DOI: 10.1007/s10272-012-0430-y

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Telco Business Models at a Crossroads

Towards New Ways of Financing Super-fast Broadband

The goals of the Digital Agenda for Europe are far from being achieved, and the measures taken so far have not proven to be sufficiently effective in order to attain European infrastructure and investment targets in a timely manner. Without adequate investment in telecommunications infrastructure, Europe will lose competitiveness compared to the digitally better-equipped world. This article proposes new funding opportunities as well as a number of policy measures to foster investment in electronic communications infrastructure in order to encourage digital modernisation and thus to enhance the EU's international competitiveness.

As several studies have shown, next generation access (NGA) infrastructure is of central importance to economic growth.[1] Likewise, the Committee on Industry, Research and Energy of the European Parliament attests that "new high-speed networks and services are needed to foster the EU's international competitiveness".[2] Despite the awareness of the importance of high-speed internet, Europe lags behind in terms of NGA penetration in comparison with the world leaders in Asia, mainly South Korea and Japan. In 2011, around 4.1 million European households had subscriptions to either fibre-to-the-home (FTTH) or fibre-to-the-building (FTTB) services, a penetration rate of only 2%.[3] Without adequate investment in telecommunications infrastructure, Europe will lose competitiveness compared to the digitally better-equipped world. In any discussion of new policies for NGA development, this is a risk we always have to bear in mind.

In order to build up NGA infrastructure, investing firms – mostly telcos – are confronted with significant capital outlays, uncertainty and high technological and economic risks. In particular, the long amortisation periods (20 to 25 years) associated with NGA impede investments in new infrastructure. For individual publicly listed firms, this problem is even more severe, as they need to bear in mind short-term profits and the corresponding dividends for their shareholders. In addition, stiff competition in most European telecom markets is making capital expenditure on these investments more and more difficult. This situation has brought the traditional telco business model to a crossroads and opened a debate on new ways of financing NGA investments.

The huge investments required in order to reach the goals of the European Commission's Digital Agenda can hardly be handled by individual firms. Thus far, the EC has had only limited success in promoting NGA deployment in a satisfactory way. The €1 billion in funding earmarked for broadband in the European Economic Recovery Plan has not been allocated, as the EP reports.[4] One new initiative in this regard is an announcement by EU Commissioner Neelie Kroes that "9.2 billion euros would be set aside for broadband and digital service infrastructure".[5] This mon-

1 L. Röller, L. Waverman: Telecommunications Infrastructure and Economic Development: A Simultaneous Approach, in: American Economic Review, Vol. 91, No. 4, 2001, pp. 909-923; R. Crandall, W. Lehr, R. Litan: The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data, in: Issues in Economic Policy, No. 6, 2007; N. Czernich, O. Falck, T. Kretschmer, L. Woessmann: Broadband Infrastructure and Economic Growth, in: The Economic Journal, Vol. 121, Issue 552, 2011, pp. 505–532, find evidence for the positive impact of broadband deployment on employment, productivity and economic growth.

2 European Parliament: Report on European broadband: investing in digitally driven growth, Committee on Industry, Research and Energy, 2011, p. 9.

3 Japan and South Korea, by comparison, boast penetration rates of more than 30%; See http://www.ftthcouncil.eu/documents/Presentations/20110927BBWFPRESSCONFERENCE_FULL.pdf; Eurostat.

Georg Serentschy, Body of European Regulators for Electronic Communications (BEREC), Riga, Latvia.

4 European Parliament, op. cit., p. 10.

5 N. Kroes: Connecting Europe Facility – Broadband and digital infrastructure services, spreech delivered on 19 October 2011, Warsaw, Poland, http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/689&language=en.

ey must be allocated immediately, as too much time has already passed without taking significant steps towards achieving the EC's aims. In the Commission's opinion, this spending could leverage amounts of €50 to €100 billion in public and private investment, filling a large part of the €270 billion financing gap in order to meet the Digital Agenda's targets regarding broadband.[6]

So far, national or local initiatives have provided best practice examples for NGA deployment. In Lithuania – the country with the largest number of FTTH/B homes in relative terms as of June 2011 – the incumbent operator as well as a publicly subsidised initiative to cover rural areas were the main drivers of progress in NGA deployment.[7] The Finnish government's "Broadband 2015" initiative aims to provide 99% of the Finnish population with high-speed internet connections by the end of 2015. In order to achieve this goal, the government plans to fund investment projects to the tune of €66 million between 2009 and 2015.[8] What if other European countries followed these examples? The goals of the Digital Agenda would not be as far away as they seem today.

