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This Issue: The Future of High-Speed Rail

3 The Great Multiplier

A national high-speed rail program could be the engine that drives America’s 21st century economy.

R. Hunter Biden
Co-chairman of Rosemont Seneca Partners LLC and Adviser to HNTB Corporation

5 Passenger Rail’s Role in Writing the Next Chapter in American Transportation History

Creating a national passenger rail program presents an opportunity to have ‘one system’ working together.

Jolene Molitoris
Director, Ohio Department of Transportation and Incoming Chair, American Public Transportation Administration’s High-Speed and Intercity Rail Committee

7 A Mountain to Climb

The United States kick-starts a transformative high-speed rail program, but the need for permanent funding looms.

Peter Gertler, AICP
High-Speed Rail Services Chair
HNTB Corporation

10 InTransit Roundtable

Three international experts share perspectives on building a U.S. high-speed rail system.

Ignacio Barrón de Angoití
Director of the Passenger and High-Speed Rail Department and Coordinator of the Latin American Region International Union (Association) of Railways

Robert Doty
Peninsula Rail Program Director
California High-Speed Rail Authority

Eduardo Romo
Technical Director for Prointec and Vice President of Technological Development Prointec USA
The Great Multiplier

A national high-speed rail program could be the engine that drives America’s 21st century economy.

The U.S. national high-speed rail program, the largest infrastructure investment since the Interstate Highway System, will have a multiplying effect that goes beyond job creation to produce a host of economic benefits, rivaling or surpassing those generated by President Eisenhower’s vision.

Inspired by Germany’s autobahn, Eisenhower’s idea of a nationwide network of highways strengthened our country and turbocharged our economy, forging greater connectivity among our far-flung states and regions and promoting the faster movement of goods, military personnel and equipment.

A national high-speed rail network could be to our 21st century economy what the Interstate Highway System was to the 20th century economy. Everyone talks about growing the economy. What we really need is to create an economic system in which the middle class has the opportunity to have a sustainable future. High-speed rail is the key to such a system.

AT THE LOCAL LEVEL
Jobs are the most important and immediate concern. A high-speed rail system will bring high-paying, labor- and environmentally-friendly jobs to the inner cities and markets where there is a huge need for jobs in the skilled labor department. Many of those jobs will not be limited to the tasks of building the actual network, either. They will be permanent jobs, providing employees with the wherewithal to purchase homes, buy cars, take vacations, educate their children, etc.

For example, a study by the nine states participating in the Midwest Regional Rail Initiative shows the 3,000-mile Chicago-hubbed system will generate more than 57,000 new jobs, generate $1.09 billion in household income and increase property values by $4.9 billion near stations.

The economic impacts of high-speed rail stops in Orange County, Calif., include growth of its tourism industry, increased density around train stations that shrinks the region’s developed footprint — and a gain of nearly 23,000 jobs by 2030.¹

In California’s Sacraminto/Central Valley area, high-speed rail will trigger jobs in the service, transportation, communications, utilities, finance, insurance and real estate sectors.²

“‘A national high-speed rail network could be the engine of our 21st century economy what the Interstate Highway System was to the 20th century economy.’”

All total, California’s statewide high-speed rail project will create nearly 160,000 construction-related jobs and an additional 450,000 permanent jobs by 2035.³

Looking beyond jobs, U.S. cities will benefit from transit-oriented communities. An economic certainty in Europe for decades, new stations here will be magnets for commercial and residential development, as the land becomes prime real estate. In Boston, family residences near commuter rail stations enjoy a 6.7 percent premium over homes located elsewhere. After new transit stations were announced in Los Angeles, values of commercial property surrounding proposed station areas grew 78 percent, compared with 38 percent for other properties.⁴

However, interconnectivity may be the most valuable benefit at the local level. By achieving economic integration into, and parity with, the rest of California, the Sacramento/Central Valley area could see potential taxable income gains of nearly $48 billion per year, state income tax revenues of more than $2 billion and a total sales/use taxes increase of approximately $333 million per year; of which, nearly $46 million would flow directly to counties and cities within the Central Valley.⁵

AT THE REGIONAL LEVEL
Because of the United States’ vast land mass, we have to implement high-speed rail in pieces. One piece or region where I see the most potential is the Midwest. Led by eight governors and the Mayor of Chicago under the heading of the Midwest High-Speed Rail Steering Group, this region has been more effective than any other multistate rail corridor in bringing together all of the political forces necessary to achieve high-speed rail.

