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**Research Report**

## A fibre-rich diet for Europe: Is the EU's next generation access strategy compromising on competition?

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# A fibre-rich diet for Europe: Is the EU's Next Generation Access strategy compromising on competition?

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## A place of copper in the Digital Agenda

HAD MARCUS AURELIUS wanted to set up telephone and Internet networks all over the Roman Empire; he would have been in an advantageous position in terms of access to raw materials. Copper (Latin: cuprum), originally named cyprium after the Mediterranean island of Cyprus where it was extensively mined by the Romans, happens to be the main component of the existing fixed line networks that we use daily for fixed line data access in Europe. The Roman emperor obviously did not need to worry about whether the red-orange metal with its high electrical conductivity

would provide sufficient capacity to stream high definition moving images; copper would thus have been an easy choice. It still is for a large portion of European consumers. But as Brussels is keen to push the EU into the digital era, the regulations on copper-based networks are becoming a subject of controversy.

As part of the EU2020 strategy for growth, the European Commission launched the Digital Agenda for Europe in 2010 with the aim of promoting ultra-fast Internet connectivity in Europe. Translated into quantitative political goals, the objective is that all Europeans should have Internet access with speeds above

## SUMMARY

Given the unsatisfactory deployment of fibre based Next Generation Access (NGAs) networks in the EU, the European Commission proposes in a draft recommendation from December 2012 that wholesale prices for access to the copper networks should be between €8-10. This means that the former monopolists who own the copper networks would be allowed to continue to charge high wholesale prices, or even substantially increase their charges to competitors in the coming ten years. The objective is to incentivise and compensate for

the necessary investments to reach the ambitious goals of the Digital Agenda to expand bandwidth and improve connectivity in the EU. However, this policy is based on a series of erroneous assumptions. To begin, there is no evidence for unprecedented capacity shortages ahead, or that the market mechanisms and current pace of technological upgrade will not be able to cope with them. Furthermore, a shift towards the gradual deployment of fibre (under so-called FTTC) is less costly yet can reach similar speeds as envisioned under FTTH and

will render any compensation for risk or investment unnecessary. Fixing wholesale prices would limit competition that is the key driver for investments. It would remove incentives for competitors to deploy fibre and risk the re-monopolisation of the future broadband market. Yet no additional investments would be created, as funds are simply moved from one operator to another. Instead, the EU needs to either incentivise demand or investments in a non-discriminatory manner consistent with the values of the Single Market.

30Mbit/s in 2020, out of which 50% should be above 100 Mbit/s. In order to achieve these ambitious quantitative goals, the Commission is keen to precipitate the transition from the current networks, based on copper threads or cables, to Next Generation Access networks with a higher data transfer capacity. This can be achieved in two ways; by upgrading and integrating high capacity fibre optics between the major nodes of the networks, and by either upgrading the existing copper or co-axial (cable) networks that connect each building to the nodes or replacing them entirely with fibre.

The Commission's 10-year plan to foster investment, competition and regulatory certainty emanated in a Recommendation in September 2010 on regulated access to the Next Generation Access networks. The keyword in the NGA Recommendation is 'non-discrimination' in terms of mandatory unbundling of the networks including unbundling of the local loops (ULL). In other words, all operators, and particularly the incumbents that are the former state monopolies, are obliged to let alternative operators use all segments of the existing networks in order to deliver fixed Internet and telephone services to their customers. In exchange, the operator that owns the network charges a wholesale price for access to its network (be it copper, fibre or cable networks). The wholesale price must be "cost-oriented", which implies that an operator is allowed to gain a reasonable return on the invested capital, with investment risks and costs of engineering works taken into account.<sup>1</sup> Yet the level of the cost-oriented prices is subject to much debate and uncertainty. This has led to a series of alleged abuses by the dominant player, and subsequent antitrust cases.

#### A Digital Agenda without competition

THE DIGITAL AGENDA is originally underpinned by three C's – *certainty* for long-term investment; *consistency* within the single market; and *competition* through non-discrimination and equal access to the existing networks.<sup>2</sup> However, recent policy changes aimed at speeding up investment in fibre networks, which in the eyes of the European Commission is not progressing in a satisfactory pace, have however put a question mark as to whether the Commission still swear by this trinity, in particular

with regards to *competition*. Many eyebrows were raised when Commissioner Neelie Kroes, Vice-President of the European Commission with responsibility for the Digital Agenda (and a former Commissioner for Competition) announced in July 2012 that she is "not convinced that a phased decrease in copper wholesale prices would spur NGA investment".<sup>3</sup> This marked a departure from previous statements, in which the Commission had in fact expressed support for moving to lower wholesale prices for access to the copper networks.

Access to the copper networks, and particularly the last segment of networks that consist of old phone lines that are costly to replicate, is critical to new competitors as they provide access to customers. In the past, predictable wholesale prices based on historic costs for rollout and maintenance of the existing networks were seen as a means to encourage the rollout of new networks and spur competition between different operators on the telecom market. Now, Neelie Kroes's July proposal of higher copper access prices is no longer just an abstract idea floated in a speech. A draft Recommendation from December 2012 states in black and white, that "the Commission expects the average monthly rental access price of the full unbundled copper local loop in the EU which will result from the application of the recommended methodology to fall within a band of prices between €8 and €10 expressed in 2012 prices", subject to inflation adjustment.<sup>4</sup> In plain English, this means that the Commission decides that the wholesale price for access to the copper networks should fall in a range between €8-10. The former monopolists who own the copper networks would in other words be allowed to continue to keep or substantially increase the wholesale prices that they charge to the competitors in the coming ten years. It is presumed that the incumbent operators would invest the additional profit from charging other operators to access their copper networks into the deployment of NGAs.

