

# **TELEFÓNICA'S CONTRIBUTION TO THE EU COMMISSION'S EXPLORATORY CONSULTATION**

The future of electronic  
communications sector and its  
infrastructure

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## The future of the electronic communications sector and its infrastructure

The following document provides Telefónica’s contribution to the exploratory consultation. It consists of:

- I. Summary of the responses to the questionnaire. The full responses to the questionnaire – those not identified as confidential – shall be published by the European Commission on the Public Consultation website<sup>1</sup>.
- II. Annex – ten pages document – to the consultation that is intended to highlight and further detail some topics that we consider are of interest for the purposes of the questionnaire. This document provides information of the annex submitted to the European Commission for publication at the mentioned website.

### I. Summary of the responses to the questionnaire

- The questionnaire is divided into four sections: technological and market developments, fairness for consumers, barriers to the single market and fair contribution by all digital players.
- In the first section, Telefónica describes the major **technological and market developments** that are expected to impact the telco sector and the whole society in the coming years. To unleash the full potential of this transformation, one of the **most urgent challenges to address** is to **increase the return of investments (ROI) above the cost of capital** to guarantee the sustainability of investments and to attract new investors. Telefónica expects that a new wave of investments in the sector (new capital inflows) should be driven by more attractive markets on the back of in-market consolidation and a fairer regulatory framework that allows for sustainable returns and boosts the business case for investment. A legislative tool assuring Large Traffic Generators (LTGs) contribute to infrastructure investments would undoubtedly help.
- In the second section on fairness for consumers, Telefónica explains why the **universal service regime in Europe has become obsolete and is no longer fit for purpose**. It has not effectively contributed to extend coverage when compared with other mechanisms, such as private-public funding. The universal service regime has contributed moderately to support affordability and accessibility to telecommunication services. However, other mechanisms such as direct subsidies from public budget would be more appropriate to address necessities for citizens with low income or special social needs.
- In the third section, Telefónica explains why **market fragmentation at national level is an obstacle to attracting investments in Europe**. Investment sustainability would be strengthened through in-market consolidation rather than cross-border consolidation. However, the EU-wide introduction of regulatory simplification and best practices harmonization would make markets more attractive.
- In the fourth section, Telefónica explains and proposes its solution to the market failure which is a fair contribution by LTGs. Internet traffic has grown by over 20% yearly in European Electronic Communication Networks (ECNs) over the past decade. The Arthur D. Little traffic report forecasts **increasing data consumption trends are to be expected until 2030**. This evidences that ECNs providers’ investment effort shall be maintained to address increasing traffic demand despite any efficiency gain that could be implemented (such as compression algorithms) or any traffic routing decision (such as using Content Delivery Networks, CDNs). As ECN providers can’t monetize increasing volume of Traffic Generators’ (TG) traffic, pressure mounts on Returns on Investment for ECNs, being already below cost of capital. LTGs’ asymmetric bargaining power limits the adoption of a two-sided market and for ECNs to negotiate with LTGs for the national data delivery service provided. Furthermore, a recent

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<sup>1</sup> <https://digital-strategy.ec.europa.eu/en/consultations/future-electronic-communications-sector-and-its-infrastructure>

Compass Lexecon report identifies a **market failure resulting in an underinvestment in networks**. The only solution to address this market failure is through the intervention of regulators and resulting in LTGs contributing to the sustainability of network investment costs. The **Fair Share solution** proposes imposing an **obligation on LTGs to negotiate with ECN providers an agreement for the service of delivery of LTGs traffic through national networks to end users**. Only largest traffic generators, **those exceeding a 5% bandwidth occupation** at peak hours should be bound to the obligation, thus protection innovation and smaller TGs to thrive and compete, while **all ECN providers** irrespective of their size would be **subject to the right of requesting a negotiation**. The European Commission could foresee transparency and accountability **measures to ensure that the resources are invested** effectively in network deployment as well as in improved capacity and efficiency of networks.

This proposal would not only address the market failure and foster closing the identified investment gap to achieve Europe's 2030 connectivity targets, but would be **beneficial for end users, TGs and the society as a whole** as Toulouse School of Economics' and Oxera's reports conclude. Additionally, by **setting a price signal on traffic**, LTGs would have an incentive to be **more traffic efficient**, thus contributing to **reduce energy consumption and CO2 emissions**.

## 1. Section 1. Technological and market developments: impacts on future networks and business models for electronic communications

- Telefónica expects that the technological developments that will have the largest impact on the electronic communication sectors in the next 10 years are Network Virtualization, Open Networks/ network disaggregation and cloud RAN, metaverse-like technologies, Artificial Intelligence (AI)/ Machine Learning (ML), and Edge Cloud.
- A key challenge to address this transformation is the need to increase capacity and incorporate new capabilities in a cost-efficient way, increasing ROI above Weighted Average Cost of Capital (WACC) to guarantee sustainability of investments.
  - Network Virtualization and Open and disaggregated solutions may help to increase efficiency and contribute to a higher ROI. A new model to monetize the investment in premium capabilities (latency, jitter, ultrasecurity) offered "as a Service" is required to face the new investment in 5G requiring massive deployment of edge cloud and infrastructure.
  - The deployment of an edge cloud infrastructure would allow to host new cloud-native network technologies (short term the 5G SA Core and Edge Computing, medium term the Open/CloudRAN and the software-defined transport network).
  - The application of Data and AI/ML to the network processes (deployment, operation and maintenance) will be fundamental to address a more complex network architecture (software-based, cloud-native, etc) that will demand high levels of orchestration and automation.
- The technological developments identified will have an impact on the role, business models and investment effort of the telco operators. These developments will also have an impact in the digital players, notably in their services, applications and business models because they will require the allocation/dedication of certain (scarce and costly) network and computing resources.
- We consider that the strengths, weaknesses, opportunities, and threats for the providers of electronic communications are the following:
  - **Strengths:** wide network capillarity as precondition for digitization, proven experience in network management/orchestration and in providing secure communications, tested reliability and resilience, strong relationships with different customers groups and key stakeholders.
  - **Weaknesses:** major investments subject to rapid technological change and capacity to meet the ever-increasing traffic demand, financial weakness (high debt, increased cost