High-speed rail development can allow Midwest cities and towns to function as an efficient economic unit. A Chicago-hubbed high-speed rail network can transform the Upper Midwest into a single, mega-region economy. To realize that vision, people in the Midwest must have the ability to visit a distant city and
return the same day — much like commuters currently do in the Northeast Corridor. High-speed trains will make it possible to spend a fully productive day in another city and still make it home for dinner. As a megalopolis, the Midwest could offer its residents never-before-considered job opportunities and give its cities the ability to tap into new labor pools and skill sets.

According to the steering committee, developing the Midwest Regional Rail System will produce construction jobs for a generation. High-speed rail is expected to create an average of 15,200 jobs annually during the construction period, of which 6,000 are construction jobs.

Florida also is moving forward aggressively to develop high-speed rail. The first leg of Florida’s very high-speed system would bring Tampa and Orlando closer together figuratively with a nonstop trip of less than one hour, also making it possible to commute for work.6

Ohio’s proposed 860-mile, high-speed rail network would link the state’s major commercial centers with the Chicago-hubbed Midwest Regional Rail System, southern Ontario and other smaller cities. Some expect the new region to attract “new economy” industries, such as high-tech and telecommunications.7

According to Richard Florida, an American urban studies theorist, a new period of geographic expansion is necessary to spur a renewed era of economic growth and development.

In an article that appeared in The Atlantic, Florida wrote: “The rise of the mega-region is the cornerstone of a new, more intensive and also more expansive use of space. Mega-regions, if they are to function as integrated economic units, require better, more effective and faster ways to move goods, people and ideas. High-speed rail accomplishes that, and it also provides a framework for future in-fill development along its corridors.”

“Several European countries — Spain, France, Germany — have developed real technical expertise in building and manufacturing high-speed rail cars and train sets. We should not be afraid to adopt that technology and bring those manufacturing bases to the United States.”

AT THE NATIONAL LEVEL

The Chinese have invested an enormous amount of money in developing high-speed rail corridors. Not only have these corridors given the Chinese people the ability to move freely within their country at speeds greater than air travel, they have created an entirely new manufacturing and assembly base.

In Europe, Alstom, the continent’s largest high-speed train manufacturer, employs more people than Airbus, a global commercial aircraft manufacturer. High-speed rail can create a new manufacturing industry here in the United States, too.

In fact, we are seeing the first development of such an industry in Wisconsin. Last year, Gov. Jim Doyle announced a groundbreaking agreement with the Spanish train maker Talgo that will put two train sets into service in Wisconsin and establish new assembly and maintenance facilities. Both facilities will be in southeastern Wisconsin, an area hit hard by the recession and job losses. Together, they are expected to create about 80 jobs initially with the potential for many more.8

The Wisconsin assembly plant will support the delivery of these trains throughout the Midwest and the country. The economic ripple effect will benefit U.S. supply firms and create even more jobs.

The Wisconsin-Talgo model is what we should be using to attract more international high-speed rail manufacturers. Several European countries — Spain, France, Germany — have developed real technical expertise in building and manufacturing high-speed rail cars and train sets. We should not be afraid to adopt that technology and bring those manufacturing bases to the United States.

We can’t predict all of the positive economic effects of high-speed rail, but we do know they will be great. The more you connect people and their ideas, the more we can achieve as a country. The Interstate Highway System taught us that. Our nation’s aviation system soon followed, and we grew even closer.

For the past 50-plus years, we have enjoyed a quality of life that only one of the world’s best economies could offer. We led the world through innovation and hard work in the 20th century, and we have every reason to believe we can do the same in the 21st century. Indeed, high-speed rail is one of the keys to realizing that goal.

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3. The California High-Speed Rail Authority website.
5. “The Economic Impact of the California High-Speed Rail in the Sacramento/Central Valley Area” report.
America has benefited immensely from our transportation system. The history of our nation was written by those who sailed the seas to a new world, crossed the Great Plains by wagon or train, flew to new heights thanks to the work of two brothers from Ohio, and brought equality to our nation with a seat on a bus. We enjoy an economy and quality of life that are among the best in the world because our transportation system—all forms of transportation working together—connects our people and our businesses like none other.

As we look to our recovery from the worldwide economic recession, President Obama’s vision for a national network of passenger trains will play an important supporting role in writing the future of our “one” transportation system. Not only do intercity and high-speed passenger rail corridors provide the kind of transportation choices that Americans want, they also address energy needs and increase productivity and safety for all of us.

I was at the White House on the day President Obama made the announcement of $8 billion in stimulus funding for passenger rail. He pledged to a room of life-long, high-speed rail advocates that intercity and high-speed rail would be one of his administration’s transportation legacies. I think every heart beat a little faster when he described his vision of an America interconnected by passenger trains, whisking through towns. “Imagine what a great project that would be to rebuild America,” the president said.