The Commission's new proposal raises some immediate concerns. Fixing a ten-year plan and imposing a wholesale price which reflects political objectives rather than economic imperatives is an extraordinary form of market intervention, even by the standards of Brussels. Still it is not clear whether such a policy would actually lead to new investments, or whether it is justified given the

risk of distorting competition. Ultimately, the question is whether the end justifies the means. In other words, is Europe gambling with open and competitive markets in order to speed up the very ambitious, but largely political objectives of the Digital Agenda? This paper will examine the assumptions underpinning the Commission's NGA policy. It will do so by looking particularly into the relationship between the wholesale prices on access to the copper network and investment in fibre optics as well as the effects of the policy on market structures and competition.

## ASSUMPTIONS OF THE CURRENT NGA STRATEGY

Why the Commission's fibre policy is not copper-bottomed

DESIGNING A FUTURE-PROOF and balanced policy for the ICT sector is admittedly a difficult task. On the question of fibre deployment, Commissioner Kroes has admitted herself that "the question whether a rise or fall of copper prices would spur NGA investment is complex. Different factors pull in different directions and vary in relative strength: according to context and in their effect on alternative and incumbent operators"<sup>5</sup>. A report by the Charles River Associates (produced on behalf of the European Commission in 2012) on which the European Commission bases its suggestion to allow continuously high wholesale prices, actually emphasises that "the effect of copper access prices on incentives to invest in fibre are, in principle, ambiguous". Independent research conducted by the OECD also points out that there are no simple solutions to promote fibre rollout; "the drivers of investment in these new networks are multiple and it is not always possible to identify and manage those drives to achieve specific outcomes."<sup>6</sup>

Still, the Commission has chosen to target the price mechanism in order to pursue its quantitatively specified goals for political objectives – perhaps as this is the only effective policy instrument available to the DG Connect, while fiscal incentives or funds for investments remain under the purview of the Member States. In any case, the proposal has clearly been constructed with a number of assumptions in mind. First of all that the telecom market is currently failing to meet the needs of digital society and its citizens, and that policy-makers must now step in

to assure that every citizen gets ultra-speed access. Also taken for granted is the idea that every citizen wants to have a high-speed connection and is, somewhere down the road, willing to pay for it. Moreover, the proposal also assumes that there are or will be capacity shortages on the European networks, and that deployment of fibre is absolutely necessary to tackle such shortages. Finally, the proposal also seems to assume that the price mechanism is the main factor that affects the level of investment and additionally presumes that only incumbent operators will invest in fibre expansion.

Let us now examine each of these assumptions more closely.

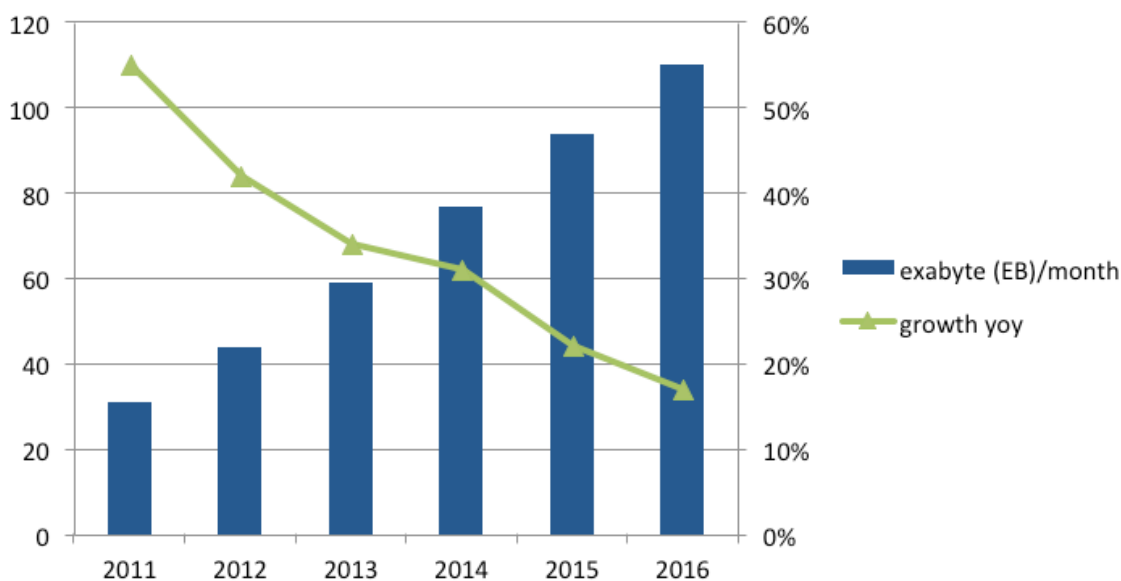
Assumption #1: There is an unprecedented increase in the demand for fixed line data?

THE COMMISSION IS assuming that the demand for faster fibre-based fixed-line connections will increase in the near future. Or, rather, that once there is a supply of high-speed connections, people will discover new services and this will in turn reinforce the demand for high-speed connections. This view is backed up by the CRA report's statement that "in order for users to demand broadband, such [broadband] services must be made available; however, the services can only be made available when a sufficiently large number of broadband subscribers can be reached."<sup>7</sup> The metaphor of 'the chicken or the egg' is not very farfetched. In other words, will there first be a supply of high-speed fibre connections, and then a demand for fibre once it is available, or what comes first? As often in a situation of such uncertainty, it is comforting that the Commission knows the answer. As in the words of the Commissioner, "the more people get ultrafast access, the more they will demand new online applications; the more the market players will supply them [...] and the more demand will soar. As demand grows, this will create a growing business in supplying connectivity: and boost revenues."<sup>8</sup>

There is some truth to this circular logic – if someone builds highways, people will buy cars, and ultimately go places.

