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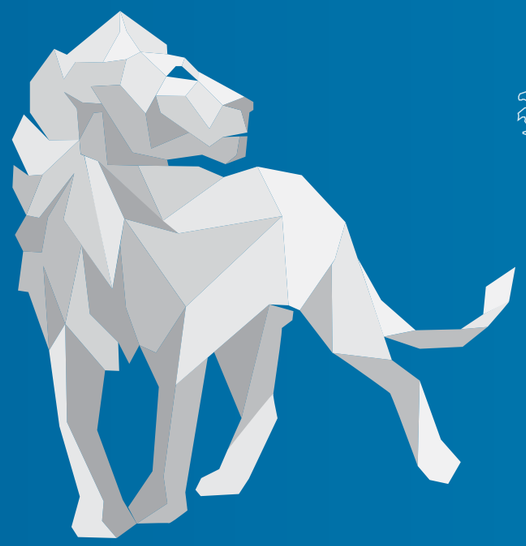
the foundation for european reform

ROSLYN LAYTON

NEXT GENERATION TELECOM POLICY AND THE DIGITAL SINGLE MARKET

EUROZONE, FINANCE AND ECONOMY



NEW DIRECTION
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NEXT GENERATION TELECOM POLICY AND THE DIGITAL SINGLE MARKET

- ROSLYN LAYTON

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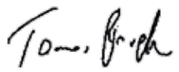
The digital economy today is the single most important driver of innovation, competitiveness and growth. This year it is expected that almost half the world's population; three billion people will be connected to the Internet. In the last 5 years the development of mobile applications alone in the USA created 500,000 jobs. It is currently estimated that the digital economy is to be worth in excess of €400 billion.
Europe's electronic communications landscape has transformed into a digital world. A world dominated by internet platforms, constantly altered by new and at times disruptive technologies, and full of opportunities for start-ups that pay no heed to geographical boundaries when creating new products and services.

As the digital economy expands there are more and more opportunities for companies across Europe to grow, create jobs and help consumers to secure a better deal. However, too often these opportunities are being stifled by burdensome regulations and differing national regimes.

Our vision for the digital single market is one which is digital by default, where it is even easier to operate online across Europe than it is to do things offline in a single state. Where online businesses go through administrative processes once, not 28 times, and where football fans can stream matches they've already paid for wherever they go.

As a result, New Direction has published a Digital Single Market Report. Renowned Internet policy expert, Roslyn Layton PhD provides policy recommendations for the EU's 2020 EU Digital Economy Agenda. The Digital Agenda is perhaps Brussels's most ambitious economic goal since the launch of the euro in 2000.

I hope that this report will be a useful tool both in raising awareness of the importance of the Digital Single Market and culture change that is required if we are to realise the vision. It is time to put this right by completing the digital single market once and for all and unlocking the growth that this market could generate.



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INTRODUCTION

The idea of a single market is "one territory without any internal borders or other regulatory obstacles to the free movement of goods and services" with the goals to stimulate competition and trade, improve efficiency, and raise quality. [2] It is recognized that a single market fuels economic growth and makes the everyday life of European businesses and consumers easier. [3] Thus the strategy to extend the single market to the digital realm is a natural outgrowth of the founding EU treaty, to "mark a new stage in the process of European integration." [4] The European Commission adopted a strategy to achieve a series of goals related to to the "Digital Single Market" (DSM) [5] under the three pillars of better access to digital goods and services; creating the right economic environment for digital networks and innovation; and promoting economic growth from the digital economy.

It is perhaps Brussels's most ambitious economic goal since the launch of the euro in 2000. While it may be argued that the EU is still not a single market from the physical perspective, let alone the digital one, there are nevertheless significant gains to be realized by facilitating a digital single market. It is estimated that achieving the various DSM goals could create some €400 billion euros annually in new economic growth from digital goods and services. [6] There is low-hanging fruit to be sure; improving the rate of cross-border ecommerce, now just 7 percent of the EU's total, would deliver significant new revenue.

This paper critiques the telecom policy recommendations for the European Commission's 2020 Digital Agenda. Specifically the European Commission notes its goals for telecommunications [7] are to improve the institutional and regulatory framework (updating and modernizing telecoms laws accordingly) and create incentives for investment in high speed broadband. In broad strokes the paper reviews the European Commission's approach to telecommunications in the key areas of investment and merger approval. It would seem logical that if supporting investment in next generation is the goal, the EU would allow the market actors to organize so that they can make the necessary investments.

The notion of a "single telecom market for growth and jobs" as part of the DSM has been an official goal at least since 2013 Spring European Council, [8] with former Vice President Neelie Kroes a leading champion for the effort, urging "We must act now". [9] The importance of telecom reform to achieve investment was reiterated by current European Commission President Jean Claude Juncker, but the goals remain unrealized.

