

Executive Summary

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In December 1994, in New Orleans, the Transportation Research Board sponsored a national conference on Intermodalism: Making the Case, Making It Happen. The conference was the second one on intermodalism. The first, ISTEA and Intermodal Planning: Concept, Practice, and Vision, was held in Irvine, California, in 1992. Coming soon after passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the first conference focused on an understanding of intermodalism in the context of transportation policy and planning. The participants at the Irvine conference discussed the definition of intermodalism, identified the characteristics of effective partnerships, and explored the meaning of intermodal transportation planning.

The New Orleans conference had a different focus. It emphasized examples of effective intermodal project and plan implementation so that transportation professionals could better understand the characteristics of successful integration of intermodalism into transportation planning and decision making. The 600 participants at the New Orleans conference heard speakers from many jurisdictions, each having a variety of interests and experiencing intermodalism from numerous viewpoints, discussing what it takes to get intermodal projects implemented. The overall tone of the presentations, and of the conference itself, was very upbeat. Participants realized that the conference was not so much a single event as it was part of an evolutionary process to more fully appreciate intermodal concerns in the bigger picture of transportation investment strategies. Despite limited research and targeted investment dollars, the conference showcased the hard work, ingenuity, and entrepreneurial spirit that made intermodal projects happen.

This executive summary highlights the key observations and messages that emerged from this conference. Given the long-term, evolutionary perspective toward intermodalism adopted by the conference, the following paragraphs should be considered a point of departure for further consideration of intermodalism in the context of transportation planning and decision making. Concepts needing further exploration were identified. Intermodalism was viewed fundamentally as a dynamic process, one that responds to opportunities for improving the transportation system in a changing world. Our understanding of intermodalism must continue to respond to this changing world as well.

In summary, the conference was another step in the process of developing a true intermodal transportation system. The key concepts discussed there provide guidance on how intermodalism can be successfully incorporated into planning and investment decisions. The next step, and indeed the challenge left to the profession by this conference, is to continue exploring innovative approaches to making intermodalism happen. This entails innovative approaches to finance, development of partnerships, better understanding of the benefits to society associated with intermodalism, and a better appreciation of the role of technological advances in fostering greater productivity and improving system performance.

OVERARCHING CONCEPTS

Although the conference program focused on the lessons learned from intermodal project implementation, several global themes emerged from the presentations. They provide an important benchmark for our understanding of intermodalism, viewed as a state-of-the-art practice in 1994.

Not Business as Usual

Most presentations described successful intermodal projects as the result of negotiations, financing, schemes, and project development strategies representing a very different process from the one existing before enactment of ISTEA. At its most basic level, this theme suggests that intermodal transportation is a critical element of the transportation system and deserves attention in the planning and programming process. Interest in intermodal transportation can be catalyzed by changes in technology, market forces, environmental considerations, and economic factors. Many of these factors have traditionally not been part of the planning process. From the perspective of intermodal transportation planning, success implies the participation of a large number of actors in an open process, each willing to compromise, learn from one another, seek creative solutions, and hold the process and each of its participants accountable to good economic sense and strong public policy.

Partnerships

The Irvine conference identified the concept of partnerships as critical to successful intermodal transportation. This concept emerged again at the New Orleans conference. Intermodalism is founded on partnerships and the flexibility of the partners to respond to opportunities to make a project happen. As noted by many presenters at this conference, successful partnerships allow each partner to contribute its best strengths.

Total-Trip Perspective

Some refer to this as the transportation chain, others as transportation flows, and still others as supply chain management. In essence the concept was that freight and passenger transportation must be viewed from the perspective of all elements of a trip that affect the actual and perceived performance of the transportation system. Intermodalism in this context not only means the connecting points where bottlenecks can occur, but also the interaction of modes where one affects the performance of another (railroad grade crossings, for example).

Market-Driven Planning

In descriptions of both freight and passenger projects, knowledge of the market was considered vital to successful intermodal projects. This has significant implications for analytical tools, data, and the process of planning and project development. For example, this focus might entail a perspective of transportation flows that occur in a global market. Such global forces could be critical to understanding what is happening in a state's or metropolitan area's transportation system. Many presenters suggested that successful intermodal planning occurs only when the analysis is broadened to include the wide variety of factors that influence such transportation.

Customer Orientation

A customer-oriented intermodal planning process is similar in concept to market-driven planning but much more specific to the needs of individual customers. Transportation, fundamentally, is a derived demand, and the characteristics and desires of system users are a critical input into the planning process. Intermodal freight movement, for example, could be viewed as a direct response to customer demand for safe, reliable, and efficient movement over long distances. And changes in the characteristics of intermodal freight movement have often been undertaken in response to customer needs and desires. Similar concepts could be applied to passenger travel.

Rethinking Roles and Responsibilities

Many presenters indicated that intermodalism means rethinking the roles and responsibilities that have traditionally structured transportation planning, decision making, and project finance. Many of the problems we face in intermodal transportation are institutional in nature and inherent in our traditional way of thinking. In some of the case studies, presenters made the point that private-sector initiation of ideas or participation early in the process helped the ideas become realities. In others, the important role of the metropolitan planning organizations (MPOs) as conveners and advocates of seamless transportation was emphasized. The new actors involved in intermodal transportation planning and the capabilities and resources they bring to the process suggest a new set of responsibilities for traditional participants in the planning and decision-making process, and new roles for the new participants.

