Stokab's response to the European Commission's public consultation on the White Paper "How to master Europe's digital infrastructure needs?"

Introduction

AB Stokab (**"Stokab"**) welcomes the opportunity to provide it's feedback to the European Commission's (**"Commission"**) consultation on the White Paper *"How to master Europe's digital infrastructure needs?"*.

In the White Paper, the Commission provides an overview of the current state of development of Europe's digital infrastructure by describing the trends and challenges in the sector. The key concern is that Europe is falling behind when it comes to the rollout of future connectivity networks and thereby also when it comes to meeting the objectives of the Digital Decade Policy Programme 2030. Against this background, the White Paper presents possible scenarios, based on three different pillars, which could be explored to tackle the challenges identified and to attract investment, foster innovation, increase security and achieve a true Digital Single Market.

Stokab is a limited liability company owned by the City of Stockholm. It was set up in 1994 to build an open and competition-neutral digital infrastructure capable of meeting future communication needs, spur economic activity, competition, diversity and freedom of choice. This was done based on the idea by the City that digital network infrastructure is a vital utility – just like streets. Stokab focuses on deploying passive infrastructure (dark fibre point-to-point) and operates its business on a wholesale only basis, leasing out fibre to the market (only business to business) on equal terms. Its aim is to focus on providing the essential infrastructure, dark fibre, on which customers can add active equipment and develop services and applications to meet a wide variety of different needs. As a result of the business model and its inherent incentive to lease out as much fibre as possible, Stokab's dark fibre is not only available for operators and service providers, but also for other companies (including SMEs), authorities, and public institutions (e.g. banks, hospitals, retail chains, real estate owners, universities etc.).

Stokab shares the Commission's view that *"A cutting-edge digital network infrastructure is the foundation for a flourishing digital economy and society"* and that *"Advanced digital network infrastructures and services will become a key enabler for transformative digital technologies and services such as Artificial Intelligence (AI), Virtual Worlds and the Web 4.0,*

and for addressing societal challenges such as those in the fields of energy, transport or healthcare and for supporting innovation in creative industries". Stockholm is an illustrative example of how such developments in digital technologies and environmentally sustainable broadband and digital services for the future have been supported by a neutral dark fibre network.[1]

Stokab also shares the view that investments in such digital network infrastructure and technological innovations are essential for Europe's growth and competitiveness and need to be encouraged. Stokab therefore welcomes the Commission's initiative for a broad dialogue on how to best achieve such investments and innovations together with meeting the future connectivity needs of all end users – citizens, businesses and public services – underpinning competitiveness of Europe's economy and ensuring secure and resilient infrastructures.

Guiding principles for Europe's digital infrastructure needs

Stokab considers that the following principles should guide the Commission's measures to meet Europe's digital infrastructure needs and any regulatory reform:

- Digital infrastructure networks are essential infrastructure for the digital revolution, in much the same way as roads, railways, and the exploitation of fossil fuels powered the industrial revolution.

- Digital infrastructure networks need to be future proof (dark fibre point-to-point, allowing for passive unbundling of fibres) to enable innovation in communications technologies as well as development of new digital services and applications to support not only the future needs of citizens, but also of businesses, public services and the scientific community.

- Based on an underlying future proof infrastructure, which supports the development of digital technoloigies and provision of any type of digital services, a single market for digital content and services can be achieved through harmonisation (a common set of rules and regulations that pertain to services and content products). This would also enable access seekers to provide their services in any scale they want across Europe.

- Regulatory frameworks should not try to steer how businesses should innovate or develop. Instead of promoting vertical integration and the emergence of pan-European operators, the past natural development of the European telecom markets with delayering at both a retail and wholesale level should be enabled.

- Investments in digital infrastructure networks require a stable and predictable regulatory regime that underpins long term capital investments and need to be promoted.

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[1] Please see Godlovitch et al., 2023, *Neutral fibre as a platform for innovation*, WIK Study for Stokab; https://stokab.se/download/18.4e63bdf518e5799b1da147/1712591992160/Stokab_Neutral%20fibre%20as%20platform%20for%20innovation.pdf and Godlovitch et al., 2020, Neutral fibre and the European Green Deal, WIK Study for Stokab; https://stokab.se/download/18.15d457b6178eff38ee02ed/1619701526100/Neutral%20fibre%20and%20the%20European%20Green%20Deal%20,%20WIK-Consult.pdf.