2. "The European Single Market - European Commission," EU, (December 14, 2015), http://ec.europa.eu/growth/single-market/index_en.htm.
3. Supra
4. "EUR-Lex - 11992M/TXT - EN," text/html; charset=UTF-8, Official Journal C 191, 29/07/1992 P. 0001 - 0110;, accessed January 31, 2016, http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:11992M/TXT&from=EN.
5. "Digital Single Market | Digital Agenda for Europe," EU, (January 22, 2016), http://ec.europa.eu/digital-agenda/en/digital-single-market.
6. "Why We Need a Digital Single Market," EU, May 4, 2015, https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/digital_single_market_factsheet_final_20150504.pdf.
7. "Telecoms - Digital Agenda for Europe - European Commission," Digital Agenda for Europe, accessed January 31, 2016, https://ec.europa.eu/digital-agenda/en/telecoms-and-internet/telecoms.
8. "Connected Continent: a single telecom market for growth & jobs" Retrieved January 31, 2016 http://ec.europa.eu/digital-agenda/en/connected-continent-single-telecom-market-growth-jobs See also https://www.youtube.com/watch?v=thJ2AelUVkQ&list=PLyMUk47rPuqredmE-LesNr5UJ7xJJhOyR

As this paper shows, the European Commission may have provided laudable words about the reforms necessary to achieve investment, but the actions of the Commission suggest a different agenda. In fact it appears that that European Commission pursues the opposite of the policies that would deliver the much-needed investment, namely by deterring mergers in highly competitive national markets.

The paper also provides some important background from a demand perspective, how to stimulate end users to adopt digital technologies, and how their efficient provision of connectivity is important for not only the economic sustainability of the enterprise, but for efficient end user prices. Digital service development in the public sector and the freelance economy are also discussed.

To be sure, there is not a single formula for economic growth in the information economy; it requires the inputs of a complex mix of factors including Investment, Networks, Connected Devices, Business models, Regulatory regimes, Human capital, and Technology. [10] As such, it is important to respect the interplay of the many factors. However getting the investment part of the equation right, especially when private sector actors must deliver the funds, perhaps €100 billion or more, needs to be a priority for the Commission.

In its drive toward the Digital Single Market, the EU can take inspiration from New Direction and its founder Margaret Thatcher. When she came to office there was existential crisis in the United Kingdom, [11] not unlike the prolonged economic crisis that has plagued Europe for the last decade. Mrs. Thatcher's leadership can be studied in light of the DSM. She called for reviving the economy, reforming outdated institutions, reinvigorating foreign policy, reversing the psychology of decline, recovering energy and determination, and restoring pride and self-confidence. [12] These efforts are just as needed today as they were forty years ago.

It is appropriate to consider the DSM not just as a technological and economic project, but as a human project. The DSM should be about restoring human dignity and creating the opportunities for Europeans to earn their success and enjoy human flourishing. While this paper focuses on next generation telecommunication policy, it should be remembered that the larger goal of telecommunications policy is to empower people. Just one of the transformative and important outcomes of the digital technologies is how it affords people greater flexibility to deploy their labor and leisure across borders.

9. Press conference on Telecoms Single Market, Brussels, 12 September 2013 https://ec.europa.eu/digital-agenda/node/67519
10. Bengt-Åke Lundvall, National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning (Anthem Press, 2010).
11. Charles Moore, Margaret Thatcher: The Authorized Biography, Volume One: Not For Turning (Penguin, 2014).
12. "Past Patron," NEW DIRECTION, accessed January 29, 2016, http://europeanreform.org/index.php/site/patron.

CHALLENGES TO REALIZING THE DSM: FRAGMENTATION AND CONVERGENCE

Fragmentation is a key challenge in the EU from an economic, business and regulatory perspective. European enterprises face a costly and cumbersome operating environment with 28 markets, regulators, and tax regimes. Regulatory barriers can make it difficult for companies to get scale across the member states. It is not surprising that entrepreneurs and investors look for more favorable markets abroad. Meanwhile foreign companies legally exploit nation state differences through fiscal and regulatory arbitrage, leaving local country competitors that play by the rules to lose market share.

The EU is also fragmented in its governance. While federalism in a vital concept in a single market, Brussels does not always get it right. Nations states are said to have the power to manage their telecom markets within a pan European framework, but the undoing of national decisions by Brussels has harmed national telecom markets. For example, mergers that are supported by national regulatory authorities may be opposed by DG Comp, the European competition authorities—or vice versa. This is a collision course for the future. If firms cannot harness synergies in their own countries, they'll never be able to grow to pan European size.

Economies of scale translate into a company being able to deploy across the EU28, one possible goal of a single market. American Internet companies Google, Facebook, Amazon, Apple, Twitter, and Microsoft localize seamlessly, but current EU rules do not allow European firms, both SMEs and especially telecom companies, the same freedom to serve their customers. Moreover telecom operators can't even get economies of scale in their own nation state, let alone across the EU28. Thus this regulatory asymmetry denies consumers the choice brought about by dynamic competition as well as the larger benefits of innovation.

Convergence is one of the economic forces driving the need for greater European integration. Convergence the coming together of computing, communication, and content. Many believe that convergence signifies a coming together of equals, but it does not. [13] The computing component dominates over communication and content. [14]

The process of convergence does not mean that there is some steady state equilibrium ahead or that things will "stabilize" in the future. Rather convergence is an endless process of ever more convergence and divergence. [15] While it can be observed that Europe has always been converging and diverging, the post-war European economic and political integration which became in the 1950s is a long term process. Today's DSM, a logical subsequent of the EU in 1992 and the euro in 2000, will likely be followed by something else in the future. As such there is no "future proof" technology, regulation, network, or business model. Convergence can mean that leaders rise and fall and that there are winners and losers.