Moreover, the Commission paints a picture in which the ICT sector is hampered by "insufficient internet access

FIGURE 1. TRENDS IN TOTAL GLOBAL INTERNET TRAFFIC TRENDS INCLUDING BOTH FIXED AND MOBILE DATA



Source: Cisco (2012), WIK calculations

and insufficient usability”. It is concerned that “it is not clear for every politician, for every national government, that it is 12 o’clock and that we have to act now”<sup>10</sup>, otherwise, “without fibre, we will condemn our people to a Europe of congested unreliable networks”<sup>11</sup>. In short, it is assumed that the market – consumers and services providers alike – does not know its own good, and neither do the national governments. But is this picture true? As our analysis will indicate later, this is not necessarily so. The NGA Recommendation actually recognises that there are still only a “limited number of retail services that require enhanced characteristics (such as higher throughput) which can only be delivered via fibre”.<sup>12</sup>

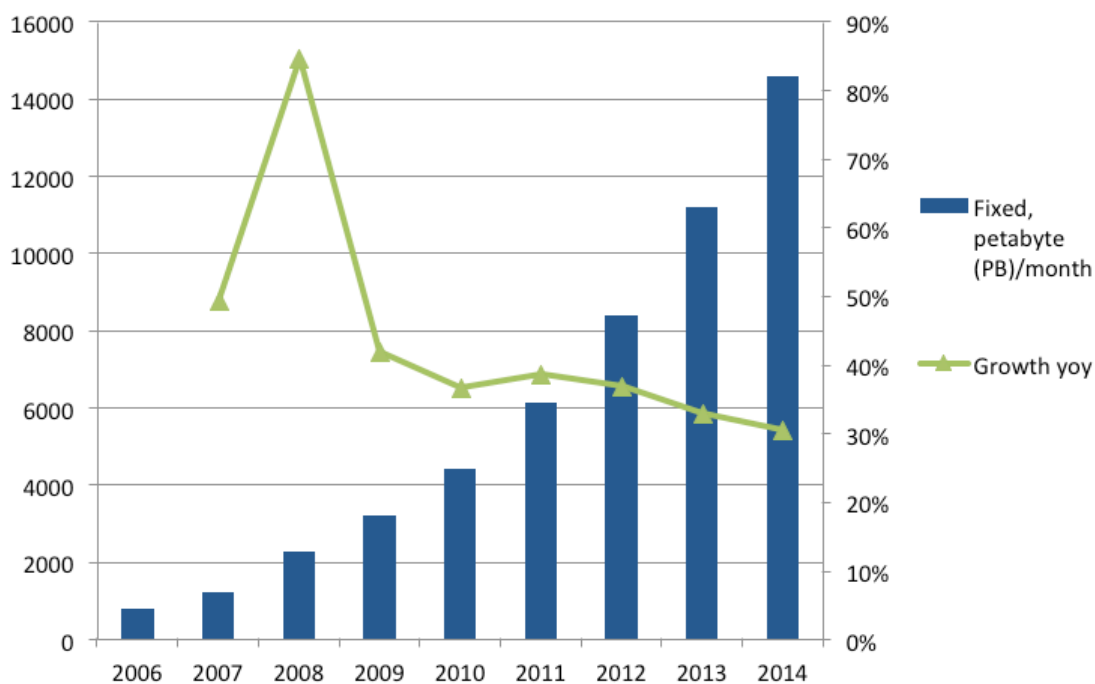
In the midst of all the focus on supply rather than demand for speed, we need to look at the long-term figures to understand future demand. The numbers show that while global Internet data traffic is growing, its growth rate is actually diminishing.

Global traffic is largely driven by the increased participation of developing countries, most notably China, which has become the world’s largest internet economy with over half a billion users online.<sup>13</sup> Looking at Western Europe in isolation, the average Internet traffic increased

by 41% in 2011, reaching 5.9 exabytes per month, equivalent of 2 million DVDs per hour. Internet video represents the greatest share of this data traffic, at around 45%.<sup>14</sup> However, the biggest increase in Europe is currently seen in mobile data traffic which grew by 123% in 2011, and is expected to grow 14-fold from 2011 to 2016 – not in fixed/wired IP traffic. In comparison, the fixed line grew by a slower rate; less than 40% in 2011, reaching 5.0 exabytes per month in 2011. The fixed/wired IP traffic is estimated to increase threefold by 2016, i.e. at a slower rate compared to the mobile data. This would imply data traffic of 16.5 exabytes per month over the fixed/wired networks.<sup>15</sup> Yet, the share of fixed/wired Internet is likely to decrease in the years to come and decrease from 41% of total IP traffic in Western Europe in 2011 to 30% in 2016.<sup>16</sup>

Estimated per household, the average data traffic per hour will be around 2 Mbps per household during busy hours, i.e. nowhere near the levels of 100Mbps that the Digital Agenda aims to build capacity, leading to a redundancy of 4900%. In addition, the fact that Internet video is mostly based on downstream data-traffic, with a limited upstream element, has led to the predictions of the demand for upstream bandwidth being somewhat revised downwards.<sup>17</sup>