- The wholesale only business model can continue to play an important role in promoting competition and innovation, driving investments in infrastructure as well as contributing to lower end user prices.

Future-proof networks, innovation and investment at the heart of Europe's digital infrastructure needs

The White Paper describes a market situation with a rapidly changing landscape, where new business models and entirely new markets are emerging from technological developments around the App Economy, IoT, Data Analytics, AI or new forms of content delivery such as high-quality video streaming. A need to master the transition of Europe's electronic communication networks to the digital networks of the future is identified. However, the possible solutions presented, inter alia the need for European players to develop the necessary capacities and scale to become service platform providers and the creation of pan-European operators, are based on a flawed notion that it is possible to foresee the best outcome of the development of a dynamic market and to achieve that outcome by trying to steer through regulation. In addition, the outcome desired seems to be focused on further vertical integration and consolidation of the EU telecoms market. Stokab believes that this approach is problematic for several reasons, which are described below and are based on Stokab's experience of operating a robust dark fibre network that has not only been able to meet all different market demands for 30 years, but is future-proof to meet the demands of the future.

Competition and legal predictability is crucial for investments

Sweden has been successful as regards the rollout of fibre optic networks, access to high-speed broadband, low prices for end users and technological innovation. A strong contributing factor to this is the existence of a large number of local municipal networks operating wholesale only business models, where the infrastructure is separated from the service layer. The positive effects of such municipal networks have also been confirmed in an OECD report. OECD inter alia found that *"where capital has been available and networks have been deployed, experience generally indicates that municipal networks stimulate further investments"* and that *"there is evidence of private players increasing investment driven by competition provided by municipal networks in areas that would have otherwise had insufficient competition from a single incumbent operator"*.[2] Contrary to what is expressed in the White Paper regarding that competition, although resulting in lower prices, has contributed to a fragmented market where there is a lack of incentive for investment due to low profitability, the experience from Sweden is that wholesale only business models and competition drives investments in infrastructure as well as innovation and contributes to lower end user prices.[3]

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[2] Mölleryd, B. (2015), *Development of High-speed Networks and the Role of Municipal Networks*, OECD Science, Technology and Industry Policy Papers, No. 26, OECD Publishing, Paris.

[3] Please see Godlovitch et al., 2017, A tale of five cities: The implications of broadband business models on choice, price and quality, WIK Study for Stokab; https://stokab.se/download/18.52d820ca1732323a3ca4eb/1594711942698/A%20tale%20of%20five%20cities:%20The%20implications%20of%20broadband%20business%20models%20on%20choice,%20price%20and%20quality%20(2017),%20WIK-Consult..pdf

There is however a particular concern expressed in the White Paper about the need for European operators to have greater scale to allow them to invest in the necessary digital network infrastructures and succeed in the telecom markets. Stokab's view is that this is a misconception and that scale in networks should not be confused with scale effects in services and content. Stokab, for example, operates a local dark fibre network without being sub-scale and without a need to consolidate to achieve economies of scale.

It is also worth noting that when discussing the need to achieve scale in the European telecom sector, the White Paper refers to other parts of the world about the benefits associated with achieveing scale, for example citing comparisons of average revenue per user (ARPU) in the EU with other regions such as the US, Japan, and South Korea. However, such differences in ARPU seems to reflect the more advanced competition and comparatively lower consumer prices in Europe, while there is no reference to the cost side of the equation, which is where economies of scale ought to arise. The creation of a few pan-European operators would therefore limit competition, risk undermining the deployment of advanced digital infrastructure and drive up prices for European consumers, businesses and public administrations.

In the broad telecom network environment, Stokab believes that the legislative priority must be for a stable and predictable regulatory regime that underpins long term capital investments. Stokab also believes that the favourable treatment of wholesale only operators in the European Electronic Communications Code has had a very positive impact on investment and on the market development. Such treatment of wholesale only remains wholly appropriate given the absence of incentives to discriminate or to seek to impose excessive prices. A sudden shift in the regulatory approach that changes the terms on which the large scale investments that took place over the last ten years would be very destructive to the investments which needs to occur over the next ten years.

