


IMPROVING ECONOMIC POLICY 

The impact of digital on economies and societies in the OSCE region: Broadband / Future of Work

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The impact of digital transformation and new technologies on economies and societies in the OSCE region, 12 September 2019

The impact of digital on economies and societies in the OSCE region: Broadband / Future of Work

- There are a huge number of opportunities and impacts.
- In this talk, I focus on just two areas.
- Broadband:
 - Empowering citizens and businesses in harnessing the benefits of digital transformation
 - Enhancing the social inclusion of the digital transformation
- Digitalisation and the future of work
 - Challenges of the digital transformation on economy / society

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Broadband

Benefits of broadband

- A wide range of studies demonstrate that broadband makes a positive contribution to society (e.g. GDP).
- Most experts assume that if broadband is good, fast broadband must be better; however, there is considerable uncertainty as to how much broadband speed is really needed.
- There are no studies that convincingly demonstrate the incremental societal benefits of broadband speed.

What goals? Coverage, adoption, usage

- Basic broadband **coverage** is nearly complete in many developed countries, but gaps remain in fast broadband coverage.
- **Adoption** of fixed and mobile broadband is high in developed countries.
 - Not everyone in every household has access to broadband.
 - Surveys suggest that lack of interest or lack of skills play a larger role than do lack of coverage or affordability.
- High speed does not necessarily lead to high **usage**.

Technological options for achieving fast broadband deployment

- Within the fixed telecommunications network, the great majority of connections are provided either by:
 - FTTCab/VDSL technologies (including vectoring and, in the near future, additional new technologies), where the last stretch to the consumer is copper; or
 - FTTP/FTTH, where fibre is extended all the way to the consumer's building or living unit.
- Cable is the main technology used in North America; elsewhere, coverage is spotty and is not growing.

Technological options for achieving fast broadband deployment



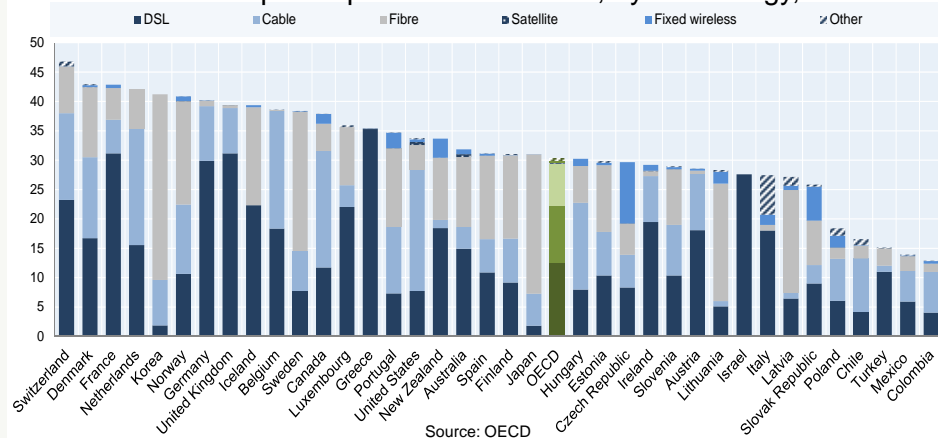
- Wireless is important, especially in remote areas.
- In developing countries, wireless is often the main means of achieving broadband.
- Is wireless a **complement** to the fixed network, or an **economic substitute**?
- Most of the traffic to mobile devices is in fact carried by Wi-Fi in most countries.

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Technological options used (fixed)



Fixed broadband subscriptions per 100 inhabitants, by technology, December 2017



Source: OECD

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Broadband deployment and national policies



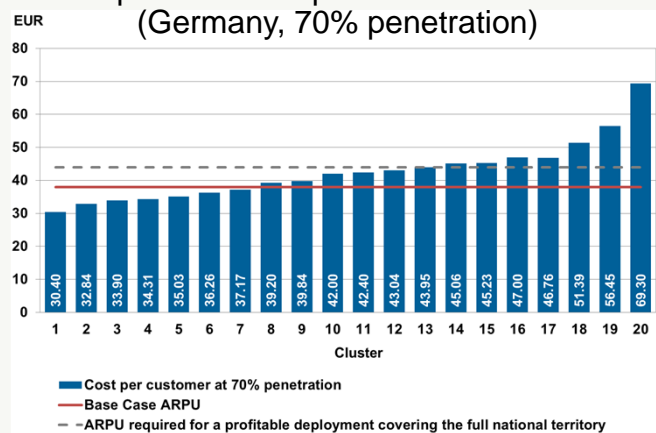
- Population density and dispersion
 - Topography: highlands and islands
 - Sub-loop length
 - Presence (or absence) of cable
 - Civil works considerations: availability of ducts and equivalents, practicality of aerial fibre
 - The degree to which the telecoms network has been built out
- These factors influence the economics of deployment, and thus not only the speed, but also the FTTCab/FTTH choice.

