Wilfried
Martens Centre
for European Studies

Telecoms Investment IN FOCUS

3 Steps to Create a Broadband Infrastructure for a Digital Europe

September 2016

Roslyn Layton

In the early 2000s, it appeared that the European Union would continue to lead the world in telecommunications. It accounted for the largest share of private investment in telecommunications infrastructure; it had six handset manufacturers accounting for more than half of the world's phones; and a continental agreement on 3G/UMTS which became the global mobile standard. But the EU's lead was short lived. Instead the US and Asia emerged. Today there are no more European handset manufacturers. 4G eclipsed 3G. The US is on track to have half of all its mobile broadband subscriptions as 4G by the end of 2016, while Europe will struggle to reach 30 percent. There is over €100 billion of additional investment required to achieve the Commission's Digital Agenda goals.

This note examines the reasons behind the EU's decline in global telecommunications leadership, notably a confused approach to telecom regulation and a regulatory framework which actually deters European enterprises from investment and innovation. 3 solutions are proposed to help close the gap in investment and to strengthen European enterprises so that they can invest/innovate and stimulate the demand for digital services. These solutions are (1) Removal of obsolete regulation on specific industries in favour of a general competition approach; (2) Update the competition framework to recognise the dynamic effect of digitally converged industries and (3) Encourage public sector institutions to digitise as a means to help lagging European nations adopt the internet and achieve Digital Single Market (DSM) goals.

The Results of Insufficient Investment in the EU

Investment in telecom infrastructure matters for many reasons. Across countries, telecom investment is one of the largest, if not the largest, category of industrial investment, which economies need to realise technological change and increased productivity. Infrastructure investment is a prerequisite to realise a digital economy. “Connectivity is key – because online activities will not happen without it,” notes Commissioner for the Digital Single Mark Andrus Ansip[1]. Costs to set up and maintain for spectrum, towers, masts, wires, and other telecommunications inputs are significant. This investment creates the physical infrastructure necessary to deliver digital goods and services. Telecom and cable operators typically spend 14 percent of revenue to build and maintain networks, significantly higher than other capital intensive industries.

In 2003, the EU counted for one-third of the world’s private investment in telecommunications infrastructure. A decade later, it plummeted to less than one-fifth. The EU has fallen both as a percentage of the total and in nominal terms. The US however has maintained its per capita level of investment, accounting for almost a quarter of the world’s total even through the financial crisis. American telecom and cable companies invest at twice the per capita rate of European. Not only has telecom infrastructure investment fallen below the necessary levels in the EU, it has stayed flat from 2013-2015 at €43 billion. Of an estimated €216 billion necessary to achieve the Digital 2020 targets, the EU is short $106 billion.

According to the Commission, a key problem today to realise the Digital Single Market is the lack of widespread 4G/LTE mobile wireless networks. Only 79 percent of the population can access this next generation mobile network in urban areas, and just 15 percent in rural areas. This contrasts to the US where close to 99 percent of the population can get such networks from multiple Pan-American network providers; even rural coverage is over 90 percent. There is no European mobile operator than can claim the same accomplishment for Europe unfortunately.

While it is understandable that production for electronics had been moving to Asia for some time, a key loss for the EU has been that the R&D function for many of the phone manufacturers also moved out of EU, either to the US or closer to the Asian production location. The European Commission talks about the Internet of Things and 5G with the expectation that the engineering and R&D for this innova-

[1] The Digital Single Market - investing in the future: Speech by Vice-President Ansip at the LIKTA 16th Annual Conference in Riga”11 December 2014.

tion will magically emerge from Europe; this is not likely. While telecom R&D has been reducing in the EU, it has been ramping up in Asia. The Chinese company Huawei today files more patents for 5G than all European companies combined.

It bears mention that for all the regulatory energy spent by regulators to create "competition," seven out of every ten wireline broadband connections in the EU is provided by digital subscriber line (DSL), a broadband over copper technology. This means that Europeans are still using the same copper networks from decades ago. To be sure, DSL is a scalable technology that now achieves speeds of 100 Mbps or more, but the focus on unbundling copper does not make it more attractive to build next generation wireline networks, e.g. fiber to the home (FTTH).

This highlights the divergence of the choices between a static approach to competition (service-based competition), regulating access to a single infrastructure (unbundling the local loop) versus the dynamic approach which allows different infrastructures to compete. For example in the US, the widespread deployment of cable provides credible competition to DSL, and both technologies have about one-third market share of broadband subscriptions. Hence there is greater competition across network technologies versus the EU where one technology, DSL, dominates broadband.

Sustained investment is important to realise technology shifts. Just as companies compete through their business models, networks compete on the basis of technology. Networks owners have to get economies of scale in order to justify developing and deploying next generation technologies. When mature companies are not allowed to consolidate, they cannot invest to deliver the next generation of broadband technologies.