- of capital, decreasing revenues, margins and returns), asymmetric and outdated regulation that distorts market dynamics and is inadequate to foster innovation, market fragmentation at national level, increasing leasing costs due to the need to sell passive infrastructure to finance the investment and legacy infrastructure that needs to be maintained.
- **Opportunities:** supporting and enabling the digital transformation of our customers, guaranteeing secure connections and the best service, including B2B and public administrations digital transformation; increasing demand of Internet of Things (IoT) and emerging digital services in the context of Web3-Metaverse, enhancing the role as orchestrator, developing new business models (Open Gateway) and pursuing collaboration with other electronic communications networks providers and OTTs.
  - **Threats:** artificial competition in the telecom market driven by regulatory decisions, ever-growing traffic from OTTs challenging network sustainability, increasing CAPEX and OPEX needs without a matching increase in revenues, growing cyberthreats resulting in need to reinforce security of critical infrastructure to guarantee the security and reliability of the service, limited competition among vendors and disruption of the supply chain, growing telecom disintermediation risks, geopolitical impacts mainly driven from the United States and China.
- Telefónica considers that the main barriers to achieving the needed transformation can be found on different levels:
    - **Legal / Regulatory level:** (i) **Regulatory simplification and harmonization** with horizontal rules (e.g. privacy, security, consumer) and removing sector-specific rules notably the intervention in wholesale and certain retail prices; (ii) **more sustainable national market structures** would allow operators to achieve local scale for an adequate return on investment while maintaining competition; and (iii) **lack of regulatory action to guarantee the Fair Share payments from LTGs to telecom operators** according to the service they benefit from.
    - **Economic level:** Increasing the ROI above the cost of capital to guarantee sustainability of investments (long payback period and limited returns).
    - **Technological level:** Solving the potential risk of lack of competition among vendors and disruption of the supply chain.
  - It is important to note that **connectivity infrastructure** is by far the area where the highest investments are needed to achieve the above-mentioned transformation. Approximately 90% of Telefónica's investments are dedicated to connectivity. Another relevant area for investment is network management, to automate deployment, provisioning, configuration, operation and maintenance. The deployment of edge-cloud infrastructure and cybersecurity (by design) also requires significant investments.
  - Telefónica expects that the network upgrades will trigger innovative services that will lead to new sources of revenue. However, **enhanced connectivity in a high Quality of Service (QoS)** will remain the main source of revenue as gaming, entertainment, health/wellness and remote working are expected to drive the adoption of Augmented Reality technologies. **Fair share contributions** from LTGs are expected to constitute a new revenue stream for European telecom operators, compensating them for the service they provide. New revenue streams are also expected to emerge **in B2B and public administration transformation**, where new use cases will continue to emerge to accelerate digital transformation and notably the exposure of **APIs- Open Gateway**.
  - **Different cooperation models** are becoming increasingly relevant and are expected to unfold between digital players, telecom operators, vertical players or tower companies. Especially forms of cooperation that improve the QoS while increasing traffic efficiency are expected to emerge.

## 2. Section 2. Fairness for consumers

- As set out in the questionnaire, we are convinced that the universal service mechanism has proven to be inefficient and ineffective, so adding more contributors or defining new financing models should not be considered. Notably, from the supply side (availability), the mechanism has proved to be inefficient to extend coverage because the universal

service is intended to guarantee access to any request from customer. Direct public subsidies for network deployment enable providing coverage to a full underserved area more cost efficiently in terms of cost per connection.

- Additionally, from the demand side (affordability and accessibility), we consider that the most effective way to guarantee the digital social inclusion is through direct subsidies -in the form of vouchers-. Such subsidies would allow consumers to choose their operator without the need to manage a fund. Also, these subsidies should come from public funds managed at national level to better target the respective needs. For citizens with special requirements, Telefónica considers that the most efficient and effective mechanism is to develop a collaboration framework with different associations. Technological developments and market dynamics have resulted in the provision of certain functionalities and devices with enhanced accessibility matching the universal service objectives for preventing digital social exclusion as part of Telefónica's portfolio.
- In addition to the above, it should be noted that the universal service is based on the management of a fund, generating administrative load and significant delays.