Consider that a decade ago the EU had six phone manufacturers, the GSM standard, and the world's leading telecom companies. It was poised to take the lead in the mobile Internet. But it did not. A decade later, Apple's iPhone is synonymous with the smartphone (even though Nokia was the leading vendor until 2011), 4G/LTE eclipsed 3G, and telecom investment in the EU plummeted as share of the world total. [16]

What happened? American telecom investment exploded and American platforms, software and services becoming the global leaders. Additionally the Chinese Internet with its versions of devices, services, and applications has also emerged. Twenty of the world's top 25 Internet companies are American. None come from the EU. Moreover the American firms comprise 80% of the revenue among the top 25 firms. [17]

As the telecom and connectivity industries have languished as a result of convergence, the EU needs to allow them to reconstitute themselves with the necessary mergers and rationalizations. As the computing and Internet companies have emerged as the winners of the last round of convergence, the EU need not give them undue advantage, as they have with so called "Open Internet" or net neutrality rules. If the EU is to have any shot at all with the next round of convergence—with 5G, big data, and the 'Internet of Things' - the EU will need get the framework right so that its connectivity and computing industries can flourish.

13. Anders Henten, "Industrial and Market Implications of ICT Convergence," Faculty of Engineering and Science, AAlborg University, January 10, 2015, http://www.en.tek-nat.aau.dk/news-events/show-event/inaugural-lecture-by-professor-anders-henten.cid190145.
14. Supra
15. Supra
16. Roslyn Layton, "The European Broadband Challenge," American Enterprise Institute for Public Policy Research, February 2014, https://www.aei.org/wp-content/uploads/2014/02/-the-european-unions-broadband-challenge_175900142730.pdf.
17. Mary Meeker, "2015 Internet Trends Report," KPCB, May 27, 2015, http://www.kpcb.com/internet-trends.

THE STATE OF EUROPE'S DSM AND HOW TELECOMMUNICATIONS CAN BENEFIT EUROPEAN CONSUMERS AND BUSINESS

The European Commission notes [18] a number of reasons why consumers and businesses don't take greater advantage of digital solutions. It is not for a lack of connectivity that Europeans don't buy online, but rather for the high cost of delivery, lack of returns/ refunds for goods bought online, various tax regimes, and confusing terms and conditions. Many users also feel a lack of safety and trust when going online, and less than half of Europeans use online banking.

Just 15 percent of European retailers sell online today, and even those that are online earn less than 20% of their sales through digital channels. Retailers and business face a number of challenges when conducting business across Europe for the maze of 28 individual regimes. [19]

As the EU's Digital Scoreboard notes, about one fifth of European adults are not online, but not because of price or availability of an internet connection but for deficiencies in the users themselves, whether a perceived lack of relevance or lack of interest. Moreover some forty percent of Europeans lack basic digital skills, meaning that job opportunities in the digital economy are limited for many.

There are some 1 million vacancies in the information technology (IT) sector alone as Europeans with the necessary skills are not available. This gap may explain some of the challenges that Europe has had to foster its IT industry. However it should be noted that many countries with next generation networks still have high unemployment, because as the next section explains, it's not simply the presence of NGA networks that drives users to adoption, but rather what they can do with the networks.

There is value in stimulating demand for digital technologies, but to date most policy efforts have focused on the supply side, ensuring access to broadband networks. These measures are typically pursued by telecom regulators because they have the authority to enforce rules on providers. However these efforts have limited ability to support adoption.

The relevant literature [20] concludes that increasing digital adoption requires policy that focuses on the socioeconomic characteristics of the user: skill, education, occupation, gender, and age. This is a set of factors that proves highly predictable in whether a person goes online, for example having high education level is highly correlated with going online but requires long term policy initiatives. As such demand-side policy has to focus on the human factors such as digital skills and what users do with the services on networks. Initiatives need to be driven from a variety of agents, but probably not telecom regulators. Telecom regulators are generally not equipped much less empowered to make policy that addresses the important demand side issues.

THE ROLE OF THE PUBLIC SECTOR IN STIMULATING DEMAND FOR TELECOMMUNICATIONS

Europe already has the building blocks to stimulate its digital economy, and perhaps they key area on which to focus is the public sector. The public sector represents a large part of Europe's analog economy and digitizing its operations has the twin benefit of reducing cost and making service delivery more efficient. The public sector is an important buyer of telecom services and equipment, and digitizing the public sector has been a crucial step in realizing the digital economy in countries such as Denmark. [21] Additionally the public sector has a large pool of skilled workers who can be entrepreneurs in their own right, developing "killer apps" for public services.

FREELANCE ECONOMY

Workers in the EU, regardless of where they live, increasingly take advantage of job opportunities through digital means. Platforms such as Upwork provide a marketplace for companies and workers to transact, generally for freelance or contract work. In the United Kingdom, for example, one in three workers is a freelancer or independent contractor, and they earns more than the average full-time employee.
The companies generally using these platforms are primarily small and medium enterprises. A recent report conducted in cooperation with Upwork observes, [22]

> ***"Freelancers have had a positive view on the outlook for the economy and their businesses over the last three quarters. In general, the confidence indices have been increasingly positive, indicating the freelance sector is expecting a net increase in business and economic performance from quarter to quarter and furthermore, that this optimism has been strengthening over time. The high performance of freelancers in terms of capacity utilisation and earnings over the last three quarters indicate that these positive expectations are broadly being realised. In the short-term the performance of the economy affects the amount of business available to freelancers, however in the longer term the activities of freelancers boosts the performance of the economy.***

Citizens in the economically depressed countries such as Portugal, Italy, Spain and Greece need not wait for companies to be launched locally. They can find a variety of opportunities in other countries, particularly for contract work. Increasingly platforms such as Upwork are becoming the de facto "safety net." Upwork suggests that freelancers are increasingly positive and confident as the digital economy increases their opportunities. Creating a confident and self-reliant workforce is in line with the personal empowerment of which Mrs. Thatcher advocated.

