



Broadband spillovers and fibre investment

Copenhagen, Denmark
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Presentation based on
DSTI/ICCPISP(2009)2/FINAL:
Network developments in support of
innovation and user needs

H1N1 Pandemic: Schools closed

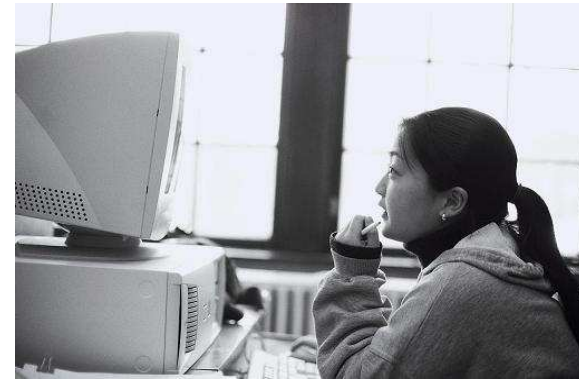


French Response

- **620 hours** of recorded courses
 - **90 days** worth of material
- TV Channels:
 - France 5
 - France Culture
- **Not available on web because of a lack of universal broadband**

What if everyone had broadband?

- Video of all class subjects distributed via peer-to-peer
- Lessons multi-casted from local teachers to local students
- Chat/Voice/Video interaction



Broadband can have significant positive impacts on education (adult learning, in remote areas, vocational education and interactive material for students, etc.)

Broadband: General purpose technology





So why fibre?

