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# The Role of Digital Stimulus in the G-20

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ITIF is a think tank committed to articulating and advancing a pro-productivity, pro-innovation and pro-technology public policy agenda internationally, in Washington and in the states. ITIF focuses on:

- Innovation processes, policy and metrics
- Science policy related to economic growth
- Telecommunications, Internet, and broadband policy
- E-commerce, e-government, e-voting, e-health
- ICT and economic productivity
- Innovation and trade policy

# The Case for ICT and Broadband Investment as ■ Part of Stimulus Measures

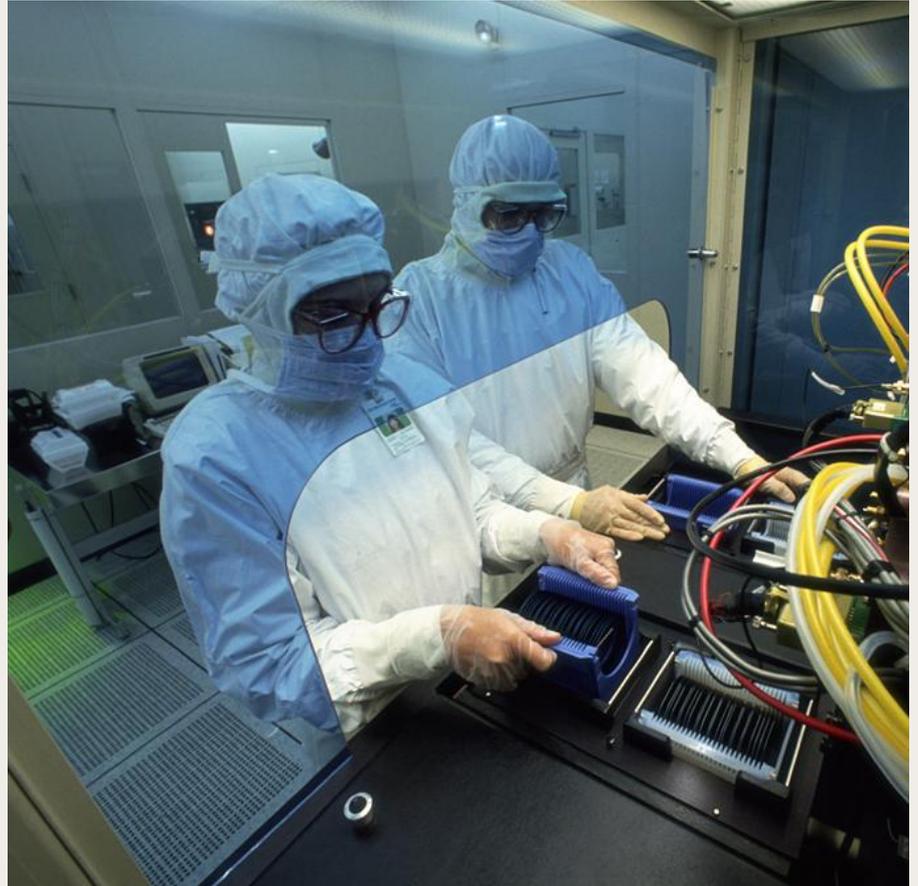
- Stimulus measures that spur investment, as opposed to consumption, serves double duty:
  - spurs jobs and economic activity in the short run
  - boosts productivity and innovation in the moderate term

- Investment in ICT:
  - Infrastructures generate even larger gains in jobs, productivity



# How Does ICT Drive Growth: Growth in the ICT Sector

- Growth in the ICT Sector:
  - Job growth: Between 1995 – 2006 ICT sector employment increased at an annual average rate of 0.9% in the OECD.
  - Global wages: Jobs in ICT industry pay 70 percent higher wages than other industries.



# How Does ICT Drive Growth? Help Existing Firms Be More Productive and Innovative



- In the U.S. the use of ICT was responsible for 80% of the productivity pick-up, with the ICT industry responsible for 20%.