We know that investments in intercity and high-speed passenger rail will translate into strong job retention and creation. It’s a lesson we learned from the stimulus, in which transportation dollars have impacted the largest proportion of jobs. Some estimates show as much as 25 percent of the jobs saved or created under the American Recovery and Reinvestment Act are a direct result of the $48 billion allocated to transportation projects.

Connect that to the compelling work force needs of all our public and private transportation organizations, and the urgency becomes clear. In my organization, the Ohio Department of Transportation, nearly half of our 5,500-person work force could retire in the next five years. This level of future transition exists throughout the nation. Transportation investment nationally and locally will help attract the brightest and the best to our transportation industry and rebuild this crucial work force of the future.

We also must develop and communicate a true cost-benefit analysis that reflects the return on investment that passenger and freight rail represent. Our rail investments hold the potential to carry more passengers and freight safely across America while revitalizing urban downtowns, stimulating economic development and protecting the environment. It is the missing link in a multimodal, national transportation system that drives mobility, economic growth and green choices.

Opponents often say we can’t afford high-speed and intercity rail right now. They want to wait until a better time. I ask you, when is a better time? Is there a better time to save wear and tear on our highways—and millions in maintenance dollars—by taking vehicles off the road? Is there a better time to give truckers more highway space in which to drive? Is there a better time to wean our country off foreign oil? And, what about saving the environment and improving our quality of life? Is there a better time to reduce automobile emissions caused by congestion—a national epidemic that is costing our country billions in lost productivity each year?

At this time, the only cost-benefit analysis that has reached a level of sophistication to make outputs readily accessible and consistently available is one that measures our highways and bridges. Intercity and high-speed rail investments—along with all other modes—need the same comprehensive cost-benefit analysis that is truly representative of the impacts these investments have on competitiveness, safety, productivity, congestion mitigation, economic development and the ability to provide mobility choice to a wide variety of citizens.

“We also must develop and communicate a true cost-benefit analysis that reflects the return on investment that passenger and freight rail represent.”

“The next federal transportation authorization bill needs to answer the question: How do we fund this ‘one system?’”
Polls indicate young professionals under age 30 want intercity and high-speed rail in huge majorities. They “live first, work second.” They understand this emerging mode of transportation will give them the quality of life they insist upon. They are the future of our country. They will be the ones who carry our vision forward.

We also must recognize the growing number of citizens who cannot or choose not to own, operate and maintain a car. Here in Ohio, that number is roughly 8 percent of our population. The aging of our society calls for ways to retain a level of mobility that contributes to the ongoing quality of life.

“Departments of transportation and transportation agencies should have a menu of choices as lengthy as the one at my local Starbucks.”

To achieve intercity and high-speed success, we must create the opportunity to move people and goods from end point to end point as seamlessly, easily and quickly as possible. It begins with the connection between passenger rail and transit, passenger rail and airports and a commitment to a one-ticket type of transportation network that assures travelers ease of use. It also encompasses the collaboration of private developers in plans to leverage intercity and high-speed rail investments for maximum city-center station-site development impact. Public and private sectors must create strong partnerships if intercity and high-speed investment is to produce the maximum return on investment.

An integrated, world-class, world-competitive transportation system will do that. By focusing on our nation’s transportation as “one system” that provides travelers and shippers meaningful, efficient and safe options, we can create investment strategies that result in the United States having the most productive freight and passenger mobility in the world.

The next federal transportation authorization bill needs to answer the question: How do we fund this “one system?” The opportunity for high-speed and intercity rail to access funding on a continual basis is a key element of advancing and sustaining such a system, but transit, light-rail, buses, pedestrians and bikes, autos and trucks, aviation and ports — all play key roles in a 21st century transportation system and must be part of our nation’s multimodal investment strategy.

House Transportation Chairman James Oberstar has put forward an integrated funding solution that addresses all aspects of transportation — one that creates unity instead of division. We must all work together to support the chairman’s vision and authorization language, which promotes timely, flexible investments, assuring the right investments are made in each state and each region.

Beyond the authorization, we should define transportation funding in a broader sense, including every possible resource — the transportation authorization bill, state and local investments, infrastructure banks and public-private partnerships. Departments of transportation and transportation agencies should have a menu of choices as lengthy as the one at my local Starbucks. Funding options should run the gamut, so we garner the resources needed to achieve a world-class transportation system.

If intercity and high-speed rail will be President Obama’s legacy, I suggest our contribution to history should be finding the ways in which to sustain our “one system” — a system where all modes work together optimally to be the most competitive in the world.