The problem of investment is further exacerbated by falling prices for telecommunications. Consumers increasingly choose free "over the top" (OTT) providers such as WhatsApp and Skype instead of traditional voice and messaging services for which they paid in the past. Consider that one third of the world's long distance calling takes place on Skype and WhatsApp (along with the other messaging services) have essentially replaced operators' proprietary messaging. Today WhatsApp and Messenger (both owned by Facebook) drive 60 billion messages per day. At their height, operators globally delivered 20 billion SMS per day. Simply put, the data packages that operators sell today do not generate the same profitability as voice and SMS in the past.

WhatsApp and Messenger drive 60 billion messages per day whereas at their height, operators globally delivered 20 billion messages per day.

Telecom investment also matters for the public sector. A variety of public projects, not to mention social services, are derived from corporate taxes on

telecom and cable companies as well as the value added taxes on the subscriptions that people buy, as high as 25 percent in some countries. Mobile adoption is so high in European countries that some governments consider telecom operators as a quasi-tax collector. The Hungarian government imposed a 27 percent tax on telecom to cover losses to state coffers following the financial crisis. But the OTT providers which compete against telecom and cable companies can do so with significantly less regulation, taxation and oversight. This allows them to deliver their services more flexibly and profitably.

Telecom investment also matters from a geopolitical perspective in how the EU competes in the world as a destination for savers' capital, but also for the various actors in the larger digital ecosystem. It is a staggering figure that Americans, a mere 4.5 percent of the world's population, enjoy a quarter of the telecom investment. But the ratio was even higher for Europeans in 2003. The point, however, is that the US was able to enshrine a policy to support long term investment in communications infrastructure for two decades, which the EU has not been able to do.

By why should European-made innovation matter anyway? If the US can deliver internet innovation more efficiently, why not leave it to the Americans? There are many reasons why the EU should support European-made innovation, namely because the EU has tremendous human capital in its universities and a productive workforce. Moreover the public sector in many of the EU nations is highly productive and professional. More prosaically, there is not a US made app for everything a European needs. Many European needs are not addressed by US apps, particularly in the public sector. There could be other reasons why a European-made app would be preferred, for example for cultural, linguistic, security, privacy and other reasons.

Innovation in many sectors is more expensive in the EU because of outdated and excessive regulation. Moreover the regulatory fragmentation across countries, obliges innovators to seek permission 28 times whereas entrepreneurs can roll out at once at scale in the US or China. The Commission should make it more attractive to innovate in the EU by removing the regulatory costs, particularly for telecom companies.

In fact there is a pedigree for the media industry to partner with communications and computing companies for the last century. It makes even more sense now for European enterprises across the ecosystem to partner as investment and innovation is so low. A recent success story is the €103 million investment made in Spotify by the Swedish operator Telia. Had it not been for the partnership between Spotify and EU telecom operators to date, the ability for Spotify to offer premium Spotify subscriptions on the mobile bill, Spotify would never have earned much of the cash to expand its business and pay artists.

There is no doubt that the very same arguments for investment motivate the call for public subsidies for telecom infrastructure, or even government-run networks. But there is no reason to give subsidies to the telecom industry when investors have the capital, or for governments to get into the broadband business when it is not their expertise. It is wrong to provide corporate welfare when that money is otherwise better spent on essential services for the poor, sick, old, and young people. The problem is that outdated and misguided telecom regulation has made it unattractive for private investment, and the European Commission has not updated the framework for almost two decades. The solution is simple: remove regulations that are obsolete and investment will follow.

Outdated and Misguided Regulation is Hampering Investment in Europe

The European Commission recognises that its telecom regulation is woefully out of date. "Telecoms operators compete with services which are increasingly used by end-users as substitutes for traditional electronic communications services such as voice telephony, but which are not subject to the same regulatory regime," noted President Juncker to the European Parliament and European Council in May 2015. Since at least 2012 the then Commissioner for the Digital Agenda Neelie Kroes lamented a loss in global leadership investment in telecommunications infrastructure and called for the change[2].

Sector specific regulation, such as telecom regulation, is a hold-out from the past. It is a form of discrimination based on the nature of the company supplying the product or the technology being used. For example Internet companies can conceive and implement their ideas in the world of "permissionless innovation." Unlike a telecom provider, they need not submit a business plan to a regulator, obtain a license, nor file a disclosure. The telecom provider must go through numerous steps including regulatory analysis, regulatory filing, disclosures to competitors and regulatory approvals.