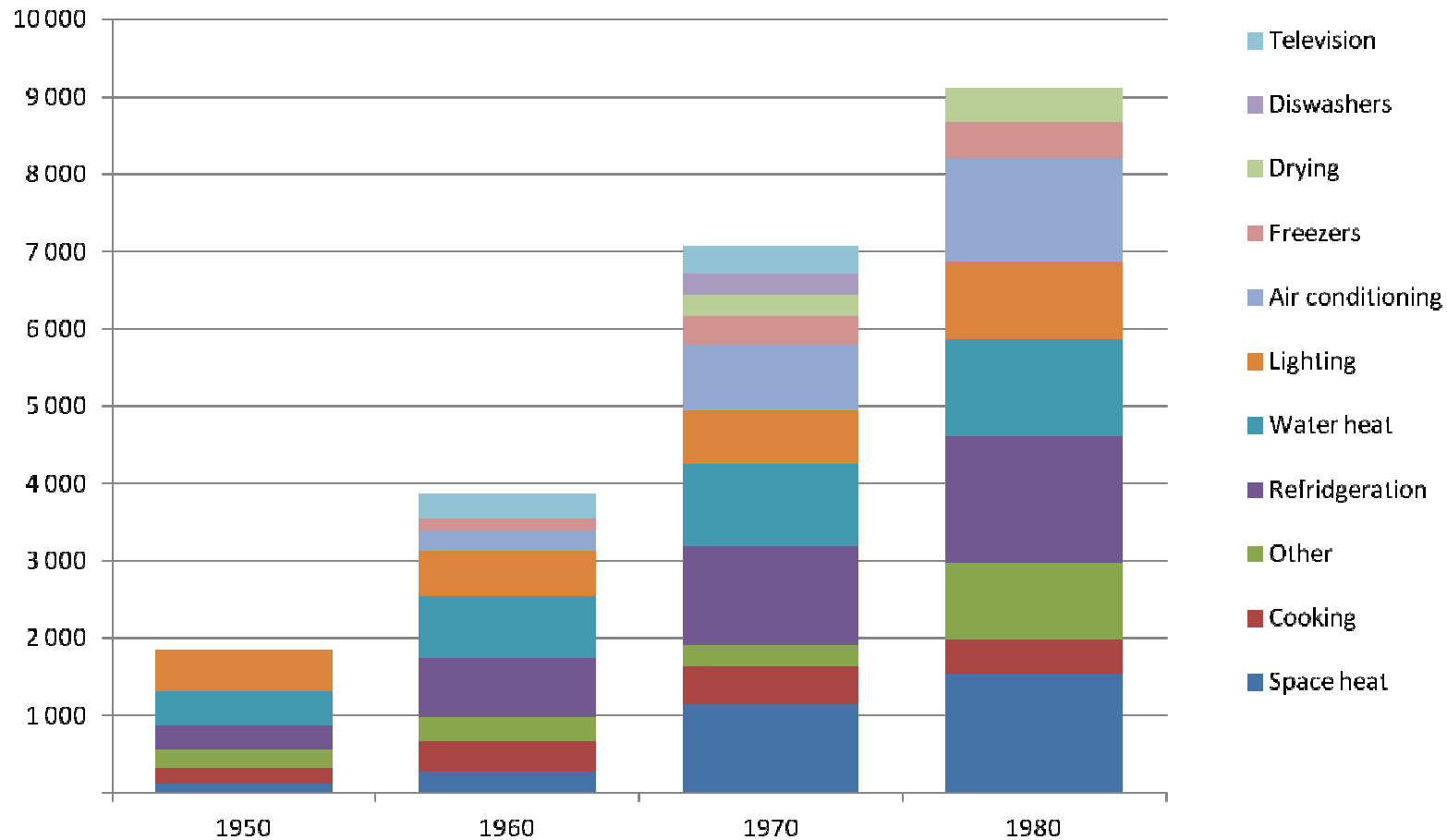
Looking ahead 50 years is difficult

Feb 1950
Popular Mechanics



Broadband: the *new* electricity?

Average US Residential Electricity Consumption by Category, kWh/customer



New electronic devices introduced after 1980





Could your network handle a future innovation like this?

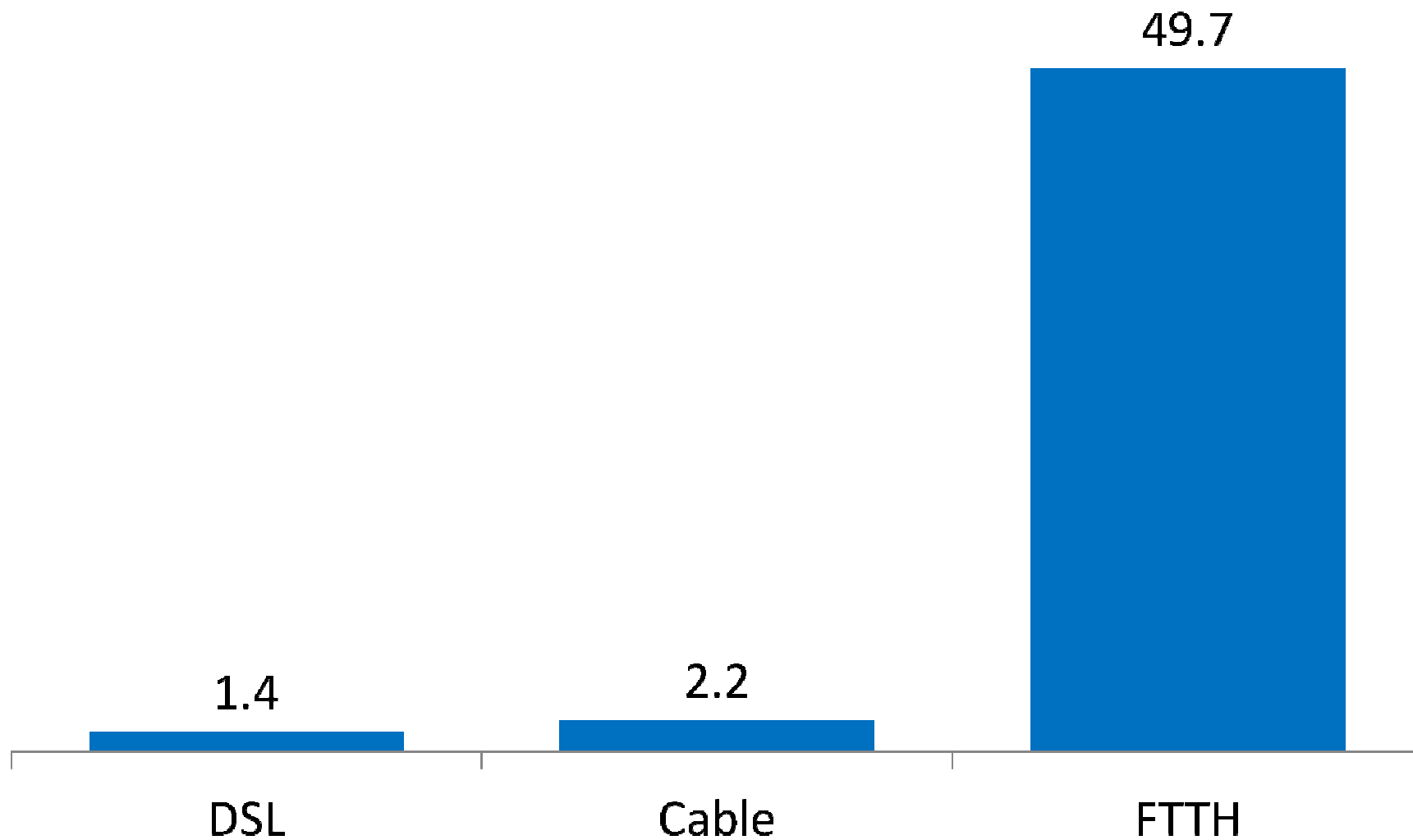


So why fibre?

