



Top 10 U.S. Government Investments in 20th Century American Competitiveness

Why Federal Funding in the 21st Century Is Equally Critical
to U.S. Science and Economic Competitiveness

Jennifer Erickson January 2012

Introduction

The release today of the congressionally mandated COMPETES Act report on U.S. economic competitiveness by the Department of Commerce highlights the critical role the federal government plays in catalyzing innovation and laying the groundwork for America's success. Investments in our people, our infrastructure, and our ability to invent the future propelled America's economic growth throughout our history.

That same commitment is imperative today, yet sometimes we forget just how critical these kinds of investments are to our future. In this issue brief, we examine 10 smart investments made in the 20th century—both what we invested in and also what we got—to remind us all how important investments today are, and in the future will be, to our continued competitiveness and prosperity.

Ellis Island—1900

On December 17, 1900, the main building of Ellis Island opened. Designed to facilitate the processing of 5,000 new immigrants per day, it opened its doors eight years after the first immigrant arrived at Ellis Island—15-year-old Annie Moore from Cork, Ireland—and would stay open for 54 years. Today, 40 percent of Americans can trace relatives through Ellis Island's immigration records.

What we invested: \$1.5 million for the main building. In 2011 dollars: **\$35 million.**

What we got: a gateway that welcomed 12 million people, a huge source of economic strength.



Source: Library of Congress

Panama Canal—1904–1914

Work began on the Panama Canal in May 1904. After almost four centuries and numerous attempts to connect the Atlantic to the Pacific, the U.S. Congress voted in 1902 to pursue an option through Panama. Two years later, America bought out the French equipment and began construction.

What we invested: \$375 million. In 2011 dollars: **\$7 billion**.

What we got: a halving of the distance to transport goods from America’s east to west coast and a gateway through which more than 815,000 vessels have now passed.

Hoover Dam—1931–1936

Five years after construction began, the Hoover Dam opened using more than 20,000 tons of steel and 5 million barrels of concrete to harness the power of the Colorado River for electricity and irrigation. Proving that infrastructure projects can also have immediate benefits, the project employed 21,000 men and women at the height of the Great Depression.

What we invested: \$49 million. In 2011 dollars: **\$767 million**.

What we got: clean hydroelectric power still in operation, and 4 billion kilowatt-hours of electricity provided per year for 1.3 million Americans in Nevada, Arizona, and California.

GI Bill—1944–1956

By the time the original GI Bill authorized by the Serviceman’s Readjustment Act of 1944 came to a close, almost 8 million American veterans had gone to college or had training. The GI Bill also helped millions of veterans get a mortgage and was critical to the development of the American middle class. It was so successful that it was repeated for Korean War and Vietnam War veterans, and was further expanded after September 11, 2001.

What we invested: \$14.5 billion in education and training programs. In 2011 dollars: **\$107 billion**.

What we got: the engine of middle-class growth that powered the American economy after World War II.



Source: National Archives

Marshall Plan—1948–1951

As Army chief of staff during World War II, General George Marshall helped plan and execute the Allied victory. Afterward he had a different mission: to help countries rebuild from the devastation. Between 1948 and 1951, the United States invested in the reconstruction of Europe through the European Recovery Program, which became known as the Marshall Plan. It represented a huge opportunity for U.S. exporters, prompting *Kiplinger Magazine* to write in 1948 that “the Marshall Plan is very much a business plan.” Europe experienced an unprecedented period of growth and stability, and much of the investment received was spent on food and products from the United States.

What we invested: \$13 billion. In 2011 dollars: **\$98 billion**.

What we got: viable trading partners for U.S. goods and services. The Marshall Plan has also been credited with laying the groundwork for both the European Union and NATO.

Interstate Highway System—1954–1991

President Dwight D. Eisenhower saw the interstate highway system as critical to U.S. competitiveness, safety, and defense. He envisioned “an America where a mighty network of highways spreads across our country.” It took investment in all 50 states and across 35 years, but that’s precisely what we got. And in the process, the nation’s highway network made a massive contribution to productivity, with a study by New York University’s M. Ishaq Nadiri and Theofanis Mamuneas and cited by the Federal Highway Administration estimating that “in the 1950’s, the highway network’s contribution to the annual productivity growth rate was 31 percent, in the 1960’s it was 25 percent, in the 1970’s it was 23 percent, and by the 1980’s it was 7 percent.”