### 3. Section 3. Barriers to the Single Market

- One of the key obstacles to EU telecom operators is market fragmentation at national level. The largest investments are made in access network where scale is not transnational. Profitability and return on investment synergies are created by having more customers using networks assets. Investment sustainability could be reached through in-market consolidation rather than through cross-border consolidation.
- A cross-border transaction needs a business case: operators would be inhibited from engaging in cross border transactions if the markets in question do not have structures that allow for dynamic competition and adequate return on investment or if they don't have investment-friendly national regulations.
- Transnational services are limited (e.g. roaming, IT services to multinational firms) and already efficiently offered through cross-country wholesale agreements between operators and other partners.
- In areas in which there is an economic rationale, cooperation is fostered by telecom operators (Open RAN, GSMA Open Gateway) which build upon virtualized and open network architectures. Notably Open Gateway will foster and benefit the demand at an EU level, offering network capabilities in a standardized way across member states.
- The EU-wide introduction of regulatory simplification and best practices harmonisation not only sectorial but also in consumer protection, taxation, audio-visual, permits, cybersecurity or data, would also save costs, increase efficiency and make markets more attractive for investments. Regarding spectrum licensing, flexibility is needed to accommodate national circumstances like geographical differences and population densities. That said, a more harmonised and investment friendly approach to licensing spectrum would help to close the investment gap and reach the EU's connectivity targets.

### 4. Section 4. Fair contribution by all digital players

**Internet traffic demand is and will remain strong and it is driven by five to six large traffic generators in each national network.**

- The average bitrate per user for each service has increased on average 10% per year over the past 5 years. Adding the increase of the number of users, and of hours of video viewed, results in traffic volume increasing 34% annually on our networks.
- This trend will continue as the ADL traffic report (Arthur D Little 2023 report "Evolution of data growth in Europe" for GSMA and ETNO) shows: video share of total traffic will rise to 75% by 2030, and traffic will keep growing at similar levels.
- Telefonica estimates peak time traffic will grow in a range of 21% to 30% CAGR until 2030. This is based on our internal data and estimations, and also supported by Arthur D. Little's

report in which average fixed data consumption per user is expected to increase by 20% until 2030 and average mobile data consumption by 25%.

- Video, including social networking video, is the main driver for data consumption growth – video’s share for fixed traffic will rise 7 points, up to 74% of total, and 12 points share of mobile traffic to 72% of total by 2030 – due to increasing penetration of higher resolution content and move towards live sports streaming and increasing time spent by users. As video has a higher peak to-average ratio than data or file sharing, peak Internet traffic, the driver of network capacity investments, will grow faster than average traffic.
- Compression algorithms cannot be the only solution or relief for ever growing bandwidth demand. Content providers’ use of adaptative streaming results in user’s connection occupying as much bandwidth as available. Then compression is used to increase image quality (SD, HD ...) for occupied bandwidth, and not to lower bandwidth usage.
- Other initiatives such as the deployment of CDNs, have also a very limited impact alleviating bandwidth and investment requirements on ECNs national networks. The deployment of CDNs closer national networks decreases international transportation costs and enhances users’ quality of experience (lower delay). Impact of CDNs within network of ECN providers is minor for national transport networks, having very limited bearing on the volume of traffic on fixed Access and aggregation networks. For mobile networks, cost savings is even relatively lower when compared to total network costs making use of CDNs much less efficient. Despite LTGs investments on CDNs, ECN providers’ investments keep on the rise due to growing traffic demand and the need to upgrade consequently national fixed and mobile access networks.
- Telefonica traffic data shows five LTGs to be responsible for at least 55% of bandwidth demand during peak hour.

***The need of a legal solution to solve the market failure that leads to underinvestment.***

- ECN providers cannot monetize the increasing volume of LTGs traffic, putting further pressure on Returns on Investment for ECNs, being currently below cost of capital.
- Due to Internet evolution and global business scale of LTGs, LTGs enjoy an asymmetric bargaining power that inhibits ECN providers from commercially negotiating with LTGs for the national data delivery service that they provide. For example, LTGs are in a position to use alternative routes to convey their traffic to the detriment of quality of service / end user experience for which only ECN providers will be blamed for by consumers.
- Furthermore, the asymmetric bargaining power also stems from the fact that LTGs’ services are a “must have” for end users. In combination with strong competition between ECN providers this means that all ECN providers are forced to provide those services and that they cannot deny providing the network service to LTGs -which would also be secured by provisions of Open Internet Regulation-.
- Adoption of a two-sided market is therefore hindered by LTGs asymmetric bargaining power and “must have” condition of LTGs services. Recognition of two-sided market nature would allow receiving direct payments from LTGs, fostering economic sustainability of network investments and helping to reduce the investment gap, having an overall positive effect on consumer welfare.
- Compass Lexecon’s report – as summarized in the Annex – Identifies a market failure leading to under investments in networks.
- The investment gap identified by the European Commission to meet the 2030 Digital Decade connectivity targets – €174 bn – is the result of the under-investment problem. EU telecom sector can’t address both problems alone: closing investment gap implies increasing EU investments by 50%, with investment intensity shifting from 16% of revenues – fully in line with USA and Japan markets – to 24%.
- A mandatory mechanism is the only way to solve the market failure and at the same time help close the identified investment gap towards achieving the 2030 Digital Decade connectivity targets.