- Because we can't predict the future so we need a future-proof platform
- Need to focus on developing a broadband platform which easily supports capacity upgrades to match bandwidth demand of new applications: [e.g. high-definition telepresence, telemedicine and remote surgery, HD TV, real-time data backup]

Upload bottlenecks

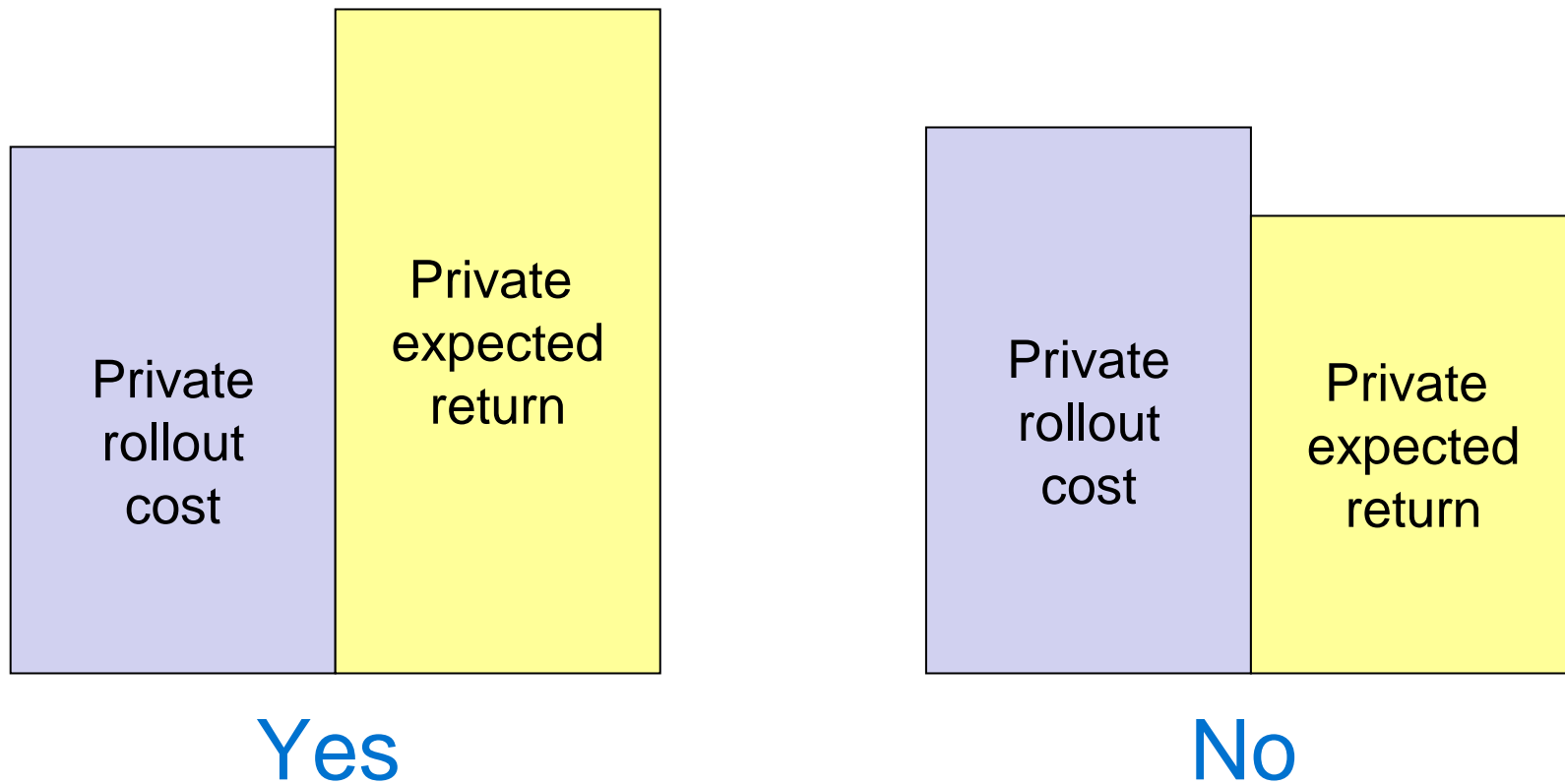
Average advertised **upload** speeds by platform in OECD countries
Mbit/s, Oct 2009



