BUILDING
COMPETITIVENESS

AMERICAN JOBS, AMERICAN INFRASTRUCTURE, AMERICAN GLOBAL COMPETITIVENESS

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From 2005 to 2007, Professor Slaughter served as a Member on the Council of Economic Advisers in the Executive Office of the President where he held the international portfolio.

A frequent keynote speaker to many audiences in business and policy communities, Professor Slaughter has testified before both chambers of the U.S. Congress and regularly contributes op-eds to The Financial Times, The Wall Street Journal, and The Washington Post. He is a regular guest on TV and radio programs such as CNBC’s Closing Bell and NPR’s All Things Considered. For many years he has consulted both to individual firms and also to industry organizations that support dialogue on issues of international trade, investment, and taxation. And at Tuck he co-directs the flagship executive-education program Global Leadership 2030.
EXECUTIVE SUMMARY

INFRASTRUCTURE HAS LONG BEEN ONE OF THE FOUNDATIONS OF AMERICA’S COMPETITIVE SUCCESS. The competitive success of the United States over much of the 20th century was based on extended periods of strong productivity growth in companies and resulting growth in average earnings for workers. High-quality infrastructure has helped boost U.S. productivity and standards of living, in part by encouraging global companies to create high-paying jobs here. Today, however, America’s infrastructure is deteriorating—both in absolute terms and relative to other countries that are rapidly bolstering their infrastructure.

IMPROVING AMERICA’S INFRASTRUCTURE WILL BOOST ITS GLOBAL COMPETITIVENESS. Although very welcome, renewed U.S. economic growth and ongoing recovery from the World Financial Crisis and Great Recession have not eliminated the reality that today the United States is in a new era of global competition to attract, retain, and grow the dynamic jobs of global companies. These companies have ever-widening choices for where to locate around the world, choices for which infrastructure is a major consideration. Not improving America’s infrastructure now could mean the loss of future American investment and jobs to other countries.

APPLYING THE BEST PRACTICES IN INFRASTRUCTURE INVESTMENT AND INNOVATION FROM AROUND THE WORLD CAN HELP AMERICA REBUILD ITS INFRASTRUCTURE. In recent decades, many countries have faced the challenges of maintaining and modernizing their infrastructure—challenges that helped create highly innovative world-class infrastructure companies. Many governments have improved their countries’ infrastructure by crafting partnerships that draw on the expertise and experiences of these companies. The U.S. subsidiaries of global companies, along with their U.S.-based counterparts, are already on the job helping fund, build, and operate infrastructure projects in the United States that are high-quality, efficient, and green.

Recommended Policy Principles

AMERICAN COMPETITIVENESS: Across all issues—infrastructure and otherwise—American policymakers should focus on America’s ability to create globally competitive, high-productivity, good-paying jobs. Sound policies can expand the important role that U.S. subsidiaries of global companies have long played in creating American jobs.

AMERICAN INFRASTRUCTURE: Rebuilding American infrastructure is critical for building American competitiveness in the 21st century. Investing in infrastructure is an opportunity to shape America’s future, as the country did throughout the 20th century with projects like the interstate highway system.

AMERICAN OPENNESS: Open and transparent competition have long been pillars of American competitiveness. To help meet America’s infrastructure challenge, open competition that embraces participation from the best companies around the world will help wisely fund, quickly build, and effectively operate and maintain projects—to the benefit of taxpayers, companies, and the overall country.
SETTING THE STAGE

America needs to build not just a recovery but its global competitiveness.

The good news is the American economy is growing again. The Great Recession officially ended nearly two years ago, and after falling by 2.6% in 2009 U.S. gross domestic product (GDP) increased by 2.9% in 2010. In the fourth quarter of 2010, the annualized level of GDP finally exceeded its pre-recession peak reached in late 2007. Consensus forecasts are that in 2011 the U.S. economy will expand by at least 3%. Although very welcome, renewed U.S. economic growth remains tentative in three inter-connected ways.

FIRST, much of this growth has been driven by historic monetary and fiscal stimulus that, appropriate though much of it has been, is not sustainable. The non-partisan Congressional Budget Office is currently forecasting the federal deficit will exceed $1.5 trillion in fiscal 2011, America’s largest ever. Unprecedented monetary easing and fiscal deficits will, at some point, need to be withdrawn and reduced.

SECOND, the magnitude of recovery still needed in the U.S. labor market remains sobering. About 25 million Americans—about one in six in the entire labor force—remain unemployed or under-employed. Today’s 108.6 million private-sector jobs is the same number America had nearly 12 years ago, in June 1999. And the last time America had just 11.7 million manufacturing jobs, like we do today, was in April of 1941. All forecasts are that it will take several years of economic growth for the American labor market to fully recover.

THIRD, and most fundamentally, the World Financial Crisis and Great Recession did not eliminate the reality that today the United States is in a new era of global competition to attract, retain, and grow the dynamic jobs of globally engaged companies. Long before the Crisis, dozens of other countries were making dramatic improvements in the policies and overall economic environment that attract the world’s leading companies. These improvements have not been simply a matter of tax abatements and other financial subsidies. Rather, these improvements have been widespread, together redefining where in the world firms can create high-paying jobs based on innovation, capital investment, and export activity.