## ■ ICT is Driving Productivity around the world.

### ■ ICT has outsized impacts:

- ICT has 3 times more impact on productivity than non-ICT capital (Nathan Associates, 2007).
- In developing nations, value added per worker in the ICT-using enterprises is \$8,712, compared to just \$5,288 for the firms not using ICT. Businesses that use ICT have faster sales and employment growth and higher productivity (World Bank, 2005 and 2006).

## ■ U.S. Jobs Creation Estimates

- A stimulus package that spurs or supports investment of \$39.2B in America's ICT network infrastructure will create about 1 million U.S. jobs.

### Estimates of U.S. Jobs Created by Investments in Network Infrastructures

ICT Infrastructure Project	Investment	Jobs Created	Small Business Jobs Created
Broadband networks	\$7.2 billion	358,000	189,000
Health ICT	\$19 billion	402,800	231,180
Smart power grid	\$13 billion	301,700	182,650
<b>Total</b>	<b>\$39.2 billion</b>	<b>1,062,500</b>	<b>602,830</b>

# ICT Infrastructure Spurs the Network Effect Multiplier

- Network effects arise from new consumer and business behaviors and downstream industries enabled by digital infrastructure.
- Digital infrastructures act as a platform that supports creation of innovative technologies and services.
- The network effect is greater in networks that are not yet fully mature.

## Examples:

**Broadband:** Newer computers, peripherals, social networking, more e-commerce and e-government

**Health ICT:** WebMD, Microsoft Health Vault, web cams, telehealth

**Smart Grid:** Smart appliances, plug-in hybrid electric vehicles, energy storage, and residential solar power

## ■ International Examples of Broadband Stimulus

- **Canada: > \$200 million over three years**
  - Extend broadband coverage to unserved rural communities
- **France: > \$1 billion, initial public investment into 10yr, \$13 billion plan.**
  - Provide universal coverage by 2010 and “ultrafast” broadband to 4 million households by 2012
- **Japan: > \$370 million over two years**
  - Extend broadband to unserved communities
- **South Korea: > \$1 billion, initial public investment of \$24.6 billion plan**
  - Upgrade broadband to reach 30 million households by 2012

## ■ International Examples of Smart Grid Stimulus

- **United States: > \$11 billion, advanced electrical systems**
  - Smart grid and metering projects.
- **European Union: > \$5 billion**
  - Upgrades to the European electric grid system
- **France: > \$4.1 billion**
  - Upgrade the country's smart-grid system
- **South Korea: > \$3.2 billion, within four years**
  - Overall green IT infrastructure, including smart grid

## ■ International Examples of Health IT and other IT Stimulus

- **United States: > \$22 billion, 2010-2012**
  - Promote digital health records and grants to digital best practices
- **Canada: > \$3.75 billion**
  - \$465 million ICT for health care
- **Japan:> \$31 billion, “i-Japan 2015 strategy”**
  - Intelligent transportation systems, fiber network for health care, e-government, energy efficient ICT
- **France: > \$73million**
  - E-government investments, including “Serious Gaming”, Web 2.0 applications and other miscellaneous e-government public purchases
- **Turkey**
  - Permanently reduce telecom/broadband tax from 15 to 5 percent
  - VAT reduction on computers from 18 to 8 percent

## ■ Policy Tools

- Tax policy (supply)
  - e.g. tax incentives for ICT investments like broadband, R&D tax credits
- Tax policy (demand)
  - e.g. reduce telecom taxes, VAT and import taxes on PCs
- Direct investment
  - e.g. invest in broadband, health ICT, smart grid, ITS, e-government, digital literacy
- Regulatory
  - e.g. allocate unused spectrum, trade spectrum for broadband investment

## ■ Policy Implications: Focus on Stimulus With a Long-term Impact

- Front-load public support for ICT infrastructures, including broadband, as part of economic stimulus, through both grants and tax incentives.
- Make investments large enough to have an impact.
- Create a national broadband plan / digital transformation strategy
- Spur ICT adoption for individuals and SMEs through demand-side initiatives (e.g. PC's in schools, tax incentives for PC and broadband adoption).
- Ensure that regulations and tax policy do not hinder ICT investment.

# Thank you!

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