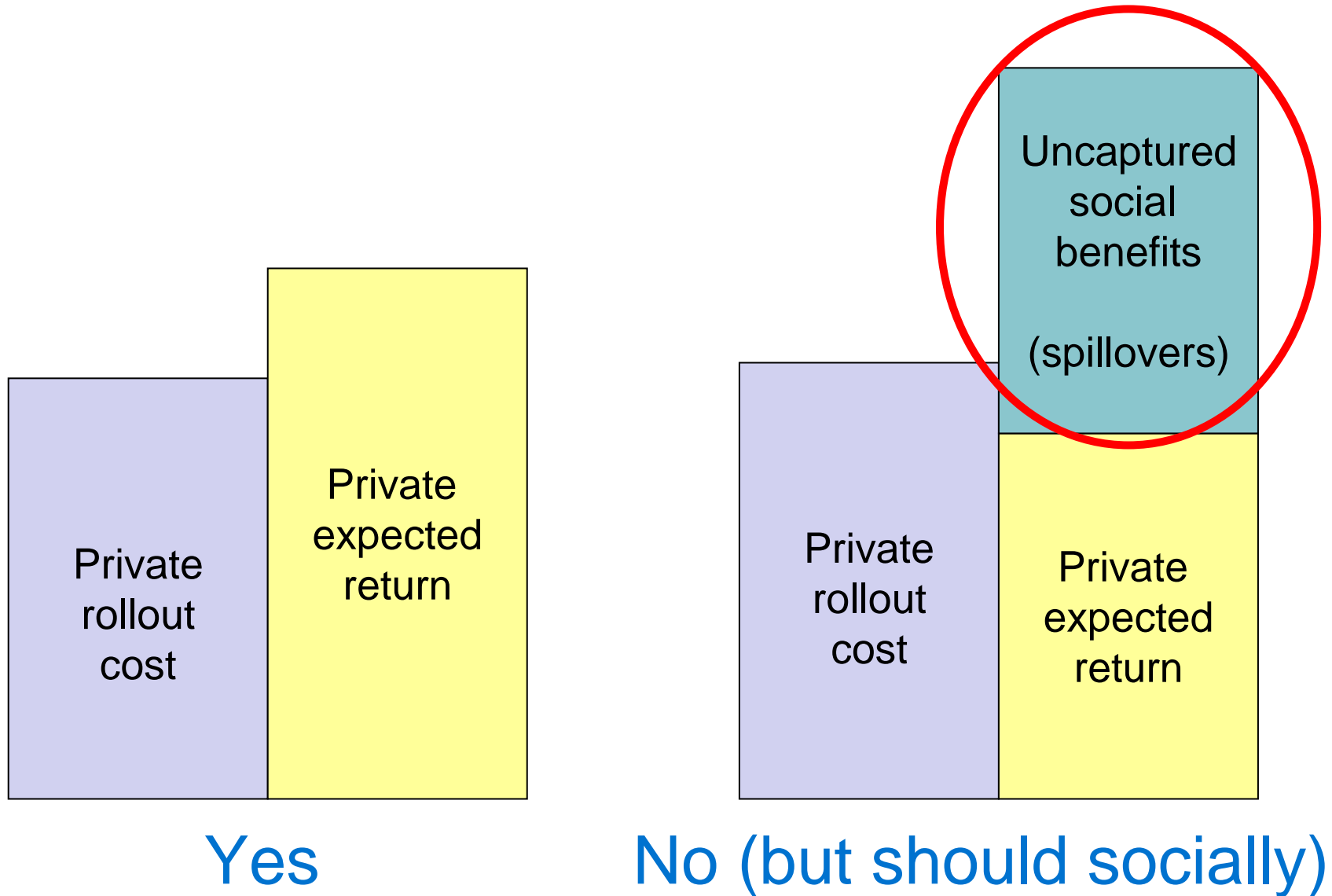


How will we get fibre?

Private investment decisions



Private investment decisions





What size of spillovers could justify a national FTTH network?

Spillover model

Buildout

- Rollout costs (3 options)
 - USD 1500, 2000, 2500 per h/h
- Which homes (2 options)
 - All homes, only subscribers
- Take-up rates: (3 options)
 - 25%, 50%, 75%
- Interest rate
 - 5%
- Payback period
 - 10 years

Payback

- Assumed payback was financed only by the unbundling fee paid by actual subscribers
- Unbundling charge
 - USD 14/month from all subscribers
- OPEX
 - USD 3/month for each active line
- What amount of spillovers in 4 key sectors would be needed to cover the difference?