Indeed, the Crisis and Recession have expanded America’s competitiveness challenge because so many dynamic emerging economies have sustained high growth rates in recent years. While America’s GDP fell by 2.6% in 2009, GDP in India grew by 5.7% and in China by 9.1%—rates that accelerated to about 10% in 2010. The International Monetary Fund calculates that 2010 GDP growth averaged 7.1% for all emerging and developing economies. The challenge facing America today is not just building an economic recovery. It is building an economic recovery that also advances America’s global competitiveness. A globally competitive America must fundamentally mean the success of American workers: success in creating globally competitive, high-productivity, good-paying jobs by all companies operating in America.
of American workers: success in creating globally competitive, high-productivity, good-paying jobs by all companies operating in America. American workers and their families need dynamic jobs with rising earnings and thus rising standards of living.

Historically, rising U.S. standards of living have been driven by successful companies becoming more productive—i.e., raising their output per worker by creating new products and processes. Nobel laureate in economics Paul Krugman describes the importance of productivity thus:

Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker... Compared with the problem of slow productivity growth, all our other long-term economic concerns ... are minor issues. Or more accurately, they matter only to the extent that they have an impact on our productivity growth.¹

The competitive success of the United States over much of the 20th century was based on extended periods of strong productivity growth and resulting growth in average earnings. For example, in the post World War II generation of 1948 to 1973, annual growth of productivity in the non-farm business sector averaged 2.8%. It then slowed dramatically, averaging just half that rate for the generation from 1973 to 1995. The low productivity of this generation brought many economic and political challenges, such as poor real and relative earnings growth for many Americans. Productivity growth and earnings rebounded in the late 1990s and early 2000s, but slowed again in the years leading up to the Crisis and Recession.

Historically, one of the key foundations of America's competitive success has been infrastructure. U.S. airports, bridges, electrical grid, ports, railroads, roads, and water systems have long facilitated the flow of people, goods, and ideas that has built American jobs and rising standards of living. A large body of research has documented the many economic benefits America has derived from building and maintaining its infrastructure. A recent report from the U.S. Treasury and Council of Economic Advisers summarized the evidence as follows.

Many studies have found evidence of large private-sector productivity gains from public infrastructure investments, in many cases with higher returns than private capital investment. Research has shown that well designed infrastructure investments can raise economic growth, productivity, and land values, while also providing significant positive spillovers to areas such as economic development, energy efficiency, public health, and manufacturing.²

Today there is much uncertainty about the global competition facing American workers. Can America re-create a dynamic environment creating millions of high-productivity, high-wage jobs? It can. But achieving this critical goal will require an expansive vision in terms of both companies and policies.

In terms of companies, America today has nearly 30 million businesses, ranging from millions of sole proprietorships to the largest multinational companies. Restoring American competitiveness will require job creation by all companies operating in America: large and small, young and old, U.S.-based and foreign-based. America’s global competitiveness cannot be re-established through the success of just one kind of company. In particular, as this report discusses, some of the most dynamic companies in America with a clear interest in maintaining U.S. competitiveness have long been insourcing companies, i.e., the U.S. subsidiaries of global companies.

In terms of policies, today’s global jobs competition reflects the breadth of policy improvements that dozens of countries continue to make. To meet this challenge, America needs to fix many problems: to boost its high-school and college graduation rates that have stagnated for decades; to overhaul its corporate tax code that is now one of the world’s most burdensome and complex; to address its looming fiscal challenges that threaten future growth. And one of the most urgent policy problems to be fixed is repairing America’s decaying infrastructure.

REBUILDING THE FOUNDATION

Infrastructure is a key part of America’s global competitiveness challenge. Infrastructure investment boosts competitiveness by raising productivity growth and standards of living.

Research has documented that periods of strong U.S. productivity growth were generally also periods of high levels of U.S. infrastructure investment, and conversely that the post-1973 slowdown in U.S. productivity coincided with a slowdown in U.S. infrastructure spending. This strong country-level correlation between infrastructure spending and productivity appears in many other advanced countries. For example, one study of 21 OECD countries over 20 years found that higher telecommunications investment boosts GDP, especially when the critical mass of near-universal access is achieved (with, on average, a 10% increase in the penetration rate boosting economic growth by 1.5%).

Other researchers have linked infrastructure to productivity growth for particular industries and regions. For example, one important study documented how building America’s interstate highway system in the 1950s and 1960s, which accounted for about 25% of total U.S. non-residential investment over that generation, boosted productivity growth in vehicle-intensive industries such as construction, utilities, and wholesale and retail trade.


Oldcastle Materials

Oldcastle Materials is part of the U.S. operations of Ireland-based CRH, one of the world’s leading building-products and materials companies. Headquartered in Atlanta, GA, Oldcastle Materials employs over 18,000 Americans at more than 1,400 operations in 44 states across the country.

Pavers, truck drivers, equipment operators, and subcontractors helped reconstruct Interstate 295 northbound, laying 200,000 tons of asphalt to pave 23 miles between Topsham and Gardiner. The $35.3 million project began April 1, 2009, with work on a four-mile section of interstate that needed to be completed by June 15. The next phase involved paving 17 miles of closed road. To meet tight deadlines amidst near-record rainfall in June and July, the company deployed portable asphalt-production and drying equipment. Despite these challenges, the company finished the project three weeks ahead of schedule. New employees were hired for the project, and more than 200 employees spent more than 160,000 hours on the project with no lost-time safety incidents.
Despite these past gains, today America’s infrastructure is in crisis. For many complex reasons, America’s infrastructure has deteriorated in recent decades. Today’s infrastructure crisis is widely recognized by engineers, business leaders, citizens, and government officials.