"Digital modernisation is the key to overcoming the economic crisis, creating growth and more jobs," says Danuta Hübner, MEP and Chairwoman of the Regional Development Committee in the European Parliament.[9] There is nothing to add to this statement. Still, there is a substantial gap between that insight and realising the necessary measures to make these promises come true.

The question arises as to why the EU has not engaged in financing NGA infrastructure in such a way as to keep up with the world's leading NGA countries in Asia. In addition to increasing the engagement of the European authorities in this respect, it is necessary to find new methods of financing NGA infrastructure in order to reach the goals of the Digital Agenda. In what follows, we attempt to identify some approaches which might be considered in the given context.

New Funding Opportunities

Infrastructure Funds

Infrastructure funds are an emerging form of financial investment. In contrast to traditional equity funds, infrastructure funds comprise shares in specific infrastructure projects instead of shares in companies. In recent years, infrastructure funds have become a popular alternative to traditional investment activities, as the former bring about relatively secure, stable and inflation-proof returns. This development is expected to strengthen, since other forms of investment such as government bonds have become less attractive during the current crisis.

Moreover, as they mainly invest in regulated industries (e.g. energy, water and gas utilities; ports and airports; railways and the telecommunications industry), infrastructure funds can profit from protected market positions. However, this also implies that they are highly dependent on political and regulatory stability in the target countries. Furthermore, such investments have only one specific type of use and thus involve a large share of sunk costs. Together, these two factors represent the main risk involved in infrastructure funds, as they need to rely on certainty of the completion of the infrastructure project.

So far, infrastructure funds have not focused on NGA networks. This might be attributed to higher risks compared to other industries, specifically:

- Unclear consumer demand for high bandwidths;
- Technological uncertainties, such as technical advances in wireless networks which could substitute for wired technologies, etc.;
- Uncertain (speed of) development of new services for high-speed internet.

On the other hand, there are facts that militate in favour of infrastructure funds' engagement in NGA infrastructure (in Europe):

- The EC's commitment to fostering NGA deployment (Digital Agenda);
- The length of amortisation periods for investments in NGA infrastructure matches the needs of large investors, such as pension funds;
- The investments are relatively inflation-proof;
- The investment alternatives are relatively unattractive.

Pension Plans

The shift of pension schemes from mainly pure, unfunded pay-as-you-go systems towards private, funded defined contribution (DC) or defined benefit (DB) systems in many European countries has given rise to pension funds which are responsible for investing huge amounts of money for their clients. Figure 1 shows the growth in pen-

6 Ibid.
7 See http://www.itu.int/ITU-D/treg/Documentation/ITU-NGN09.pdf.
8 See http://www.telegeography.com/products/commsupdate/articles/2012/02/09/ficora-hands-out-first-round-of-funding-for-regional-broadband-project.
9 See http://www.eppgroup.eu/press/showpr.asp?prcontroldoctypeid=1&prcontrolid=10948&prcontentid=18359&prcontentlg=en.

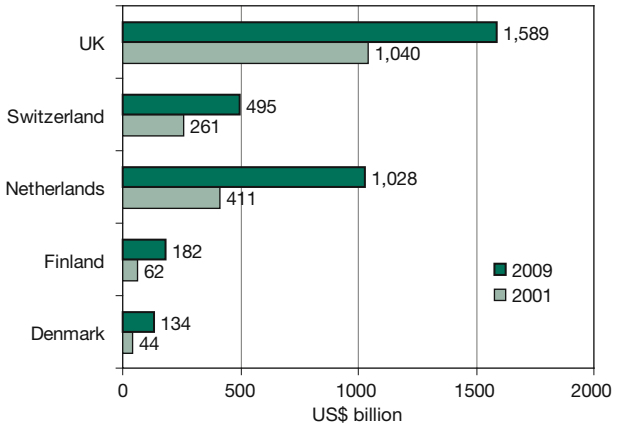
sion funds' assets from 2001 to 2009, providing evidence that an increasing amount of capital might be available for infrastructure investment. However, these funds have mainly targeted equities and bonds in recent years. Today, less than 1% of pension funds' assets worldwide are invested in infrastructure,[10] and an even smaller amount is invested in telecommunications networks.

