

# The Telecom Sector and the Economy

## How U.S. Broadband Policies Are Working for America

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## Telecom and the Economy: Overview

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- Unlike 2000, when a heavily regulated telecom sector led the way into recession, telecom is now one of the healthiest sectors of the economy.
- Thanks to pro-competitive regulatory policies, telecom companies are investing heavily in new networks, creating high paying jobs, and enabling productivity growth and price reductions throughout the economy.
- The next generation broadband networks being created today are the keys to keeping America competitive in the global economy, while raising energy efficiency and reducing carbon emissions.

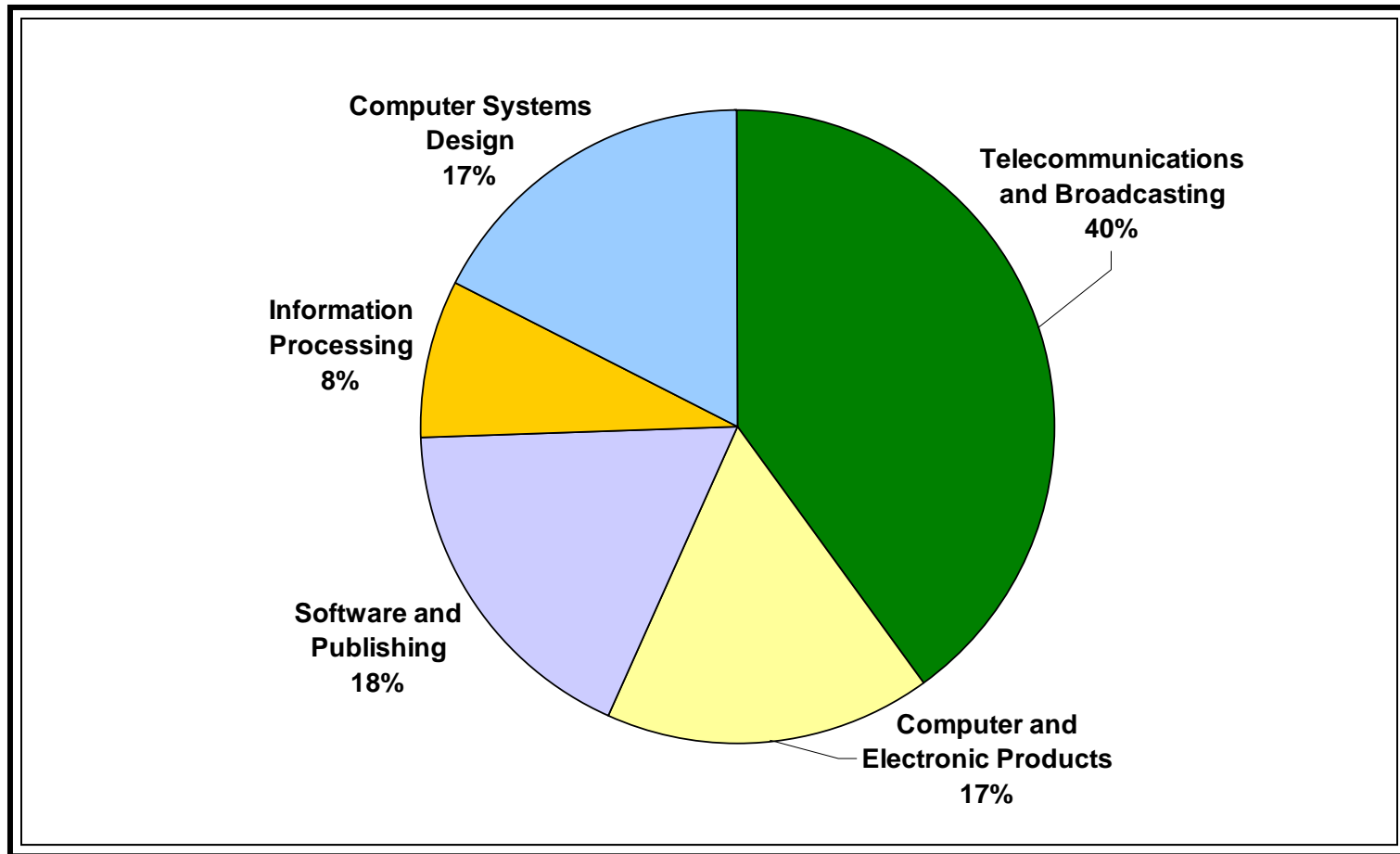
## The Telecom Sector in Context

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- The telecom sector consists of companies that own and operate wireline and wireless infrastructures, including fiber, HFC cable, copper and wireless.
- These “next generation” networks combine advanced hardware and software to deliver converged digital content, including voice, data and video.
- The telecom sector is thus an integral part of the overall ICT sector, which also includes content, hardware and software.
- Without continuing investment in next generation telecom infrastructures, the contribution of the ICT sector to growth and productivity would be significantly reduced .

# Telecom's Share of IT Sector Output

*In terms of GDP, telecom is the largest component of the IT sector; it and broadcasting account for 40% of total output.*