Future-proof networks and natural evolution of markets is key for innovation

When it comes to enabling and promoting technological innovation Stokab would like to make the following remarks. The ongoing rapid development of digital markets is not something entirely new. The telecom markets have also historically been dynamic and subject to technological developments.

When Stokab was established in 1994, it was not possible to foresee the technological leaps that have taken place since then (new generations of mobile technology, increase in data consumption, etc.), and their requirements on the underlying digital infrastructure. Stokab however decided from the outset to build its fibre network using a future-proof point-to-point architecture that would meet future capacity needs and could enable competition and technological innovation through physical unbundling.[4] And it has proven to be able to do so over time, recently by supporting advanced communication capabilities such as Quantum communications, which will be essential for the security of networks in a quantum computing environment and can only be supported over point-to-point fibre connections.[5] The dark fibres

[4] Point-to-multipoint architectures do not allow for passive unbundling of fibres and thus limit the scope for product innovation by access seekers. Please see *Neutral fibre as a platform for innovation*, referred to in footnote 1 above.

[5] High Performance Computing, which is critical for the evolution of big data processing as well as Quantum communications, which will be essential for the security of networks in a quantum computing environment, can

used for this purpose are no “specific” fibres, but the same fibres that were put into the ground by Stokab 25 years ago, which shows that they are still viable for today’s use and for the foreseeable future. The access to dark fibre and the innovations in network technology that it supports has also fostered innovation in the development of content, public sector services, research, and industrial applications.

In summary, it is not only crucial for both competition and innovation in communications technologies as well as development of new digital services and applications that fibre networks exists, but also that i) they are truly future-proof (allowing for passive unbundling of fibres) in order to meet future market demand and ii) access is provided to dark fibre for all players on equal terms. For more information on how neutral fibre serves as a platform for innovation, please see *Neutral fibre as a platform for innovation*.[6]

It is Stokab’s firm conviction, based upon experience, that regulatory frameworks should not try to steer how businesses should innovate or develop. The market should have the possibility and freedom to innovate by having the flexibility to explore and implement solutions that best meet the diverse and dynamic market demands, create new business models, services, etc. To enable this, a future-proof network that supports all types of innovation by access seekers, instead of limiting the scope for product innovation through network design, the use of specific active equipment or promotion of vertically integrated business models, is essential. This is also consistent with how the European telecom markets have been naturally developing over the past two decades – delayering at both a retail and wholesale level.

Embracing a diverse market environment with a multitude of players (both large and small) and different specialized products and services, enables businesses to either buy directly or via intermediaries to mix and match to create solutions for the end user. By allowing the natural evolution of the markets with its increasing fragmentation and specialization of different business components (delayering), Europe can unlock its innovative potential, which is crucial for its growth and competitiveness.

Harmonization and the European single market

As correctly described in the White Paper, the EU does not have a single market for electronic communications networks and services, but different national markets with different supply and demand conditions, network architectures, levels of coverage of very high-capacity networks, etc. Stokab believes that there is enormous potential in the single market for digital content and services, but does not believe that this is a function in any way of creating pan-European network operators. As noted above, Stokab’ s opinion is that (a) economies of scale do not exist in networks and (b) a greater specialization of inputs is what businesses need to deliver services to end users.

Stokab believes that what is needed is a common set of rules and regulations that pertain to services and content products such that if a product or service is launched in one Member State

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only be supported over point-to-point fibre connections. Please see *Neutral fibre as a platform for innovation*, referred to in footnote 1 above.

[6] *Neutral fibre as a platform for innovation*, referred to in footnote 1 above.

and complies with the rules and regulations of that Member State, it can automatically be deployed in each Member State without future compliance obligations.

A useful analogy might be to consider European road networks. While these are built on a national basis (sometimes with cross border co-ordination for motorways, etc.) there is no need for pan-European road infrastructure ownership. However, the transportation rules for the vehicles that use those roads apply across all of Europe and the same road rules and obligations that apply in northern Sweden equally apply in southernmost Spain. Something similar should be envisioned in digital markets so that European service and content providers can take advantage of the European single market.