In its 2009 Report Card for America’s Infrastructure, the American Society of Civil Engineers assigned a grade of “D” for the quality of U.S. infrastructure overall. The blunt ASCE overview:

Years of delayed maintenance and lack of modernization have left America with an outdated and failing infrastructure that cannot meet our needs. Infrastructure has a direct impact on our personal and economic health, and the infrastructure crisis is endangering our nation’s future prosperity. For the safety and security of our families, we can no longer afford to ignore the congested roads, aging dams, broken water mains, and deficient bridges. The quality of life for this and future generations depends on our willingness to rise to the challenge.

Across 15 infrastructure categories, grades ranged from a high of C+ for solid waste to a low of D- for roads, drinking and waste water, inland waterways, and levees. The ASCE foresees rising economic damage as “overstressed infrastructure will slow freight delivery, create unpredictability in supply chains, diminish the competitiveness of U.S. businesses, and increase the cost of consumer goods.”

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Lessened our productivity, undermined our ability to compete in the global economy, shaken our perceptions about our own safety and health, and damaged the quality of American life.”

“There is no bigger question for public policy,” according to Tim Stone, chairman of global infrastructure and projects for KPMG, ‘and the hole is huge … The problem is that infrastructure decays at a glacial pace. So no one notices until it falls down … no one is aware of the state of things before they start falling apart.’”

American citizens have been voicing deep concerns about America’s infrastructure.

A 2009 survey found that 94% of Americans are concerned about the nation’s infrastructure. Compared to many other nations, Americans are unsatisfied with their infrastructure. Out of the 32 OECD countries in 2009, Americans ranked 17th in satisfaction with roads and highways and 25th in satisfaction with public-transit systems. This dissatisfaction drives American votes. In 2008, over 80% of all transportation infrastructure projects passed in voter referenda. “Even more striking is that over 98% of the funds requested for these projects were approved by the voting public.”

Business leaders warn of the costs of the infrastructure crisis.

Noted financier and long-time infrastructure expert Felix Rohatyn has warned that “Regardless of what is scrutinized, in the end it all adds up to the same very despairing result: The aging of our nation’s infrastructure has

Tate & Lyle

TATE & LYLE  Tate & Lyle, a global provider of high quality, renewable ingredients and solutions to food, beverage, and other industries, is a U.K.-based company. Its U.S. operations have been headquartered in Decatur, IL since 1906, when American entrepreneur Augustus Eugene Staley founded the A E Staley Manufacturing Company. The company began processing corn at their Decatur facility in 1912. Today, in addition to their 10 facilities throughout Illinois, Tate and Lyle has 18 additional sites across the country and employs over 2,000 Americans.

Each month, Tate & Lyle in the United States receives millions of bushels of corn and sends millions of pounds of finished corn products, sweetns, and starches to customers across the globe. The company relies heavily on the lock and dam systems on rivers to move their products throughout the Midwest—especially the Chickamauga Lock in Tennessee. Christened by President Roosevelt in 1940, the lock is one of 14 locks on the 318-mile-long waterway from above Knoxville through Chattanooga on the Tennessee River system that links the state to the Mississippi River and connects to the Gulf of Mexico and the oceans of the world.

Today the concrete in this 70-year-old lock is deteriorating and needs to be replaced before a threatened closing. Congressman Chuck Fleischmann toured the lock in February 2011 and noted, “Infrastructure such as the Chickamauga Lock is an issue the federal government should work to fund. We need to prioritize our spending so commerce-critical infrastructure like the lock is at the front of the line in the budget process.”

Michelin North America

Michelin North America is the U.S. operations of France-based Michelin, one of the world’s largest tire manufacturers. Headquartered in Greenville, SC, Michelin N.A. America has invested over $6 billion in the United States and employs more than 17,000 Americans in eight states across the country. In its home state of South Carolina, Michelin NA has invested over $3 billion and employs more than 7,600 at seven different locations across the state.

South Carolina enjoys many attributes, none more important to the region’s economic well-being than the natural seaport in Charleston. It is one of the primary reasons why Michelin N.A. moved to S.C. 40 years ago. Today more than 40 percent of all Michelin shipments move in and out of the United States through the Port of Charleston, and Michelin is one of biggest users of the Port in the state.

The expansion of the Panama Canal is expected to be completed in 2014, resulting in larger “mega-ships” transporting more tonnage per vessel. South Carolina is well positioned to take advantage of the opportunity presented by the Canal expansion. However, to accommodate these larger ships it is imperative that the Charleston Port deepen its channel, a project that is projected to cost $300 million. Without this critical investment, companies throughout the region, including Michelin, will be severely impacted. A decision to not invest the funds to deepen the harbor—or even not investing the funds in a timely manner—could have a chilling effect on future investment in the state.

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9 Survey conducted by Frank Luntz, et al, for Building America’s Future, January 2009.
And our governors, mayors, and other state and local officials, often times closest to the problem, are incredibly concerned.