Source: Department of Commerce, Bureau of Economic Analysis

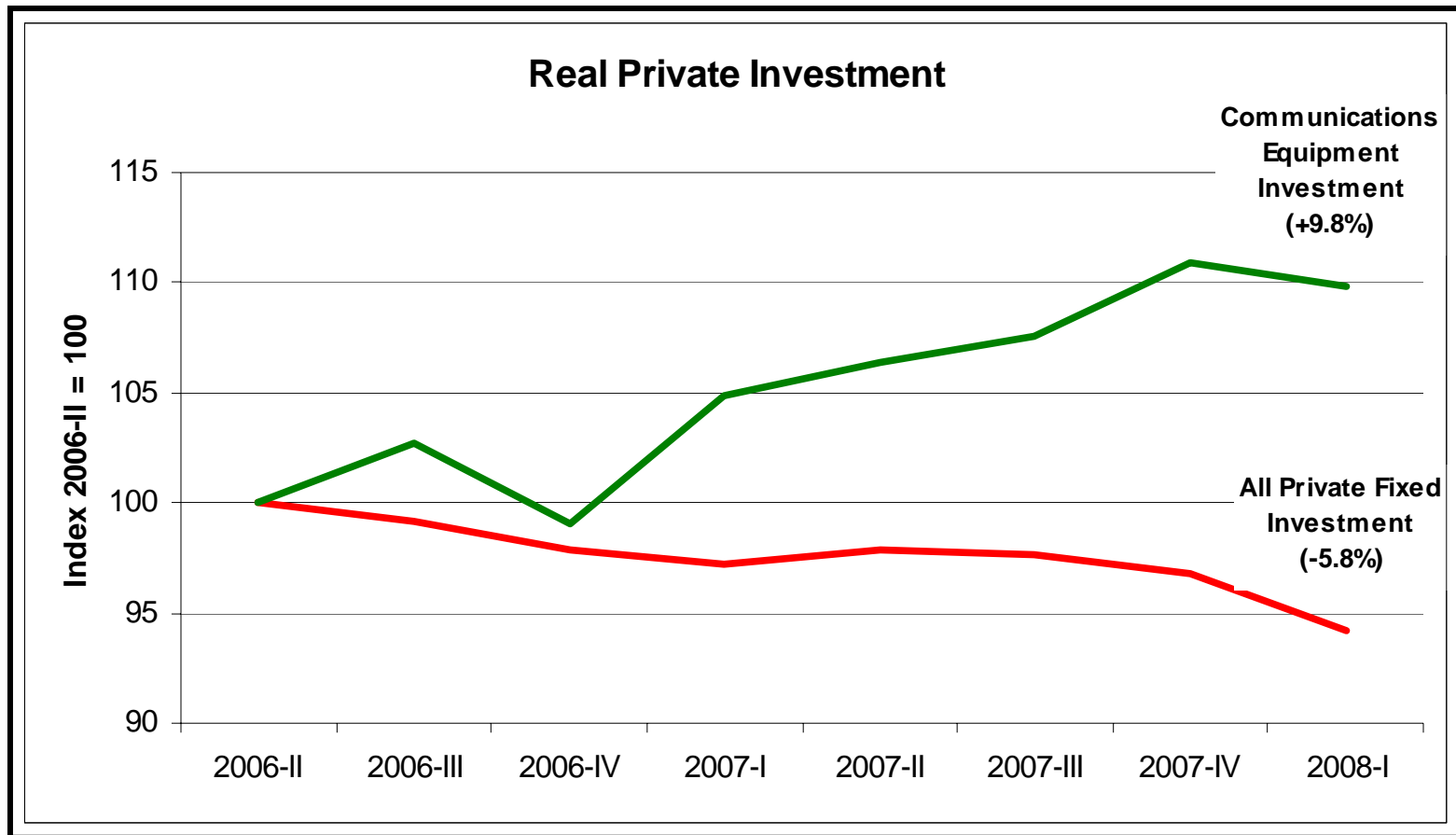
## Investment in New Networks

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- While private investment in the rest of the economy is shrinking, communications sector investment is growing.
- Private investment in the telecom infrastructure exceeds Federal investment in the transportation infrastructure.
- Information sector investment, including telecom, accounts for more than half of *all* private investment.
- U.S. telecom companies are investing more than their more-heavily-regulated European counterparts.

# Communications Equipment Investment

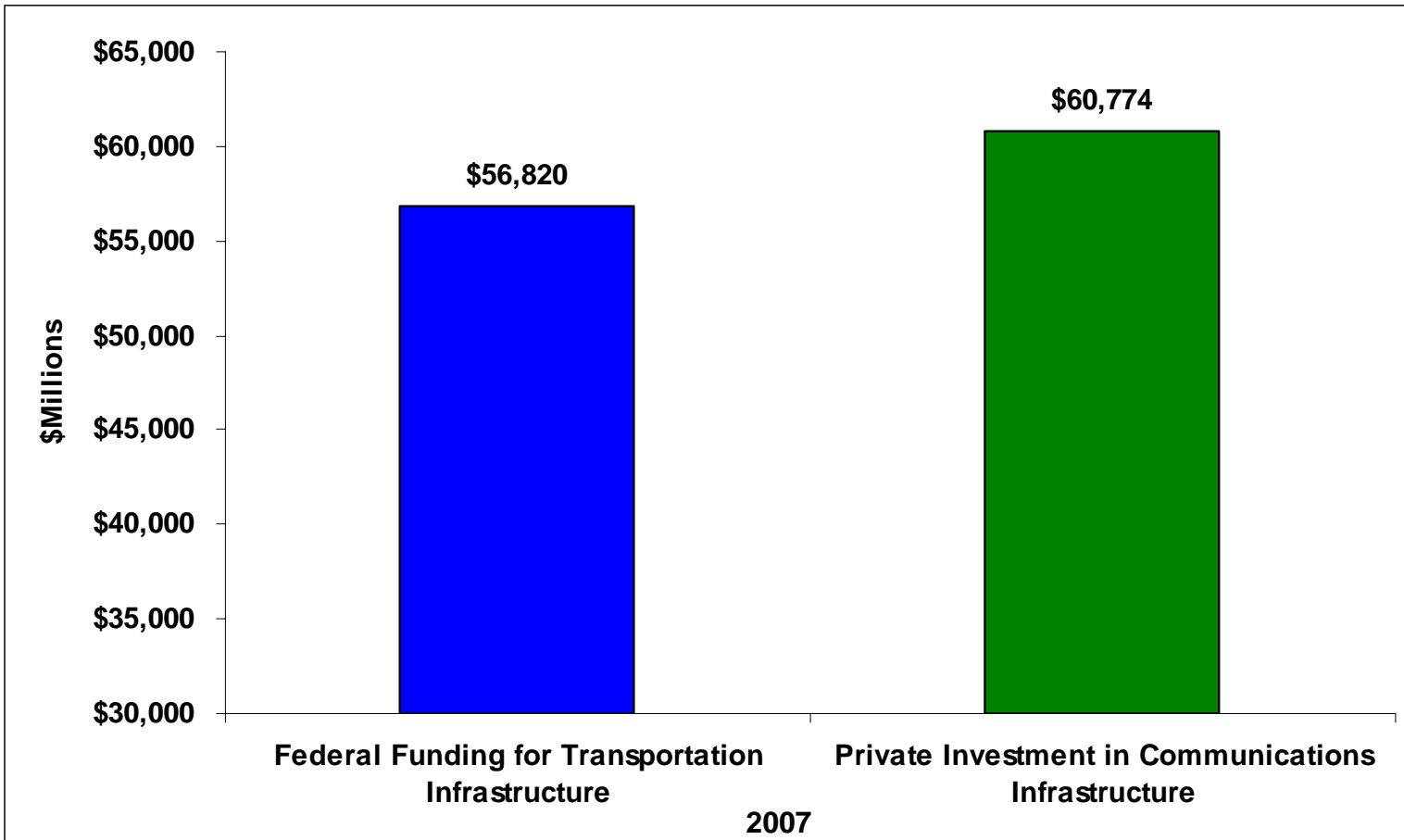
*Overall private investment has fallen 6% since mid-2006.  
Communications equipment investment has grown 10%.*