In addition to being outdated, telecom regulation is also misguided. It is ironic that the very attempt to promote private investment in telecommunications has produced the opposite effect. The Ladder of Investment (LOI) is perhaps the most misunderstood, misapplied, and most damaging of all telecom policies. Author Martin Cave himself is on record stating its misapplication, calling it "regulator-promoted arbitrage which allows resellers to buy cheap at wholesale prices and

[2] "Connecting Europe: Fast Broadband for All" Oct 16, 2012.

attack the incumbent's margin."[3] The notion seems possible in theory: allow entrants to get a "leg up" by regulating the wholesale price of the network; then as they gain more visibility and market share, entrants will climb the ladder and invest in their own network. But in practice the ladder does not work because regulators don't increase the access price, and entrants don't climb the ladder. There is no incentive to invest in new network if one can be leased at a cheaper price.

Indeed the ladder of investment is one of many misguided regulations at odds with realising the Digital Single Market. This is no better evidenced than from the EC's own Digital Economy and Society Index (DESI), a composite score based on measures of connectivity, human capital, use of internet, integration of digital technology, and digital public services. The index shows the wildly divergent outcomes of different states. Many member states are not on track to meet the 2020 Digital Agenda goals.

There is an unrealistic expectation from the government that telecom operators will invest in ever faster networks and capacity, even in face of bad regulation and economics. It is not tenable to expect greater telecom investment when the telecom operators' average revenue per user is declining; when operators must deliver competing services without the flexibility to recover costs; when operators must make their networks available to resellers under poor conditions; and when operators are deterred from innovation that will allow them to generate new sources of revenue.

The European Commission has noble dreams for 5G, but it is not realistic to think that the industry will somehow magically fund totally new wireless technology without a viable business case or the right regulatory framework.

Solutions

1. Remove obsolete regulation on specific industries in favour of a general competition approach that allows all actors to create technological change and innovation

The EU does not lack the information about what changes are needed in telecom policy to realise the Digital Single Market; it has plenty of documentation and evidenced-based research. Indeed the European Commission has realised that its approach to the digitally converged industries has been

[3] 3 Martin Cave, "Encouraging Infrastructure Competition via the Ladder of Investment," Telecommunications Policy 30, no. 3–4 (April 2006): 223–37.

compromised since at least 1999. What is needed is the courage to remove obsolete regulation and allow enterprises to compete and innovate. Sweeping compliance programs do not make it more attractive for European firms to innovate, rather they entrench the existing powers. Only those companies with large staffs and budgets will be able to comply. In the meantime, the EU continues to fall behind the US and Asia in its digital economy objectives.

2. Update the competition framework to recognise the dynamic effect of digitally converged industries. Consolidation is necessary to increase network investment and close the €100 billion investment gap to reach DSM goals

Outdated industry frameworks continue to characterise policymaking at an EU level. This is an approach that defines markets in vertical silos, whereas the process of convergence, the combining of communications, content, and computing, has been ongoing for 40 years. In practice firms compete horizontally, not necessarily on price but on technology and the ability to offer new products and services. By not facilitating greater consolidation policymakers are unwittingly strengthening the existing large and profitable players rather than allowing the smaller players to merge and provide more credible competition.

3. Encourage public sector institutions to digitise as a means to help lagging European nations adopt the Internet and achieve the DSM goals more broadly

Rather than use public money to subsidise networks, it is far better that government digitise its services. The government can be an important buyer of IT services, and by digitising essential services, this is a way to drive citizens to use digital services. This can be an important demand-side solution to realising the DSM, and in process increases the demand for network through the services they deliver. The EU's Digital Scoreboard tracks the progress of the member states on e-government and e-health initiatives. Some major countries below the EU average include Germany, Hungary, as well as Poland and Italy, two countries which also fall behind on the EU connectivity goals. As all citizens generally receive services from the government, this can be an important solution to closing the gap of the significant number of Europeans who have not come online.

There may be no one roadmap for digitisation for every EU country, but it is helpful to review the position and experience of Denmark. Not only does

Denmark lead the EU in digital public services, it vies with South Korea for the world's most digital nation. The rationale in Denmark to increase the digitisation of public services was to reduce the resources consumed by the public sector, simplify the process in which the citizens interact with the public sector; improve citizens' experience with public services; and help companies save on regulatory compliance costs so that they can devote more resources to their core activities. The benefits include effective communication with citizens; an easier path to growth for companies (using fewer resources); efficient collaboration with patients (as health care professionals have the right ICT tools to access data necessary for treatment); and enabling the use of technology for social services, particularly for the care of the elderly, children, the disabled, and disadvantaged youth.

Credits

Wilfried Martens Centre for European Studies
Rue du Commerce 20
Brussels, BE 1000

The Wilfried Martens Centre for European Studies is the political foundation and think tank of the European People's Party (EPP), dedicated to the promotion of Christian Democrat, conservative and likeminded political values.

For more information please visit: www.martenscentre.eu

Editor: Dr Eoin Drea, Research Officer, Martens Centre
External editing: Communicative English bvba

This publication receives funding from the European Parliament.