18. "A Digital Single Market for Europe: Commission Sets out 16 Initiatives to Make It Happen," EU, May 6, 2015, http://europa.eu/rapid/press-release_IP-15-4919_en.htm.
19. Ibid.
20. See Jeremy Millard in Kim Andreasson, ed., Digital Divides: The New Challenges and Opportunities of E-Inclusion, Chapter 1 (Boca Raton: CRC Press, 2015).
21. "Digitaliseringsstrategien," Digst, (March 9, 2015), http://www.digst.dk/Digitaliseringsstrategi/Den-faellesoffentlig-digitaliseringsstrategi-2011-15/Download-strategien.
22. The Freelancer Confidence Index Q2 2015. https://www.ipse.co.uk/sites/default/files/documents/economy/FCI-Q2-2015-v1.pdf

CRAFTING THE RIGHT TELECOMS FRAMEWORK IN AN ERA OF CONTINUOUS CHANGE

The European Commission has recognized the challenges to connectivity in its Digital Scoreboard. Looking at its map of Europe, [23] it is evident that there are pockets of next generation networks, understandably high in major cities but lacking in rural areas, with some exception.

Historically the goal of European telecom regulation was to ensure low prices for consumers. This has been achieved by the static, service-based approach where incumbent network providers must provide access to service-based competitors, which get to resell the same service, frequently a regulated rate.

While low prices may be a laudable goal for some, the Commission notes that it has not resulted in the level of investment necessary to deploy next generation telecommunications networks. Hence networks in the EU are at best a patchwork. While this approach appears to be consumer-friendly in the short run, in the long run it shortchanges consumers because next generation networks are not built. This can be understood intuitively and logically, as a network provider that is forced to lease its facilities to its competitors will be reluctant to invest in its network.

This service-based regulatory approach has been supported by an academic theory called the "Ladder of Investment" by Martin Cave. [24] His ultimate goal was to support dynamic, facilities-based competition in which different kind of broadband technologies compete to give users access to the Internet by different facilities, e.g. mobile wireless, DSL, cable, fiber, and satellite. His goal is dynamic facilities-based competition in which networks copete because that's what drives innovation. [25] A world of service-based competition was not what Cave had in mind. He called it "regulatory induced arbitrage which attacks the incumbent's margin." [26]

23. "Point Topic - The Broadband Competition Map of Europe," Point Topic, 2013, http://point-topic.com/free-analysis/the-broadband-competition-map-of-europe/.
24. Martin Cave, "Encouraging Infrastructure Competition via the Ladder of Investment," Telecommunications Policy 30, no. 3–4 (April 2006): 223–37, doi:10.1016/j.telpol.2005.09.001.
25. Supra
26. Supra
27. "Onfone - the New MVNO That in Just Eight Months Cost the Jobs of 10 Top Danish Directors in the Mobile Industry," Strand Consult, accessed January 31, 2016, http://www.strandconsult.dk/sw4493.asp. and "Number Portability Is a Huge Success - Discount Mobile Service Providers Are Great with Numbers and Figures," Strand Consult, accessed January 31, 2016, http://www.strandconsult.dk/sw747.asp.

Regulators and policymakers frequently use Cave to justify wholesale regulation, but they fail to implement the requirements he stipulates. To get it right, regulators must set forth clear expectations and an exit strategy for entrants and then enforce those requirements. Cave says that climbing the ladder should be "demanding but feasible". Regulators' hope is that giving service-based competitors a "leg up", that they will climb the ladder, but in reality the opportunity does not attract actors that are interested in the long term project to invest in networks. The "regulatory induced arbitrage" opportunity invites actors which specialize in reselling. Their goal is to build a customer base which then can be sold at a premium. As practiced, the policy has not led to investment in new networks. [27]

The policy contrasts markedly with the approach taken in the US and Canada which has encouraged different facilities and technologies to compete. The widespread deployment of cable in both countries provides some of the fastest speeds and competition to copper and fiber networks in wireline technologies. Similarly spectrum polices allowing lifetime licenses and trading has supported greater deployment of next generation wireless services. It bears mention the government of South Korea and Japan made a number of polices to lower the cost of deployment to operators, as well as a tacit recognition that operators could price services in such a way as to earn a return on investment. This delivers a better quality network, but not necessarily a lower price to end users. In any case, the European Commission praises such countries for their broadband policies, but fails to implement the change needed in the EU.

Instead EU officials have valued low end user price above network quality. This is a strategic error. Next generation networks enable higher speeds, capacity and throughput. The higher level of technology is associated with a lower unit cost. So while Americans may pay more for a typical broadband subscription, they generally access a higher speed with almost twice as much data as a European. Thus they have lower unit costs. That people pay more for increased data, speed and quality is understandable. In any event, the American subscription enables lower unit cost and better volume pricing for users. Indeed if operators are forced to charge the same or similar price for a low speed connection, as for a high speed one, there is no incentive to invest in improving capacity to offer ubiquitous high speed networks.

