Working Party on Communication Infrastructures and Services Policy

REPORT ON THE OECD WORKSHOP ON FIBRE INVESTMENT AND POLICY CHALLENGES

Stavanger, 10 - 11 April 2008

The Working Party is invited to note the outcome of the Workshop and discuss any follow-up.

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1. The OECD held joint workshop on Fibre Investment and Policy Challenges with the Norwegian Ministry of Transport and Communications and the Norwegian Ministry of Government Administration and Reform in Stavanger, Norway on 10-11 April 2008. The main findings and points to emerge from the workshop were:

- Fibre network topology will influence the level of competition in areas without multiple fibre-providers. Several experts explained why point-to-point dark fibre topologies with large aggregation points are best suited for unbundling and open access service provision.

- Infrastructure-based competition remains the best scenario but participants largely agreed that there would be many areas which could only support one (or no) fibre network economically. The high penetration rates necessary to recover costs means regulators may need to consider other options for introducing competition. Some operators said they needed a commitment for between 25 and 40% of homes to subscribe before they would consider installing a network.

- There was a general consensus that governments should be involved in promoting broadband to achieve social goals. Differences did emerge on the level of involvement which may be optimal. Most participants agreed that governments should work to improve access to ducts, poles and rights-of-way as a way to foster fibre rollout. The discussions also emphasised that government intervention should not displace properly functioning markets.

- Functional separation could be a tool for promoting competition but participants stressed that the high costs of implementing such a policy should leave it as a policy of last resort.

Meeting summary

2. The feedback received by the Secretariat has been extremely positive in respect to the importance of the topic, high quality of presentations, the relevance of discussions and the excellent local organisation and hosting by the Norwegian government. The workshop was also picked up by key press outlets and bloggers in the sector. All the presentations for the workshop are now available at: http://www.oecd.org/document/56/0,3343,en_2649_34225_40460600_1_1_1_1,00.html.

3. The workshop was opened by Erik LAHNSTEIN, State Secretary of the Norwegian Ministry of Transport and Communications. Mr. LAHNSTEIN highlighted the importance of broadband for the general development of the society and the need to have excellent connectivity to even the smallest communities. He emphasised how Norway is moving forward with fibre rollouts despite low population densities.

4. Mr Vince AFFLECK of OFCOM (UK) and the Chair of the OECD Working Party on Communication Infrastructures and Services Policy thanked the Norwegian hosts and introduced the idea of cycles of innovation and how next-generation access is a new iteration of the cycle.
5. Session 1 of the workshop was a presentation of technological developments geared to policymakers. The speakers were from Citynet Amsterdam, Carnegie Mellon University and Leoni and there were several key themes to emerge from the session. The speakers emphasised the importance of network topology. In particular, the location and size of aggregation points for fibre connections will be key issues for fostering competition. There was a general discussion about the limited number of infrastructure-based providers a market could support given the high penetration rates needed to recover rollout costs. Costs per subscriber are prohibitively high in low-penetration scenarios. That means that competition in many areas will need to be accommodated over physical fibre network. If this is the case, then point-to-point, dark-fibre networks offer the easiest path forward for unbundling if regulators decide to mandate it.

6. Another key discussion in the session was the importance of low latency. Much of the focus has been on bandwidth but latency is likely more important to end-consumers than the amount of bandwidth they have available at a given time. Finally, the speakers talked about the prices of rolling out networks. Access to ducts and conduit are extremely important as are locations for points of presence. Anything to reduce the costs of network installation (reducing the skill required by installers) will have a significant impact on the ability of operators to build networks.

7. Session 2 examined the demand for high-speed networks. Speakers in the session were from IBM, Cisco and ATT and highlighted the role of broadband networks in helping solve problems in other sectors. Using the environment as an example, high speed networks can help reduce energy consumption considerably. ICTs account for large amounts of energy use but one speaker suggested that they have a positive impact on environmental issues by a factor of 10:1. Teleconferencing was mentioned as a possible key use to save on carbon emissions. The speakers also spoke of the difficulties of predicting the future demands which will be placed on broadband networks. The analogy used was debating whether there would be a need for sound or colour in movies back in the silent film era.

8. There was also discussion regarding the installation costs of these networks, particularly when operators already have a large investment in the copper plant. All speakers spoke of television as a key driver of high-speed data networks but there was also concern expressed that the backhaul networks will not be able to support the services which are commonly used as justifications for fibre rollouts. In one example, backhaul networks may only have an average of 50 kbit/s allocated to each user. There was a discussion that pervasive broadband connectivity could become the “fourth utility” similar to water, electricity and gas.

9. Session 3 examined investment opportunities and challenges. The session included speakers from Verizon and BT and consultants from LogicaCMG and the Yankee Group. One of the key themes to emerge from the discussion was the cost of rolling out networks and whether this would inhibit infrastructure-based competition. There seemed to be a broad consensus that many areas would only have one wired fibre provider but disagreement over whether requiring operators to share their networks would decrease operator’s incentives to invest.