ABOUT THE AUTHOR:
Jolene Molitoris is director of the Ohio Department of Transportation, serving as the first female director of that organization. She oversees an effort to modernize the state’s multimodal transportation system and chairs the Ohio Rail Development Commission. Molitoris was appointed by President Clinton in 1993 as the first female to head the Federal Railroad Administration. She will become chair of the American Public Transportation Association’s High-Speed and Intercity Rail Committee this year. Contact her at (614) 466-2336.
The speed at which events surrounding high-speed rail have progressed in the past few months has left the transportation industry in a whirlwind of excitement and angst. Angst because high-speed rail doesn’t have a sustainable funding source. We don’t know what the long-term commitment looks like.

High-speed rail’s watershed moment came in January, as the Federal Railroad Administration awarded nearly $8 billion in stimulus grants to kick-start a national, high-speed, intercity passenger rail program. Thirteen corridors in 31 states received funding to benefit new and existing rail infrastructure. The lion’s share went to California ($2.25 billion), Florida ($1.25 billion) and the Midwest ($2.6 billion).

These grants signify the FRA’s commitment to support the most progressive, most advanced programs. They are the first step toward a transformative high-speed rail program in America. Although the cost to overhaul the country’s entire rail system is estimated in the hundreds of billions, this initial funding will enable the nation’s first high-speed trains to be operational by 2015, with additional lines opening by 2020.

However, no one is certain where the remaining revenue for high-speed rail will come from. Congress needs to consider a permanent, sustainable and dedicated program, similar to the Highway Trust Fund, as part of the new surface transportation bill. However, difficult battles and give-and-take decisions lie ahead before a permanent funding source becomes law.

The $8 billion in grants is base camp. We’ve got a mountain to climb.

Ron Utt, a senior research fellow at the Heritage Foundation in Washington, D.C., agrees. He recently told Bloomberg.com that, “Unless more federal money is forthcoming in the future, these places are still going to struggle for resources because the states are in even worse condition than the federal government.”

THE HOT SPOTS

For future transportation historians, it may be difficult to pinpoint a single birthplace of U.S. high-speed rail. The map is filled with hot spots of activity. California and Florida’s very high-speed systems, similar to current systems in Europe and Asia, as well as the higher-speed incremental systems in the Midwest, Northeast and North Carolina, simultaneously are shaping the future system.

California’s electrically powered high-speed rail system will serve major population centers from Sacramento south to San Diego. Trains will reach speeds of 220 mph, shuttling passengers between Los Angeles (Anaheim) and San Francisco in about two and a half hours and will be very competitive in terms of travel time, cost, reliability and convenience compared to traveling by air or driving. At full build-out, the California High-Speed Rail Authority expects 40 million passengers per year, which will make it one of the busiest passenger rail lines in the world.

There are eight sections of line to be constructed in California. HNTB is participating in four of the sections and leading two of them: the San Francisco to San Jose and the Los Angeles to San Diego sections.

The San Francisco to San Jose line will share Caltrain’s existing commuter rail corridor, which runs through dense, urban areas. Anticipating the need for extensive grassroots communication, the authority has implemented the first major U.S. high-speed rail context-sensitive solutions process. The effort proactively engages the public in decision-making and developing alternatives through design workshops, forums and charrettes.

This gives the public and other stakeholders a seat at the planning table. In turn, the authority is asking participants to help it understand what is desirable and what isn’t, so the result is an elegant solution that fits within the context of the communities it serves.

And, rather than working conventionally from two-dimensional plans and aerial maps, the authority is using 3-D data to display what can’t be seen, such as underground utilities and how the structure will affect the designated space.

3-D technology can effectively and efficiently test and validate significantly more alternatives than traditional methods would. As a result, the authority arrives at solutions much faster.
As for the San Francisco to San Jose leg, preliminary engineering will be completed by June 2011, followed by a final environmental impact report/environmental impact study in July 2011 and a record of decision by September 2011. The Los Angeles to San Diego leg will be completed after 2011. That important date ties into the stimulus funding. Eligible projects must be at a certain state of readiness, so that they can move into construction by 2012.

With a $1.25 billion grant from the federal government, Florida now has a green light to move forward with building a true high-speed rail system. The FRA has made an initial grant for the design, land acquisition and construction of the Orlando-Tampa project, which is the first piece to be developed in a Tampa-Orlando-Miami high-speed rail corridor.

HNTB is serving as the program management consultant for the Florida Department of Transportation’s High-Speed Rail and Intercity Rail Program and will work with officials to manage the process for the department to competitively award a design-build-operate-maintain franchise for this world-class high-speed rail system. Work already taking place includes ridership projections, selected right-of-way purchases, preliminary station design and work to complete the bid process.

