

by Bill Melody

# Ultra-fast broadband in Europe: Platform for resurgence of the incumbents

## Progress toward the EC Digital Agenda targets

Universal access to “fast and ultra-fast” broadband to support the European Commission’s Digital Agenda is the new long range (up to 2020) EU policy intended to establish seamless European markets in digital products, services and applications. It is claimed this will make Europe a world leader in the highly competitive global information age economy. Grand goals have been announced by the EC, with the Member States requested to develop national broadband plans that meet the coverage, speed and take-up targets defined in the Digital Agenda for Europe (EC, 2010).

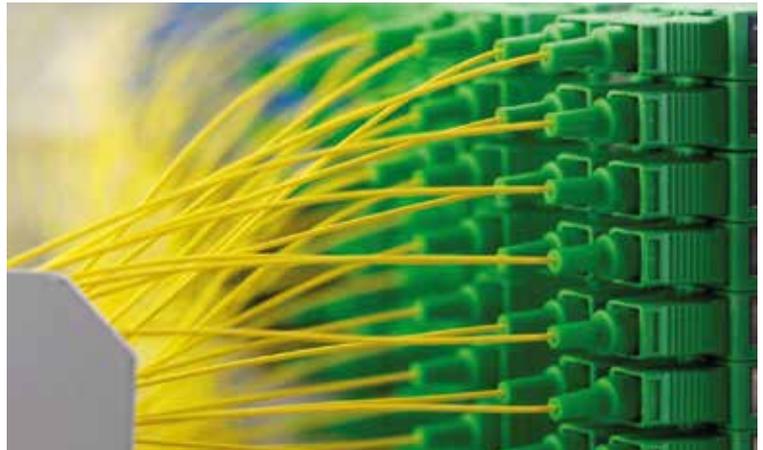
The EC states that to keep up with the global leaders, South Korea and Japan, Europe needs Internet connections with download speeds of at least 30 Mbps for all households and 100 Mbps for at least 50 per cent of households subscribing to Internet connections by 2020. Mobile networks should meet the target of 100 per cent coverage of 30 Mbps broadband by 2020, but only fixed networks can be expected to reach the 100 Mbps target. These Digital Agenda targets will be achieved by stimulating investments in broadband infrastructure and next-generation digital access networks. However, the telecom sector has been pretty slow out of the starting blocks.

So far progress has not been nearly rapid enough to reach the desired targets. The EC claims that by 2013 the entire EU population is expected to have access to some form of broadband service, and there will be almost 50 per cent coverage with 30 Mbps access. But only 8.5 per cent of fixed lines are capable of delivering speeds of 30 Mbps or higher, and coverage with 100 Mbps is marginal. The main reason is that most broadband is provided using 3G mobile technology, and most fixed network broadband is supplied over the copper network infrastructure of incumbent operators, neither of which has, nor is expected to have the technical capability of providing ultra-fast broadband in time to meet the EC targets (EC, 2010).

The broadband success to date in Europe has been driven primarily by smartphones and related mobile handset developments. Mobile broadband penetration in Europe passed fixed network penetration in 2008, and by 2011 had almost twice as many subscribers, with 43 per 100 people. Fixed network broadband penetration was 27.7. At the end of 2011, 75.6 per cent of fixed broadband subscriptions were provided with ADSL over copper networks. Only 3.5 per cent were provided over fibre networks (FTTx) and only 1.2 per cent over fibre to the home (FTTH/B) connections. Of the FTTH/B homes passed, 30 per

cent were provided by incumbent operators and 70 per cent by competitive operators, municipalities and other public organizations. Thus, only 0.36% of fixed broadband subscriptions were provided by incumbents over fibre networks, despite being the overwhelmingly dominant providers of telecom infrastructure (ETNO, 2012).

Although 4G and other advanced mobile networks are expected to play an important role, the prime technology for providing the desired ultra-fast broadband infrastructure enabling next-generation digital access is fibre because it is the only technology seen as being capable of providing 100 Mb/s to the home. The investment the EC is promoting most heavily is in fibre networks but, while essential to meet the 2020 Digital Agenda broadband objectives, the rate of investment is embarrassingly slow. A major challenge for the EC is fashioning policies to stimulate the needed investment in ultra-fast broadband fibre network infrastructure capable of delivering 30-100 Mbps to the home.