Source: U.S. Department of Commerce, Bureau of Economic Analysis

## Investment in Broadband Infrastructure

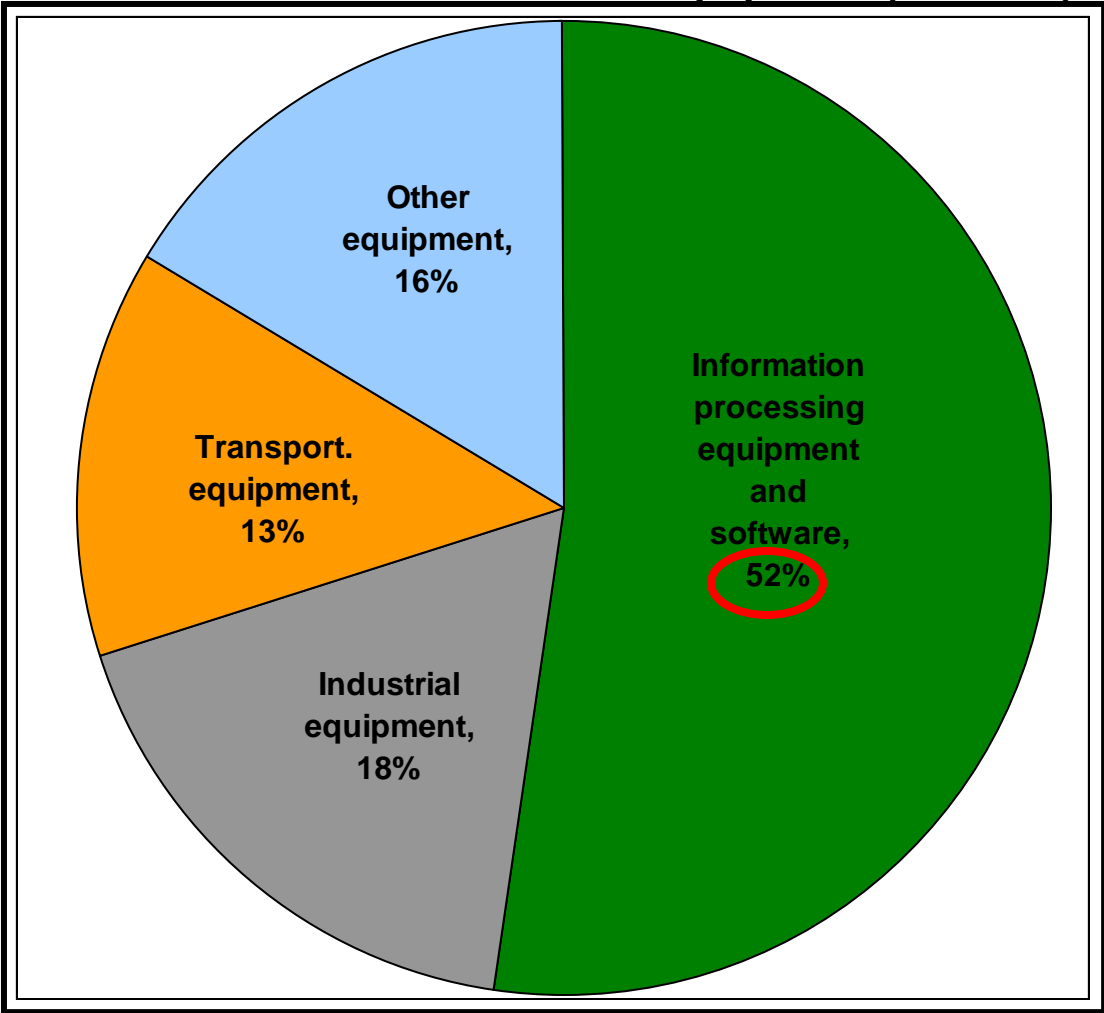
*The telecom sector is investing more in the broadband infrastructure than the Federal government is investing in all forms of transportation.*



*Notes: Federal transportation investment from Budget of the United States Government, FY 2007, includes both grants to state and local governments and direct spending on highways, railroads, water and air transportation. Private investment includes all cable investment (NCTA); all wireless investment (CTIA); wireline telco investment by AT&T, Qwest and Verizon (company reports)*

# Investment in IT Equipment and Software

Share of Private Investment in Equipment (Q1 2008)

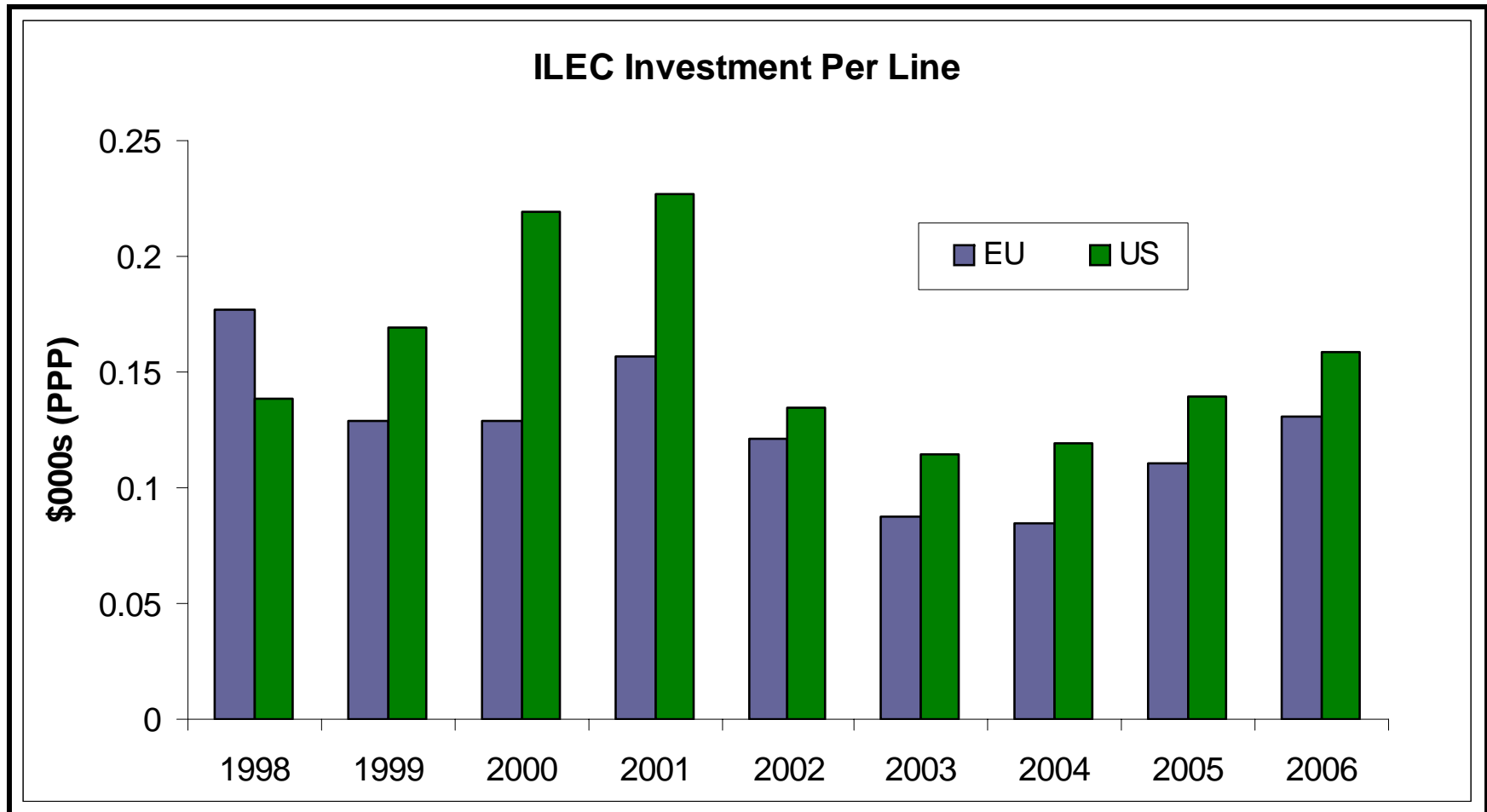


*Information processing equipment and software (including telecom equipment) accounts for more than 52% of the total, up from 42% in 1995.*

Source: U.S. Department of Commerce, Bureau of Economic Analysis

## Network Investment: U.S. vs. Europe

*U.S. incumbent telecom companies invest nearly 25% more per line than their European counterparts.*