FIGURE 2. PROJECTION OF TOTAL FIXED-LINE INTERNET TRAFFIC IN EUROPE



Source: AT Kearney, “A Viable future model for the Internet”, referring to Cisco/VNI

Moreover, it is not obvious that Internet users value data volume before connectivity. It would go against historical precedents as users have consistently paid more for services linked to connectivity compared to services requiring large data capacity. For example, the price paid per byte for a text message is usually higher than the price for the same amount of data transferred on fixed lines. People are perfectly willing to move from fixed-line voice calls with high quality at 64 Kbps to wireless phone calls with lower quality of around 8 Kbps.<sup>18</sup> The effective use of data is also significantly improved by advancement in compression and distribution methods. Applying this to Internet-services, the slow uptake of ultra-high speed broadband could be explained by the diminishing marginal utility of faster Internet access. It has been demonstrated by Odlyzko that the value of data is not linear, but logarithmic – an upgrading from a dial-access connection of 10 Kbps to broadband with a capacity of 1 Mbps represents a step from 4 to 6 on a scale, an upgrade from 10Mbps to 100 would only represent a step from 7 to 8.<sup>19</sup>

To conclude, there is no compelling evidence to suggest that the fixed line market will be facing an unprecedented increase in demand that we have not yet seen in the past

– quite the opposite as the growth rate is actually decreasing. The fixed line market has so far been able to gradually accommodate the demand for new services in an overall satisfactory manner, and therefore it is difficult to see the hypothetical market failure that the policymakers need to correct. The suppliers have not failed to meet the expectations of the market or technology. They have only failed to match the political ambitions of Brussels. Under such circumstances, it makes little economic and business sense to follow a heavy top-down policy intervention that pushes telecom operators to put all eggs in one fibre-fabricated basket. There is no sufficient guarantee that investments in NGA networks will provide a reasonable return while other profitable technologies are emerging.

#### Assumption #2: Copper is at the end of its life cycle?

THE FIXED LINE data traffic is still increasing, albeit slower than the rest. Europe is also inarguably lagging behind other parts of the world. In 2010, only 1% of the European networks was fibre-based and had high-speed capacity (which is roughly the same rate as China), whereas the figure for geographically smaller and economically

more homogenous countries like Japan have reached 12%, and South Korea 15%. Such figures are still consistent with the fact that the EU spends significantly less on ICT research and development in general, only 40% of the U.S. levels.<sup>20</sup> Simply put, different regions choose different specialisations, and needless to say, a lack of a high-speed fixed line internet connection remains a minor factor in generating growth compared to policies on public education, R&D spending as well as fiscal policies.

As we have seen, it is debatable whether the “pipes will get full very very quickly” and crush Commissioner Kroes’s vision of “Usain Bolt Internet” in Europe.<sup>21</sup> The Commissioner has been warning that today’s copper-based ADSL broadband networks will not be able to provide sufficient capacity for modern devices.<sup>22</sup> This would allegedly have serious consequences on the competitiveness of Europe’s digital economy in the long run as new high-performing devices would not be introduced on the European market.<sup>23</sup> However, a study from ABI Research likewise recalls that even without fibre technology, telecom operators can still offer triple-play services including TV, Internet and telephone, which require around 20Mbps.<sup>24</sup>

So far, technological upgrading of the existing copper-based DSL seems to have enabled the networks to cope with the increasing demand for data traffic over existing telephone lines. The first generation of ADSL connections (Asymmetric Digital Subscriber Line) had downstream capacities of 8 Mbps and around 640 Kbps upstream. The ADSL was then upgraded to ADSL2 and ADSL2+, which respectively have downstream capacities of 12 Mbps and 27 Mbps. Subsequently, the technology has been improved further into very high-speed DSL (VDSL or VDSL2) that can deliver up to 50 Mbps, based on a twisted pair of copper threads, which allows the capacity to become that of two copper lines put together. The latest technology under development seeks to exploit the full potential of the VDSL technology through vectoring, a noise-cancelling technology that removes interfering noise that reduces the speed of the data transfer. Moreover, it might also be possible to combine VDSL2 vectoring with Phantom Mode in the future, a technology under development that allows signals to be sent not only through the two bonded copper-threads but also between them. Tests have shown that these techniques combined should be able to deliver at least 100 Mbps (and thereby reaching goals of the Digi-

tal Agenda) on loops of up to 1 kilometre.<sup>25</sup> It is not surprising that most stakeholders agree that copper and cable networks still “have the potential to further evolve and support increasing needs [...] in terms of bandwidth”.<sup>26</sup>

Indeed, past evolution suggests that copper lines have had more than nine lives. But it is not the only technology in town. On the contrary, it is likely that we are going to see a wide range of different competing and complementary network technologies that co-exist (such as 4G/LTE) either interlinked or combined – most notably in the form of a joint use of fibre and VDSL. Although there is competition between different technologies, it will still be essential to assure a competitive environment within each category and segment, in order to avoid market failures in the telecom sector.

When it comes to fibre, enthusiasts initially envisioned that the copper networks be entirely replaced by fibre. At the outset, the Commission pushed for fibre-to-the-home (FTTH) connections all over Europe, meaning that Internet and telephone services would be delivered via fibre networks all the way to the end-user. It has however turned out that high-speed connectivity can be provided without the entire fixed-line being fibre-based. FTTH deployment has turned out to be too expensive and risky, even for incumbents; around 80% of the costs are related to civil engineering.<sup>27</sup> It is estimated that around €270bn will be required in order to build FTTH connections all over Europe by 2020, calculating that half of them would provide speeds of 100Mbit/s.<sup>28</sup>

FTTH, which can reach speeds above 100 Mbps, is not necessarily required in order to deliver high-speed connections. Instead, fibre optics can complement or partially replace copper as the bearing infrastructure through fibre-to-the-cabinets, fibre-to-the-building or fibre-to-the-node architectures (FTTC/B/N). This implies that fibre is rolled out to each building or to street cabinets, while the existing copper-based sub-loops remain in operation in order to connect each end-user to the main fibre network. Combining new fibre infrastructure with the existing copper sub-loops, FTTC/B has turned out to be an efficient and less expensive alternative to FTTH.