## Stimulating Network Investment: 2012-20

### EU Policy 1987-2012: Market Liberalization

Since the Green Paper in 1987 began the telecom reform process in Europe, a central theme of the evolving policies and programmes has been providing new opportunities for competition in the formerly monopolized national telecom markets. Enhancing competition has been the prime vehicle for stimulating market development, efficiency, innovation and new investment.

The first wave of liberalization reform focused on the introduction of competition into the telecom sector, and the second wave into the converged ICT sector, providing the enhanced infrastructure for the Internet. The current third wave of reform, the Digital Agenda, is focused on establishing a further upgraded European telecom/ICT/Internet infrastructure as the foundation for driving economic growth in the new digital economy and information society (Melody, 2013b).

The original objective of liberalising access to national markets as a step to establishing competitive European single markets in telecom network provision and services

remains unfulfilled, as neither fully competitive markets nor European single markets have been achieved. The EC sector review that led to the Digital Agenda notes that although competition had grown in some markets and countries, it had not done so in many others. The European market is still largely fragmented, with few operators offering services across several Member States. The review concludes, as did past reviews, that, “the revised rules would focus regulation on those market sectors where competition is still lacking, and develop stronger EU-level regulation to foster the development of the internal market” (EU, 2012).

### European Industry Structure in 2012

New initiatives to strengthen competition and regulation, and stimulate investment in ultra-fast broadband across Europe must be developed from an understanding of the current industry structure and the incentives for the market players to invest. The main types of players are fixed network incumbents, established and potential competitors, and government agencies.

During the first and second waves of reform, the entry of competitors brought new investment. It also stimulated incumbents to invest

more than they would have without a realistic threat of competition. Both competitors and incumbents paid more attention to market development and took greater risks in promoting it, demonstrating a basic principle of market economics. Incumbents also took defensive economic and political steps to restrict and delay the growth of competitors, making it more difficult and risky for them to climb the ladder of investment, thereby reducing the level of investment from what it would have been in an effectively competitive market. Government subsidies supported investment in network extensions to provide universal access to essential services.

For the ultra-fast broadband infrastructure, it is already clear that government subsidies and public investment will play a much greater role than they have in the first two waves of telecom reform in Europe. The EC has proposed a budget of €9.2bn for broadband investment from the Connect Europe Facility in the Multiannual Financial Framework for 2014-20. The national broadband plans required by the EC to meet the rollout targets of the Digital Agenda all contain significant universal access broadband subsidies.

For example, the UK government set aside £530 million as part of its 2010 spending review to fund the rollout of high speed broadband to rural areas, plus £150 million in 'super-connected cities' and £150 million to improve mobile coverage (DCMS, 2013). There will also be government initiatives at the local level in many countries.

The criteria used to allocate these very large public investments to the operators that will build these network extensions will play a fundamental role both in shaping the future structure of the industry and its markets. They provide an enormous opportunity to enhance significantly the role of competition and finally achieve the goal of competitive European markets; or they could be the vehicle for the resurgence of the incumbents in their respective national markets and the retrenchment of their monopoly power. A closer look at the incentives of the other players is in order.

Incumbents still have significant market power in most major markets. National telecom regulation varies significantly across countries. It is weak in many countries, and regulations are not applied evenly or consistently. As former national champions, incumbent operators still exercise significant political influence. Competition has a noticeable presence in national markets, but few markets qualify as effectively competitive. Incumbent monopoly power reduces the competitive threat that would stimulate

incumbents to move beyond their comfort zone and take the higher risk of longer term investment in fibre. At the same time, it increases the risk for competitors and potential new investors to do so. As a result, the current industry structure does not foster investment in longer-term capital-intensive fixed broadband infrastructure.<sup>1</sup>