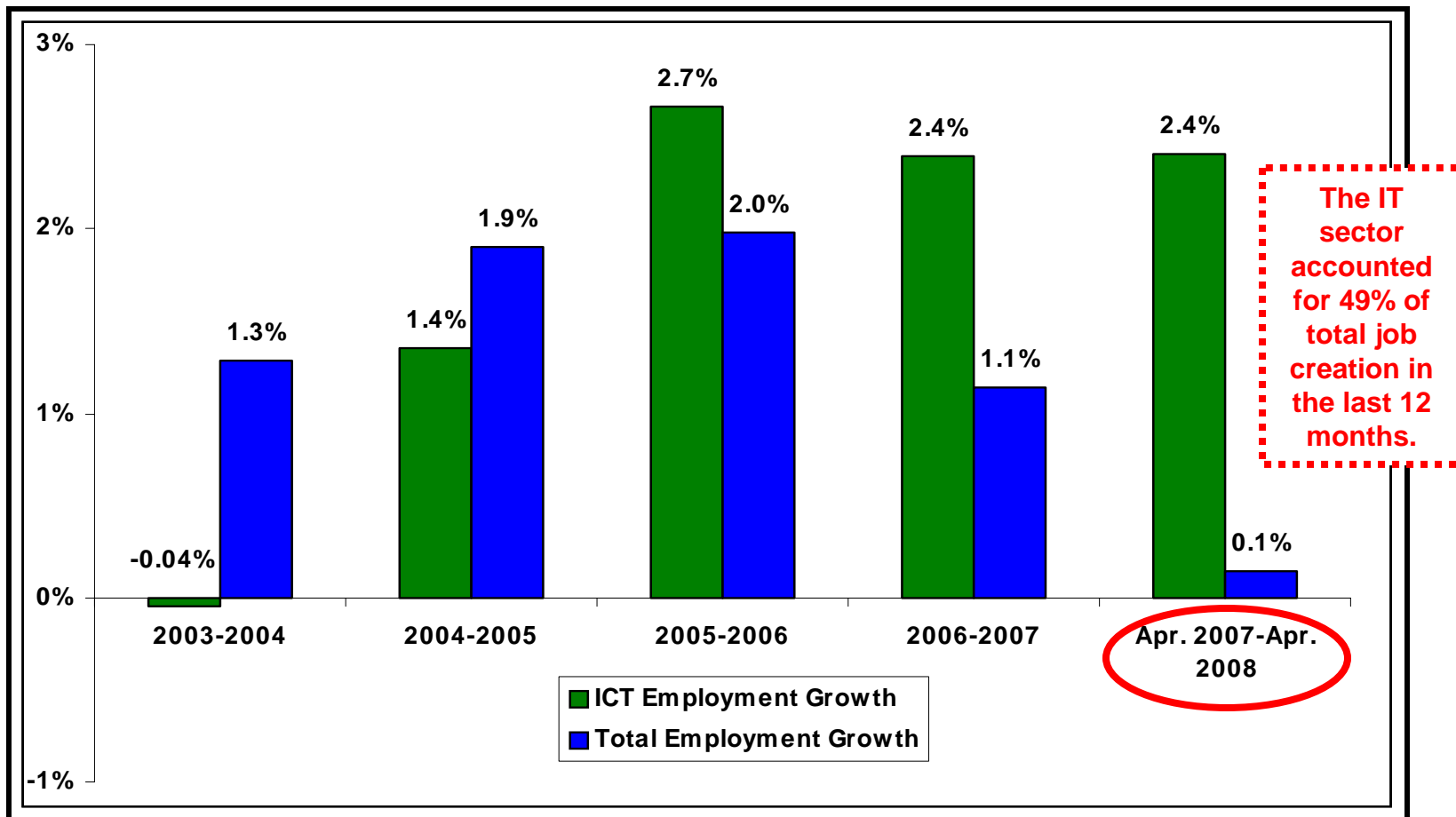


Source: Crandall (2007); Company Reports

- While overall employment is shrinking, the IT sector is continuing to create jobs.
- The IT sector created more than half of all net new jobs between April 2007 and April 2008.
- Information sector jobs generally, and telecom jobs in particular, are among the highest-paying jobs in the economy.

## IT Job Creation in a Slowing Economy

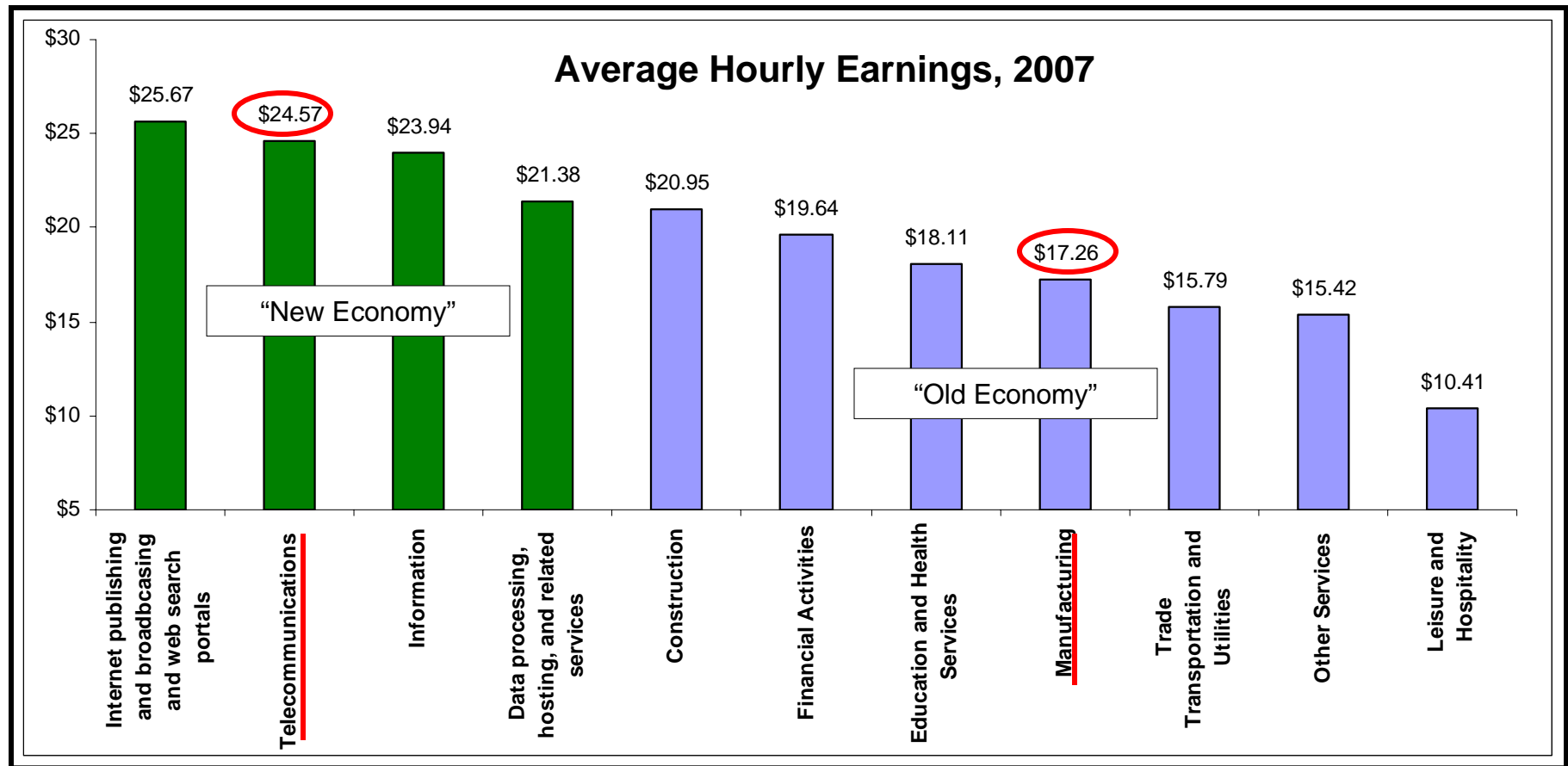
*As job growth has slowed in the rest of the economy, employment in the IT sector has continued to expand.*



Source: Bureau of Labor Statistics

# Telecom and IT Jobs Pay High Wages

*IT jobs are high-paying jobs. Average hourly earnings in telecommunications are 42% higher than in manufacturing.*