In a 2010 letter to U.S. Senators, Building America’s Future co-chairs Mayor Michael Bloomberg (I), Governor Edward Rendell (D), and Governor Arnold Schwarzenegger (R) urged funding to “ensure additional investments in our critically important transportation projects, drinking water and wastewater treatment systems, and upgrades to our electrical grid ... These infrastructure investments will have the dual benefit of creating thousands of jobs while at the same time improving the efficiency and safety of the infrastructure.”

Federal government officials have been concerned for some time as well; they began creating a series of Commissions and reports when, for example, in 2005 they passed the last surface-transportation bill.

The National Surface Transportation Infrastructure Financing Commission, established by law to analyze American highway and transit needs, opened its 2009 report Paying Our Way: A New Framework for Transportation Finance with the words, “The nation faces a crisis. Our surface transportation system has deteriorated to such a degree that our safety, economic competitiveness, and quality of life are at risk.” The American Association of State Highway and Transportation Officials issued a similar warning in its 2009 report, Rough Roads Ahead: Fix Them Now or Pay for It Later.
America’s infrastructure crisis contrasts starkly with the dramatic infrastructure improvements being made in so many other countries. America today spends approximately 2% of GDP on infrastructure (federal, state, local, and private-sector spending). This amount is down 50% from U.S. levels in the 1960s, and it is low compared to many other major countries. Comparable infrastructure-spending shares today are about 5% in Europe and 9% in China. The OECD recently forecast that now through 2030, world infrastructure spending will average 3.5% of GDP per year, about $71 trillion in all. Should these projected rates be realized, then America’s current infrastructure spending will lag dozens of countries for another generation.

The unequivocal fact is that America’s infrastructure is crumbling, not just in absolute terms but relative to other countries as well. The McKinsey Global Institute recently concluded that the quality of America’s infrastructure compared to other nations has slipped over the past decade from being a world leader to being only in the top quartile. Similar assessments of decline have been made by many others, such as the World Economic Forum. America’s infrastructure crisis is threatening America’s global competitiveness because it is eroding the country’s ability to attract and retain dynamic global companies that create high-productivity, high-wage jobs. America’s ability to meet the infrastructure needs of dynamic global companies increasingly lags the ability of many other countries—in contrast to much of 20th century, when America’s infrastructure was a strong pull attracting these companies.

In the United States, global companies have long been among America’s most innovative. The U.S. subsidiaries of global companies, in particular, have long created and sustained high-paying American jobs based on substantial investments in ideas, capital, and exporting—much of which is based on lessons learned around the world.

The U.S. subsidiaries of global companies have been operating in America for generations. Today the work they do in America plays a vital role in the success of their overall global operations. In fact, in many of these companies worldwide functions are now located in the United States, not only to serve U.S. customers but other countries as well.

The U.S. subsidiaries of global companies retain a deep interest in a vibrant, competitive U.S. economy. For example, in a recent survey, the chief financial officers of these companies continue to see growth opportunities in America. 48.9% plan to increase their U.S. employment over the next 12-18 months, versus just 22.2% that plan to reduce it.

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Daimler Trucks North America

Daimler Trucks North America, part of the U.S. operations of Germany-based Daimler AG, is the largest heavy-duty truck manufacturer in North America and a leading producer of medium-duty trucks and specialized commercial vehicles. Headquartered in Portland, Oregon, Daimler Trucks North America manufactures, sells, and services several respected commercial vehicle brands including Freightliner and Thomas Built Buses. Founded in 1942, Daimler Trucks is a leading exporter of heavy-duty vehicles from North America and employs more than 14,000 Americans at 23 facilities across the United States.

Daimler Trucks’ commitment to the environment is exemplified by its lineup of alternative powered vehicles. In 2011 the company celebrated the production of its 1,000th hybrid truck, and its natural-gas powered truck is an industry leader. Both of these alternative fueled trucks are made in the United States where new environmental-technology jobs are being created.

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Volvo Group North America

Volvo Group North America represents the U.S. operations of the Volvo Group, one of the world’s leading suppliers of commercial transport solutions. Products manufactured by the Volvo Group include trucks, buses, construction equipment, engines and drive systems for marine and industrial applications, as well as aircraft engine components. The Group also offers financial solutions to customers. The Volvo Group has been operating in the U.S. since 1956, where today it employs 10,000 people and operates manufacturing facilities in six U.S. states (CT, NY, PA, VA, TN, MD).

Volvo Construction Equipment, a division of the Volvo Group, is one of the world’s largest manufacturers of construction machines. Volvo Construction Equipment acquired the road development division of Ingersoll-Rand and its Shippensburg, PA facility in 2007 and recently completed a $30 million expansion of this plant that produces pavers, asphalt and soil compactors, motor graders, and milling equipment. In March 2011, Volvo announced an additional $100 million investment in this facility to produce wheel loaders, articulated haulers, and excavators over the next couple of years. The Shippensburg plant was recently awarded the coveted Silver LEED Certification (Leadership in Energy and Environmental Design), a rare honor for a manufacturing facility.