***The proposed solution: Fair Share***

- A legislative tool should impose an obligation on LTGs to attend negotiation requests from ECN providers for fair contribution: paying for the service of delivering the traffic over ECN national networks, fixed and mobile, to end users.
  - As contribution for the provided service would not imply any quality assurance or traffic management differentiation, no asymmetries/discrimination would be introduced for services provided over the Internet. Consequently, the *Fair Share* solution upholds equal treatment of traffic, a core principle of an Open Internet.
- Should negotiation requests not be attended, or an agreement not be possible within three months after the initial request, any of the parties can ask for the intervention of the Competent Authority (CA) to resolve the dispute.
- Telefónica recommends Final Offer Arbitration – FOA – as the dispute resolution mechanism
  - Both parties present an offer including all commercial terms, one of which CA shall choose as binding, ruling the commercial relation.
  - European Commission could provide further guidance for CA for the selection between the offers to solve the dispute. The procedure should also, include compliance and fining provisions.
- European Commission could foresee transparency and accountability measures to ensure that the resources are effectively invested in network deployment as well as in improvements of network capacity and efficiency.

### ***Definition criteria for LTGs (Large Traffic Generators).***

- Bandwidth occupation at peak time is the criteria for network dimensioning, i.e. CAPEX spending. Therefore, Companies exceeding 5% bandwidth occupation at peak hour are to be considered as LTGs. This threshold proposal should be set based on internal data to capture relevant share of bandwidth occupation / investment demand, while limiting the number of companies to a minimum (Pareto Principle: 80% results with 20% effort).
  - This allows to establish a causal relation between excessive traffic demand driving investment requirements and fair contribution payment.
  - Largest companies have a differential impact in driving up network investments. Therefore any symmetrical bargaining power in relation to telcos would be subject to the obligation.
  - Smaller companies below the threshold would not exert such great demand on network capacity and investment requirements. Thus, they would not be subject to the fair contribution obligation; this would protect innovation and aid emerging companies to grow and better compete with LTGs.
  - Targeting only largest traffic generators is the most effective and least intrusive solution to foster traffic efficiency.
- Busy/Peak hour is defined as 60 minute period of highest bandwidth usage within a week. Provided data average of one year (52 weeks).
- Threshold should be applicable at national level, calculated on an annual basis, at each operator’s fixed and mobile networks independently to account for different usage and investment costs patterns of fixed and mobile networks.
- The consideration of a company as a LTG should be dynamic. It should be assessed periodically, ideally on annual basis, determining a period for i) data measurements to identify LTGs, for example weekly averages could be considered to smoothen exceptional one off bandwidth demand surges; we have used 52 weeks average to identify LTGs – ii) period for which the LTG definition is applicable to a company before a new assessment is needed, and iii) periodicity of the assessment. Given traffic dynamics, we recommend twelve months period for iii).
- Traffic is to be attributed to TGs according to the source/ origin, irrespective if entering national network through direct interconnection, or indirect interconnection (transit/Peering/Third party CDN).
  - Traffic from CDNs is to be attributed to a specific TG. Considering not all traffic measurement tools used by ECN providers allow to attribute traffic to a specific TG, European Commission could impose a transparency obligation on CDNs and alike

- intermediaries to report source of traffic for a proper assessment of LTGs; EC could even set a EU clearing house where to reconcile information provided by ECN providers, intermediaries and TGs with the purpose of identifying LTGs.
- Because the proposed solution is agnostic to strategic traffic rerouting, LTGs would not be able to avoid contributions by delivering traffic through indirect interconnection / international third parties, thus preventing potential degradation of service quality received by end consumers as claimed in the South Korean case.
  - Traffic of different services / companies belonging to the same parent company or group of companies is to be added together for the purpose of identifying LTGs.
  - Additional conditions to the threshold could also be considered to account for the special societal role of providers of audiovisual media services of general interest.

### ***Beneficiaries of Fair Share initiative proposed solution***

- **All ECN providers** are subject to the right to request and conclude an agreement with LTGs for the traffic delivery service over ECN national networks to end users.
  - All ECN providers, fixed and mobile, big and small, operating public access and core networks are subject to increased investment costs due to growth of traffic demand. Therefore, everyone should be subject to the right.
  - This would prevent *Fair Share* resulting in competition distortion between ECNs.
  - European Commission could provide further assurances for smallest ECN providers granting them additional tools to ease the burden of negotiation. For example, precedents in other jurisdictions, allow smallest companies - subject to conditions depending on the size of the company – a collective negotiation with an LTG.
  - As far as the *Fair Share* solution provides a solution to the market failure, ECNs will benefit from it and will have further incentives to continue investing.
- **End users** will also benefit from *Fair Share* solution:
  - Enhancing sustainability of networks, securing continued and faster QoS evolution and better networks will allow to match end users’ demands.
  - Toulouse School of economics ([bit.ly/3o90glg](https://bit.ly/3o90glg)) and Oxera ([bit.ly/41CcMHT](https://bit.ly/41CcMHT)) reports conclude *Fair Share* can lead to welfare enhancement for users and whole of society among others by means of lower access prices for the combination of access and content due to competition dynamics reflecting additional revenue stream for ECN providers.
- **TGs** will benefit from faster advancement to better networks capable to deliver their innovative and more demanding services (i.e. virtual worlds such as metaverse).
- **The whole society** would benefit because
  - Compensating ECN providers for the cost incurred to deliver LTGs traffic will foster network investments. These will allow faster closing of investment gap and achievement of 2030 connectivity targets reinforcing digital competitiveness of the EU in the global landscape.
  - Induced incentives on LTGs for efficient data traffic generation by setting a price signal on traffic would result in positive effects on energy consumption and CO2 emissions. More investments into future network technologies by ECN providers will improve energy efficiency.