There are various general barriers to investment in infrastructure by pension funds, including a lack of political commitment over the long term.[11] One of the most severe problems so far is the scale of pension funds. Due to fragmentation within and among countries, there are only a few pension funds which can invest directly in infrastructure. Smaller pension funds have to invest indirectly via infrastructure funds, if at all, and the substantial additional management costs involved[12] render the pension funds' investments unprofitable. Moreover, direct infrastructure investment involves a steep learning curve, thus creating an obstacle for pension fund managers seeking to engage in direct investment.

Given the growing assets of pension funds as shown in Figure 1, the scope of these problems will diminish in the coming years. Furthermore, in light of the increasing risk associated with government bonds, pension fund managers will begin to focus more heavily on infrastructure investment.

Even today, there are already pension funds which are large enough to invest directly in infrastructure funds. For example, the second-largest state-owned fund in the world, the Norway Government Pension Fund (NGPF), invests in infrastructure "such as electricity, gas and water supply, toll-financed roads, airports and telecommunications".[13] It adds that "economies of scale in asset management ensure that the Fund can maintain a low level of costs compared to other investors. As a result, the Fund can secure profitability in investments which are not profitable for others".[14]

Figure 1
Evolution of European Pension Assets, 2001-2009



Source: OECD: Pension Funds Investment in Infrastructure – A Survey, International Futures Programme, 2011, p. 127.

Another example is the Ontario Teachers' Pension Plan, which has engaged in infrastructure investments since 2001. The fund's infrastructure investments (in combination with timberland investment) totalled $9.3 billion at the end of 2010, approximately ten per cent of the fund's overall assets. The fund has invested directly in several infrastructure projects, such as airports, ports, power generation and distribution. Its aim is to find investment opportunities that "have a long economic life and offer low-risk, reliable returns linked to inflation in order to help pay pensions for decades".[15]

Korea's National Pension Service allocated 37.2% of its total alternative funds to infrastructure investment in 2008. This was mainly in domestic core infrastructure such as highways, airports and social infrastructure projects.[16]

Within the European Union, no major pension funds have invested directly in telecommunications projects. However, there are some funds which invest in infrastructure projects, mainly renewables and energy transmission:

- The Dutch Pension Fund PGGM administers €100 billion in pension assets, including those of Stichting Pensioenfonds Zorg en Welzijn (PFZW), which invests 1.5% of its assets in infrastructure and has defined a future target of 3.5%. Since 2009, the fund has focused more on direct investments, mainly in renewables and emerging markets.

10 OECD: Pension Funds Investment in Infrastructure – A Survey, International Futures Programme, 2011, p. 16.
11 Ibid., p. 24.
12 For example, Macquarie, one of the largest infrastructure fund companies in the world, typically charges a premium of around 5% (see http://www.novainvest.at/files/Macquarie8_Flyer.pdf, http://www.fondsprofessionell.de/upload/attach/171976.pdf). This amount can be assumed to be slightly lower for pension funds due to their high investment volumes.
13 See http://www.regjeringen.no/en/dep/fin/Documents-and-publications/propositions-and-reports/Reports-to-the-Storting/2010-2011/report-no-15-/2/3/3.html?id=644654.
14 See http://www.regjeringen.no/en/dep/fin/Documents-and-publications/propositions-and-reports/Reports-to-the-Storting/2010-2011/report-no-15-/2/2/5.html?id=644647.
15 Source: http://www.otpp.com/.
16 OECD, op. cit., p. 152.