SPECTRUM

Spectrum is the single biggest cost for a mobile operator and single biggest barrier to entry. But it is also the resource that if managed wisely can yield significant benefits to operators and consumers alike.

There is no better way to get maximum efficient use of spectrum that with a long-term license for which a party has paid the market price. When operators buy spectrum with a term of 30 years or more, it has an owner's incentive to develop the asset for its maximum useful life. Moreover allowing operators to swap and trade spectrum is also important. This is part of the reason why the US has multiple operators with pan-American 4G/LTE networks while the EU has none.

Telecom regulators suffer from classic information problems and generally are not as efficient as markets in harmonizing scarce spectrum. As the *10th Anniversary Handbook of Telecom Regulation* observes,

> ***There is now a growing consensus that past and current regulatory practices have delayed the introduction and growth of beneficial technologies and services or have artificially increased costs. As a result, there is a renewed emphasis on striking the best possible balance between the certainty of administrative approaches and the flexibility of more light-handed market-based regulation.***
>
> ***This follows a growing consensus that regulatory practices originally intended to promote the public interest may, in some cases, have either delayed the introduction and growth of new technologies and services, or artificially increased their costs.***
>
> ***There is, therefore, renewed emphasis on striking the best possible balance between the certainty of interference-free spectrum to encourage a stable roll-out of services and flexibility to allow improvements in cost, services and technologies to spread more readily to consumers and public services.***
>
> ***Good governance involves transparent arrangements for accountability and fairness. While decisions on spectrum allocation (among uses) and assignment (to individual users) inevitably reflect public policy objectives, government or political interference in detailed decisions, such as which firm should receive a particular license, should be avoided. The reward for such forbearance is enhanced investor confidence and, ultimately, more and better services for end-users.*** [28]

The current piecemeal approach to spectrum is at odds with the idea of seamless connected continent. Each member states has different bits and pieces of spectrum allocated to different operators with different conditions and different technologies on top of the complications and distortions created from mandated spectrum spin-offs from misguided merger remedies. In addition regulators may also be pressured to limit the supply of spectrum to increase the price at auction, thereby enriching government coffers. Moreover many government entities own prime spectrum, for which they have probably never paid, and are loath to give it up, even if they don't use.

But in spite of all these challenges, spectrum reform should not be outside the ambition of the Digital Single Market.

The European regulators' misguided approach to controlling domestic mobile prices has had another unintended outcome, making international mobile roaming prices higher. There is no doubt that many Europeans experience bill shock when their take their mobile devices on vacation, but when operators cannot cover their costs in domestic markets, they take the rational choice and look to recover the costs somewhere else, namely roaming prices.

Low roaming prices has certain consumer appeal. To be sure, consumers would like a lot of goods and services to have the same price, regardless of the underlying value. Imagine the Mercedes that could be sold at the price of a Skoda. Or the 120 square meter apartment in London having the same price for the same size as one in Londonderry. It doesn't take long to realize that such a system would cause competition and differentiation to collapse. In fact it's what centrally planned economies tried and failed to do-miserably.

The fact of the matter is that each European country has a unique mobile industry owning to its geography, population, market structure, regulation, taxation, technologies, and spectrum regime. The cost to deliver a minute of voice, a text message, or a megabit of data can vary significantly from country to country. Consider just the difference between mobile infrastructure needed in Luxembourg versus Norway, 150 times as large. Roaming charges evolved as a way for operators to exchange traffic on each other's networks and reflects the underlying costs to deliver that traffic on the given network.

But the new EU rules force mobile operators to divorce prices from their underlying costs. It is nice for consumers in the short run, but a disaster for them in the long run. It means prices have to go up somewhere else to cover the loss, or operators will downsize or exit.

Rather than promote misguided roaming regulation, the EU could allow the market to work. Operators would allocate the underlying resources more efficiently based upon supply and demand. In any case, there are already business models that allow Europeans to enjoy mobile communications on vacation. For one, travelers can buy pre-paid local SIM cards. Another is to allow operators to compete by offering free data travel plans. Operators could offer plans for zero rated content tailored to the specific location (maps, tourist info, travel videos etc).

But most important the EU could achieve its goal of having pan-European operators by facilitating a pan-European market for spectrum. That way Europeans would never have roaming charges anyway. Just like consumers in the US that take advantage of national networks at scale, European consumers would be able to take advantage of pan-European networks built on pan-European spectrum markets.

28. Colin Blackman and Lara Srivastava, 10th Anniversary Telecommunications Regulation Handbook, vol. March 2011 (infoDev. The World Bank. The International Telecommunication Union. http://www.infodev.org/articles/10th-anniversary-telecommunications-regulation-handbook.
29. Supra
30. Supra
31. Roslyn Layton, "Destroying the Dynamic Internet," US News & World Report, August 13, 2015, http://www.usnews.com/opinion/economic-intelligence/2015/08/13/fcc-net-neutrality-rules-undercut-americas-world-class-internet.