Tilcon Connecticut Inc., a leading supplier of crushed stone, hot mix asphalt and ready mix concrete, has played a vital role in building infrastructure around the state of Connecticut. When Tilcon was given the state contract for repaving the main runway at Bradley International Airport outside of Hartford, CT, they used a Volvo paver and compactors to accomplish the job, meeting the Federal Aviation Administration’s exacting density and quality standards on time and under budget.

CNH

CNH, part of the U.S. operations of Italy-based Fiat Industrial S.p.A., is a global company operating in both the agricultural and construction equipment industries; today S.p.A. is the number one producer of agriculture tractors and combines in the world. Headquartered in Burr Ridge, IL, CNH employs over 9,000 Americans and operates manufacturing plants in nine states across the country (GA, IA, IL, KS, MN, ND, NE, PA, WI).

In February 2010, President Obama’s export czar Fred Hochberg visited the company’s tractor plant in Racine, Wisconsin, from which 40% of its manufactured tractors were exported in 2009, to talk about the role CNH is playing to help expand American exports. As a company CNH exports over 25% of all the machines it produces in the U.S., exports which support U.S. jobs at both CNH and supplier partners around the country. CNH currently works with over 1,375 supplier-partners in 43 states, which together employ more than 570,000 Americans who help CNH build its machines in the United States to export around the world.

Today, however, America’s lagging infrastructure makes it harder for global companies, which have ever-widening choices for where to locate around the world, to create and maintain jobs in the United States. Global companies today need reliable transportation systems to move their people and products, reliable electrical systems to power their plants and offices, reliable broadband and cellular backbones to drive their computers and creativity. But America’s congested roads and delayed airports slow people and products. America’s brownouts, blackouts, and price volatility complicates basic production. And America’s spotty cellular networks and low broadband penetration inhibit innovation.

Meeting America’s global competitiveness challenge will require closing America’s infrastructure gap. Sustaining high-quality U.S. infrastructure will be critical to boosting America’s ability to attract the jobs and related investments of global companies.
APPLYING BEST PRACTICES FROM AROUND THE WORLD

How can America rebuild its infrastructure to help it build globally competitive jobs? A key step should be looking to apply best practices in infrastructure investment and innovation from around the world.

America’s infrastructure gap compared to global best practices is evident in many specific structures.

**High-Speed Rail**

Consider high-speed rail, which President Obama supports expanding in America. Today the European Union has several thousand miles of operational high-speed rail, with nearly 2,000 kilometers of track in each of France and Spain and over 1,000 in Germany. Japan, which pioneered high-speed rail in 1959, has nearly 2,000 kilometers as well. China has the largest single-country network, with about 6,000 kilometers all opened within the past few years, and based on current construction this amount will at least double within two years. The closest America has today to high-speed rail is the Acela Express, which opened in 2000 and runs between Boston and Washington via New York. Although capable of running at 150 mph, Acela trains average only about

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*These data come from the International Union of Railways.

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**Bombardier, Inc.**

Bombardier, Inc. is a global supplier of transportation solutions in the aerospace and rail sectors. Headquartered in Montreal, Bombardier is the world’s third largest manufacturer of civil aircraft and a world-leader in rail transportation technology. Active in the U.S. since the 1970s, Bombardier today employs nearly 8,000 people at facilities in 39 states, including four manufacturing centers, 24 product service centers, three equipment-refurbishment centers and two parts-distribution centers.

Bombardier’s rail business provides equipment, systems, and after-market services to transit and airport authorities across the U.S. Rail operations employ U.S. workers in 15 states, including manufacturing facilities outside Pittsburgh, PA (automated transit systems, signaling systems and propulsion equipment) and in Plattsburgh, NY (rail vehicles and components). These two sites supply products and components for both domestic and export markets.

The company’s installed U.S. fleet of rail vehicles totals more than 5,000, including: Amtrak’s Acela trains; nearly 3,000 subway and electric commuter vehicles serving New York City and surrounding regions; a light-rail fleet in Minneapolis; electric locomotives in New Jersey; a monorail in Las Vegas; and commuter coaches serving another 11 metropolitan regions. Bombardier also runs a network of maintenance centers supporting commuter-rail fleets in Boston, Los Angeles, south Florida and San Diego. And in 11 cities the company manages operations and maintenance services for driverless transit systems—an example of its ongoing innovation.
Alstom, a global leader in power generation, power transmission, and rail infrastructure, sets the benchmark for innovative and environmentally-friendly technologies. The company employs over 93,000 people in more than 70 countries. Alstom’s infrastructure gap compared to global best practices is also evident in specific practices, such as congestion pricing for roads.

**Congestion Pricing for Roads**

Many countries have boosted the efficiency of their road systems by charging user fees in urban areas. This was pioneered in Singapore in 1975 with a fee to drive in the central city. Today that original system of manual police control has evolved into a sophisticated high-technology mechanism that virtually eliminates traffic jams through an ongoing partnership of the Singapore government and information-technology companies such as IBM. In 2003 London adopted its own congestion charge to curtail traffic congestion. Since then the coverage area was extended, and methods have advanced thanks to partnerships with companies such as IBM (which operates the charging system) and Siemens (which builds and maintains the monitoring infrastructure). Research has documented many

Daimler Trucks North America

**Daimler**

Daimler’s U.S. operations, part of Germany-based Daimler AG, is comprised of Daimler Trucks North America and Mercedes-Benz USA. Founded in 1886, Daimler AG is one of the world’s most successful automotive companies. Today Daimler employs over 18,000 Americans at its various U.S. subsidiaries.