Officials estimate the Orlando-Tampa system will be operational by 2015, and expect it to benefit both Florida citizens and visitors, with the Orlando-Miami segment to follow. The system will have a large tourist component with stops at the major attractions near the Orange County Convention Center and Walt Disney World. The promise of a non-stop trip of less than an hour between Tampa and Orlando also makes it possible to commute for work between these two cities. Officials also are looking to use high-speed rail to spur transit-oriented development and manage growth by reducing sprawl and creating walkable communities.

THE CLIMB
High-speed rail is the catalyst for much of the change so many want. It promises to accelerate mobility, accelerate environmental goals and accelerate job growth and our global economic competitiveness, but only if we can make a long-term funding commitment.

The heady momentum we are enjoying now is not yet sustainable. Our mountain lies ahead.
SURVEY SAYS AMERICA’S HIGH-SPEED RAIL ASPIRATIONS REMAIN STRONG

A February 2010 America THINKS survey* indicates transit and passenger rail remain top of mind in the wake of the Obama administration’s $8 billion high-speed rail grant announcement earlier this year.

Nearly nine in ten (88 percent) Americans currently are open to high-speed rail travel for long-distance travel within the United States. While this is a strong majority, that support is down slightly from the 94 percent America THINKS recorded in March 2009.

“Stimulus money is seeding initial projects, but it’ll be up to those of us in the industry—working in partnership with transportation agencies and elected officials—to keep up the momentum,” said Peter Gertler, high-speed rail services chair for HNTB Corporation.

Such advocacy efforts are crucial at a time general excitement about high-speed rail has slowed. Americans were far more likely to choose high-speed rail over driving for a trip to a city in their region in March 2009 than February 2010 (54 percent versus 38 percent).

“The pain we felt when gasoline was hovering near $4 a gallon has receded,” Gertler said. “Yet we can’t stand by and wait for the next crisis to hit to address the underlying issues of congestion and our dependency on limited fossil fuels.”

While general interest may have slowed, there still is a great deal of support for passenger rail enhancements overall. More than four in five (83 percent) Americans agree public transit and high-speed rail infrastructure should receive a larger share of federal funding.

“When our interstate highways empowered economic growth and development during the last 50 years, we now realize America can’t erase its congestion and conservation problems simply by building more lanes,” Gertler said. “Establishing a long-term transportation vision that includes rail as an intermodal counterpart to our roads is crucial.”

Liz Rao, HNTB national public transit services chair, agreed. “The U.S. Department of Transportation recently shifted its criteria when evaluating transit proposals for federal funding to consider environmental and economic development benefits, as well as congestion relief. Such a focus will allow us to improve the quality of life in our communities and make better use of limited resources.”

* HNTB’s latest America THINKS survey polled a random nationwide sample of 1,007 Americans Feb. 1-7, 2010. The margin of error is +/- 3.1 percent.
Twelve countries, including Japan, France, Spain, Germany and Italy, have mature high-speed rail systems that have become the preferred transportation mode for the 100- to 600-mile trip. These countries have years of experience and miles of best practices from which the United States can benefit as it builds its own system.

To find out what we might learn from these countries, InTransit spoke with three of the international community’s foremost high-speed rail experts:

• Ignacio Barrant de Angoiti, director of the passenger and high-speed rail department and coordinator of the Latin American Region, International Union (Association) of Railways.

• Robert Doty, who has built high-speed rail systems in Europe and Asia and now is director of the Peninsula Rail Program, California High-Speed Rail Authority.

• Eduardo Romo, technical director for Prointec and the vice president of technological development for Prointec USA.

InTransit: What best practices in developing and operating high-speed rail systems would you recommend for U.S. agencies?

Barrant: There is one fundamental concept or best practice developers must keep in mind: High-speed rail is not just a train that runs faster than other trains. It is a complex system in which all the involved elements (infrastructure, track, rolling stock, maintenance policy, station placement, marketing, etc.) must be considered together, even if different people or companies will take charge of that development later. Imagine the system already is in operation and then start development, one by one, of all the elements.

In the United States’ case, adhering to that concept is slightly more complicated because “classic” passenger trains disappeared years ago and the differences between classic trains and high-speed trains are significant. Moreover, the American way of life and, consequently, the way America develops its cities, will have tremendous influence on the potential use of high-speed trains. A communications campaign is essential for any high-speed project in order to promote understanding among the society.

Next, the United States should not view high-speed trains as competition to airlines and cars but as a complement to those transportation modes. High-speed rail is a good transport mode from the point of view of the environment, and it’s intended to complement other transport modes, not compete with them.

High-speed rail is similar but different all around the world. Each system must be adapted to suit the needs and preferences of its own region or country.

In addition, the first project can be crucial to further developments. Ideally, the first project should link two medium-sized cities (1 million to 3 million people) separated by approximately 300 miles, without intermediate population, that share relatively flat terrain. This ideal scenario should permit a travel time between stations of approximately two or three hours — compared with six hours door-to-door by car and three hours by plane — and at a cost that is approximately half that of an airplane ticket. This scenario could produce between 4 million and 5 million passengers per year and will demonstrate to the American people exactly what high-speed rail is.