Funding

In each case study of project implementation, the major focus was on how project funding was arranged. Whether discussing a transportation terminal in Holland, Michigan, or the Alameda freight corridor project in Southern California, success was partially defined as the ability to make the "deal." This often required flexibility in the use of funds and formal partnerships that defined financial and management responsibilities. Innovative funding strategies included revolving funds, private contributions, and use of congestion mitigation and air quality (CMAQ) funds.

Importance of Linkage

Many of the case studies discussed at this conference were successful because project proponents were able to link the intermodal project to economic development, quality of life, eco-

conomic competitiveness, environmental considerations, and so forth. In particular, in situations where public funds are necessary to support a project and political constituencies are needed to garner such support, the benefits of a project need to be explained in terms understandable to nontransportation officials. Many conference participants suggested that we need to do a better job of understanding these linkages.

Consideration of Intermodalism at All Levels: Policy, Planning, Design, and Operations

When taken together as an integrated conference program, the presentations showed that intermodalism can occur and be very influential at all levels of transportation provision. At the policy level, this could include integrated fare structures or regulatory reforms that provide more efficient transshipment of freight at national borders. At the planning level, this means examining options for the movement of people and goods. At the design level, this means providing capacity and opportunities for efficient access. And at the operations level, this means coordinating schedules and operations for efficiency in movement.

Technology Innovation

Advances in technology, especially for intermodal freight movement, are important driving forces behind new forms of services and travel patterns. Information technology and technological innovation in infrastructure provision can be catalysts for market-driven changes in transportation demand. For example, electronic labeling of containers allows more efficient operation at port facilities, resulting in greater turnover in container utilization and greater container movement on the transportation system serving that port. Technology thus becomes an important input into the transportation planning process and could possibly be a cost-effective strategy for solving the identified problems.

Intermodalism as Opportunity

Almost all of the presentations portrayed intermodal projects or plans as means of taking advantage of market forces, geographic features, technological innovation, or network configurations. Thus, intermodalism should be viewed as an opportunity to enhance productivity and efficiency.

MAKING THE CASE

Perhaps the best argument for intermodalism was the large number of successful partnerships described at the conference. Partnerships rely on agreement from many perspectives that a project is worthwhile (e.g., public benefits versus return on investment). The fact that the conference portrayed so many good examples of intermodal projects indicates the important role that intermodalism has in both the public and private arenas.

Intermodalism was viewed by many conference participants as an opportunity to improve the efficiency of the transportation system and, ultimately, to benefit society in a variety of ways. Several case studies described these benefits. In most cases, the descriptions were general, with few specific data on actual impact.

Economic Impacts

Several case studies described the economic benefits of effective intermodal transportation. Perhaps the most impressive was the data from a New York/New Jersey airport regional

access study, which estimated that the economic impact of the three airports in the region was \$25 billion annually, or 3 to 4 percent of the regional GNP. Poor access to the region's airports had been consistently given as the second most important reason why firms moved away from the region. The Alameda freight corridor project in Southern California is expected to provide substantial economic growth in the port areas. At a more site-specific level, the Union Station case study in Washington, D.C., indicated what impact a well-designed intermodal station could have on enhancing ridership and attracting retailers.

To the users of the system, the benefits of effective intermodal transportation were described as reduced time, increased reliability, and reduced costs. Although not quantified, these benefits were expected to be received as increased customer satisfaction and passed along to system users as productivity gains and reduced costs to the ultimate consumers.

Environmental Effects

The environmental effect cited most often is the reduction in air quality that is associated with intermodal projects. For example, the Alameda freight corridor is expected to see a significant increase in truck flows by 2020, an increase of 20,000 per day over the period. The New York/New Jersey transit access to airports is estimated to reduce carbon monoxide emissions by 2,300 tons per year by removing 18,000 vehicles per day from the road system.

Safety

Reduction in accidents is a primary benefit of projects that improve access to terminals. This safety benefit was associated with vehicular conflict, but also vehicle-pedestrian interaction.

Increased Opportunities and Quality of Life

Intermodal projects designed to produce the preceding benefits would enhance the quality of life of a community. One speaker pointed to the Americans with Disabilities Act requirements for barrier-free transportation access as an excellent way in which intermodal linkages can enhance the mobility of an important segment of society.

MAKING IT HAPPEN

Consistent with intermodal planning from a total-trip perspective, successful project implementation requires understanding, dialogue, agreed-upon expectations, and education of the interdependent participants in the process. Of some interest in the conference was the difference in scale of application of intermodal concepts. The presentations pointed to strategies for and approaches to project implementation that proved successful for particular situations. Presentations related to three areas: systemwide/areawide approaches, corridor or subarea applications, and site-specific strategies.

