“Global Lessons in High-Speed Rail and Their Relevance for North America”

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Date: Friday, December 06, 2013 at Noon
Time: Lunch Available 11:45, Seminar Begins 12:15
Location: Newmark Lab, Yeh Center, Room 2311
University of Illinois at Urbana-Champaign

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Global lessons in High-Speed Rail and their relevance for North America

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Americans have been early adopters of transportation technology that was invented elsewhere.
Auto and jet aircraft technology were both launched in Germany, before taking off in the U.S.
Where America excelled was in re-imagining autos and aviation as mass transport modes.
U.S. has long embraced mobility as a means to advance opportunity

- Travel and trade enable Americans to pursue a better life.
- Social mobility increased when the U.S. has introduced new transport technology.
After Japan launched the *Shinkansen*, America took the first steps to adapt and adopt HSR technology.
President Lyndon Johnson signed the High Speed Ground Transportation Act in 1965
Americans quickly built a train that could reach very high speeds. New York Central M-497 set the still standing U.S. speed record on rails - 183.85 mph, on July 23, 1966!
Fast(er) trains entered commercial service in 1968

Public-private partnership built America’s first high-speed EMU

- NY - DC Metroliner was product of a “public-private partnership”
- $12.9 million in federal funds leveraged $60 million from PRR, Budd, GE, & Westinghouse.
In the 1970s, Amtrak could boast that a 3 hour trip time from NY to DC made their train “one of the fastest in the world”
When Amtrak experienced many problems during its early years, *Metroliner* was the only train to consistently cover its operating costs.
America’s fastest trains have been stymied by the tracks they need to operate effectively.
Even in the Northeast Corridor today, tracks exact a heavy toll on Acela

The ‘breadbox’
9 Presidents and 24 sessions of Congress after 1965 ...

... the U.S. holds the world record for time elapsed between launching HSR development and building tracks that are needed to operate it.
Why has HSR moved so slowly?
When HSR was gaining momentum in Asia and Europe, many U.S. railroads went through a near death experience.
Billions went into bailing out bankrupt carriers when Uncle Sam got into running freight and passenger railroads.
Railroad ownership wasn’t the only thing that changed during this crisis

"It all started when my train of thought was deregulated...."

Government rewrote a century-long accumulation of rules and regulations
Railroads no longer had to serve everyone, they could focus on profitable market niches.
Downsizing to carry profitable traffic led to reduced track capacity.

Some rights of way have potential capacity; 20,000 miles of railroad got converted to trails.
While Asia and Europe perfected HSR...

the United States reinvented ways to move freight profitably by rail
This strategy worked!

U.S. railroads have been the only transport mode to post consistent profits since 2001.
Smart money from big investors has moved into U.S. railroads
The infrastructure gap between North American freight rail innovation and Asian and European HSR development has widened.
So what’s the matter with the U.S., Europe and Asia going their separate ways in reinventing railroads?
Climate and energy vulnerability are global problems that rail offers part of the solution to.
Growing climate & energy risks are likely to drive future mobility changes
U.S. dependence on oil has gone up since the 1973 OPEC Embargo

Source: USA Today, Sept. 19, 2013
U.S. economy depends on vehicles that don’t work well without oil
HSR offers proven technology for moving people without oil for travel up to 1,000 miles
Conventional wisdom: the mid-point of the world’s oil reserves gives plenty of time to plan adjustments.
The oil we’ll burn tomorrow is \textit{physically different} from the oil we’ve already used.
Do we invest a trillion plus into new oil infrastructure or billions in transportation infrastructure that doesn’t need oil?
New mandates to restart HSR development given by the 2008 election
2008 election provided both Washington and state governments a mandate to invest in rail infrastructure.
Taking full advantage of America’s lag in adopting HSR technology will pay dividends.
3 models of HSR have emerged, each with their own strategic orientation

1. Exclusive Corridors: linking mega-cities

2. Hybrid networks: blending new and conventional rail to extend HSR reach

3. Comprehensive National Networks: Making HSR a backbone of intercity mobility
Exclusive Corridors: linking mega-cities
Hybrid networks: blending new and conventional rail to extend HSR reach
Comprehensive National Network: Making HSR a backbone of intercity mobility
California is now the HSR design laboratory for the U.S.
No need to reinvent the know-how for exclusive corridors; this is the place for global partnerships
Global knowledge can support local experience in sharing tracks among intercity and regional rail passenger operators.
Sharing tracks will be essential to getting HSR into mega-cities like Los Angeles and San Francisco.
Sharing rights of way with freight railroads will require innovations that are unique to the USA.
Climate and energy challenges will affect freight railroads too.

What will freight railroads need from government to adapt their business model in the decade ahead?
Building America’s first new rail infrastructure to move people between cities in over 100 years will advance essential capacities.
Innovation will attract states looking to add rail to their intercity mobility mix
Institutionalizing that know-how could bring rail an exciting new role of moving more people and freight across the U.S.