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TITLE: Measuring the Impact of Broadband: employment effects

Measuring the Impact of Broadband: employment effects

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The logo for the London School of Economics (LSE), consisting of the letters 'LSE' in white on a red square background.

Agenda

- The Case for Digital Investment
- Other Nations' Experience
- Methodology
- Digital Infrastructures and Jobs
 - Broadband
 - ITS
 - Smart grid
- Policy implications & proposed indicators

example calculation

Estimates of UK Jobs

£5 bn each area over 1 yr

ICT area	Jobs Created
Broadband networks	280,500
Intel. Transport Syst.	188,500
Smart Power Grid	231,000
Total	700,000

The Case for Investing in Digital Infrastructures

- Jobs, including network multipliers
- Productivity
- Quality of Life
- Energy Savings

Employment Multipliers

1. Direct jobs created
2. Indirect jobs created
3. Induced jobs created
4. Network effect jobs created

The Network Effect Multiplier

- Arises from new consumer & business behaviours, functionalities, & downstream industries enabled by digital infrastructure
- Broadband is a platform supporting innovative tech. & services
- Effect is greater in networks that are not yet mature

Examples of Network Effects

Broadband

New computers, peripherals, social networking, e-commerce

ITS

Vehicle navigation, registration recognition, freight telematics

Smart Grid

Appliances, electric vehicles, energy storage & flexibility

Methodology for Measuring Employment Impact

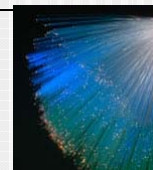
1. Bottom-up analysis
 - Jobs created in direct service, software & hardware (manufacturing) for each industry using industry-specific employee compensation data
 - Estimate mix of technologies (e.g. DSL & fibre optic)
 - Assess labor component of equipment/hardware needed
 - Apply a leakage factor to account for loss of some mfg. jobs due to imports
2. Calculate indirect & induced jobs w/ industry-specific employment multipliers
3. Apply a network effect multiplier

Methodological options

- Choosing salary levels
- Aggregating industry categories
- Costing estimates
- Scale effects
 - What happens if larger allocations?
 - Do we lose much with smaller actions?

Broadband

Job Type	Total created/ retained	Of which in small bus.
Direct	76,500	22,500
Indirect + induced	134,500	37,000
Network effect	69,500	34,500
Total	280,500	



Intelligent Transport Systems

Job Type	Total created/ retained	Of which in small bus.
Direct	62,500	44,000
Indirect + induced	79,000	53,700
Network effect	47,000	23,000
Total	188,500	



Smart Grid

Job Type	Total created/ retained	Of which in small bus.
Direct	43,000	26,500
Indirect + induced	130,500	91,000
Network effect	57,500	28,500
Total	231,000	



Policy implications

- Mix of:
 - Tax credits
 - Grants; as done for home water meters; home insulation
 - Procurement esp. accelerated transport systems spending
 - Lead by govt. properties, vehicles, etc.
- Regulatory reform
 - Speed-for-spectrum swap

available indicators

- Salary levels (but no consensus on “total employment costs”)
- Job descriptions from industry associations (but know-how necessary for interpretation)
- Trade & geographical dispersion data generally good
- UK Off. Nat. Stats. restricted lab data excellent for firm-level, inc. post code

indicators needed

- Comparable, sector specific multipliers
 - these exist for some, e.g. U.S., Scotland (but not England)
- Job mix per sub-sector (estimates require considerable detailed knowledge)

How the UK differs

- Smaller network effects than USA
- Choices of network areas
- Stimulus mechanisms

Conclusions

- Spurring additional investment of £15 billion in Britain's digital infrastructure in 2010 will create about **700,000 U.K. jobs** for 1 year.
- ICT infrastructure investments are ready. These projects—and the jobs they create—can **get started now**.
- While most infrastructure investments only create jobs in the year the investment occurs, many jobs created through network effects enabled by digital infrastructure **persist** once the infrastructure is built out.
- Immediate short-term measures can drive networks for broadband, intelligent transport systems, and the smart grid to the tipping point, after which much **investment can be sustained by the private sector**.
- Beyond immediate jobs creation, ICT infrastructure investments drive productivity **growth and deliver personal and societal benefits**.