Stokab's comments on scenarios in the three pillars

In addition to the views presented above, please find below Stokab's comments on selected areas of the three pillars included in the White Paper.

Pillar I: Creating the "3C Network" – "Connected Collaborative Computing"

Stokab agrees that investments in research and development and collaboration, for example through test beds, are important in order to promote innovation and to develop solutions to future challenges. However, the aim with creating a 3C Network described in the White Paper is to make *"sure that today's connectivity providers become tomorrow's providers of collaborative connectivity and computing, capable of orchestrating the different computing elements that this ecosystem requires"* and *"to provide the environment for future networks and applications being developed, tested, deployed, and integrated in the EU"*, rather than freely enabling innovation and development of different solutions based on market demands. In Stokab's opinion, such steering of the market towards a desired (in this case, vertically integrated) outcome risks getting in the way of the natural evolution of the market (which is currently moving to a delayered model and greater specialization at the different levels of the value chain). As described above, markets that evolve according to market demands will perform better.

Pillar II: Completing the Digital Single Market

Copper switch-off and sustainability (scenario 5 and 7)

Stokab supports measures to facilitate the transition from legacy copper networks to full fibre networks and welcomes that the White Paper addresses the sustainability aspect of the digital transformation. Such a transition would not only contribute to substantial energy savings in the operation of telecoms networks and significantly reduce CO_2 emissions, but also promote the take-up of new services and provide incentives for investments in fibre networks. Moreover, such a transition is also key for enabling digital solutions in climate critical sectors such as energy, transport, construction, agriculture, smart cities and manufacturing. For more information about the environmental benefits of fibre networks, please refer to the report *Neutral fibre and the European Green Deal*.[7]

[7] *Neutral fibre and the European Green Deal*, referred to in footnote 1 above.

In Sweden, the copper network is expected to be closed in 2026 and there is therefore no need for measures to accelerate copper switch-off. The reason Sweden is so far ahead in this respect is that the early rollout of fibre networks by the municipal wholesale only operators pushed the incumbent to invest in its own fibre network in order to compete.

Access policy in a full fibre environment (scenario 5)

The White Paper includes a discussion on changes in access policy in a full fibre environment. One measure that is considered is the introduction of a regulated European virtual wholesale access product. The purpose of such a standardised EU-level access regulation is to foster pan-European network rollout and support the emergence of pan-European operators.

In Stokab's view, as described above, the aim to foster pan-European networks through regulation is fundamentally flawed and the introduction of a European wholesale access product would risk interfering with market development and negatively affecting investments in fibre infrastructure for the following reason.

European access markets differ significantly and there is a considerable risk that a commonly regulated access product would disrupt market development and hamper investments in infrastructure in areas with a well-developed level of competition, such as for example Sweden. This is illustrated by the fact that, contrary to what is stated in the White Paper, any virtual wholesale access product would limit the capacity of access seekers to compete in terms of services and quality, since they would depend on the active equipment used by the network operator. As described above, only dark fibre allows full flexibility for the access seeker as regards product innovation. Consequently, if future-proof fibre networks (allowing for passive unbundling of fibres) are rolled out across Europe, pan-European operators may or may not evolve naturally depending on the market development. Stokab therefore believes that the development of the European telecom markets with delayering at both a retail and wholesale level should be promoted, rather than promoting vertical integration and the emergence of pan-European operators.

Pillar III: Secure and resilient digital infrastructures for Europe

Stokab shares the view that the security and resilience of submarine cables is of critical importance for Europe's digital network infrastructure. Such cables are challenging to protect, due to the long distances they cover and the fact that they run underwater where passing ships or natural events risk damaging them. Diversity of subsea cable infrastructure and spare capacity in the cables is therefore crucial to ensure resilience of communications and to minimize the impact in the event of cable damage incidents. As there is a limited number of repair ships, which are responsible for maintenance and repair of submarine cable infrastructure, coordination at EU level in order to strengthen the maintenance and repair capacity and thereby ensure security of existing infrastructure is positive.