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TITLE: The impact of ICT on growth and competitiveness in competitiveness in Europe

The impact of ICT on growth and competitiveness in Europe

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Evidence from growth accounting literature:

- Growth accounting method breaks down the sources of productivity growth into the different inputs used in the production process: labour, materials and physical capital (including ICT)
- The remaining unexplained part attributed to improvements in efficiency of production due e.g. to technological advance (MFP)

Economic impact of ICT: 3 channels

- Investment in ICT
- Efficiency gains in ICT-producing sector
- Efficiency gains in ICT-using sectors

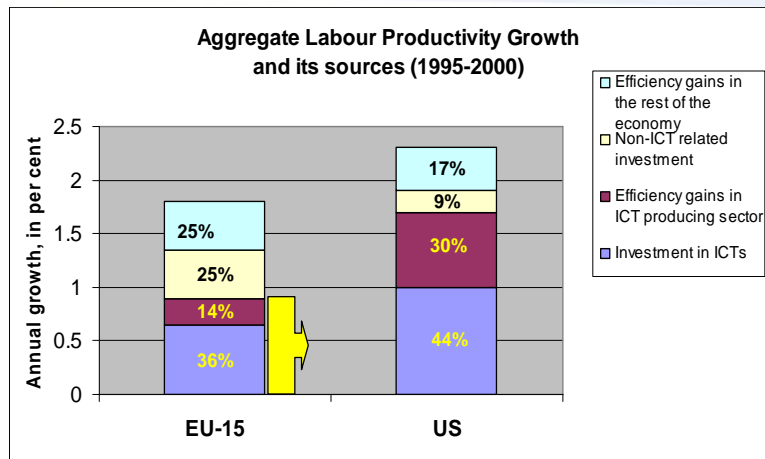


Recent study of the EU: Van Ark et al. (2008)

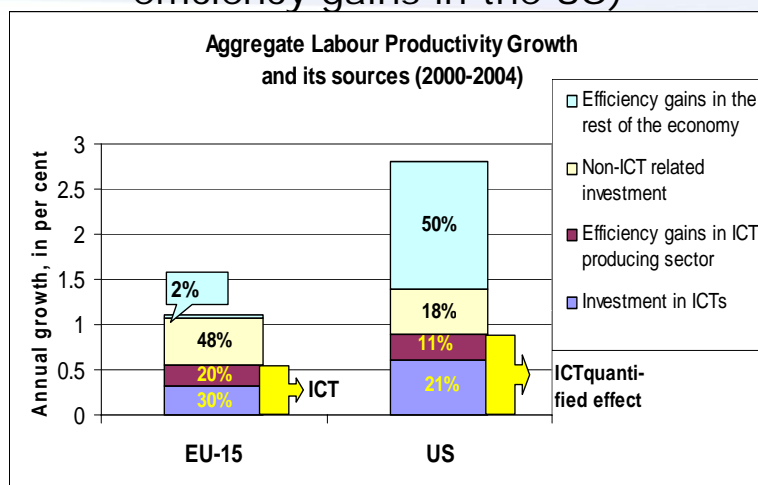
- Study on the EU-US gap identifies three stages:
 - 1950-1973
 - 1973-1995
 - 1995-2006
- In the first EU was catching-up
- In the second, catch-up slowed
- Final phase large productivity slowdown



Economic impact of ICT (1995-2000): ICT drives half of productivity gains in the EU (and 75% in the US)



Economic impact of ICT (2000-2004): ICT drive half of productivity gains in the EU (and efficiency gains in the US)



Recent study of the EU: Van Ark et al. (2008)

- Gap was biggest in ICT production and market services
- For the latter, the gap was striking: 0.5% in EU compared to 1.8% in US
- While market service also include financial services, retail and whole sale trade also posted very high productivity growth throughout this period
- Data also shows differences within EU: UK for example had similarly large growth rate in market services (1.6%) to US – in line with economic similarities e.g. product and labour market regulation