As we conclude, the days of the copper networks are still not numbered. They are not exclusively a competitor to

fibre – on the contrary, copper networks are strongly complementary to the point where a realistic pan-EU deployment of fibre depends on open markets in both technologies once we discuss how much investments are actually necessary to reach the Digital Agenda goals, and how the investments are to enter into the market.

### Assumption #3: Competition cannot spur necessary investments?

THE COMMISSION HAS BEEN KEEN TO ESTABLISH A REGULATORY framework in order to “make investors confident that fast broadband networks are safe, profitable and worthwhile”,<sup>29</sup> in a context where long pay-back periods create uncertainties as to whether fibre investments are profitable. In the Commission’s NGA recommendation, the proposed cost-oriented wholesale prices for NGA networks include a risk premium to assure a reasonable return on the investment.

Although the Commission’s NGA policy claims to reflect an understanding of the “drivers of real-world investment decisions”<sup>30</sup>, it focuses strictly on the supply-side. There are a number of reasons why operators are reluctant to invest in fibre optics, and it is not primarily regulation that can make NGA roll-out profitable, no matter how much the Commission wants that to be the case. This is particularly evident from the fact that fibre investments are already being made by both incumbents and alternative operators where competitive pressure and consumer demand force them to do so. The main reasons behind the low fibre coverage are not only small margins but primarily the uncertainties regarding scale – i.e. whether there will be a significant demand for fibre connections. The OECD questions whether investors will be able to capture a big enough market share to make profit. It is even suggested that at least around 50% of the total potential consumer base is required in order to make fibre rollout profitable. High take-up rates and cheap access (that could spur even higher take-up rates) are likely to be the main facilitators in the transition from copper to fibre.<sup>31</sup> Such figures seem to suggest that a full-scale and profitable FTTH deployment is a lost cause, even for the incumbents – with or without a risk premium. It is estimated that only around 12%-25% of the total FTTH deployment would be profitable in countries like in France, Germany, Spain, Italy, Portugal, Spain or Sweden.<sup>32</sup>

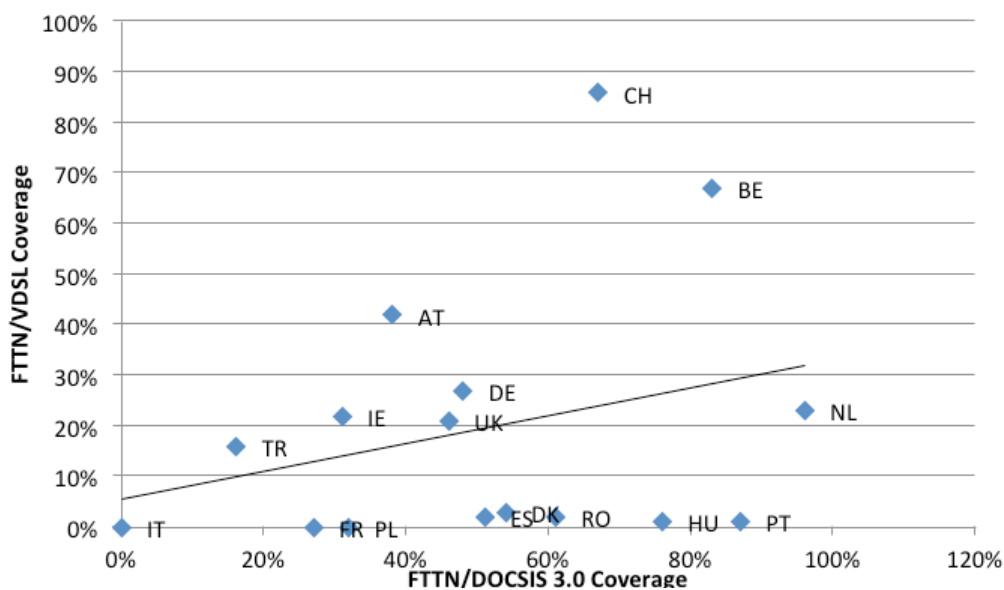
This is why the gradual approach of upgrading the existing copper network and the deployment of fibre-to-the-cabinet/node (FTTC or FTTN) connections have emerged as the only feasible paradigm by virtue of being a cost-efficient alternative to FTTH. Operators can in this way avoid the costly and complicated work of replacing the local loops, which represents around 85% of the roll-out costs (thereby cutting costs to almost one-seventh of FTTH), and still provide high bandwidths at a capacity of 80-100 Mbps. In Germany, 100% population coverage (which literally means every neck of the woods in the largest country in the EU) could be provided through a combination of FTTC and VDSL at one-third of the cost compared to FTTH.<sup>33</sup>

The combined FTTC and VDSL deployment seems more than adequate to face the actual surge in capacity demand projected for the fixed line market. This shift also has an important bearing on regulation – even if an actor would deploy fibre loops to deliver FTTC, functioning competition becomes directly hinged on access to the copper sub-loops “at the last mile”, where high copper wholesale prices would discourage other operators from investing in the less costly FTTC deployment. Operators can upgrade their networks with only marginal investments and thereby respond to the coming demand for higher bandwidth and enhanced services. But instead of encouraging competition and thereby investments, the Commission’s Draft Recommendation carelessly builds on the view that only incumbents could be investing in the less costly deployment FTTC. This is clearly contradicted in real life as non-incumbents are often matching their investments under current market conditions.