Daimler has been working with other automakers and with state and federal road authorities to evaluate the feasibility of deploying communications technology on roadways and in vehicles to deliver a range of safety and mobility applications, to support environmental goals, and to provide new commercial opportunities. Deployment of this communications technology will require a substantial investment in roadside equipment and a supporting communications network. The communications protocol that has been developed for delivering real-time safety applications to motor vehicles is called Dedicated Short-Range Communications. The sophistication of this system enables vehicles traveling at speeds up to 100 miles per hour to exchange messages in real time; however, DSRC radios currently function within a range of 1,000 meters, and so currently require a fairly dense infrastructure.

Deployment of this communications technology would also require continuing investments to support governance, operations, and maintenance. Federal governance of this system would ensure national consistency in technology and rules of operations; it would also enable cross-border agreements with NAFTA members that could yield even larger economic benefits. Public oversight that provides a legal framework for this communications system would also likely foster private investment in this infrastructure opportunity.
Public-Private Partnerships
Infrastructure PPPs are now common throughout Europe, Australia, Canada, and many parts of Asia. The success of PPPs in terms of lower costs and greater efficiency stems from several factors. Private companies often innovate more and often can assume risks that government entities may not be able to. “In a 2009 study of 114 PPPs, the U.K. National Audit Office found that 69% were completed on time. Australia’s Allen Consulting Group found that cost overruns were much higher for traditional projects than for PPPs—AU$673 million on AU$4.5 billion in traditional projects versus only AU$58 million on AU$4.9 billion in PPPs.”17 PPP practices are widely disseminated across many countries; for example, through the European PPP Expertise Centre.18

In America, private companies have been helping build infrastructure from colonial times on. “Historically, the

Oldcastle Materials

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Warm-mix asphalt (WMA) offers several advantages over other traditional asphalts: it reduces worker exposure to asphalt vapors, it enhances material workability and density, and it allows a longer paving season. The National Asphalt Pavement Association introduced WMA to the United States from Europe in 2002, and since that time Oldcastle Materials has been one of the leading U.S. producers of WMA. “Oldcastle has more than 100 WMA plants producing an estimated 5 million tons this year,” said Ron Sines, P.E., vice president of operations for Oldcastle Materials. “We expect to easily exceed this amount, especially with strong market presence in Ohio, Missouri and Texas.”

The first Oldcastle Materials WMA project dates to 2005. Using synthetic zeolite, an additive used in the production of WMA to decrease temperature, employees at Pike Industries in New Hampshire paved an overlay of an access road at one of their quarries. The Shelly Company, an Oldcastle Materials company headquartered in Thornville, Ohio, recently reached the 2.6 million ton WMA milestone for the 2010 construction season—half of the company’s total asphalt production. The Shelly Company was the first company in the state of Ohio to initiate WMA. Idaho Sand & Gravel recently completed a 4,000-ton mile WMA project for The Idaho Transportation Department. The $2.6 million, 4,000-ton project was completed in August 2010 and was the first all-WMA project completed in the state.

* PricewaterhouseCoopers LLP, March 2010. 10 Minutes on Global Infrastructure.
* See http://www.eib.org/epec/.
private sector developed and operated new modes of commercial passenger and freight transportation in the United States and built transportation equipment and infrastructure. Those accomplishments were brought about by some of the nation’s greatest business leaders, who were attracted to the transportation sector ... by 1860 at least 7,000 private U.S. corporations had formed to operate bridges, canals, ferries, railroads, and roads.”

Today, U.S. government officials are increasingly attuned to the opportunities of partnering with global companies.

For example, the U.S. Department of Transportation’s 2007 study, Public-Private Partnerships for Highway Infrastructure: Capitalizing on International Experience, concluded from its analysis of Australia, Portugal, Spain, and the United Kingdom that, “PPPs are an effective strategy for delivering highway projects, and they are service arrangements as much as financial ones.”

In 2007 DOT also issued the detailed report, Case Studies of Public-Private Partnerships around the World, with a large number of PPPs examined across Europe, Australia, Asia, and South America. Today dozens of states allow some form of public-private partnerships, and since 1985 nearly 100 transportation public-private partnership projects have been contracted or completed in the United States.

Many countries have improved their infrastructure by crafting partnerships that draw on the expertise of the private sector. Here in the United States, the U.S. subsidiaries of global companies can—along with other companies—help pave the way to modernizing America’s infrastructure and maintaining America’s global competitiveness. Indeed, along with their U.S.-based counterparts, these companies are already on the job applying their best practices from around the world to help fund, build, and operate infrastructure projects in the United States that are high-quality, efficient, and green.

Funding Infrastructure

Despite the large fiscal pressures at local, state, and federal levels, the United States must reject the false choice between balancing budgets and modernizing its infrastructure. Rather, what needs to be done is to examine what infrastructure projects can yield the highest private sector developed and operated new modes of commercial passenger and freight transportation in the United States and built transportation equipment and infrastructure. Those accomplishments were brought about by some of the nation’s greatest business leaders, who were attracted to the transportation sector ... by 1860 at least 7,000 private U.S. corporations had formed to operate bridges, canals, ferries, railroads, and roads.”