Source: Bureau of Labor Statistics

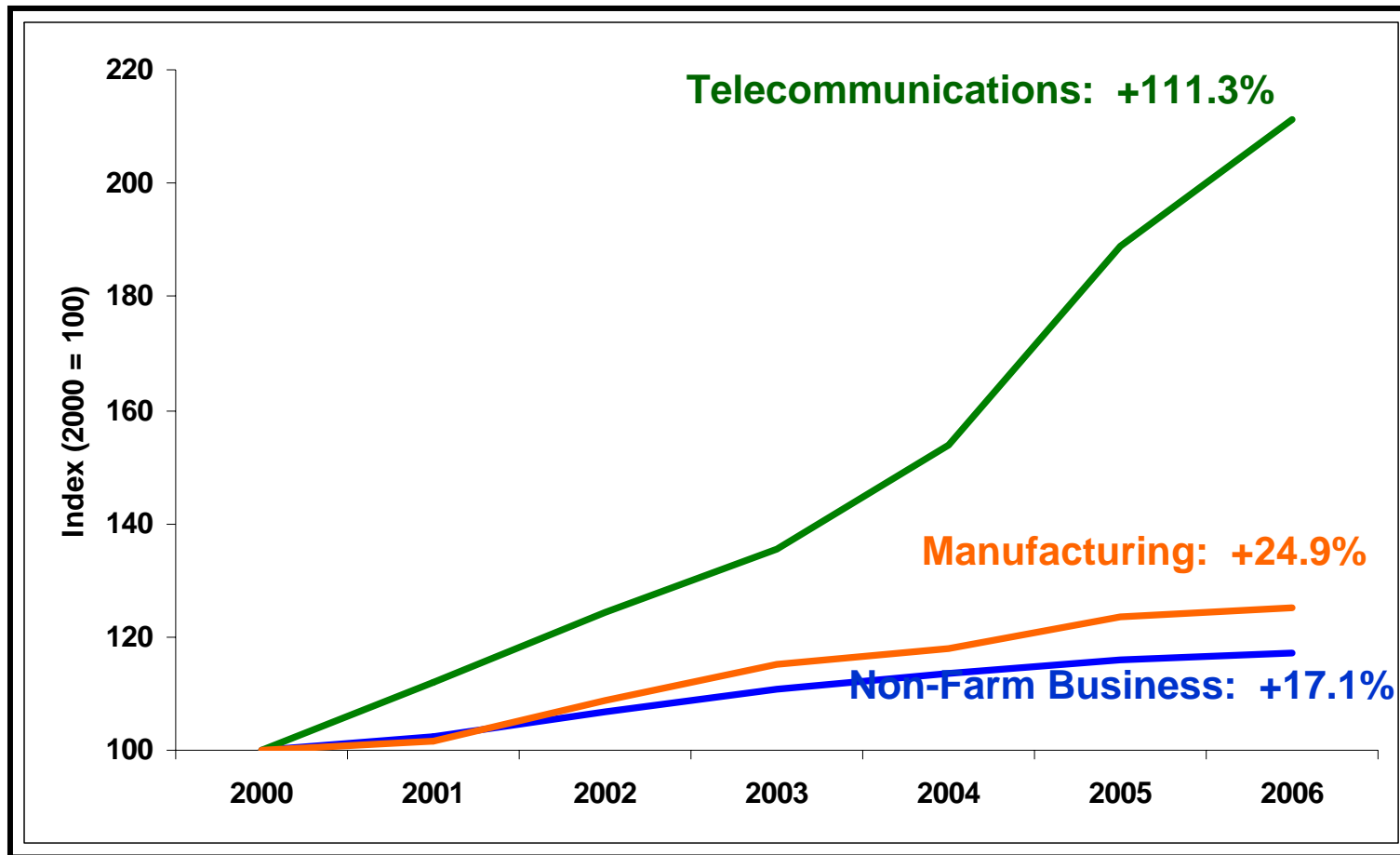
## Increasing Productivity and Reducing Prices

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- **Productivity in the telecom sector is increasing much faster than in the economy overall.**
- **Higher productivity – along with increasing competition – has led to falling prices.**
- **Advanced broadband networks enable productivity increases throughout the economy.**

## Increasing Productivity

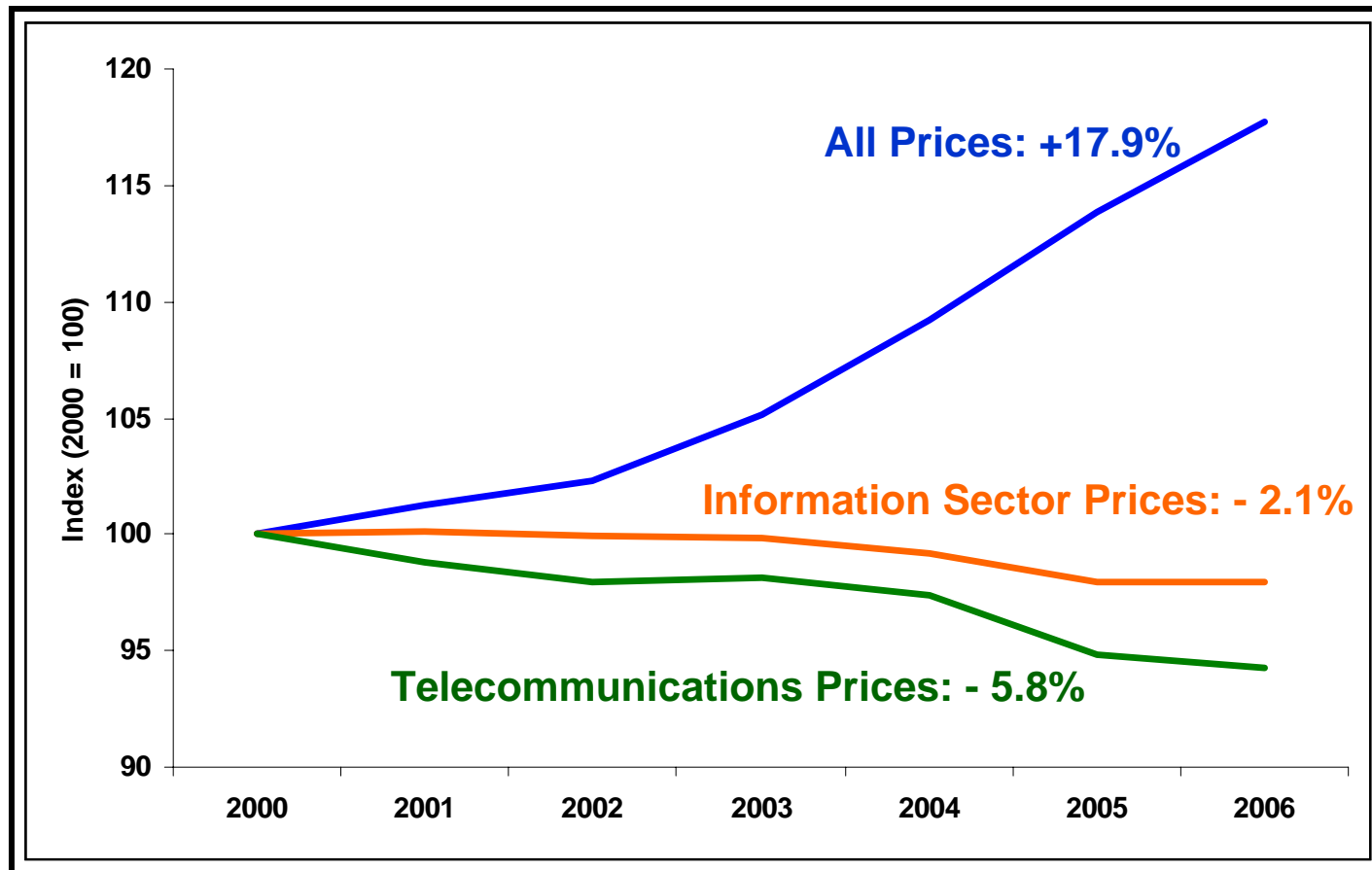
*Telecom sector productivity is rising much faster than in the rest of the economy, more than doubling since 2000.*