10. One of the speakers explained that while costs for fibre are higher than VDSL, maintenance costs are dramatically lower (as much as an 80% decline in trouble tickets). In addition, there is a need to look at the implications for businesses, not just residences, when considering fibre rollouts.

11. The final session on day one examined ways to reduce barriers to entry and in particular, ways to promote investment using passive infrastructure such as access to ducts, poles and rights-of-way. The session included presentations from Eckermann & Associates, Telecom Italia, the UK Broadband Stakeholders Group and the French regulator ARCEP. There was general consensus that any improvements in passive infrastructure access will help stimulate the rollout of fibre networks.
12. The second day began with a session looking at examples of fibre rollouts covering both large cities and smaller rural areas. The session was broken down by size of the network and there were presentations from Lyse Tele, Dansk Energi, Stoka and ETRI in Korea. One particular area of interest covered in the session was the role of energy companies in providing broadband access when municipalities may not be allowed. The operators each had different penetration thresholds for considering fibre investment. These ranged from initial commitments of 25 to 40%, although more subscribers joined during or after the initial rollouts. The penetration rate in small network rollouts is relatively high, particularly in areas with limited other broadband options and among households with teenagers.

13. The session also looked at several business models. Some were open access, others were not. In some cases the companies provided dark fibre on equal terms to all providers and other operators ran closed fibre networks. Another item to emerge was the role governments could play in helping “rate” broadband connections to apartment buildings through a certification program. This provides an incentive to building owners to compete partially on the quality of broadband connections when they look to attract buyers or renters.

14. Session 6 focused on ways to promote competition with fibre with regards to facilities-based competition, potential unbundling rules or functional separation. The session included speakers from the Norwegian Post and Telecommunications Authority, Ofcom in the United Kingdom, France Telecom and Tele2. The discussions focused on geographical regulation and the challenging balance between geographic segmentation and manageability. More geographically differentiated regions mean more targeted regulation but more complex management and operational costs for the regulator. Functional separation was another topic of discussion and most discussants agreed that it should be used as a last resort given the costs of implementing the policy. Finally, the participants focused on the role of ducts and rights of way and how competitive operators need access on equal terms to the incumbent in order to promote competition.

15. The final session of the workshop look at ways of stimulating next-generation network deployment with the goal of social inclusion and ways governments could promote fibre deployment in markets with different competitive situations. The session included speakers from the European Commission, the Ministry of Internal Affairs and Communications of Japan and Telefónica. The role of governments was a key element of discussion during the session. The participants highlighted the key role of governments, in particular municipalities, in coordinating installations, providing rights-of-way and aggregating demand. The discussants also expressed that governments needed to take care as to not distort competition. The session also looked at countries making significant progress with deployments. The Japanese example of ubiquitous broadband was put forward as an example. The Japanese government plans to have fibre broadband connections available to all households by 2010.

16. Another topic of discussion was network neutrality and its associated issues with competition. There seemed to be general agreement that some traffic prioritisation was beneficial to consumers as long as there were competitive safeguards in place to protect consumers from anti-competitive behaviour.

17. Mr Hugo PARR of the Norwegian Ministry of Government Administration and Reform closed the workshop highlighting the importance of the broadband access and the role of the OECD broadband recommendations. He discussed broadband rollouts in stages, with the final 5% of connections as the most expensive and difficult to supply but those which also need the most government support. His key points centred on the importance of sharing infrastructure, overcoming bottlenecks, the role of technology in reducing infrastructure building costs, allowing home owners to dig their own lines and the pros and cons of functional separation.
WORKSHOP AGENDA

DAY 1: Thursday, 10 April 2008

9:00 - 10:00 REGISTRATION

10:00 WELCOME:

Erik LAHNSTEIN, State Secretary, Minister of Transport and Communications, Norway

Vince AFFLECK, Chair, OECD Working Party on Communication Infrastructures and Services Policy & OFCOM

Chair: Vince AFFLECK, Chair, OECD Working Party on Communication Infrastructures and Services Policy & OFCOM

SESSION 1: Technological developments geared to policy makers

10:15 – 11.30 This session will provide an overview of technological developments in fibre networks geared to policy makers. Session participants will discuss the benefits and drawbacks of various network topologies and technologies along with their implications for markets.

• Herman WAGTER, Citynet Amsterdam
  FttH as a communication infrastructure: a primer

• Marvin SIRBU, Carnegie Mellon
  Topology – benefits and drawbacks

• Karl BAUER LEONI NBG Fiber Optics
  Installation – last mile and last meter challenges and issues

11.30 - 11.45 Coffee Break
**SESSION 2: Demand for high-bandwidth networks**

11.45 – 13.00    This session will examine how demand for high bandwidth is evolving, the future uses of networks, and whether subscribers need the speeds which will be offered. An increasing number of content suppliers are looking at offering streaming video, high-definition TV and other applications which require high bandwidth. There are also arguments put forward that subscriber demand is not sufficiently strong for high-bandwidth connections.