INVESTMENT AND DEPLOYMENT OF NEXT GENERATION NETWORKS

Investors in telecommunications networks are by and large people saving for their retirement. These savers place their monies in a variety of investment vehicles, whether stocks, bonds, mutual funds, pension plans and so on. Historically cable and telecom was a stable investment vehicle. Providers made long term investments, and consumers purchased subscriptions. This ensured the reliable deliverable of dividends, important for people on fixed incomes and those drawing pensions.

Around 2000 the EU accounted for one-third of the world's telecom investment, but once European regulators started imposing their misguided approach, investors looked at other regions. Today EU telecom investment has plummeted to less than one-fifth of the world's total. [29] It is no accident that the growth of European telecom firms as Vodafone, Telefonica, Telenor, and Deutsche Telekom comes from operations outside the EU.

To be sure, other countries, notably China, have increased their investment in telecommunications. But through the period, the US has maintained its leadership, enabling Americans, just 4.5 percent of the world's population, enjoy a quarter of the world's investment in broadband networks. [30] This was assured, at least until the American telecom regulator the Federal Communication Commission's recent adoption of Title II on broadband providers, [31] with a predictable policy approach favoring private investment in networks.

An additional casualty of the flawed European approach to telecom is that it has reduced taxes and employment in a number of countries. Telecom tax revenue has been important for many countries to fund important social service, but that has declined along with thousands of jobs in the EU telecom sector.

NEED FOR CONSOLIDATION TO PROMOTE INVESTMENT

It is a mantra of economics that competition is good and the solution to many market problems. The elementary idea of a competitive market is one with many buyers, many sellers, perfect information, a uniform good, no taxation, and no barriers to entry. But modern markets have varying degrees of these elements, and the regulation, ostensibly imposed to create competitive markets, frequently entrenches the position of existing actors, or creates perverse incentives for undesirable outcomes. [32]

Telecommunications is a highly sophisticated service requiring many inputs and technology. It needs a substantial economies of scale in order to achieve efficiency. For example, a square kilometer of land will likely not be a large enough area to justify creating a single telecommunications operation. To justify the investment, a large area is generally required.

On account of the high fixed costs and entrance barriers, telecommunications has traditional been run as a monopoly. It was not practical to have multiple firms erect their own telephone poles and wires, so the right is typically offered to one firm in exchange for certain covenants to serve a defined area or population and specific rates. However the rise of new networks, including mobile communications, has challenged the traditional model of telecommunications.

Mobile networks, for example, require spectrum, infrastructure, mobile devices, and subscriptions. While under a traditional telecom model these inputs would be offered under a vertically integrated model, mobile networks are highly diversified with a number of competing firms at each level.

To begin, the finite resource of spectrum must be allocated. Ideally the country has gone through a process to rationalize spectrum (finding the balance between civilian and military uses) and allocating as much as possible in a competitive auction. Ideally operators will own the spectrum in perpetuity and be able to trade. However the European model unwittingly puts caps on the life of spectrum, frequently leaving entrant European operators at a disadvantage, not being able to buy spectrum either to replace their existing holdings or because the supply is not available. [33]

Once spectrum is acquired, a mobile operator contracts with an infrastructure provider to build mobile infrastructure including masts and towers to provide coverage for the given area. Makers of mobile devices will offer equipment to end users either directly or through a resell agreement with operators. End user subscriptions can be offered directly to consumers or through wholesale agreement with mobile network virtual operators (MVNOs). In the past, services were typically offered only by the network operators, but the Internet today allows substitute communications services (typically Skype and WhatsApp) to be delivered on the same network. Thus the mobile market is extremely competitive and differentiated.

Consolidation is a widely discussed topic in regulatory and industry literature, but it has a certain nuances and implications for the mobile industry. The arguments for consolidation include gaining more market share, deploying better business models across a larger customer base, accessing new technologies, getting better terms for financing, finding hidden or nonperforming assets belonging to a target company, and winning better bargaining power from suppliers. Another key benefit of consolidation is lowering, or making more efficient, administration costs, for example, the same financial department can serve two companies.

When applied to network industries such as telecommunication, consolidation can have some important benefits including reduced operating expenditures on network operations, reduced capital expenditure with fewer sites (or the removal of redundant sites), reduced marketing costs (fewer brands to market), and better utilization of spectrum and infrastructure investment. In mature economies, sales and marketing costs can consume up to 25% of an operator's revenue, so reducing this line item through a consolidation is an attractive proposition. Moreover most European economies have mobile penetrations exceeding 100 percent, so in practice, there are no new customers for operators, and on account of the heavy service-based competition, operators must focus on poaching each other's customers, rather than investing in new networks.

Many European operators experience declining revenue and average revenue per user (ARPU) as users substitute free communication services such as Skype and WhatsApp instead of traditional voice and SMS. Traffic is exploding on mobile networks, but operators' ability to sell data packages don't necessarily replace the revenue they earned in the past. On account of heavy service-based competition, it is difficult for operators to raise prices to cover cost. So lowering costs through consolidation is essential not only for the industry's solvency, but to fulfil the larger goals of investment in next generation networks.

In mobile markets in many European countries, there is up to 75 percent redundancy of operating costs for operators.[34] It is thus natural that firms should consolidate, and this is necessary to make business case for savers to invest. Moreover many of the most desired applications, whether telemedicine or connected cars, require mobile networks to function. Additionally when looking at rural areas, mobile networks offer a more cost effective solution than wireline. As such it is critical that the operating environment be conducive to supporting this kind of infrastructure.