Empiric studies of the European market also support the notion that it is primarily competitive pressure that spur investments. So far, the fear of losing market shares, either because alternative operators or owners of other (primarily cable) service platforms are deploying more performing technologies, has been the main incentive for incumbents’ investment. This obvious fact is illustrated by the fact that investments to upgrade DSL to VDSL take place in areas where there is competition from cable (or DOCSIS3, Data Over Cable Service Interface Specification).



FIGURE 3. CABLE/DOCSIS AS A SPUR TO FTTN/VDSL INVESTMENT



FTTN = fibre to the node, VDSL= very high speed digital subscriber line  
 Source: WIK (2012) based on NRAs, COCOM (2011), ETNO (2012)

In addition, the deployment of the costly FTTH/B has so far been most extensive in countries where there is already a strong physical access competition on the existing networks, for instance in Portugal, France, Netherlands, Germany and Italy, where the market shares of alternative operators have been around 50%, based on unbundling of the local loop (ULL). Similar trends have been observed in the US, Japan and Korea, where fibre roll-out was preceded by strong service-based access competition on the broadband market, encouraged by mandatory unbundling of all segments of the existing networks, including both cables and local loops.<sup>34</sup>

In sum, it is questionable whether a risk premium to the incumbents is still necessary to spur investments, given the less expensive and gradual rollout by FTTC. Following the reasoning above, the answer must therein be no. Furthermore, the Commission’s intervention on wholesale and retail price level are counterproductive – had the Commission’s NGA policy reflected an understanding of the “drivers of real-world investment decisions”<sup>35</sup>, as it claims to do, it would not be so focused on the supply-side and the price mechanism, but let competitive pressure spur telecom investment. Tampering with the price mechanism distorts the competition on the NGA market

and may hinder the virtuous cycle that market forces have triggered, which is ultimately the best driver for investments.

**Assumption #4: Fixing the copper prices will lead to fibre investments?**

THE RELATIONSHIP BETWEEN wholesale access prices for copper networks and investments in fibre optics has been characterised as complex and ambiguous, making it difficult to “conclude as to the details of the specific access pricing regime that should be imposed on any given network or operator”.<sup>36</sup> We have also clearly established that FTTC deployment is hinged on open competition between the cabinet and the home, i.e. the copper networks. Despite this – and “after examining all the evidence” – the Commission is “not convinced that a phased decrease in copper prices would spur NGA investment”; “indeed, we now see fibre investment progressing relatively well in some Member States where copper prices are around or above the EU average”, said Commissioner Kroes in July 2012.<sup>37</sup> This logic is seriously flawed. The differences between copper wholesale prices across Europe reflect the different cost levels in different countries, as well as legacy costs. And to a large extent, the differ-

ence reflects the different and in some cases arbitrary assessment methodologies applied by the national regulators. Meanwhile, the fibre investment is linked to demand and whether the operators are capable of making a return on their investment.

The proposition of whether *lower* copper prices would *increase* fibre deployment is also reversed. Dropping the newspeak, the real question is whether the profits gained from increasing wholesale prices to artificially stable prices would be re-invested and lead to higher level of investments. The copper networks are already “cash cows” for the operators who own them.<sup>38</sup> If the margins of the cow would be further improved or remain artificially stable, there is no guarantee that these will be funnelled into fibre FTTC or VDSL investments, or any new investments at all.

The general problem of the industry is how increased data traffic is not matched by increased revenues as prices are fixed and disconnected from the actual cost of the services provided.<sup>39</sup> Just a quick glance at the balance sheets reveals that the European telecom sector has not been performing well during the last three years. The declining revenues reflect the gradual saturation of the market, although increases in mobile data have somewhat compensated for the decline in fixed-line revenues.<sup>40</sup> As of date, around 12% of the total revenue in the sector is spent on any investment,<sup>41</sup> which is lower than average, but not extraordinary given the current economic climate. The main challenge is not the question of creating funds for investments, but the fact that more investments in fibre do not bring additional revenue. Even in a scenario where the fixed line traffic would grow according to previous estimates, operators who invest in fixed-line networks may see the returns of their employed capital decline from the 12% in 2010 to around 8.9% by 2014.<sup>42</sup>

In a market economy where investment decisions of private entities are not dictated by the polity, investment decisions are decided by competitive pressure and return on investment, i.e. whether there is consumer demand and incentives to pay more for new capacities. Otherwise the money should be put to better and more effective use, which could be marketing, customer acquisition (which is the main strategy for operators to grow) – or even higher salaries and dividends to the shareholders before invest-

ments in products. Anything else would be an inefficient use of capital.

Moreover, the Commission is suggesting that the wholesale prices of existing copper networks should be based on the costs of “modern equivalent assets”. In other words, the copper access prices would reflect the estimated cost of replacing the copper networks with a modern equivalent, i.e. with fibre. However, given the emergence of FTTC, the copper-based sub-loops that connect end-users to the street cabinets, curbs or nodes will not be replaced. As a result, the modern-equivalent wholesale price that a competitor pays is artificially inflated. They are not only paying as they were building a copper network that was once financed by the tax-payers, and depreciated since decades – foreign and local competitors will be also pay as they were replacing it with fibre (and they are thereby still paying as it was FTTH), although it is most likely not being replaced.