- **Kjell Arne Yttervik**, IBM  
  Evolution of video – Is fibre necessary?

- **Bas BOORSMA**, Cisco  
  Broadband and the Connected Urban Development experience

- **Richard CLARKE**, AT&T  
  VDSL as a broadband strategy

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13.00 – 14.15    Lunch

**SESSION 3: Investment opportunities and challenges**

14.15 – 16.00    This session will examine opportunities and challenges facing existing communication operators and new market entrants (e.g. utilities) as they work to expand fibre coverage. The session will evaluate situations where investment makes economic sense for private firms and other situations where governments may need to play a more active role. It will look at the track record of various public/private sector partnerships and attempt to find some effective recommendations.

- **Dennis WELLER**, Verizon  
  Fibre investment risks and rewards – an operator’s perspective

- **Rudolf VAN DER BERG**, LogicaCMG  
  Dig or wait: Is now the best time to roll out fibre?

- **Benoit FELTEN**, Yankee Group  
  Municipal fibre – an overview

- **Grant FORSYTH**, BT  
  How Telecoms Regulation Can Support Businesses

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16.00 – 16.15    Coffee Break
SESSION 4: Reducing barriers to entry

16.15 – 18:00 This session will help identify innovative ways to reduce barriers to fibre investment. The session will examine how governments can help promote investment through passive infrastructure such as access to ducts, poles and rights-of-way and inside wiring. The session will also examine other barriers, such as access to backhaul facilities and use of demand aggregation to overcome demand barriers.

- **Robin ECKERMANN**, Eckermann & Associates
  The Hard Yards and the Easy Yards in the Last Mile

- **Lorenzo PUPILLO**, Telecom Italia
  Duct and pole sharing – challenges and opportunities

- **Antony WALKER**, UK Broadband Stakeholders Group
  What levers are available to Governments to reduce barriers to fibre investment? A UK perspective

- **Bertrand VANDEPUTTE**, ARCEP
  Fibre in the last 100 metres- potential to share?

20.00 GALA DINNER
DAY 2: Friday, 11 April 2008

CHAIR: Ottar OSTNES, Director General, Ministry of Transport and Communications, Norway

SESSION 5:  Fibre rollout project examples
8.45 – 10.45: There are innovative fibre projects covering large cities as well as others in small rural areas. This session will look at projects of different sizes and also distinguish between projects in urban and rural areas. The goal of this session is to help policy makers identify best practices that relate directly to the type of geographic areas where they are promoting investment.

• Anders BRANDT, Lyse Tele
  Small scale

• Christian BERG, Dansk Energi
  Medium scale

• Annette LUNDBERG, Stokab
  Large scale

• Byung Tak LEE, ETRI, Korea
  National plans

10:45 - 11:00  Coffee Break

SESSION 6:  Promoting competition
11:00 – 13:00: The rollout of new fibre infrastructure may require a review of existing telecommunications regulation. This session will examine issues facing policy makers. First, the session will look at the extent that facilities-based competition, particularly in metropolitan areas, may be feasible. In addition the toolbox available to policy makers/regulators to promote fibre infrastructure deployment could be discussed (e.g. making it mandatory to install fibre in new buildings, sharing of ducts and installations in multi-dwelling units, etc). The session will also examine alternative methods under consideration in the OECD for fostering fibre competition such as extending unbundling requirements or functionally separating operators. Finally, the role of open access networks, particularly when government funds are involved, will be examined.

• Willy JENSEN, Norwegian Post and Telecommunications Authority
  The role of facilities-based competition with fibre

• Clive CARTER, OFCOM
  The unbundling and separation debates

• Vianney HENNES, France Telecom
  A broadband policy toolbox

• Mikael GRAPE, Tele2
  Safeguarding competition and consumer choice in the roll out of fibre (NGA)

13:00 - 14:00: Lunch Break

CHAIR: Dimitri YPSILANTI, OECD Secretariat
SESSION 7: Fibre and social inclusion

14:00 - 16:00: This session will assess how to stimulate next generation networks deployment and the role of alternate platforms in complementing fibre networks. The session will also outline government policy initiatives to stimulate demand for next generation access networks and policy options for promoting fibre deployment in markets with different competitive situations.

- Lucilla SIOLI, European Commission (DG INFSO)
  Fibre deployment and public funding

- Shigeo OKAMOTO, MIC Japan:
  Japan’s Strategy for the Nationwide Development of Broadband and FTTH

- Rafael DIEZ VEGA, Telefónica
  NGANs and the geographical segmentation of markets

CLOSING SESSION

16:00    Hugo PARR, Norwegian Ministry of Government Administration and Reform

18:00 – 20:30   SOCIAL EVENT: Boat Trip to the Lysefjord