July 22nd, 2022

Telefonica response to the public consultation on Draft BEREC Report on the Internet Ecosystem - BoR (22) 87

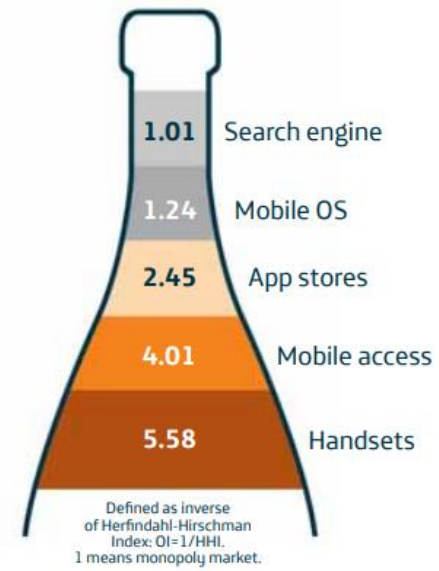
Telefonica welcomes BEREC's draft analysing Internet ecosystem and its highly complex market dynamics. This is extremely relevant as Internet has become an enabler of digital societies, and as such any limitations on its openness have the potential to affect our lives and economies. norm

Overall context

BEREC's draft report clearly describes how a handful of tech companies are exerting a tight control of both ends of the Internet value chain, the client side, and the server side. Focusing on different elements of the client and server side these companies can control and limit users Internet experience gaining an asymmetric bargaining power over the rest of the ecosystem agents. While the Digital Markets Act and the Digital Services Act are already addressing competition concerns arising from these digital gatekeepers, a holistic analysis of the Internet ecosystem was much needed to assess if enacted wide European regulatory framework is fit for purpose.

BEREC detailed analysis fully recognizes competition concerns already identified in 2014 Telefonica's assessment of the Internet ecosystem "A Digital Manifesto An open and safe Internet experience for all" in which we highlighted how closed proprietary application stores and operating systems were limiting consumer choice and competition, and how the Web could foster a more open ecosystem, pointing to portability and interoperability as most relevant remedies to secure an open Internet. Four years later, in 2018, Telefónica reviewed the policy challenges of the Internet ecosystem in "A Manifesto for a New Digital Deal": we deepened our analysis on the Internet of platforms, confirming through a Digital Openness Index calculated for different markets of the Internet value chain in Brazil -refer to Exhibit 1-, that the new Internet bottlenecks representing highest threat to the open Internet were big tech companies operating in the OS, application stores and search markets. Having repeated that same calculation on various relevant European markets, results and gatekeepers were the same. Contrary to general and regulators believes, telecom markets resulted significantly more open and competitive (openness index of 4.01 vs. 2.45 for application stores or 1.24 of mobile OS). Worth to highlight not only the higher openness of the telecom markets, but that players and bottlenecks across OS, application stores and search are all the same across the different national markets, where as telecom players vary from market to market.

Chart 1. Digital Market Openness Index (Brazil)



Market shares

Search engine	
Google	99.5%
Yahoo	0.3%
Bing	0.2%

App stores	
iOS	55.3%
App Stores: Google Play	27.6%
App Stores: Other Android	16.3%

Mobile OS	
Android	89.1%
Mobile OS: Android	10.3%
Mobile OS: Microsoft	0.5%

Mobile access	
Telefonica	31%
Telecom Italia	24%
Telecom Americas	25%
OI	17%

Handsets	
Samsung	52.7%
Lenovo-Motorola	15.4%
Huawei	11.4%
LG	13.6%
Apple	14.3%
TCL-Alcatel	17.5%
ZTE	5.2%

Source: Telefónica analysis based on data from App Annie, Strategy Analytics, Anatel and Stat Counter.