In any case, best practices should include a detailed analysis of traffic forecasts and costs and benefits, both direct and indirect, in order to determine the appropriate levels of public and private investment.

Doty: First, the United States needs to understand there are few simple modifications to high-speed rail. You must have a perspective that incorporates the total view of the product.
When you decide to alter something, you have to evaluate the consequences on the entire system.

Second, the United States needs to change its risk management approach. Here, risk management is a defensive process. We use it as a financial tool to contain cost overruns. In Europe, it is an offensive process. They use risk management to bring the project in on time and on budget by identifying problems in advance and putting mitigation measures in place to make the project successful.

Third, one of the problems the United States faces is that high-speed rail isn’t seen as a product. The average American doesn’t have the level of understanding needed because we don’t have a prototype to point to. In California, everyone likes high-speed rail conceptually, but when you ask them what it is, they define it as a fast train. No, not really, it’s more like an airplane without wings. It will be a tough sell until after the first system is built. Then people can point to the existing system and say we want one of those.

Finally, we need to create interoperability requirements at the national level that can be used by all states. If a train goes from one state to another and there are different set of rules there for clearances, operating and speeds, you have a mess on your hands.

**Romo:** To achieve an efficient system, the different life cycles of each subsystem need to be taken into account during the planning stage. It is important to consider infrastructure from a very long-term perspective and equipment at the mid-term, if not earlier. The infrastructure characteristics establish some key features for the line performance — as the alignment geometry determines the limit for the maximum speed to be delivered along the whole life of the system. On the other hand, operation and services can be modified quite easily.

For the best results, experience says it’s important to combine the general criteria — the long-term view and real high-speed values — with the specific features of each corridor, such as functionality, population, number of stations and travel times, to match demand.

Defining the system involves establishing a number of variables. In Europe, due to its historical railway heritage, some of those variables could not be selected to meet optimum performance. They included limited clearances of infrastructure and rolling stock, the lack of compatibility in the field of signaling and communication equipment or, in some cases, the track gauge.

**InTransit: How has high-speed rail changed transportation systems in other countries?**

**Barrón:** High-speed rail increases mobility, which stimulates economic and social development, promotes changes in land use, modifies the distribution of the population (especially in short and medium distances) and creates employment. In some cases, by having new facilities for fast, frequent and cheap travel, people change their way of life because intercity travel becomes much easier. You can live in one city and work or study in another.

**Doty:** High-speed rail changes the face of the transportation industry. In Spain, the people working on these projects are young. The reason they are attracted to high-speed rail is because it’s a technology-driven system, so it’s exciting. People don’t go to college to work for a railroad, but they will go to college to work for high-speed rail. It’s a cultural shift from a traditional brick-and-mortar business to a technology business.

**Romo:** High-speed rail has dramatically changed behavior. For instance, in the Madrid-Seville relation, high-speed rail is the traveler’s first choice when considering all transportation modes. On the Madrid-Barcelona route, where commuters also use a reliable air shuttle, high-speed rail ridership increased 30 percent in the first two years of service — 50 percent fly and 50 percent take the train.

High-speed rail also is changing the geographical range of services. From the beginning, the main services were providing mid- to long-distance connections of 300 to 400 miles. Recently, on the same infrastructure, service has expanded to include distances as short as 100 miles and as long as 600 miles.

**InTransit: From a cost-benefit standpoint, is the investment in high-speed rail worthwhile?**

**Barrón:** If, in your cost-benefit analysis, you take into account social profit, then, yes, high-speed investment is worthwhile. If you only consider the business side, in general, the answer is no. Social profit means you benefit from the three main advantages of railways: capacity, respect for the environment and safety. Having a new, intermediate transportation “product,” one that is in between the airplane and the private car, offers more freedom and comfort than airplanes, more speed and safety than private cars and all at a reasonable cost. And, then, there are the environmental benefits. High-speed rail accomplishes all of this.

**Doty:** Where systems have failed, there has been a desire to shift the capital costs to the operator. An operator may be able to break even operating the system, but it’s rare they also could absorb any amount of capital costs in a payback mode. You can’t burden the system with extensive capital debt from day one. You need to allow time for the operating system to stabilize and build a customer base. Then, it will become a profitable system. Further, in many countries, you don’t have clear regulatory ownership. When you have multiple owners — one owns the right-of-way, one owns the rolling stock, one owns the operating company — every layer adds bureaucracy and cost and that, again, will challenge your ability to generate positive revenue.