## II. ANNEX to the Exploratory Consultation

The intention of this document is: i) to include additional information to the responses to the questionnaire and so, to better explain Telefónica’s views; and ii) to highlight and further detail some topics that we consider are of interest for the purposes of the questionnaire [Confidential information deleted from Appendix]:

1. **Financial situation of the telco sector in the European Union.**
2. **The economic evidence of the existence of a market failure in the provision of the service by telco operators to LTGs.**
3. **The downsides of the implementation of a universal service fund (USF) in Europe to solve the market failure. Comparison to the USA case.**
4. **The relationship between the *Fair Share* initiative and the Open Internet Regulation.**
5. **Fair cost recovery in South Korea**
6. **Brief description of the *Fair Share* solution proposed by Telefónica.**

### 1. Financial situation of the telco sector in the European Union

New technologies, such as IoT, AI, cloud/edge computing, immersive technologies (e.g., web3, metaverse) are already a reality and they will be the backbone of future competitiveness and social welfare, with connectivity at heart. Use cases for these technologies will not materialize in time for Europe if the connectivity infrastructure doesn’t evolve simultaneously and telcos invest and deliver on time the targets set by the European Commission in the Digital Compass 2030.

However, progress towards building key digital infrastructure is still too small in Europe. For example, less than 3% of mobile subscriptions in Europe are 5G while in the USA and China this figure is 15% and in South Korea it is almost 30%. Current evidence suggests that European FTTH coverage is expected to reach roughly 90% by 2030 and will therefore risk falling short of the EU Digital Decade target on ‘gigabit for everyone’. According to the European Commission, Europe has an estimated investment deficit of €174bn in order to meet the EU’s 2030 connectivity targets.

Without a strong telecom sector, Europe’s industrial capacity risks increasing its competitive gap with other regions to the detriment of the welfare of Europe’s citizens. A strong European telecom sector is paramount for EU’s competitiveness and digital strategic autonomy in a global digital market.

However, European telcos declining revenues and returns on investments and their overall deteriorating financial situation are affecting the sector’s capability to invest:

- European telecom services have been under deflationary pressure during the past 10 years. Meanwhile, the digital ecosystem has been transformed into a data market. This data market has been supported by the continuous telecoms’ investments to expand network capacity, coverage, and ensure quality of service. And the pace of investment is critical to continue supporting the digital era ahead.
- Importantly, the decoupled trend between data traffic evolution and telecoms revenues, show the telecom industry’s difficulty in monetizing new investments required to address increasing demand. While data traffic is growing rapidly (CAGR of 35% in 2011-2022 and above 50% for mobile data), operators’ revenues are declining (at a -3% CAGR). Almost a third of the European telecom revenue market has been destroyed since 2011. Average Revenue Per User (ARPU) in Europe are about half of ARPUs in the USA in 2021, both in fixed broadband (€21.8 vs. €50.6 in the US) and mobile (€14.71 vs. €37.37 in the USA). The European telecom

sector is becoming irrelevant, with a shrinking share in the global sector’s revenues market which is almost 6% percent points lower than a decade ago.

- According to JP Morgan, European aggregate incumbent EBITDA (excl. T-Mobile USA) has declined at a -1.5% CAGR 2011-2021, while capital intensity has expanded at a +1.1% CAGR since 2011 and the free cash flow available to invest is declining (-57% in 2021 vs 2011 for European incumbents – excluding T-Mobile US).
- The need to increase investment to achieve 5G and FTTH objectives also means that European telecoms companies have reached their highest investment intensity for many years (nearing 20% in home markets in 2021).
- Although the ~€500bn invested by the European telecom sector during the last decade, investments in Europe remain low per capita and below other regions (210,7 euros per capita/year in the United States; 104 euros per capita/year in Europe in 2021), as well as the return on investment (14% in the USA versus 6% in Europe, according to JP Morgan).
- The decline in market capitalization of European telecom operators reflects the sector's difficult outlook compared to other regions. This loss of leadership is leading to a collapse in the market capitalization of EU Telcos: while over €280 bn has been created by the US Telcos since 2010, around the same value has been destroyed in Europe.

The future readiness of European networks is at stake due to insufficient return on investment, below cost of capital, which in turn would be affecting Europe competitiveness and citizens’ welfare.

For Europe to play a role in a new tech era, policy support for the telco sector is critical. New revenue streams for the sustainability of network investment and conditions to increase efficiency and return on investment are crucial.

## 2. The economic evidence of the existence of a market failure in the provision of the service by telco operators to LTGs

From the consumers' perspective, content and connectivity are consumed as an inseparable whole. They are an example of what economists call complementary products. As a consequence of their complementarity, when an operator lowers the price of connectivity or increases the capacity of its access networks, it creates greater profit potential for content providers. The same is true in the opposite direction. The close relationship between the two services is at the root of the "market failure" to which the OTT *Fair Share* initiative would respond. Unless there is a mechanism to transfer the incremental value that a given pricing or investment strategy generates on the complementary side, decisions will be sub-optimal (prices too high, investments too low).

It is important to note that the new mechanism would be linked to the delivery of traffic through the national networks to the end user, fixed or mobile. That includes access networks and national transport. This is a different service from the international transit and peering services that transport of content to the national network. It has a different nature and respond to different market dynamics.