- In 2010, the Dutch APG Group managed assets of €272 billion, including €237 billion belonging to ABP, the largest Dutch pension fund. Since 2004, APG has been investing in infrastructure with a target of 2% of total assets. In 2006, APG also began to invest directly in infrastructure projects.

- The British University Superannuation Scheme (USS) had invested GBP 797 million (€958 million) in infrastructure as of March 2010. The fund mainly invests in unlisted infrastructure funds but also considers direct investments.[17]

There are various potential reasons why pension funds will invest in telecommunications infrastructure in the future. Due to stable, expectable cash flows, infrastructure investment "can offer opportunities for protection against inflation".[18] Additionally, the time horizon of pension funds' investments in infrastructure is well matched to the pay-offs for the funds. The NGPF, for example, sees a "low risk of large withdrawals from the Fund by the owner in the short term" and "a very long time horizon",[19] which are similar properties for most pension funds. Furthermore, the further shift from pay-as-you-go systems to capitalised schemes will facilitate direct investments by pension funds.

Sponsoring Bodies

Besides occupational pension schemes and the rising importance of infrastructure funds, there are also public sponsoring bodies which cannot be classified as traditional investors and should potentially engage in telecommunications infrastructure investment:

- *European Investment Bank*: The EIB "furthers the objectives of the European Union by making long-term finance available for sound investment".[20] In 2010, the EIB lent €64 billion to 460 large-scale and 190,000 small/medium-scale projects within the EU, with €26 billion dedicated to funding economically weaker regions.[21] In 2011, the EIB lent €1.4 billion to telecommunications providers, of which only €225 million went towards fixed-line NGA investment.[22]

- *European Bank for Reconstruction and Development*: The EBRD "provide[s] financing for banks, industries and businesses, both new ventures and investments in existing companies, [and] publicly owned companies".[23] It operates in 29 countries in Central and Eastern Europe and Central Asia. In 2010, the EBRD signed nine projects valued at €50 million in the ICT sector; for example, it granted an €11.3 million loan to LLC Prestige Internet, a Russian wireless broadband operator which plans to connect 130 Russian cities to its broadband network.[24] So far, the EBRD has not developed an explicit focus on NGA deployment, and its engagement in ICT is generally rather weak.

- *Marguerite Fund*: This fund (also called "The 2020 European Fund for Energy, Climate Change and Infrastructure") is sponsored partly by the EIB and partly by private and public banks. It focuses on greenfield projects in capital-intensive infrastructure. Today, the fund invests in energy, transport and renewables, with current commitments of €710 million. Telecommunications investments, however, are not among the fund's focus areas.[25]

- *Europe 2020 Project Bonds*: In 2010, EC President José Manuel Barroso proposed to implement project bonds financed by the EIB and private sponsors in order to facilitate private infrastructure investment, "with the intention of having the Europe 2020 Project Bond Initiative fully operational in 2014".[26] Philippe Maystadt, President of the EIB, stated that "project bonds could be a way to attract capital from other investors such as pension funds and insurance companies, and be a useful addition to traditional financing options".[27]

Policy Implications and Conclusions

Most of the available indicators and analyses clearly show that the measures taken so far have not proven to be sufficiently effective in order to reach European infrastructure and investment goals in a timely manner. To foster investment in electronic communications infrastructure, a range of policy measures should be implemented as soon as possible:

17 Ibid., pp. 131-134.
18 See http://www.regjeringen.no/en/dep/fin/Documents-and-publications/propositions-and-reports/Reports-to-the-Storting/2010-2011/report-no-15-/2/2/5.html?id=644647.
19 See http://www.regjeringen.no/en/dep/fin/Documents-and-publications/propositions-and-reports/Reports-to-the-Storting/2010-2011/report-no-15-/2/2/5.html?id=644638.
20 See http://www.eib.org.
21 Cf. EIB: Corporate Responsibility Report, Vol. IV, 2010.
22 See http://www.eib.org/projects/loans/sectors/telecommunications.htm?start=2011&end=2011&region=european-union.
23 See http://www.ebrd.com/pages/about/what.shtml.
24 See EBRD: Telecommunications, Informatics and Media Operations Policy.
25 See http://www.margueritefund.eu.
26 EC: Commission Staff Working Paper on the Europe 2020 Project Bond Initiative, 2011, pp. 2, 9.
27 See http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/236&type=HTML.

