Opportunities for Technology Transfer

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I am particularly interested in an analysis that keeps the focus where the focus should be: on learning from this remarkable logistics revolution that happened as a result of the leadership of the American freight industry and on looking for its obvious applications to the U.S. Department of Defense (DOD) and the U.S. Department of Transportation (DOT). But at the same time, I would like to discuss some possible spin-off implications for two subjects—passenger intermodalism and public management.

What we are doing in a project called the I–95 Corridor Coalition is looking at the idea of an advanced passenger information system, an intermodal passenger information system. The purpose of this system would be to allow you, sitting at your desk or talking to your travel agent, to understand the full characteristics of one total trip—say, by air—versus another total trip—say, by train. I would like to suggest that the themes that you have developed through the work of this committee are remarkably appropriate and applicable to the subject of passenger intermodalism, particularly in our case. We are looking, in the I–95 corridor, at a program that is going to be first applied to traveler need but, most important, it also applies to certain public management and public planning issues.

Here are three observations about our situation. First, along the corridor, resources are scarce, resources are limited. We have got to do more with what we have. So the problem becomes how to manage existing resources better through application of information technology. Second, the existing information systems for passengers are finite but they are very channeled. They are single-mode in nature. If you want information about an airline trip, it is there. However, if you want information about other portions of this sort of horizontally integrated trip, you cannot get that information. Third, the work that we are doing is going to have multiple ownership. Some of the information we need to organize will be owned by people operating at the origin end of the trip, some of the information will be owned by people concerned with the long-haul portion of the trip, and some will belong to the destination portion of the trip.

Making a trip within our corridor, you might pass through several states. In each of these states, there are local policy concerns—for example, a congestion management strategy or an air-quality management strategy (in some cases, the airports are aware of their contribution

to these problems). Our problem is to get you the information you need to make rational choices so you can help, in your travel behavior, with their local strategies. The question is, Can information technology improve the dissemination of the information? The goal is not necessarily to have you change the mode that you use but to provide necessary information for you.

You talk about the creation of a research framework. Here is our model. In order to make sense of this, working down, we are trying to find out how people need information, about what, and when. In terms of time, we think there are three phases. There is the pretrip planning, which might happen 1, 2, or 3 weeks before the trip; the time of trip commencement; and the time en route, detailing and rerouting. For example, look at a trip from Princeton, New Jersey, to Stowe, Vermont. There is a collection segment where you get to the terminal; the long-haul segment, in this case by rail; and there is a distribution segment to get out of the train. The same trip taken by air would have information needs that would be totally different. This is what we mean by the three categories of trip segments.

What would these segments look like in each of these phases? Let us assume our travel is going from San Francisco to Utrecht in the Netherlands. What they have done in the San Francisco area is give information about how to get to airports, for example, how to travel from Richmond in the Bay area over to the airport. The information exists; that segment is available. For the long-haul segment, there is lots of information that helps you plan your trip from Oakland to Amsterdam, approximately seven programs are now available. To answer the question of what a corridorwide or nationwide intermodal information that also incorporated rail would look like, we can turn to the Netherlands. There a remarkable program of trip planning has been built. It essentially asks what day do I want to go, where am I leaving from, and where do I want to get to. Say I want to go from Schiphol Airport to the town of Utrecht. At the computer terminal, on the left window I choose my train, on the right window I get a picture of the train trip, and I get a printout, so when I get off the airplane in Amsterdam I have the written directions in my pocket that tell me to change twice. At Utrecht Station, I am going to change to a pedestrian mode. I am going to take a bus. So you see, our multimodal trip, our intermodal trip, has been planned out for us by some remarkably straightforward technology.

Other pieces of technology that might fit in the mix are in evidence in the trip planning kiosks available in Portland and the kiosk under development in Seattle. All of these could work together in a program.

What is amazing about this subject is the timeliness of it. Five years ago when you went to an airport (except Boston) and asked, What are you doing to tell people about connecting modes? the answer was, Nothing. But it has changed. From Frankfurt, Germany, to Norfolk, Virginia, to Baltimore-Washington International Airport to Oakland, people are now vying for the opportunity of providing exactly the same kind of ground information they were not at all interested in providing 5 years ago.

People are already organizing trip-planning information at the origin, at the destination, and, for some modes, in the long haul. From a point of information technology, how would we organize it? I think it is pretty clear that the best place to update data about the origin of your trip is in the origin metropolitan area. Likewise, the best place to organize information about options at the destination is at that metropolitan area; and probably you would want a national data source about the characteristics of interstate travel. So some of the data needs to be managed locally and some of the data needs to be managed in a central place. We are trying to figure out which information is most appropriately left at the local level and which should be centralized.

The most exciting aspect may have to do with the issue of public policy that Secretary Huerta was talking about. This kind of information is needed by the planner to monitor the system, to model the system, and to use in taking part in performance-based planning.

In addition to having a dimension where we want to service the traveler as well as service economic development (which we have not talked about), the third dimension is to serve the public policy purpose and provide data to support that.

It is much too early to generalize about which technology is needed and what kind of institution could develop it. But judging by the speed at which local areas are putting high-quality trip-planning information on the Internet, it seems that now is the time to prepare standards and protocols to build toward the day that we do have a national system.

From the documents put together for this seminar and the lessons to be learned from the freight industry about the public process, it is clear—particularly if you are a public manager looking at freight and looking at the logistics revolution—that what you want to do is learn to manage better. From the studies that have been prepared, it is clear to me that in order to manage better, we have to learn to measure performance better. That is key to the logistics revolution. To learn about performance, we have to learn to monitor; we have to learn to track.

In the case of passenger information systems, we are involved in monitoring—finding those services and monitoring how well they work. We are involved in the evaluation, in looking at performance measurement, building up to the evaluation of the national transportation system. We hope we will end up with better management resources through information technology.

There is a nexus of intermodal interests; a research agenda is needed to address the very obvious implications of the logistics revolution, first for DOD and second for DOT in the management of freight. In addition to primary motivation and primary interests, there are some strong implications that we should not lose sight of, the spin-off implications of this logistics revolution, to help us understand passenger intermodalism and to help us understand public management.