The idea that wholesale prices somehow affect investments must also be based on another assumption that only those who own the copper networks are capable of making FTTC investments, although this does not reflect the reality of the European markets and actual investments made. Disproportionate rental costs for ULL are strictly zero-sum transfers between two competitors where funds are just being moved from one operator to another. No incremental room for investments can be created within the industry as a whole – it just comes down to picking winners without any benefits to consumers or the economy. Even in the case that the investments were somehow reinvested, it would simply create a de facto monopoly of the NGA market.

## CONSEQUENCES OF NGA RECOMMENDATIONS

### Undoing decades of competitive reforms

THE COMMISSION HAS previously championed the liberalisation of the telecom market and open up the networks for competition. By limiting incumbents’ control over ULL prices, new alternative operators were encouraged to enter the market. The Commission is not shy to call this telecom policy a success, and “10 years of liberalisation and openness to competition have delivered wider

choice, more convenience, and lower consumer costs. People enjoy multiple, tailored services; [...] while the most dynamic operators find new ways to expand and develop.”<sup>43</sup> However, the “objective is no longer just to open up one, existing network: but to build or upgrade to new networks, for superfast broadband”, as in the words of Commissioner Kroes.<sup>44</sup>

In broad terms, there are two types of competition in the market for fixed-line networks. Until recently, the Commission’s policy focused on promoting infrastructure-based competition. Simply put, this refers to a situation where operators compete by rolling-out their own fibre networks as close as possible to the end-user. Non-discrimination, translated into mandatory unbundling of the local loops (ULL), has been a keyword as competition based on fibre-to-the-cabinet networks implies that operators then rely on the last segments of the incumbents’ copper access networks to deliver services to their subscribers.

The Digital Agenda officially seeks to combine infrastructure-based competition with service-based competition, the latter implying that operators compete by using the same access networks to deliver services. The goal is to secure “truly equivalent access”<sup>45</sup> to the existing networks while at the same time encouraging deployments of NGA networks without hampering competition, or “without re-monopolising our networks”.<sup>46</sup> As we have concluded in the previous sections, the effect is likely to be the contrary – by sponsoring incumbents’ roll-out of fibre to the cabinets via high wholesale prices, the Commission seems to take it for granted that it would be unrealistic for alternative operators to take part in infrastructure-based competition. The Commission now seems to envision a scenario where new entrants instead rely on the incumbents’ networks, thereby reverting to service-based competition.

Ensuring competition on the telecom market is indeed a complicated matter. The market still has some features that are legacy problems from the era of state monopolies, exemplified by the difficulties in finding a practical solution for the copper/ULL networks. Unless the erroneous assumptions behind the Commission’s NGA recommendations are addressed, the policy is more likely to cause a serious market failure. Although it seeks to avoid a

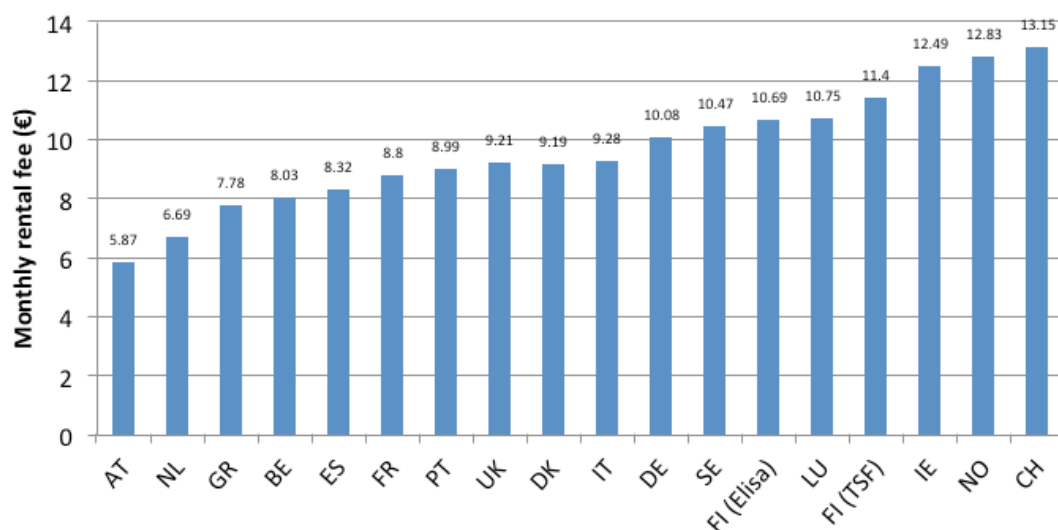
re-monopolisation of the market, the policy will inarguably strengthen the position of incumbents, who still own around 43% of the broadband lines.<sup>47</sup> Incumbents are in an advantageous position given their larger subscription base, often around 80-90% of the local loop and around 50% of the retail customers, and in a unique position to enjoy the leverage on economies of scale.<sup>48</sup>

### Growing antitrust concerns

SUCH CONDITIONS HAVE obvious spillover effects to other areas of EU policy. The EU antitrust regulation (enshrined under TFEU art 102) safeguards the Single Market against real market failures due to abuse of a dominant position. Under EU case law, a market actor is deemed dominant if it is able to act independently from competitors and consumers.<sup>49</sup> Most incumbents are de facto dominant as they control the wholesale prices with unhealthy incentives for abusive pricing towards its competitors that would lead to illegal anti-competitive foreclosure. For relatively generic services such as data capacity (which, like petrol is not differentiable and does not come in different flavours or fashionable colours), the customers are primarily price takers, do not hold much potential to affect prices, and simply take the lowest available price. The consumers’ countervailing powers against such dominant actors strongly depend on the existence of alternatives on price and capacity. Market mechanisms of supply and demand are offset, allowing the dominant actor to determine the profit margins of competitors and new market entrants. This causes direct harm to consumers in terms of higher prices and a reduced number of operators to choose between.