**Romo:** Spain’s first line was implemented and entered operations surrounded by a heavy cost-benefit debate. After the new service proved to be a success — with rapidly increasing demand and higher passenger satisfaction — the local, regional and national administrations responsible for the costs and social benefits agreed to extend the system. All major political parties support these investments.

**InTransit: How have other countries funded their high-speed rail programs?**

**Barrón:** In Europe, all the infrastructure management — such as the investments in new infrastructure, maintenance, traffic control — are made by public companies, while the operations investments are made by railway undertakings, which, in some cases, are private companies. The ultimate goal is to produce a liberalized railway space, in which competition between rail operating companies is possible in the entire European railway space. This approach, which looks similar to the liberalization in the skies and on the roads, should permit a higher efficacy for this railway space.
Concerning the construction of new high-speed lines, an interesting development in France has been to share funds and responsibilities (investment shared by European Union, French government, regional authorities, cities, etc.) that give transparency and efficacy to the investments.

Once the investment is made, train operators’ fees to use the infrastructure — which can take into account the social profit of railroads — can significantly influence railway operations’ profitability.

Finally, in some cases, public-private partnerships have been (or will be) implemented, as in the cases of the Netherlands, the link between France and Spain and the Portugal high-speed system. In this case, discussion of social profit still is more important because public and private interests (including risks and the costs of the risks) are mixed and need to be clarified.

Other than infrastructure investment, the financing of rolling stock and other equipment is more conventional. The main question, in this case, is how to define the train operation process. The entire purchase process can take five years and can cost more than $1.5 million.

Equally strategic and important is the discussion about stations, especially in the United States. The stations’ locations and size, their connectivity to other transportation modes, the cost to accede to the adequate placement and who pays the architecture costs (some people associate high-speed train stations with large architectural projects, when, in fact, that’s not always necessary) — all these elements can be critical to the final success or failure of high-speed rail.

Doty: Almost every system I worked on was funded by the national government, which was about the size of California from an economic perspective. One of the elements that will make high-speed rail work here is sponsorship at the national, state and local levels. You go through cycles of acceptance and rejection, but if you have strong leadership, you will prevail during the downturns.

Romo: In Spain, the main infrastructure is supported by the national government while the intermodal high-speed rail stations receive local and regional funds. Operations are carried out by public railway companies on a non-subsidized basis.

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How to Make High-Speed Rail Fly in America
Why the U.S. system can't be just like other countries’ systems.

When I went to work building high-speed rail in Asia, I spent time trying to understand who the customer was in a very literal sense. Understanding the “home” culture is critical to high-speed rail’s success.

You can’t simply go about implementing high-speed rail by inserting the same cookie-cutter experience country after country. It won’t work. The Asian customer is different from the European customer. And, the European customer is different from the U.S. customer. Yes, the technology is the same, but the product — the total experience — needs to be tailored to the user.

We must present high-speed rail to the American public just as Madison Avenue would present a new car or any other type of product. Because, in the end, that’s what high-speed rail is: a product we want consumers to buy. And, as any good customer-focused company will tell you, you have to tailor your product to your target audience.

For the United States, it means creating a high-speed rail experience that will be accepted by the American public, not replicating one that was accepted by the French public. Applying the Peoria principle — if it “played” in country A, it will play anywhere — to high-speed rail doesn’t work. What one society embraces, another may consider off limits. Case in point: personal space. Americans have certain personal space boundaries, which we deem acceptable or tolerable. These invisible bubbles do not exist in Asia.

Any American who has ever chosen to take the next elevator because the available one was full knows you can’t expect U.S. high-speed trains to hold the same number of passengers that a Korean or Japanese train holds. Americans won’t tolerate it. We need our personal space. Present a high-speed rail product with sardine seating and Americans will pass. If a product requires us to sacrifice personal space, forget it.

Another example: In Japan, passengers can clear a high-speed train in seconds. Operators tell them to get ready. When the doors open, people go scrambling off and the next group comes scrambling on. I will guarantee you there is not an American who will go for that. As soon as you push an American, he or she stops. And, we don’t scramble. Have you ever scrambled off a commercial flight? No, you wait while the passengers in the rows ahead of you reassemble themselves, dig into the overhead bins and lumber down the aisle dragging their carry-ons.

Those are the types of cultural nuances we first have to recognize and then build into the U.S. product. You can’t force one cultural norm onto another. You have to make the experience intuitive. If we want high-speed rail to fly in the United States, America will need to look at itself and then look at high-speed rail as a complete package.