### Network Competition: Copper v. Fibre Infrastructure

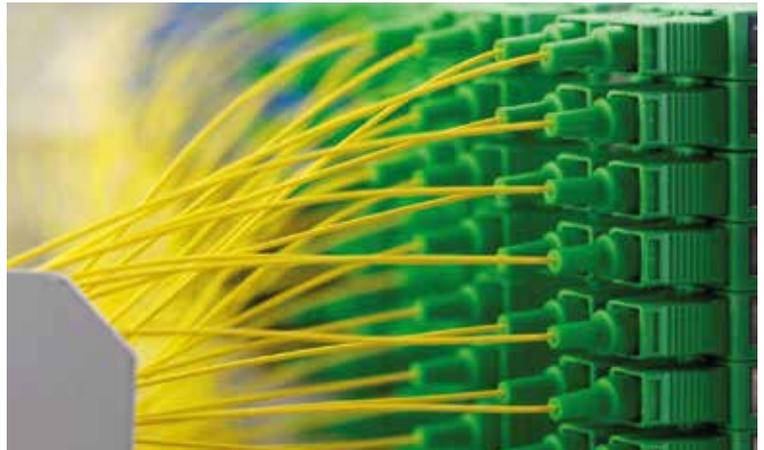
The most important factor influencing the incentive to invest in fibre network infrastructure is the copper infrastructure, the most important element of competition between incumbents and competitors. The copper infrastructure is a long-term, capital-intensive investment in a fixed asset-specific resource that has already been made. It is characterized by significant economies of scale and scope, and is the foundation of the revenue flows and market dominance of the incumbents. Its capabilities for higher capacity services continue to increase even though these are less than some services and users require (Melody, 2012).

The proportion of Internet services and customers that cannot be provided over the copper infrastructure is at present relatively small compared to those it can provide, and most competitors must use incumbent local networks to reach their customers. Moreover, competitors cannot provide these advanced services without incurring very large investments in alternative infrastructure (mostly fibre). Such investments carry high risks associated both with the growth of uncertain demand and the defensive reaction of the incumbents now dominating the market.

For incumbents, an enormous investment in fibre infrastructure would add only a small gain in revenues from the advanced network services. At the same time it would render obsolete their copper networks and all the advantages they provide. Financial calculations comparing copper and fibre networks must consider copper as an almost free network as the investment has been sunk, it is location specific and it has no good alternative uses.

---

<sup>1</sup>The mobile sector is characterized by stronger competition and long-term network investments that are less-capital intensive and for shorter periods. But even with advanced technologies such as 4G, the allocation of additional frequencies and improvements in spectrum management, mobile is seen only as a significant player in providing capacity up to the 30 Mbps Digital Agenda target, not the 100 Mbps target.



It will be more profitable to make incremental investments to improve the capacity of the copper network until the anticipated revenues from advanced services that cannot be provided over copper justify the very high investment required for an advanced fibre network. Moreover, this principle should be applied on a block by block, not a universal, basis.

In the meantime incumbents have a powerful incentive to raise the barriers and risks to other parties that may consider investing in fibre, thereby extending the profitable lifetime of the copper infrastructure and their dominant market position. This is why incumbents have shown little interest in fibre investment. This can even make it financially justifiable in some circumstances for incumbents to buy a partially developed fibre network developed by others and not develop it further.<sup>2</sup> The bottom line is incumbents are financially required to preserve the financial viability of the copper network and delay as long as possible major investments in fibre infrastructure.

<sup>2</sup>For example, the Danish incumbent TDC purchased the fibre network from Dong Energy and has not developed it further.

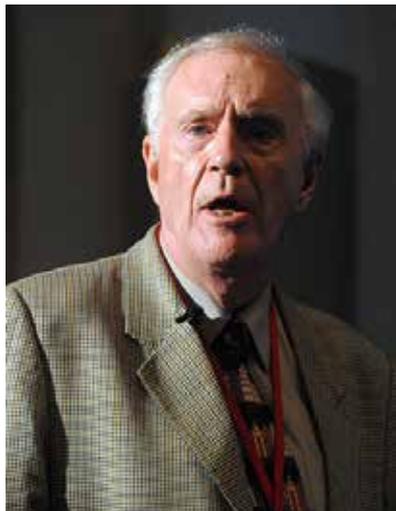
It is only competitors without significant past investments in capital-intensive, asset-specific infrastructure that can consider the revenues from all the services to be supplied over a new fibre network when assessing the financeable viability of such an investment. They are the champions of fibre in the copper versus fibre competition. For them the major risks are the uncertain growth rate of advanced services, competition for those services that can be provided over the copper network, and the threat of anti-competitive activity by the dominant incumbents.

New investment from competitors generally is prepared to assume higher market risk than would the established dominant firms. It seems clear that if the EC targets for ultra-fast broadband rollout by 2020 are to be met, it will be because of investment by competitors, including new players and new investors, and government agencies.