Today, U.S. government officials are increasingly attuned to the opportunities of partnering with global companies.

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ABB North America

ABB North America is the U.S. operations of Switzerland-based ABB, a world leader in technology-based power and automation products, systems, solutions, and services. Headquartered in Cary, NC, ABB North America employs 12,000 Americans in 20 facilities across the United States.

With over 90% of the world’s goods transported by sea, harbor areas are a prime candidate for enabling significant emissions reductions. In 2000 ABB introduced the world’s first high voltage shore connection (HVSC) system to the port of Gothenburg, Sweden. Since 2000 shore-to-ship power connections have been implemented in approximately two dozen port terminals worldwide. ABB’s HVSC shore to ship pioneering technology allows ships calling at ports to turn off diesel engines and tap into cleaner energy sources without interrupting its port services. This technology also cuts a typical ship’s fuel consumption by 20 metric tons and reduces its carbon-dioxide emissions by 60 metric tons. Currently the EU leads the way in applying this revolutionary technology that brings both environmental and economic benefits, but it has yet to be established in a port in the United States. California is a state that has expressed strong interest in shore-to-ship technology in its ports. Investments in this technology will be considerable, and funding these investments will likely require a partnership of governments, port and terminal operators, and companies.

return. Expanding private funding can help accomplish this.

ASCE estimates that between 2009 and 2014, raising America’s overall infrastructure condition to “good” would require $2.2 trillion in new investment. However, federal, state, and local spending over that period is projected to be just $1.1 trillion. Fully meeting this massive infrastructure need will require not just new sources of tax revenue but also, because of the ongoing fiscal pressures in America, an expanded role for private investors.

The U.S. Treasury and Council of Economic Advisers recently stated that, “Investing rationally in infrastructure is critically important, as is providing opportunities for the private sector to invest in public infrastructure. There is currently very little direct private investment
in our nation’s highway and transportation systems due to the current method of funding infrastructure, which lacks effective mechanisms to attract and repay direct private investment in specific infrastructure projects.”

Other stakeholders recognizing the benefits of private infrastructure funding now include some labor unions. “One shift has been the attitude of some local trade unions towards privatization deals. The unions favor using private capital to help generate jobs and protect pensions. The Chicago Federation of Labor has urged the city to press ahead with a deal to privatize Midway airport, and backed a public-private partnership to build an expressway between Illinois and Indiana.”

In America it is currently estimated that over $180 billion in private capital is available for infrastructure projects. In a time where government funding is sorely constrained, the private sector can help provide soundly invested capital in critical areas. Many countries have ample experience utilizing private capital to fund airports, roads, bridges, tunnels, and electricity. Simple and transparent public oversight can balance private risk-return needs with the public interest (e.g., electricity distribution, with public regulation of rates). There are many possibilities for combining public and private funds, such as an infrastructure bank or bond issuances.

**Building Infrastructure**

Private companies can help build America’s infrastructure. U.S. subsidiaries of global companies tend to create high-quality, innovative products and technologies that meet exacting standards for safety and reliability—all drawing on the best practices used around the world. They can also leverage the ongoing research and development they undertake in America: $40.5 billion in R&D in 2008, 14.3% of the private-sector total that year, far above these companies’ 4.7% share of private-sector employment.

From design and engineering to earth moving and construction, U.S. subsidiaries of global companies offer world-leading building practices. Of course, so, too, do many U.S.-based companies. Competition among companies in building infrastructure benefits governments via higher quality, more variety, and lower prices.

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**Maersk Inc.**

Maersk Inc. is the U.S. operations of Denmark-based A.P. Moller-Maersk Group, one of the leading liner shipping and oil and gas companies in the world. Headquartered in Madison, NJ, Maersk has been operating in the United States for over 20 years and employs 4,000 Americans.

Maersk is credited for having made the largest private investment in marine infrastructure in the United States. The company’s $500 million investment went to purchase 600 acres of new land in Portsmouth, VA and the costs associated with building a highly automated and technologically advanced container terminal. Since 2001, this terminal build-out has created 230 direct jobs and more than 15,000 construction, warehouse, distribution, and railroad jobs associated with the terminal operations and its flow-through of goods. In addition, estimates are that this investment will have a $6.4 billion impact in the Portsmouth, VA region over 15 years.

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22 PricewaterhouseCoopers LLP, March 2010. 10 Minutes on Global Infrastructure.
Volvo Group North America represents the U.S. operations of the Volvo Group, one of the world’s leading suppliers of commercial transport solutions. Products manufactured by the Volvo Group include trucks, buses, construction equipment, engines and drive systems for marine and industrial applications, as well as aircraft engine components. The Group also offers financial solutions to customers. The Volvo Group has been operating in the U.S. since 1956, where today it employs 10,000 people and operates manufacturing facilities in six U.S. states (CT, NY, PA, VA, TN, MD).

Acquired by the Volvo Group in 2001, Mack Trucks, Inc. has been an American icon for more than 100 years. Mack’s history of building America dates back to 1919 when the company played a major role in a transcontinental convoy conducted by the U.S. Army, which underscored the need for a national highway system. Since then, Mack trucks have been used on construction projects around the country.