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Population density and dispersion



Cost and ARPU per customer per month for FTTH P2P Ethernet (Germany, 70% penetration)

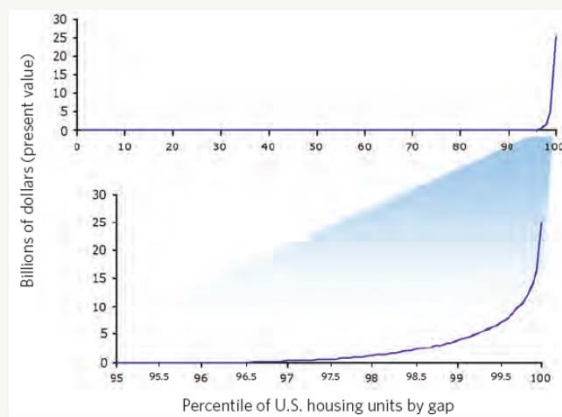


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The broadband funding gap: A large role for small number of remote locations



The broadband funding gap in the USA in 2010



Source: US NTIA, 2010

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Public policy to promote broadband: Many tools are available



- Measures tend to be different for:
 - Areas where facilities based competition is feasible.
 - Areas where incentives suffice for just a single deployment.
 - Areas where there is no business case at all for deployment.
- State subsidy and/or state ownership.
- Promotion of competition in national markets.
- Measures to ensure investment incentives for network operators (including co-investment and wholesale-only).
- Measures to reduce deployment cost (e.g. use of ducts, other infrastructure, sharing of infrastructure).
- Stimulation of demand!

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Digitalisation and the future of work

The impact of automation on workers

- Concerns that technological innovation leads to unemployment or poor work conditions are long-standing.
 - The Luddites (1811 – 1816)
 - Samuel Butler's *Erewhon* (1872)
 - Karel Capek's *Rossum's Universal Robots (R.U.R.)* (1921)
 - Fritz Lang's *Metropolis* (1927)
- John Maynard Keynes predicted widespread unemployment "due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour". (1933)
- In the nineteenth and early twentieth centuries, this was largely a matter of de-skilling jobs, creating assembly lines, mass production.
- Today, automation is driven by mainly by digitalisation.

How much unemployment to expect?

- Over time, AI, big data and machine learning might eliminate some jobs, but will also create new jobs.
- Most experts (e.g. Arntz et al, 2017) have now concluded that the actual level of unemployment to be expected as a consequence of digitalisation is nowhere near the 47% that Frey and Osborne (2017) predicted.
- Unemployment is actually *lower* today in EU regions that have seen the greatest deployment of robots and ICT.
- Meanwhile, wage polarisation is increasing.

Labour flexibility: New forms or work are emerging

- Many new forms of work have emerged recently.
- Nearly 10% of European adults have done platform work at least once.
- Examples include Uber drivers and Amazon Mechanical Turk (AMT).



Source: Eurofound (2018)

Labour flexibility: Not a new phenomenon

- These new forms of work are best understood as a further evolution of a long term tendency to *labour flexibility* (Atkinson (1984), Atkinson and Meander (1986)).
- Firms were gaining flexibility by using part-time employees, agency temporaries, and contractors.
- Job security, training and retention were important only for workers with high, firm-specific skills.

Labour flexibility: Motivation for firms

- Firms faced the need to deal with
 - Market volatility and uncertainty;
 - Rapid technological change; and
 - The need to increase productivity.
- The firms sought to deal with this by more flexibility in
 - The number of employees and of their hours worked;
 - The skills profile of the work force; and
 - Wages and benefits provided.
- Flexibility today can provide benefits to workers as well.

Social protection of non-traditional employees and the self-employed



In most countries, social protection to non-traditional workers and the self-employed are limited.

- Many benefits are conditioned on eligibility periods, or on a level of contributions over a period of years.
- As workers transition among different modes of work,
 - they may be unable to meet the eligibility periods, or
 - they may not accrue enough combined benefits if time from different forms of labour are not properly aggregated

Issues for public policy to address



- For traditional, non-traditional and the self-employed
 - Ensuring adequacy of benefits
 - Ensuring totalling up of benefits
 - Preserving benefits when the worker moves
- Avoiding misclassification of workers
- Re-thinking of social dialogue / trade unions
- Ensuring adequacy of funding
- Re-thinking education and training / lifelong learning