “greenfield” projects that were frequently several hundred acres in size. Many of these projects were accomplished by the partnering of railroads with public and private entities.

Two models emerged from this generation. The BNSF “logistics parks” in Alliance, Texas and Elwood, Illinois, demonstrated partnership opportunities with private real estate developers. However, both were also facilitated by public-sector initiatives: expansion of the Dallas Area Rapid Transit and redevelopment of the Joliet Arsenal, respectively. Norfolk Southern’s “corridor” strategy was focused on developing new intermodal traffic lanes (including new terminals) with public-sector assistance.

The location and development of an intermodal terminal is an important decision for a railroad; however, such decisions are increasingly interrelated with private and/or public initiatives. Not only are these projects significant for the railroad, but they are increasingly viewed as drivers of regional supply chain efficiency, quality of life, and infrastructure utilization to other stakeholders.

The success of these projects has obscured the difficulty in creating successful intermodal terminal projects. While public-sector policy makers recognize that the private sector has a different decision making process, this is often viewed through a policy lens, rather than recognizing the railroads’ technical business requirements.

Research was recently undertaken to synthesize railroad perspectives on intermodal terminal development to assist public-sector decision makers. The results highlighted key requirements:

1. The proposed intermodal terminal must be an end point of volume moving between itself and another intermodal terminal on the railroad’s network. The volume must exceed a minimum annual level – with reasonable volume every month – hopefully somewhat evenly distributed

through the week. Just having large volumes is not enough if the volumes do not translate to business that could be readily incorporated into a railroad's intermodal network.

2. The proposed terminal must have critical market proximity. Rail intermodal – a substitute for motor carrier line haul. In order to provide door-to-door service that “looks” like a truck, intermodal drayage is provided at either end of the transaction. To be competitive, intermodal transportation must provide an all-in, door-to-door transportation expense that is less expensive than the comparable truckload product. The terminal needs to be close to the business – in order to minimize drayage distance/expense – and have rail routings that are not excessively circuitous.
3. Creating more intermodal terminals – to reduce drayage distance will cannibalize existing volumes and destroy the network's density and economies of scale.
4. Conflicting goals must be reconciled. Railroads and real estate developers (both public and private) are not seeking the same result. Railroads seek to attract new business, or handle existing business, in a non-disruptive and economically beneficial manner. The developer is looking to generate real estate transactions and/or warehouse jobs.
5. The project must be financially viable. Railroads might accept investment to compensate for a shortage of capital, but it will not accept funds to overcome an operating shortfall. The former is a good project without funding; the latter is still a bad project.
6. Railroads are asset-based, network-operating businesses. The project must accommodate those requirements. This includes mainline access, schedule conflicts, and traffic balance.

Finally, can the public-sector partner assure a timely and predictable path to approval? Intermodal's paradox is that its societal benefits (i.e., reduced pollution, diminished congestion, and enhanced safety) are global. However, it may generate negative externalities for populations adjacent to a terminal.

Intermodal's prospects remain great, and interest in public-private partnerships remains high. The key is for all parties to understand the success criteria of potential partners.

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