Source: Bureau of Labor Statistics

## Reducing Prices

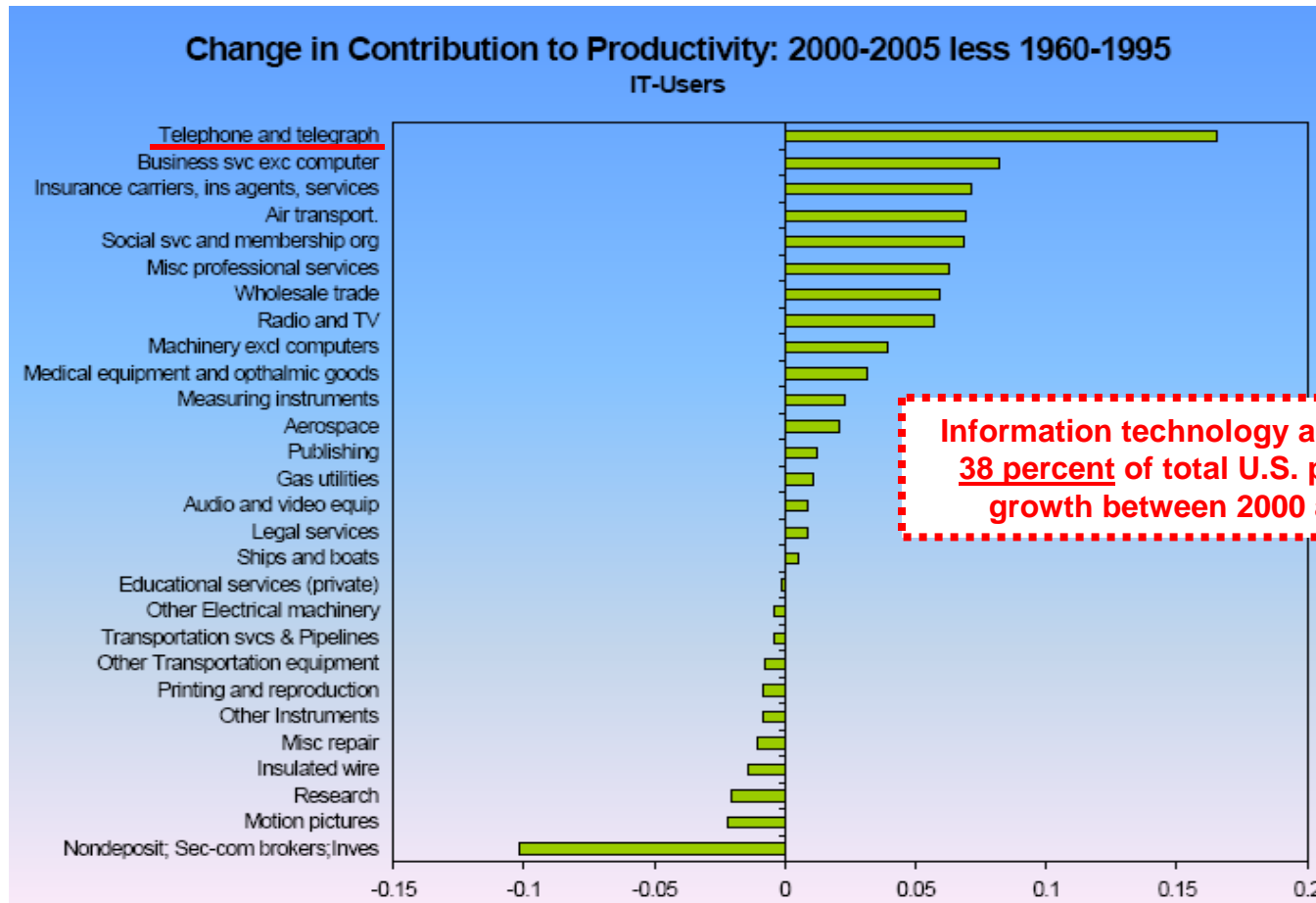
*The CPI is up 18 percent since 2000, but telecom prices are down 6 percent, falling even faster than IT prices overall.*



Source: Bureau of Labor Statistics

# Telecom Investment and Productivity

*The telecom sector's contribution to productivity growth has increased faster than any other industry.*



Source: Jorgenson 2007, 2008.

## IT, Energy Efficiency, and Greenhouse Gases

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- **Broadband-enabled IT applications reduce energy consumption and cut greenhouse gas emissions.**
- **Broadband is already contributing to greater energy efficiency.**
- **Broadband applications will reduce greenhouse gas emissions by more than a billion tons by 2018.**

## Broadband Applications Reduce Energy Use

*An online bookstore like Amazon.com uses less than a tenth as much energy as a traditional bookstore.*

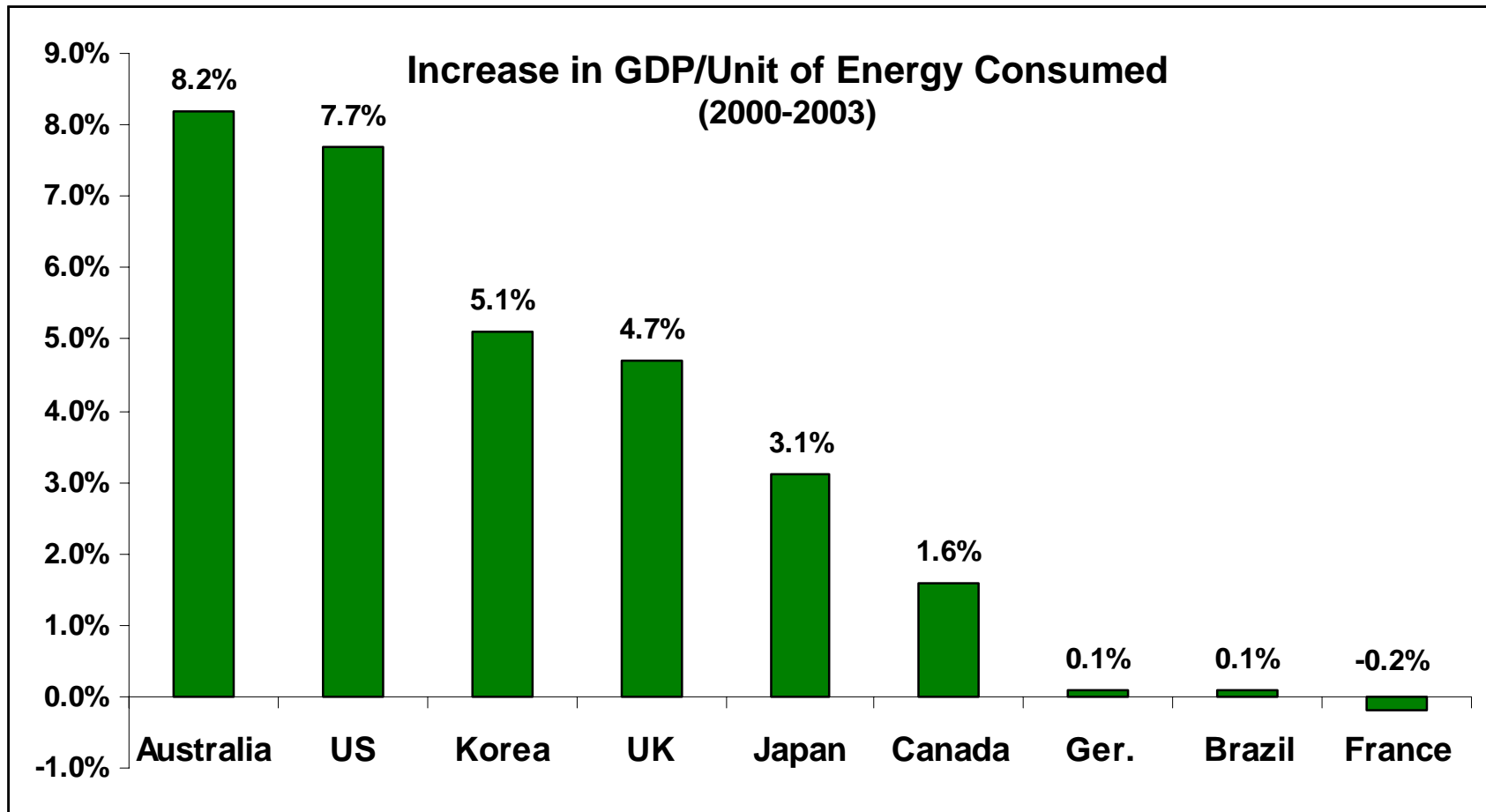
**Comparison of Energy Efficiency of Traditional Bookstore vs. Online Bookstore**