### The Digital Agenda Broadband Investment Plan: Coaxing Incumbents

Although the Digital Agenda programme included the usual rhetoric about the EC commitment to further strengthening competition and regulation, it provided no significant new pro-competitive initiatives. The replacement of the European Regulators Group (ERG) with a now 27 country member Body of European Regulators for Electronic Communications (BEREC) with a remit to facilitate national implementation of EC Directives and to advise on EC policy and programme proposals introduces no new substantive changes, other than the movement of the head office from Brussels to Riga, Latvia. Its first major task is to assess which telecom markets can be released from regulation and which require continuing regulation (BEREC, 2013).

The obvious deficiency of investment in the rollout of ultra-fast broadband infrastructure has prompted two major responses from Neelie Kroes, the European commissioner for the Digital Agenda, both focused on the failure of incumbents to take up the investment challenge.



Initially she threatened to impose direct regulation reducing wholesale rates that incumbents charge competitors for access to customers. Such a change would be inconsequential with respect to the incumbents' copper versus fibre financial comparison, although it could help some competitors climb a rung on the ladder of investment.

More recently the commissioner changed her approach. On 5 December 2012 the EC issued a proposal intended to strengthen national regulation by providing more specific direction on cost calculations for incumbent wholesale services, as well as increased pricing flexibility and new opportunities to charge higher wholesale prices to competitors (EC, 2011). Although incumbents like these proposals, they too are inconsequential with respect to their fundamental infrastructure investment decisions. However, it would make it more difficult for competitors to climb the ladder of investment.

Tinkering at the margins of wholesale price determinations cannot provide a significant stimulus for expanded investment in fibre infrastructure. The very modest current level of investment in fibre has been provided by the competitors and public agencies. The most notable recent development is that incumbents have won virtually all of the public sector subsidy awards for infrastructure investment. On the present trend public sector investment in broadband

infrastructure will be the platform for the resurgence of the monopoly power of the incumbents in their national markets, without committing significant amounts of their own capital.

Although the commitments of public funds to help meet the ultra-fast broadband 2020 targets is extensive, it will be far from sufficient if their allocation to incumbents simply increases incumbent monopoly power, as this will reduce private investment both from incumbents and competitors. If the targets are to be met, the Digital Agenda programme must adopt significant initiatives to leverage public investment commitments to enhance competition and stimulate new private investment (Melody, 2013a). Attempting to coax the incumbents with small favours to lead the ultra-fast broadband initiative cannot succeed, and it will create new barriers to competition and the development of a European common market in digital services.

---

William H Melody is Guest Professor, Center for Media and IT (CMI), Aalborg University Copenhagen.

## Bibliography

BEREC. (2013). *Body of European Regulators for Electronic Communications*. Retrieved January 24, 2013, from Body of European Regulators for Electronic Communications: <http://berec.europa.eu/>  
DCMS. (2013). *Broadband Delivery UK*. Retrieved January 24, 2013, from Department for Culture, Media and Sport: [http://www.culture.gov.uk/what\\_we\\_do/](http://www.culture.gov.uk/what_we_do/)

telecommunications\_and\_online/7763.aspx  
EC. (2010). *Communication on European broadband: Investing in digitally driven growth*. COM(2010) 472 final. Brussels: European Commission.  
EC. (2010). *Digital Agenda for Europe*. Retrieved January 24, 2013, from European Commission: [http://ec.europa.eu/information\\_society/digital-agenda/index\\_en.htm](http://ec.europa.eu/information_society/digital-agenda/index_en.htm)  
EC. (2011). *Digital Agenda for Europe: Annual Progress Report 2011*. Retrieved January 24, 2013, from European Commission: [http://ec.europa.eu/information\\_society/newsroom/cf/itemdetail.cfm?item\\_id=7699](http://ec.europa.eu/information_society/newsroom/cf/itemdetail.cfm?item_id=7699)  
ETNO. (2012). *Annual economic report 2012*. Brussels: European Telecommunications Network Operators' Association.  
EU. (2012). *Amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access and interconnection, and 2002/20/EC on the authorisation of electronic communications networks and services*. Brussels: European Union.  
Melody, W. H. (2012). The closing of the liberalization era in European telecommunication. *Competition and Regulation in Network Industries*, 13(3), 218-235.  
Melody, W. H. (2013a, January 17). *Missed opportunities on the Digital Agenda*. Retrieved January 24, 2013, from European Voice: <http://www.europeanvoice.com/article/imported/missed-opportunities-on-the-digital-agenda/76186.aspx>  
Melody, W. H. (2013b). Moving beyond liberalization: stumbling toward a new European ICT policy framework. *info*, 15(2), forthcoming.