Systemwide/Areawide Approaches

An excellent example of an intermodal transportation system was found in a presentation from MARTA, the public transportation system in Atlanta. As noted by the MARTA representative, this system is intermodal by policy and by design. Examples included subway stations designed with easy access by bus, automobile, pedestrians, and bicycles. Policy aspects included providing funds to local governments for sidewalks connecting to the transit system. The fare structure provides for convenient transfers. The key message from this presentation was that effective intermodal systems need to have associated intermodal policies and designs.

The concept of market-driven planning was deemed critical at the systems level. Many examples were presented at the state and MPO level where the customers and users of the transportation system were part of the process. The airport access example from the New York/New Jersey region emphasized the importance of attitudinal and origin-destination surveys. Examples from Wisconsin, Florida, Ohio, New York State, Albany, Columbus, and Seattle emphasized the need to understand the market forces and demands influencing freight movement.

Intermodal planning at the systems level needs to take into account the importance of a much broader scale of application, especially in understanding freight movement. Factors that influence intermodal transportation often do not end at the state border. Examples were provided of a much broader analysis perspective brought into the planning process, something very different from traditional planning.

Systemwide intermodal considerations often require a convener that can transcend some of the more myopic perspectives of individual agencies or organizations. MPOs have become important catalysts for addressing the intermodal transportation issues in their regions. Lessons learned from the examples given indicated the importance of listening to the customers and being pragmatic. Albany, New York, for example, showed that by listening to the customers, the focus of system performance measurement shifted from volume-to-capacity type measures toward a concern for reliability of system performance.

The importance of good data, especially at the systems level, was emphasized by many presenters. An excellent example of what good data can do for developing a strategic plan for intermodal freight movement was provided from eastern Washington. Understanding transportation flows, both passenger and freight, is based on the existence of good data.

Corridor and Hub Applications

Corridor and hub applications, as presented at this conference, tended to focus on access to terminals (e.g., the Los Angeles ports, the Port of New Orleans, and airports). Participants identified several factors for successful project implementation, which are described in the following paragraphs.

Most of the examples in this conference at the corridor level began with information about why projects were needed. For example, in Los Angeles one reason was a substantial increase in the number of dedicated truck and rail trips from the two ports in the region to a common intermodal rail yard (related to shifting world markets and transportation technology). In Boston, New York/New Jersey, and St. Louis substantial increases in airport-oriented trips required the development of feeder systems. Market factors necessitated new partnerships, which often strongly influenced the level of participation of the groups involved.

Partnership arrangements at this level become important in bringing a project to completion. Almost all of the examples showed the importance of some mechanism for this partnership to operate (a board, steering committee, task force, etc.). As was noted in the Tchoupitoulas corridor at the Port of New Orleans, it is important to have private-sector participation early in the process. The broad concepts of economies of scale and common system benefits need to be established before technical issues can be dealt with.

Once an institutional mechanism is in place for intermodal planning at this level, the key issues need to be addressed. For example, the New York Full Freight Access study focused on passenger/freight rail conflicts and on issues concerning access to a new intermodal terminal. If clearly identified key issues are not agreed upon early in the process, a great deal of time and money may be wasted as these issues reappear later.

Many of the corridor studies included representatives from various business and modal perspectives. Given this type of participation, there needs to be a group with a broader, unified perspective on the multimodal nature of corridor needs and that does not address the issues from a single perspective. The analogy used by one presenter was that you cannot build a house by asking the plumber, electrician, carpenters, and so forth to meet at a given time and design a house. A blueprint for success is essential.

Site-Specific Strategies

This level of application provided the most detail on successful implementation and public/private partnership. The issues ranged from creative sources of funding (for example, CMAQ funds for an intermodal yard in Auburn, Maine) to the existence of unique institutional structures to take a project to completion (for example, the management organization for Union Station in Washington, D.C.).

IMPORTANT OBSERVATIONS IN THE PRESENTATIONS

The involved parties need to clearly define and agree on the objectives at the outset. This is especially important when broad-based teams are the basis for design and oversight of a project. It is also necessary to examine a facility in the broader context of the general service that is being provided. Train stations, for example, are just one part of a traveler's trip. Intermodal freight yards are just one element of freight movement. Design and operations must clearly be related to the function this terminal has in the broader context.

Successful "selling" of an intermodal project requires clear delineation of its likely benefits. For example, most of the port access projects presented at the conference were related to likely economic development benefits and jobs. This linkage was especially important when numerous government agencies became involved in project implementation and local elected and appointed officials began asking why public funds for these projects were justified.

Many success stories were based on the concept of letting people do what they do best. Especially at the site level, public-sector agencies have distinct roles (land taking, funding, planning, etc.) that become important in the overall scheme of project implementation. Private organizations also have roles in land economics, funding, market analyses, service provision, and so forth. Success means playing to the strengths of each participant.

Finally, although the focus of site-specific projects tends to be fairly narrow, even here a systems perspective is often important. For example, the Auburn, Maine, intermodal terminal will be strongly affected by the operation of a tunnel between Ontario and Michigan that allows doublestacked railcars. The boundaries of success and failure go well beyond property limits.