One of the main problems is the methodology of cost calculation. In the NGA recommendation, provision of wholesale access is accepted at a dubious and artificial cost based on replacement with fibre, creating a significant gap with the actual incremental costs. Meanwhile, the EU competition law relies on long-term average incremental cost (LRAIC) as a benchmark, and the highest permitted wholesale price under EU antitrust principles would be significantly lower. Such a margin squeeze of competitors is inconsistent with EU antitrust law, and the Commission’s Directorate General for Competition has struck down on the incumbents in numerous cases, including in Spain, Germany and Slovakia,<sup>50</sup> thereby consistently

FIGURE 4. LOCAL LOOP UNBUNDLING – PRICES. TOTAL MONTHLY RENTAL FEES (VOICE + ADSL SERVICES)



Source: Cullen International (last update October 2012)

upholding the case law that has been developed in other sectors.<sup>51</sup> DG Competition has also clearly stated that a margin squeeze can exist despite government-regulated or sanctioned tariffs, such as the NGA recommendation or national laws – since the incumbent has the commercial freedom to avoid the margin squeeze by lowering the wholesale prices on its own initiative.<sup>52</sup>

Setting an arbitrary acceptance of any price within €8-10 also worsens this squeeze, as the suggested band is clearly too narrow to encompass the variety of cost levels and prices throughout the EU. Using the replacement cost methodology would imply a cost increase for the competition of up to 36% (e.g. Austria) on a market where profit margins are often counted in single digits. Incumbents are not only immune to such cost hikes – they are even allowed to pocket the money.

There is little disputing the assumption that the NGA deployment has some merit for European competitiveness and welfare, and EU competition law actually allows for some exclusionary measures that benefit the dominant actors in such cases. However, this does not provide a carte blanche for market interference – the Commission’s interpretation of Art 102 provides that the efficiencies created by the technical upgrade must outweigh negative ef-

fects on competition.<sup>53</sup> But in a market where consumers are not prepared to pay for these efficiencies created, or where FTTC deployment (and soon through VDSL alone) could provide the speeds envisaged at a mere fraction of the costs, this argument is, at best, disputable. This is perhaps the most damning aspect of the wholesale aspects under the NGA recommendation: not only does the proposed ‘stabilisation’ of wholesale prices have weak causal link to investments – it is simply unnecessary given the relatively minuscule investments involved.

Furthermore, there should be no alternative measures available that are less anti-competitive – but it is easy to envisage that non-discriminatory state aid or tax rebates on a non-discriminatory basis available to all EU and non-EU actors would achieve the goals (although these instruments are not under the control of Brussels) in a far more competition-neutral manner, and be more beneficial for the consumer.

Commissioner Kroes will clearly be at odds with the principles of EU antitrust law, to the surprise of the free-marketeters in DG Competition who probably never foresaw a case like this, where their Commission colleagues working on the Digital Agenda would go against the principle of competition - a cornerstone of the Single Market.

## CONCLUSIONS – ADDRESSING THE RIGHT PROBLEM.

THE STATE OF play on the fixed line broadband market is already appalling. While there is little demand or incentives to invest in fibre rollout, the consumers are over-charged in areas where there is no sufficient competition. The fact that cross-border competition is practically non-existent and the former monopolists have not entered into each other's markets to any high degree shows that Single Market is still highly fragmented. One could argue that the markets no longer function properly as consumers and suppliers do not price their future bandwidth needs correctly. However, there is no evidence for unprecedented capacity shortages ahead, or why the markets and current pace of technological upgrade are unable to cope with them. It is obvious that operators find it difficult to find sufficient demand for overcapacities of up to 4900% of projected future usage, in the market today. By pushing for a political objective, rather an economic one, we are risking making market failures permanent, rather than avoiding them.

However, there is some truth to the prophetic point that "if you build, they will come". But technological development in VDSL jointly with the more economically rational gradual deployment of FTTC render any premium for risks or replacement unnecessary, as almost the same speeds can be achieved at less than one-third of the costs. There are simply no justifications left for regulatory intervention of market prices that has volatile and unforeseeable implications.

Instead, both theory and empirical analysis show that competition spurs fibre investments. The Commission's new NGA recommendation justifies a raising of the wholesale prices for the sake of subsidising one operator against the others – and thereby removing the main driver for investments, namely competition. The proposal is a strict zero-sum game where funds within the industry are moved from one operator to another, with no incremental investments created. If there were such market failures and supply mismatches that call for such drastic measures on market concentration, even the most ardent free-marketeer would have to agree that the national governments must renationalise the telecom industry – or it could be simply a matter of the Commission addressing the wrong

problem, if there is one: the EU needs to either incentivise demand or investments in a non-discriminatory manner consistent with the Single Market.

Instead, the readiness to overlook the Single Market principles risks setting the stage for more permanent market failures down the road. The new policy represents a 180-degree turn from what was communicated only a year ago by Commissioner Kroes, who then firmly rejected the idea of awarding incumbents with a regulatory holiday. The margin squeeze also puts her at odds with antitrust policy. It is not surprising that the Brussels commentariat is already asking: 'Could the real Neelie Kroes please stand up?'<sup>54</sup>

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