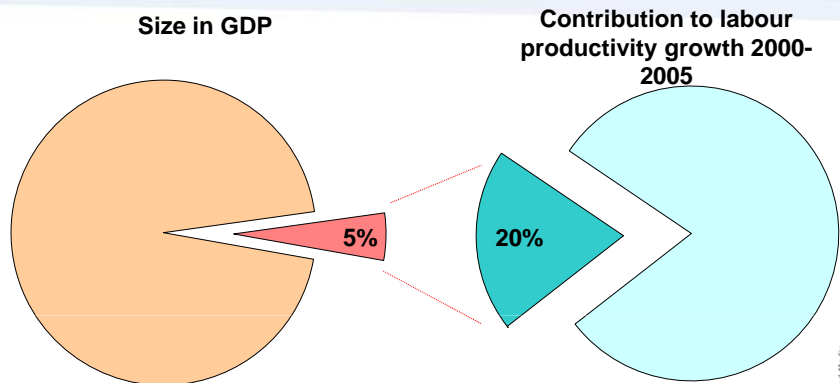


Sources of information

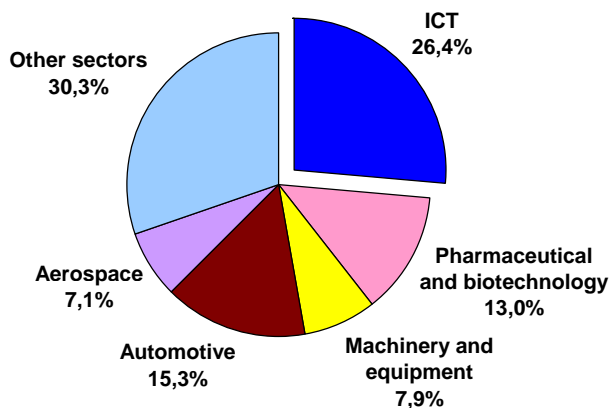
- For Europe: EUKlems database
- Main authors: B. Van Ark, M. Timmer, M. O'Mahony
- The GGDC data base has data also for non-EU countries
- Main indicator: labour productivity growth decomposed into industry level contribution to MFP and ICT and non-ICT capital



The ICT sector alone drives 20% of productivity growth



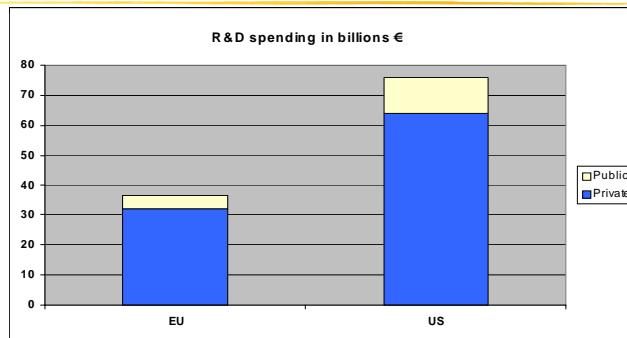
ICT sector Biggest sector in terms of R&D



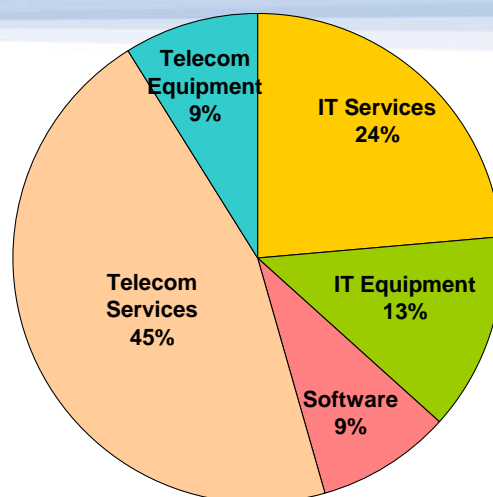
Share of ICT in EU total Business Expenditure R&D (2005)

ICT R&D spending in EU and US

ICT spending on Research & Development



ICT Segments



A micro-to-macro approach: a study by the LSE

- How companies respond to changes in economic environment =>AMATECH database
- Significant impact of ICT on productivity because of unobservable complementary factors:
 - ICT-intensive industries
 - Country effects
 - **Organisational capital**



Sources of information

- Amatech dataset to assess the distinctive contribution of ICT capital (measured as PC per person)
- The Amatech database combines ICT hardware and software from Harte Hanks with company account data from Amadeus
- LSE study can be found at
http://ec.europa.eu/information_society/eeurope/i2010/docs/eda/ec_on_impact_of_ict.pdf



Investment and ICT adoption

- Demand important determinant
=> (stimulus programmes)
- The *macro-diffusion approach*: adoption ceiling heterogeneous across countries (EU<US); inflection points similar
- The *micro-adoption approach*: PC intensity positively associated with high wages and firm size;



Thank you!

http://ec.europa.eu/information_society/digital-agenda/index_en.htm