In order to demonstrate the existence of such a market failure and the economic rational of the initiative Telefónica has commissioned a paper to Mr Daniele Condorelli, Professor Mr Jorge Padilla, and Ms Zita Vasas, “Another Look at the Debate on the *Fair Shar*” Proposal”. In this paper, the authors consider whether it is appropriate for regulators to intervene in the market based on the *Fair Share* proposal. They first seek to identify the source and nature of the market failure that the proposal endeavors to correct. In the absence of such a failure the proposal would lack justification as a matter of economics. They also investigate whether such a failure could be resolved through untethered bilateral negotiations or, instead, requires public intervention to be effectively addressed.

The authors then assess whether the *Fair Share* proposal can correct such a failure and explore its possible drawbacks and limitations. They proceed to discuss how that proposal could be implemented in practice and the likely consequences of alternative implementation designs.

They conclude that payments from LTO<sup>2</sup>s to telcos are meant to incentivize telcos to undertake investments that are beneficial to the LTOs and their customers. Those payments will increase the demand for content and, therefore, should also increase the incentives for LTOs to invest in developing more and better content.

There is a risk that the current unregulated arrangements result in no payments from LTOs due to asymmetries between industry participants, free-riding among LTOs, and the large imbalance in bargaining power between LTOs and telcos. Thus, some form of intervention will be needed to address the underinvestment problem we have identified.

This paper is accessible through this link:

<https://www.telefonica.com/en/wp-content/uploads/sites/5/2023/05/Compass-Lexecon-Report-on-the-fair-share-debate.pdf>

A summary of the paper is accessible through this link:

<https://www.telefonica.com/en/wp-content/uploads/sites/5/2023/05/The-Fair-Share-Proposal-in-Telco.pdf>

The paper is open for comments from anyone, notably from the academic community:

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4449086](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4449086)

Another report on the economic rationale of the initiative is the working paper published by Bruno Jullien and Matthieu Bouvard from the Toulouse School of Economics “Fair cost sharing: big tech vs telcos”<sup>3</sup>.

This paper analyses the impact that the introduction of a payment from LTOs to telcos would have on the final prices of connectivity and content. It concludes that in very plausible scenarios consumers would benefit from the change, for two main reasons:

1. The main content providers are funded by advertising and are able to monetize each user very well, partly because of their innovation, and partly because there are not many alternatives for advertisers. With a small increase in ads, they could compensate for the new payment, with a relatively low impact on the end user. On the connectivity side, the new payment would translate into a lower price that for the end-user would more than compensate for having to endure a few more ads. The result would be an increase in the amount of demand for both connectivity and content.
2. It has been shown that end-consumers are reluctant to take on variable payments for traffic and highly value the peace of mind that flat rates provide, prompting operators to provide such flat rate offers them as not to lose their customers to competitors. This results in little incentive to “save on traffic”. The new payment would generate such incentives, and lead the content provider to be more efficient. The increased efficiency would reduce the network cost per user, especially in mobile networks, which would be passed on to the price of connectivity, benefiting the end customer.

Also relevant to this debate is the recent paper commissioned by the Dutch ministry to Oxera<sup>4</sup>. The paper includes the use of a simple economic model to quantify the impact of the new measure on consumers, telecom operators and content providers. There are two key takeaways:

1. The most likely outcome (the base case) is that the new proposal would enhance welfare, even if in our view the model underestimates the potential for increased efficiencies.
2. Impact of the measure for the base case is positive for consumers: end users would be recipient of 35% of the value transfer considered the effects of lower connectivity prices, increased broadband penetration, and an increase in content prices.

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<sup>2</sup> LTO meaning “Large Traffic Originator” according to the terminology used in the report. In this context, LTO can be considered as equivalent to LTG (Large Traffic Generator) that is the terminology used in Telefónica’s response to the consultation.

<sup>3</sup> [https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/wp/2022/wp\\_tse\\_1376.pdf](https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/wp/2022/wp_tse_1376.pdf)

<sup>4</sup> Oxera, January 2023 “Proposals for a levy on online content application providers to fund network operators”, <https://open.overheid.nl/documenten/ronl-8a56ac18a98a337315377fe38ac0041eb0dbe906/pdf>

### 3. The downsides of the implementation of a universal service fund (USF) in Europe to solve the market failure. Comparison to the USA case

Section 2 of the questionnaire is about the effectiveness of the universal service regime in Europe. Furthermore, it aims to assess whether the introduction of a mechanism consisting of a EU/national digital contribution fund could be an appropriate tool to address the requirement of contribution for all digital players to the infrastructure as stated in the European Declaration on Digital Rights and Principles (Question 60).

Telefónica considers that the universal service regime has become obsolete and is no longer fit for purpose. We do not think that other contributors or other ways of financing should be considered in the context of *Fair Share* because it has proven to be an inefficient and ineffective regime (further detail provided in Questions 22, 23, 24 and 28).

The reasoning behind the push for contributions in Europe is essentially the same as in the United States. Connectivity for all is crucial for the future and the associated cost of the required network expansion must be distributed fairly. The “Funding Affordable Internet with Reliable Contributions Act” or “FAIR Contributions Act” aims to push lawmakers and regulators to have LTGs contribute to the USF showing that the lack of a fair contribution is a real problem, not only in Europe. It was originally introduced in the US Senate in July 2021. On 16 March 2023, the FAIR Contributions Act was re-introduced in the US Senate. Before becoming law, the bill must be approved by the US Senate, the House of Representatives and signed by the president.