As mentioned, the European Commission has long recognized the importance of investment, including Neelie Kroes. [35] This was a cornerstone of new EC President Jean Claude Juncker strategic plan, [36] and was echoed by Vice Presidents Andrus Ansip [37] and Gunther Oettinger. [38] But these leaders have failed to live up to their promises, and the various branches of the Commission have made conflicting statements.

Instead the Commission has changed course, largely because of the uninformed leadership of Margrethe Vestager as Vice President for Competition. While a recognized leader in Denmark for the Ministry of

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the Interior in Denmark, she came to the helm of DG Competition which has an antiquated understanding of what creates competition in the marketplace. [39] Competition authorities, not having the time or wherewithal to update themselves on how technology creates competition, [40] fall back on an obsolete paradigm of counting the number of competitors in a marketplace as a proxy of competition. A modern competition analysis would take into account the value and diversity of the services consumers receive.

Not only does DG Comp fail to define the market appropriately, it does not take into account the role of technology in creating competition, for example the evolution of 3G to 4G and beyond. Moreover consumers substitute over the top technologies in lieu of operators' services, making Skype and WhatsApp some of the world's largest de facto telecom operators. In addition DG Comp fails to account for whether operators are "single play" or "full service" providers.

Having four mobile network operators is not only increasingly unsustainable in many countries, it is not empirically associated with lower prices, more choice, or more innovation. Moreover there may be more effective ways to support lower prices, increased choice, and more innovation than by artificially creating a fourth operator where market actors see no incentive to do so. If it is the case that regulation and spectrum allocation are "national" affairs, [41] it begs the question why DG Comp can deny mergers even when national regulatory authorities support them.

Denmark is a case in point. It vies with South Korea for the honor of world's most digital nation [42] and has some of the lowest prices in any developed country. Mobile operators number 2 Telenor and number 3 Telia wanted to lower cost to improve their respective positions, breaking even and running a loss. Not only did two operators already share a network, the merged entity would have better economy to extend their network to rural areas and provide stronger competition to market leader TDC, which has 51% market share and 95% of the EBITDA profits.

DG Comp, under the mistaken belief that a merger would increase prices in Denmark, deterred the merger by requiring remedies so onerous that the parties ultimately rescinded their request to merge. [43] Essentially DG Comp wanted the combined entity to spin off network, customers, and spectrum to create a fourth network operator, but there are no takers for such a proposition in the Danish market. It bears mention that the DG Comp does not make its analysis public, so its decision process is largely a black box.

In any case, the deterred merger has not succeeded to stop price increases; in fact all operators in Denmark have increased their prices soon after the merger was deterred, starting with market leader TDC. Across all network operators, the plans with price points under 100 Dkr (13€) were removed while data allotments were increased on existing plans, subsequently calling them "new" plans. [44] Those who already purchase the largest packages are slightly worse off, but the burden of the deterred merger falls hardest on those who bought the lowest priced plans, obviously those with the least ability to pay.

If operators can't cover their costs through consolidation, they will do so through price increases. Not only are the Danes shortchanged by not getting the next generation networks that the merger would have allowed, the incumbent TDC increased a time horizon with less fierce competitors. This proves the adage that regulation, in this case the competition authority's ability to deter a merger, served the incumbent.

To justify itself, the European Commission claimed that it supports consolidation that is "cross-border", not "in country". [45] This is just fancy spin-doctoring. The synergies available "cross-border" are marginal compared to the synergies available "in country". Moreover "cross border" spectrum is in extremely short supply and frequently not complementary to the operator that could invest.

From the perspective of the DSM it is extremely troubling that a merger was discouraged in Denmark, a small country of 5.7 million people and with the market cap equivalent to that of Hamburg, Germany. If operators can't get scale in national markets, they won't get scale across the EU.

However it is not always DG Comp's approach to scuttle mergers or insist on remedies, but the basis of approval appears to be arbitrary—or extremely political. Adding further to the complexity is that mergers will also be judged on whether revenue in earned in country or another EU state, which seems to go against the idea of a single market. For example the British Telecom/EE merger succeeded without remedies. [46] However DG Comp has not been so friendly to the Hutchinson/O2 deal, and remedies are likely.[47]

This leaves the UK with 3 network operators and 60 million users. If counting competitors is the name of the game, then it is not logical that it's ok for the UK to have 3 network operators serving 64 million people, but not for Denmark with a mere 5.7 million.

DG Comp's myopic aversion to mergers can be likened to American Federal Trade Commission which denied the merger of Blockbuster Video and Hollywood Video. [48] American regulators too have failed to see the role of technology in changing the market. Today Netflix has 70 million customers in 190 countries. [49] Competition authorities frequently fall prey to a classic error, misdiagnosing the situation and failing to allow the competition that can improve the market, the classic Type I regulatory error. Blockbuster had a plan for online video which was never tried because the merger was denied. It's possible that Netflix would have had more competition had the FTC allowed the merger.

Today Netflix exists in "co-opetition" with cable operators, both parties cooperating and competing. Netflix [50] is both strengthened by the widespread deployment of cable in the USA (ensuring its availability to millions of users), but the presence of cable is also a reason for Netflix to make its service more compelling.