Electricity



Transportation



Education



Health



0.5% – 1.5%

For OECD an average cost savings between 0.5% and 1.5% for the 4 sectors over 10 years resulting directly from a new broadband network platform could justify cost of building a national point-to-point, fibre-to-the-home network. *For Denmark required cost savings ranges from 0.6% to 1.2%.*

Goals for governments

Extending access



Fostering competition



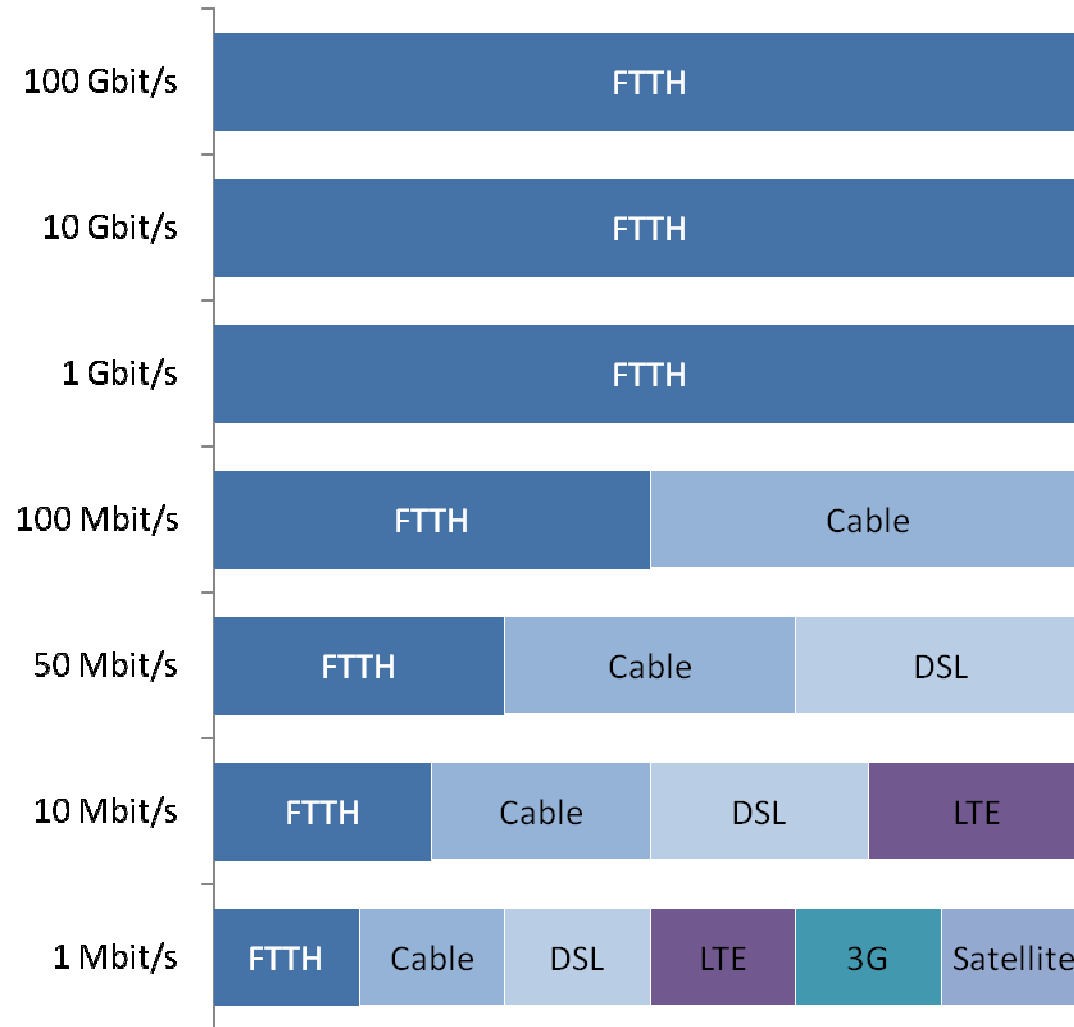
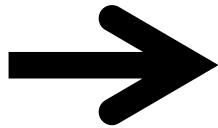
Open access



- When the **public pays** for broadband investment they **should expect to benefit** from improved service and greater choice in the market.
- Networks built or augmented using public funds should offer access or capacity to all market participants at cost-based, non-discriminatory terms

Technological neutrality

Selecting policy targets for speed already means selecting technologies



Conclusions

- Spillovers matter
- Private firms don't consider them
- Governments should

- New networks should be “forward looking”
- Fibre is the foundation of future networks

- Any government investment in networks should foster competition