	Traditional Superstore	Online Bookstore (Amazon.com)
Titles per Store	175,000	2,500,000
Revenue per Operating Employee	\$100,000	\$300,000
Annual Inventory Turnover	2-3 times	40-60 times
Sales per square foot	\$250	\$2,000
Rent per sq. ft.	\$20	\$8
Energy costs per sq. ft.	\$1.10	\$0.56
<u>Energy costs per \$100 of sales</u>	<u>\$0.44</u>	<u>\$0.03</u>

Source: Romm 2001

## Use of IT is Increasing Energy Efficiency

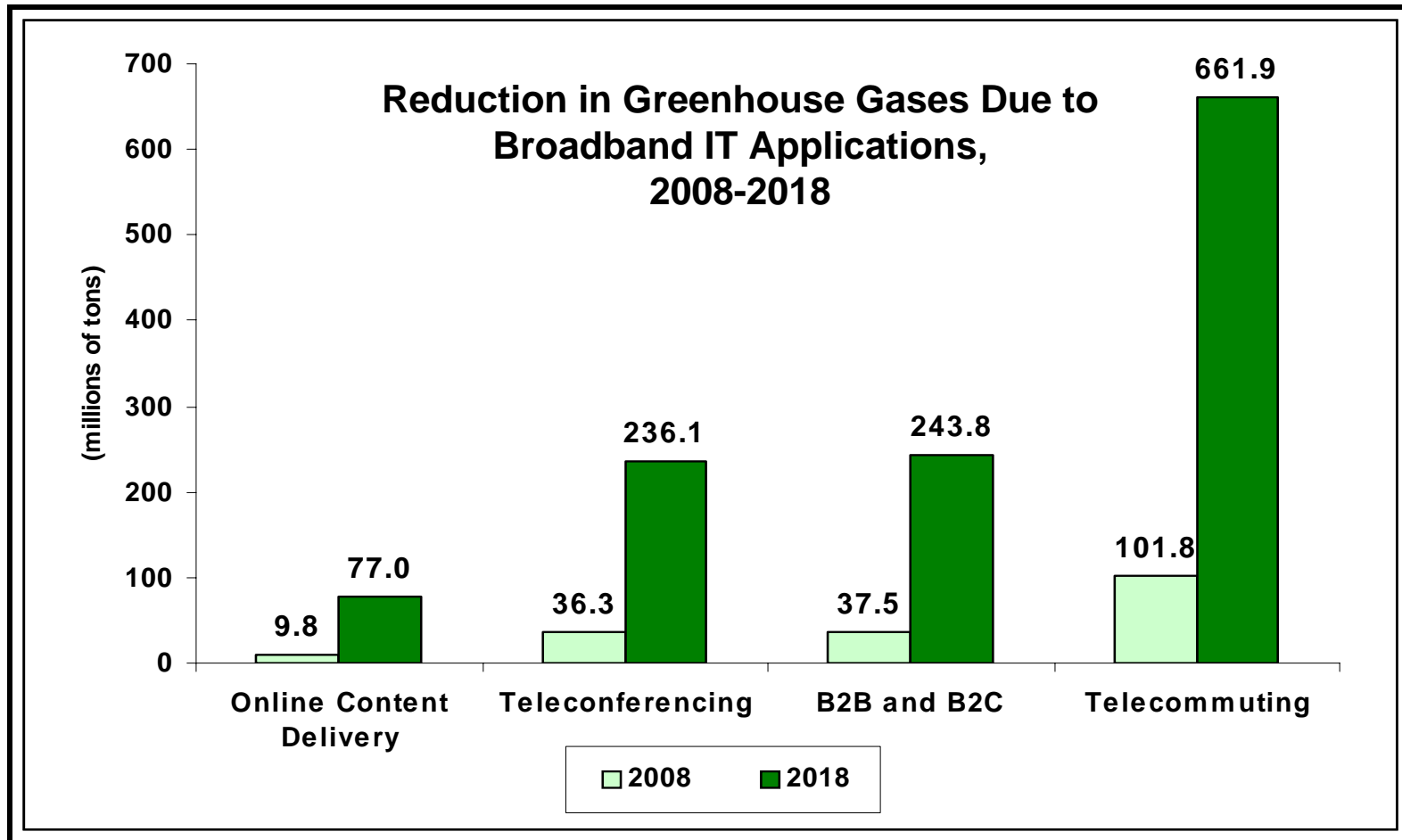
*U.S. energy efficiency rose by nearly 8 percent from 2000-2003, one of the fastest growth rates in the world.*



Source: World Resources Institute; <http://earthtrends.wri.org/>

## Reducing Greenhouse Gas Emissions

*Broadband will reduce greenhouse gas emissions by more than 1 billion tons by 2018 – equivalent to reducing oil imports by 11 percent*