Rockford Corporation, a company which lays gas pipelines across the western United States, recently completed a long segment of the Rockies Express Pipeline Project in Ohio. Its current challenge is the Ruby Pipeline, which represents a $3 billion investment in new pipeline infrastructure aimed at connecting clean-burning natural gas reserves in the Rocky Mountain region with growing markets in the western United States. The total project includes approximately 680 miles of 42-inch natural gas pipeline beginning in Wyoming and ending in Oregon. Often working in rocky and mountainous terrain and hauling heavy loads, Rockford recently purchased 16 fully EPA 2010-certified MACK Granite models to meet these challenges.

Operating Infrastructure

U.S. subsidiaries of global companies tend to operate efficiently, thanks to their strong and sustained investments in knowledge and innovation both here and around the world. These productivity advantages can bring two very important benefits for operating infrastructure.

One benefit is that high-quality operation stretches farther any given amount of taxpayer dollars invested. This benefit is especially important in light of America’s current fiscal pressures: what infrastructure investments America makes will need to work as efficiently as possible. The other benefit is that productive insourcing companies can induce all operators—public and private alike—to improve their own productivity. This happens through several channels, such as learning best practices and competitive pressures that prompt improvement. Around the world, competition between public and private providers has successfully improved overall public services in many infrastructure areas.

Siemens Corporation is the U.S. affiliate of Germany-based Siemens AG, a global powerhouse in electronics and electrical engineering that operates in the industry, energy, and healthcare sectors. Siemens has been in the U.S. since 1854 and today has more than 60,000 employees across all 50 states. The company has invested more than $25 billion in the U.S. over the last decade, including recent investments of more than $400 million in clean-technology industries resulting in approximately 3,000 new jobs.

Siemens produces light-rail vehicles from the ground up at its factory in Sacramento, CA. This is the only permanent light-rail manufacturing plant on U.S. soil, and up to 90% of the facility’s energy needs are met with a two-megawatt solar-power system. Siemens has built more than 1,000 rail vehicles for 17 cities across the U.S. and for export to Canada, representing one out of every three light-rail vehicles in North America.

Beyond just rail equipment, Siemens is also a leading provider of services and systems integration for public transportation and railroads. Its full range of products extends from light-rail vehicles to traction electrification, propulsion systems, rail automation, and integrated services for light rail, heavy rail, commuter rail, and locomotives. For example, for the 7.5-mile starter line for Houston’s METRO Siemens provided overall project management as well as the railcars, rail automation, and rail electrification. Opened in January 2004, this system has 16 stations with 18 Siemens light-rail vehicles—and the company recently won a contract for an additional 19 vehicles there. Current rail vehicle customers of Siemens also include: Amtrak; Portland, OR; Hampton Roads, VA; Salt Lake City, UT; Charlotte, NC; Denver, CO; San Diego, CA; and Minneapolis, MN.

Siemens is also a leader in the Intelligent Traffic Systems market, with everything from complete traffic-management centers to adaptive traffic controls and smart parking to reduce time stuck in traffic or looking for a parking space. The company is also an early player in the electric-vehicle supply-equipment market, with a range of smart-grid and charging-infrastructure solutions available to customers.
The Role of U.S. Subsidiaries of Global Companies in the United States

**Jobs:** U.S. subsidiaries of global companies employ 5.6 million Americans.

**Payroll:** U.S. subsidiaries support an annual payroll of $408.5 billion—with average compensation per worker of $73,023, about one-third higher than compensation at all U.S. companies.

**Manufacturing:** U.S. subsidiaries heavily invest in the American manufacturing sector; nearly 38 percent of jobs at U.S. subsidiaries are in manufacturing, accounting for about 16 percent of total American manufacturing jobs.

**Exports:** U.S. subsidiaries manufacture in America to export goods around the world—accounting for more than 18 percent of all U.S. exports, or $232.4 billion.

**Purchase Locally:** U.S. subsidiaries buy $2.21 trillion in intermediate inputs from local suppliers and small businesses, almost 80 cents for every dollar spent of their total input purchase of $2.78 trillion.

**R&D:** U.S. subsidiaries spend an annual $40.5 billion on U.S. research and development activities.

**Reinvestment:** U.S. subsidiaries reinvest an annual $93.1 billion in their U.S. operations.

**Taxes:** U.S. subsidiaries pay $38 billion in annual U.S. corporate taxes, nearly 17 percent of total U.S. corporate tax payments.

**Bricks & Mortar:** U.S. subsidiaries spend an annual $187.5 billion on property, plant construction and new equipment.

**Private Sector:** Nearly 98 percent of U.S. FDI is from private sector firms — only about two percent of all subsidiary activity (in terms of value added) is from companies that are controlled by foreign governments or government-related entities.

*All statistics are from the most recent government data from the U.S. Department of Commerce and the U.S. Department of Treasury.*

**Organization for International Investment** OFII is a business association representing U.S. subsidiaries of global companies.

On behalf of these companies, OFII advocates for fair, non-discriminatory treatment in U.S. law and regulation with the goal of making the United States an increasingly attractive market for foreign direct investment, which will encourage global companies to invest and create jobs in this country. Given companies' increasing ability to conduct worldwide operations through jurisdictions anywhere in the world, OFII's mission is critical to sustaining and improving America’s global competitiveness.