The “Fair Contributions Act” must be seen in the specific US context. There, it makes sense that the feasibility of LTGs paying into a fund would be assessed, as the USF has been the vehicle to subsidize connectivity since 1934. The Communications Act of 1996 expanded the scope. It required telecommunication providers to contribute a percentage (around 30%) of their revenues from cross state and international calls into the Universal Service Fund. The fund supports four key programs: subsidizing broadband services for eligible users, for schools and libraries, communications services in rural hospitals, and finally funding the expansion of rural or high-cost voice and broadband infrastructure to eligible telecom companies.

There is no equivalent existing fund in Europe. Unlike in the USA, the current universal service regime in Europe has a very different approach. It guarantees the provision of a connection following an end-user request and is not intended to extend network coverage. Member States have developed different implementation approaches. Consequently, a new fund for network coverage would have to be created on a European level. The creation of such an ex novo fund would represent a heavy regulatory intervention; its implementation would require a relevant effort and quite some time which Europe doesn’t have to achieve the 2030 digital goals. The question of who should contribute, based on what criteria and who should benefit would be difficult to resolve, especially in a European context where differing Member State interests on national allocations would have to be balanced.

Depending on the outcome, this fund might not necessarily help increase the overall investment volume. Also, it could lead to telecom operators competing over the funds and could indirectly punish those operators who have already made huge investments towards achieving the Digital Decade objectives all on their own.

The *Fair Share* solution on the other hand would require only a minor regulatory intervention as we have explained in the questionnaire and is detailed after in this document.

### 4. The relationship between the *Fair Share* proposal and the Open Internet Regulation

The *Fair Share* proposal, as fully described in answer to questions 54 to 59 in the questionnaire, is fully compliant with Open Internet Regulation (OIR) and aligned with Net Neutrality principles. This assessment is based on the following analysis of the OIR:

- **OIR and the Fair Share initiative objectives are not interrelated.**

Article 1 of Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 on establishing measures in relation to access to an open Internet (hereinafter "OIR") aims to adopt common rules to safeguard fair and non-discriminatory treatment of traffic in the provision of Internet access services and the related rights of end-users. The *Fair Share* initiative (and the eventual regulation that may regulate it) seeks to rebalance an unfair situation such as the lack of payment for the provision of certain services.

Analyzing both OIR objectives and articles, together with *Fair Share* initiative objectives and proposal, it can be stated that *Fair Share* complies with the OIR and is not contrary to it:

- **The OIR does not prohibit charging LTGs for the service they receive.**

Further to the above, the OIR encourages parties "to agree with providers of Internet access services on tariffs for specific data volumes and speeds of the Internet access service"; provided that such agreements and commercial practices do not limit the exercise of the rights provided for in the Regulation.

- **Charging only LTGs does not violate the principle of non-discrimination.**

The OIR gives competent authorities powers to intervene against agreements or commercial practices which, by reason of their scale, lead to situations where end-users' choices are in practice significantly reduced. To this end, the assessment of agreements and commercial practices must, inter alia, as the Regulation itself points out, take into account the respective market positions of the providers of Internet access services, as well as of the CAPs involved. In other words, the Regulation itself recognizes the different impact that the exercise of rights has for a small CAP than for a CAP with a dominant or relevant position. The Regulation does not seek to protect large gatekeepers but rather those who cannot compete against them.

In line with the above, when interpreting this principle of non-discrimination, the Regulation itself recalls the general principles of law and settled case-law, according to which 'comparable situations should not be treated differently and different situations should not be treated in the same way unless such treatment is objectively justified'. That is, different conditions may be applied without infringement where the situations are not comparable, as is the case in the present context, with the large volume of traffic generated by a small number of CAPs as opposed to the traffic generated by others. Moreover, treating some situations in the same way as others would be in breach of the principle of non-discrimination.

- **Fair Share does not affect access to an open and free Internet**

*Fair Share* does not restrict or limit the rights of end-users or affect the services that end-users use to receive and send information, access content and services of their choice fully in line with Article 3.1 of OIR.

Under the *Fair Share* proposal, the agreements between telcos and LTGs that will determine the contribution of LTGs will be based on traffic volumes, whereby traffic delivered on each network will be measured without affecting traffic. All data packets will be carried unchanged with the same quality of service in the network, regardless of the source, an LTG or another agent. Traffic will not be prioritized, restricted or interfered with.

In the event of a dispute, breach or litigation over the *Fair Share* agreement between an LTG and a network operator, the traffic transport service would have to continue to be provided and any unilateral action to force compliance with the agreement, such as throttling an LTG, degrading or blocking its traffic would be in breach of OIR law and should therefore be sanctioned, as would be the case in a similar situation without *Fair Share*.

- **Fair Share does not affect traffic: it does not involve blocking, slowing down, altering, restricting, interfering with, degrading the traffic.**

- ***Fair Share assumes that all CAPs will be treated equally in terms of their traffic management.***

Since the provision of the Internet access service is not associated with any commitment or guarantee of quality, capacity reservation, or traffic management, the obligation of fair treatment of traffic without discrimination or restriction imposed in Article 3.3 of the OIR does not contradict *Fair Share*. All traffic, both from LTGs that reach agreements, as well as all other CAPs not subject to *Fair Share* and therefore not reaching any agreement with network operators, will receive the same treatment. Neither the traffic of LTGs will be prioritised, nor will the traffic of other agents be throttled or degraded. All Internet traffic, whether it comes from an LTG or from a non-LTG agent, will be treated equally by network operators.