(i) National occupational pension fund regulations should be changed in order to ensure that pension funds must invest in infrastructure projects. The EU directive on the activities and supervision of institutions for occupational retirement provision states that "Member States should be given some discretion on the precise investment rules that they wish to impose on the institutions located in their territories".[28] Therefore, EU member states have some freedom to lead domestic pension funds in a certain direction. They should use this power to foster infrastructure investment.

(ii) A new framework in which various pension funds and insurance companies can together invest directly in infrastructure projects needs to be created. A fund such as the Marguerite Fund should be established in order to facilitate investment in telecommunications infrastructure, with the EIB as the main sponsor. This would also enable smaller pension funds and insurance companies to engage in telecommunications infrastructure investment without the need for a certain size and high-level expertise in this field.

(iii) It is necessary to create information infrastructure to foster spill-over effects and help pension fund managers from different companies/countries to go through the investment learning curve more quickly. In comparison to (ii), the focus is not on creating a single investing entity for more than one pension fund but on establishing information infrastructure for funds which are capable of direct investments, including expert pools, databases, tenders, etc. Cooperation projects such as PIKE[29] are good examples, but they need to establish a clear focus on NGA.

(iv) The European Commission should try to push European financing bodies (e.g. EIB, EBRD) to increase their commitments to telecommunications investment. The EIB is not bound to decisions of the EC or the EP, but it does seek advice from European authorities. As a focal point of support, telecommunications infrastructure has to become a core target of the EIB. As an EBRD shareholder (together with 61 countries and the EIB), the EC should make efforts to foster telecommunications infrastructure investment by the bank. The "Europe 2020 Project Bond Initiative", which was proposed by the EC in order to supplement private investments by the EIB, should be realised sooner than 2014.

(v) Even stronger commitments are required from European and national authorities to foster NGA deployment. Through the Digital Agenda, the EC has already made a clear statement on the goals to be reached by 2020 regarding broadband provision. To strengthen this commitment, the EC should make each country specify how to reach these goals within a certain time frame, following role models such as the Finnish Broadband 2015 initiative. The EC has defined goals and measures for controlling[30] the progress of NGA deployment but no mechanisms to actually achieve the goals if a country is lagging behind. These mechanisms have to be created and could include additional structural funding by the EU and the obligation to adhere to the countries' deployment plans.

(vi) The EP has to insist on a resolution to invest in digitally driven growth. The proposed benchmark of 15% of household subscriptions with a speed of at least 100 Mbps by 2015 should become an additional goal of the EC.[31] Moreover, the EC should be required to present to the EP a yearly report on actual high-speed broadband deployment in order to evaluate the progress of telecom infrastructure development.

Public funding has to be extended with due attention to competition issues. Such funding, provided either by the EU or member states, has to be used mainly to cover white spots. For the period from 2003 to 2010, €3.4 billion in state aid was approved by the EC.[32] To ensure that more public subsidies are in line with EU competition law, reverse auctions – in which the rules of the game (e.g. commitments to certain prices and quality characteristics) would have to be defined for a longer period – could be used for publicly funded infrastructure projects, to name one example.

In the EU's cohesion policy budget for the period from 2007 to 2013, €2.3 billion was earmarked for telecommunications infrastructure, including broadband networks. Compared to the investment volumes needed in order to reach the goals set out in the Digital Agenda (estimated at €270 billion[33]), this amount seems rather small and should definitely be increased in the next EU budget.

28 Directive 2003/41/EC of the European Parliament and of the Council of 3 June 2003 on the activities and supervision of institutions for occupational retirement provision, recital 32.

29 See http://www.pike-project.eu.

30 Especially via the Digital Agenda Scoreboard and the "Progress Report on the Single European Electronic Communications Market".

31 European Parliament, op. cit.

32 See http://ec.europa.eu/competition/sectors/telecommunications/broadband_decisions.pdf.

33 See http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/689&language=en.