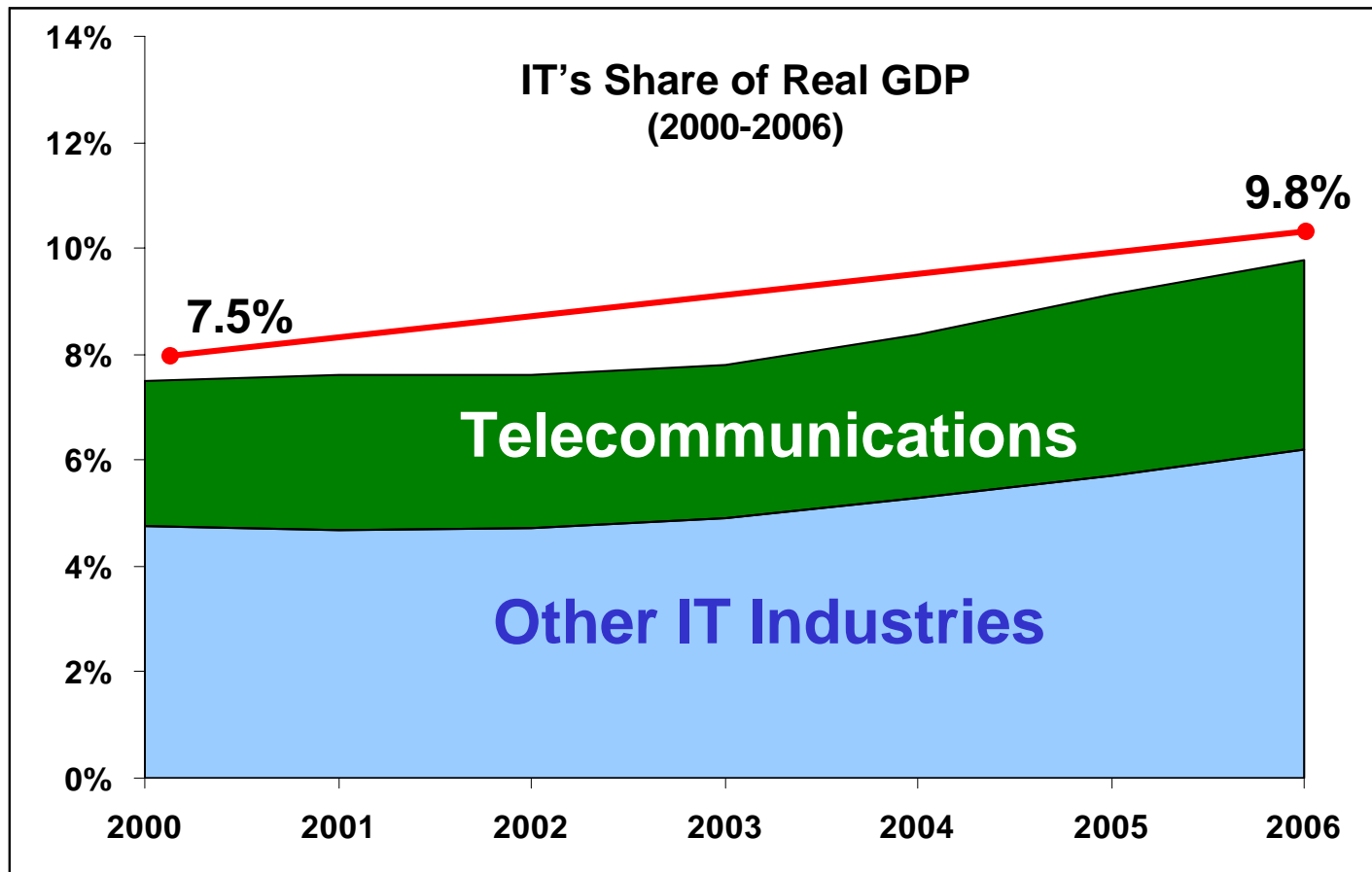


Source: Fuhr and Posciask, 2007

- While the rest of the economy is shrinking, the IT sector is continuing to grow.
- IT's contribution to **GDP** is increasing.
- IT contributes disproportionately to **GDP growth**.
- Telecom is the largest segment of the IT sector; it contributes more to **GDP** than computing, software or services.

## IT's Share of GDP

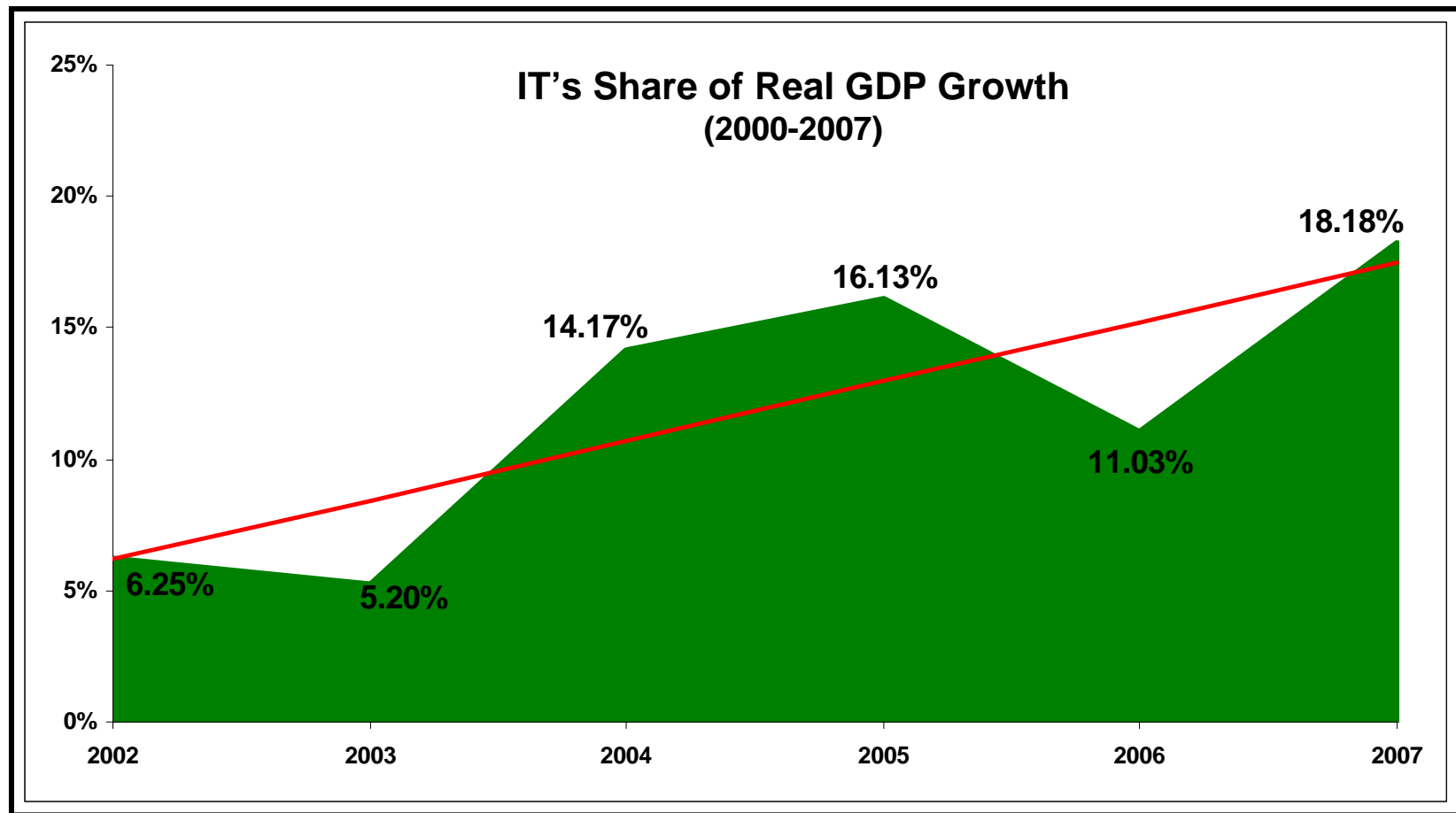
*The IT sector's share of GDP grew from 7.5 percent in 2000 to 9.8 percent in 2006.*



Source: Department of Commerce, Bureau of Economic Analysis

## IT's Share of GDP Growth

*In 2007, the IT sector was responsible for nearly one-fifth of overall GDP growth, triple the level of five years earlier.*



Source: Department of Commerce, Bureau of Economic Analysis

## The Telecom and the Economy: Summary

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- Thanks to a pro-investment regulatory environment and a highly competitive marketplace, the telecom sector is a key source of strength in an otherwise slowing economy.
- The telecom sector is:
  - Investing tens of billions of dollars in a next generation broadband infrastructure;
  - Creating high-paying jobs to replace the continuing loss of manufacturing jobs;
  - Enabling productivity growth needed to keep inflation down and maintain U.S. competitiveness;
  - Facilitating more efficient energy use and reduction of greenhouse gas emissions;
  - Contributing disproportionately to U.S. economic growth.

**The U.S. Broadband Model is Working!**