While the EU may praise the digital economies of the US, Japan and South Korea, it is unfortunate that the European Commission has opposed implementing the very steps that have helped those countries achieve the proliferation of next generation networks, including allowing market consolidation. [51] These countries have multiple broadband access facilities at scale and continue to best the EU when it comes to the digital economy. It's no secret that Europeans are overwhelmingly served American Internet companies when it comes to the computing component of convergence.

As a regulator, the European Commission need not take a heavy handed approach. It can allow market forces to work. If telecom firms can consolidate, they can engage more effectively at dynamic, facilities based competition at scale. Consider the role that the cable industry provides in creating competition, particularly in the US. By inventing DOCSIS, they turned themselves from pay TV providers into broadband service providers. Similarly telecom providers offered DSL with the hope to deliver data and video, not just voice, over the the copper network. Not only do they provide credible wireline competition to DSL and fiber providers, they also challenge mobile operators for wireless services with WiFi and MVNO agreements.

European regulators in their myopic focus to micromanage network access have effectively deterred making the EU an network innovation test bed. Investment is not attractive; scale is limited; and user bases are small. As such, the transformative network innovations happen in the US, not the EU.

The EU has fallen behind the US, Japan and South Korea both the connectivity and computing domains. But it has perhaps one last chance to win leadership in the digital economy. While the temptation is strong to win by regulation—handicapping the strong, foreign players—this does not ensure that Europeans get the best services. Instead the EU should win by innovation, and it can only do this by allowing market forces to work. There is no better place to start than in telecommunications.

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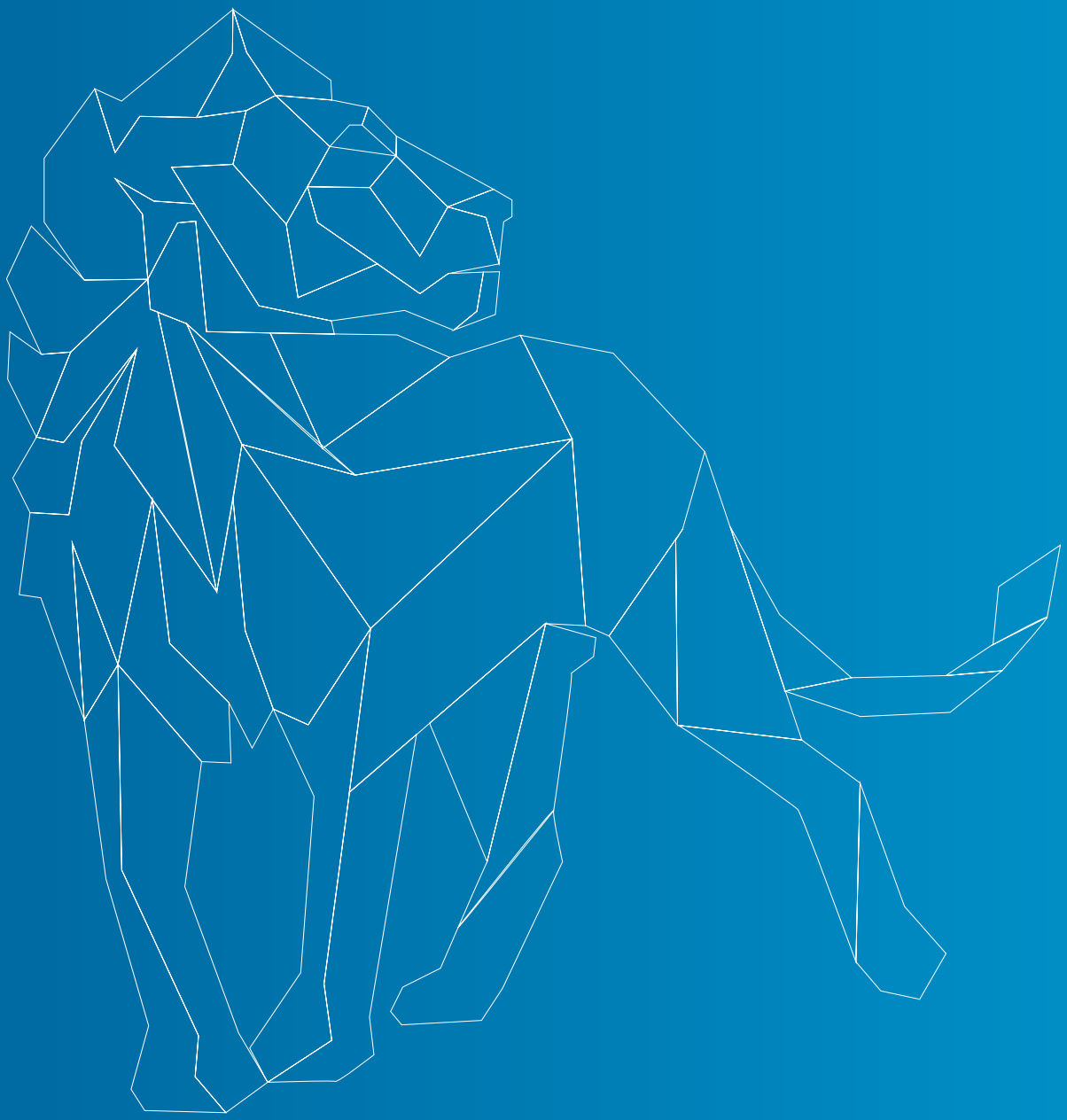

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