What we invested: \$125 billion. In 2011 dollars: **\$468 billion**.

What we got: 42,795 center lane miles of road connecting the largest economy in the world. In 2011, 16 billion tons of freight worth \$15 trillion moved across the nation’s highways.



Source: AP/Ralph Radford

DARPA—1958

Founded in response to the launch of Sputnik to ensure the United States had cutting edge military technology, the Defense Advanced Research Projects Agency, or DARPA, now operates as a small R&D team within the Department of Defense, delivering world-leading technology both on the battlefield (think Stealth fighter jets) and off (think the Internet). Described as “one hundred geniuses connected by a travel agent,” DARPA

continues to work with universities and teams across the country to push scientific boundaries, working on projects like a human exoskeleton and mobile robots capable of performing medical operations.

What we invested: \$246 million in the first appropriation in 1962. In 2011 dollars: **\$1.6 billion**. Investment continued throughout the 20th century, reaching \$1.9 billion in 1999—or **\$3 billion** in 2011 dollars.

What we got: the team that would go on to pioneer technologies that brought us the Internet, the Global Positioning System, and Siri to talk with you directly on your iPhone.

Apollo Space Program—1961–1969

Two months after the Soviet Union put the first man in orbit, President John F. Kennedy announced the Apollo Space Program to a joint session of Congress, telling the nation, “No single space project in this period will be more impressive to mankind, or more important in the long-range exploration of space; and none will be so difficult or expensive to accomplish.” He was right. In fixing a national ambition and rallying resources behind it, the United States went from never having put a man in orbit to landing a team on the moon in less than a decade. At the height of Apollo’s efforts, it employed 400,000 Americans and worked with 20,000 partnering institutions.

What we invested: \$24 billion. In 2011 dollars: **\$150 billion**.

What we got: massive technological advancement and the start of huge opportunities for technology transfer, leading to more than 1,500 successful spinoffs related to areas as disparate as heart monitors, solar panels, and cordless innovation.



Source: AP/Neil Armstrong, NASA, file

Elementary and Secondary Education Act—1965

A key investment in competitiveness is in the provision of high-quality public education. Most of this investment happens at the state and local level, though the federal government played a critical role when President Lyndon B. Johnson signed the Elementary and Secondary Education Act in 1965, saying that education was the “only valid passport from poverty.” Particularly important is Title I of ESEA, which focuses on schools with concentrations of children from low-income families. Title I funding continues to invest in our future workforce by channeling resources to many of our nation’s most vulnerable children, and at various stages, we have seen significant progress in cutting achievement gaps.

What we invested: \$36 billion in Title 1 funding between 1980 and 1990. In 2011 dollars: **\$70 billion.**

What we got: Significant reduction in the achievement gap between white students and African American and Hispanic students throughout this period.

Human Genome Project—1990–2000

Started as a joint project between the Department of Energy and the National Institutes of Health, the Human Genome Project ultimately helped coordinate the work of scientists in countries around the world to map the human genome. In a joint telecast in 2000, President Bill Clinton and U.K. Prime Minister Tony Blair announced the first phase was complete, with a public working draft of the “genetic blueprint for human beings,” ushering in a new era of medical and scientific advancement.



Source: AP/Ron Edmonds

What we invested: \$2.7 billion. In 2011 dollars: **\$4.7 billion.**

What we got: critical tools to help identify, treat, and prevent causes of disease—and huge opportunities for the high-growth fields of biotechnology and pharmaceuticals.

21st Century investments

As the Commerce Department report released today confirms, to position ourselves for sustainable economic growth, we have to keep focusing on the engines of that growth. Our people, our infrastructure, and our innovation are critical to America’s formula for success. When the American people invested in our competitiveness in the 20th century, it paid huge dividends. Now, in the 21st century, with America’s long-term economic prospects at stake, we need to continue to be smart in investing in our future competitiveness.

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