Robert Doty
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Featured in this issue:

American Public Transportation Association’s High-Speed and Intercity Rail Committee
http://www.apta.com/about/governance/committees/intcity/Pages/default.aspx

International Union of Railways
http://uic.asso.fr/spip.php?id_article=757&page=home

Ohio Department of Transportation
http://www.dot.state.oh.us/Pages/Home.aspx

Peninsula Rail Program, California High-Speed Rail Authority
http://www.caltrain.com/peninsularailprogram.html

Prointec USA
http://www.prointec.es

Rosemont Seneca Partners LLC
http://www.rosemontseneca.com/

HNTB High-Speed Rail
http://www.hntb.com/point-of-view/ready-for-high-speed-rail

Other helpful websites:

Ailston
www.alstom.com/home
Alstom is a global leader in power generation and rail infrastructure.

American Association of State Highway and Transportation Officials
http://www.highspeed-rail.org/Pages/default.aspx
AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia and Puerto Rico. It fosters the development, operation and maintenance of an integrated national transportation system.

Californians for High Speed Rail
http://www.ca4hsr.org
This is a grassroots, statewide coalition of advocates for the high-speed rail project approved by California voters in November 2008.

California High-Speed Rail Authority
http://www.caighspeedrail.ca.gov
The Authority is the state entity responsible for planning, constructing and operating an 800-mile-long high-speed train system serving California’s major metropolitan areas.

Center for High-Speed Rail: An initiative of the American Public Transportation Association
http://www.highspeed-rail.org/Pages/default.aspx
This committee promotes the development of conventional and high-speed intercity rail transportation systems.

Center for Transportation Excellence
http://www.cfte.org
The CTE is a nonpartisan policy research center committed to defending the merits of transit and equipping local leaders with information they need to be successful with their public transportation initiatives and ballot measures.

Federal Railroad Administration
http://www.fra.dot.gov/Pages/31.shtml
The FRA has placed a new emphasis on building high-speed and intercity passenger rail to connect communities and economic centers across the country.

Federal Transit Administration
http://www.fta.dot.gov
The FTA supports locally planned and operated public mass transit systems throughout the United States.

Florida Rail Enterprise
http://www.floridahighspeedrail.org
This agency is responsible for planning, constructing, maintaining, operating and promoting Florida’s high-speed rail system.

High Speed Rail News
http://www.hsrnews.com
HSR News is dedicated to covering the expansion of high-speed rail in the United States and around the world.
Indiana High-Speed Rail Association
http://www.indianahighspeedrail.org/index.html
The Indiana High-Speed Rail Association is an organization of grassroots citizens and professionals from government and business dedicated to the development of a high-speed rail transportation system within Indiana.

Midwest High-Speed Rail Association
http://www.midwesthsr.org
This association is a Chicago-based, member-supported, nonprofit organization advocating for fast, frequent and dependable trains linking the entire Midwest.

Midwest High-Speed Rail Steering Group
www.connectthemidwest.com
The Steering Group, composed of high-level state officials, was established within the Memorandum of Understanding signed by the Mayor of Chicago and the Governors of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin. The Steering Group coordinates and advocates on behalf of the region’s collective high-speed rail interests and serves as the single point of contact for the region.

Ohio High-Speed Rail Passenger Initiatives
www.dot.state.oh.us/Divisions/Rail/Programs/passenger/HighSpeedPassengerRail/Pages/HighSpeedPassengerRaildefault.aspx
This website is dedicated to Ohio’s passenger rail program.

Public Transportation
http://www.publictransportation.org
Public transportation is an online resource designed to provide information about the benefits and importance of public transportation for all Americans.

Southeast High-Speed Rail Corridor
http://www.sehsr.org
This corridor is one of five originally proposed high-speed passenger rail corridors designated by the U.S. Department of Transportation in 1992. It operates from Washington, D.C., to Charlotte, N.C., with maximum speeds of 110 mph.

States for Passenger Rail Coalition
http://www.s4prc.org
The States for Passenger Rail Coalition is an alliance of departments of transportation that supports intercity passenger rail initiatives and advocates for federal funding.

Transportation for America
http://t4america.org/about
This broad coalition seeks to align national, state and local transportation policies with an array of issues, such as economic opportunity, climate change and energy security.

U.S. High-Speed Rail Association
http://www.ushsr.com
The U.S. High-Speed Rail Association is the only nonprofit organization in America focused entirely on advancing a state-of-the-art, national high-speed rail network.

Virginians for High-Speed Rail
http://www.vhsr.com
This nonprofit coalition educates and advocates for the improvement and expansion of rail service in Virginia to achieve fast, frequent and reliable rail service.

White House News Release
This news release announces the $8 billion award for high-speed rail projects.

Wisconsin Regional Transportation Authorities
http://www.wisconsinrta.org
Regional transportation authorities can create jobs and a stronger economy by empowering communities to operate cost-effective, balanced transportation systems.