**The assertion that a fair contribution from LTGs would jeopardise the principles of net neutrality has no legal or factual basis.**

## 5. Fair cost recovery in South Korea

The South Korean case in which SKT requested the intervention of the Korea Communications Commission given the lack of agreement with Netflix regarding payment for the use of the operator infrastructure has gained worldwide relevance. Its resolution, not only of the ongoing legal process, but also of the long-term effects related to the adoption or non-adoption of a legal measure would have on broadband providers and the Korean Internet ecosystem is generating great expectations. Also, because South Korea is one of the most digitally advanced countries in the world.

In the meanwhile, the difficulty in accessing a trusted and neutral source of information in English language for non-Korean natives is leading to the spread of misinformation about the case. First of which is the highly negative impact on the Internet ecosystem: rapidly deteriorating quality of Internet Access service, increasing prices and Internet companies fleeing from South Korea due to potential obligation to pay to network operators for access service. Telefónica wants to share some facts about the Korean situation for a more nuanced and fact-based discussion

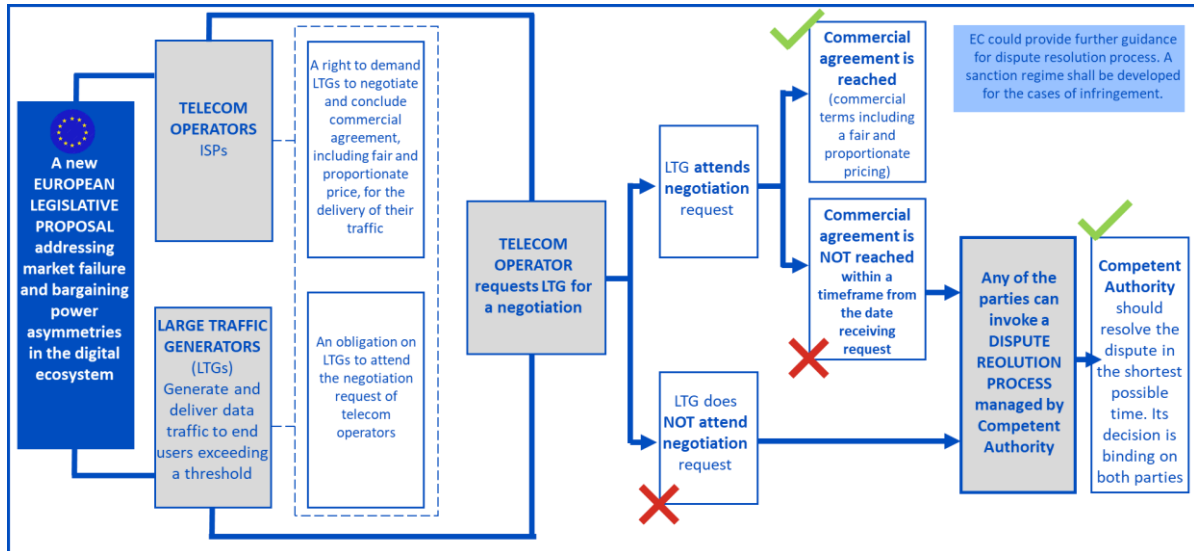
- South Korea has always been considered to be at the forefront of Internet adoption and broadband deployment. OECD Broadband data ([bit.ly/42HR5aL](https://bit.ly/42HR5aL)), updated June 2022, positions South Korea as a world leader: top-5 of fixed and mobile broadband connections per 100 inhabitants, highest number of fibre connections per 100 inhabitants, from 1st to 6th fastest download speed for fibre connection, 25 million 5G subscriptions (28.5% of total).
- To date there is no fact-based evidence indicating a degradation of broadband services in South Korea.
- South Korean telecom legislation provides different legal consideration for broadband providers / Internet Service Providers (ISPs) and access users. IP interconnection prices are regulated for ISPs, and access users, including end users and content providers, and are deemed to pay an Access Service to broadband providers.
- Local content providers such as KaKao and Naver are already paying for Access Service to South Korean broadband providers.
- Korean legislation demands content providers having over 1 million subscribers or occupying over 1% of network capacity, to support the stability of the network. Governing and opposing parties have presented up to 7 bill proposals seeking enforcement of such law demanding content providers to pay for the service received.

Telefónica advises a fact-based analysis of the South Korean cost recovery case, and a rigorous assessment of potentially misleading and biased information.

## 6. Brief description of the "Fair Share" solution proposed by Telefónica

Telefónica has a proposal to ensure fair and proportionate contributions by LTGs to telco operators. This proposal is supported by the European telco sector through the GSMA and ETNO.

It is a simple solution based on a regulatory obligation to agree on payment terms with arbitration as a last resort mechanism to ensure settlement of commercial agreements. In case of dispute, an effective arbitration process based on “Final Offer Arbitration” is proposed. The targeted scope is limited to the largest traffic originators. Some transparency and accountability measures could be implemented to ensure that payments from OTTs effectively contribute to a swift and broader deployment of very high-capacity networks. Section 4 - Questions 49 and subsequent describes the solution which is also explained in the diagram below.





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