***Exhibit 1**- Source: "A Manifesto for a New Digital Deal" – Telefonica (2018)*

Four years later of these findings, trends have strengthened, with big tech companies and gatekeeper effects becoming even greater. It is for this reason BEREC's report to assess market openness and the adequacy of the regulatory framework is so timely. It is the time now to evolve pure technical analysis into regulatory decisions.

Specific comments to BEREC draft report

Telefonica positively values BEREC's deeper analysis of the Internet ecosystem. While the report provides a great analysis of the different element of the ecosystem including legal provisions, market actors, competition dynamics and markets openness, we consider a few items deserve further considerations:

I. Fair Share payments and IP interconnection

BEREC analyses of IP interconnection focuses only on international transit and peering markets, concluding no evidence is found on major difficulties to competition on these markets.

Large CAPs providers have evolved from being ISPs customers of Internet Access Services (IAS) to interconnect directly to telecom networks as ECS providers. In the early days of the Internet, CAPs -mostly email providers and web sites- were IAS clients of telecom providers; traffic was quite symmetric and balanced, due to the nature of services provided by CAPs, and internet connectivity was implemented as a bill & keep business model, meaning free peering relationships at interconnection. As the Internet developed, international transit carrier market emerged connecting networks of

operators around the world through a paid peering model and maintaining bill & keep between international transit carriers as traffic flows among them were balanced.

As CAPs proliferated, and some of them became relevant in size, these largest CAPs connected directly with internet transit carriers paying for the international transit but saving payments for IAS as no longer requiring it. In parallel, traffic between international transit carriers started to unbalances being no longer symmetric; this triggered review of the agreements among international traffic carriers, implementing paid peering with those being net traffic generators (transmitting far more traffic, 1:3, than receiving) mostly because of having CAPs directly connecting to them.

When CAPs grew eve larger, they decided to create their own private transit networks - deploy their own international infrastructure including submarine cables- and interconnect directly with national IAS providers, where having a relevant user demand, and keeping previous agreements for smaller markets. As they were no longer contracting IAS they demanded interconnecting through free peering agreements. Because of bargaining power asymmetries CAPs imposed the entire Internet ecosystem they were no longer clients of telecom networks refusing to pay for interconnecting. This resulted in conflicts among the parties that gained significant traction on media, such as the 2014 Comcast-Netflix case also affected by the Net Neutrality debate taking place at the time.

Attempts from access network operators to negotiate paid peering agreements with large CAPs had little success: they only focused on the transit carrier networks, paying only for international internet transit services and not including any remuneration for the costs of the national access networks of telecom operators on the grounds these were already paid and covered by end users through their Internet Access service.

While large CAPs do are not considered ECS providers and thus have not any of their obligations, as still being considered end users within the Open Internet Regulation, they are granted with all end users rights enshrined in it. Still, they demand to be treated as large telecom operators and refuse to pay for peering, termination costs or any cost for the network-based services they receive, i.e. internet traffic conveyance service delivering their traffic to end customers devices through national operators / ISPs' networks.

In recent years, ICT industry is investing on CDNs to get contents closer to the users improving their user experience and more efficiently use international networks by reducing international traffic flows. A market has emerged providing CDNs services to third parties, while largest CAPs invest in their own CDNs.

CAPs investments on infrastructure ease investment requirements for network operators on international networks. But still telecom operators' national networks, including core, aggregation and access networks, where allocated the bulk of their investments, have to transport the exponentially increasing traffic from CAPs to end customers. CDNs result

in some efficiency gains at national transport level, depending on the number of locations where deployed, but have no impact on the access networks.

European telcos have invested over €500bn in fixed and mobile networks in the past 10 years to cope with increasing Internet traffic demand (60 times growth of traffic since 2007), but European telecom revenues have been steadily decreasing in an unparalleled deflationary trend. Internet bandwidth spiked 30% annually in 2020 and 2021, and this trend is due to continue in the years to come. Video streaming, social media, and gaming account for over 70% of Internet traffic, with just 6 companies accounting for over 56% of total Internet traffic.

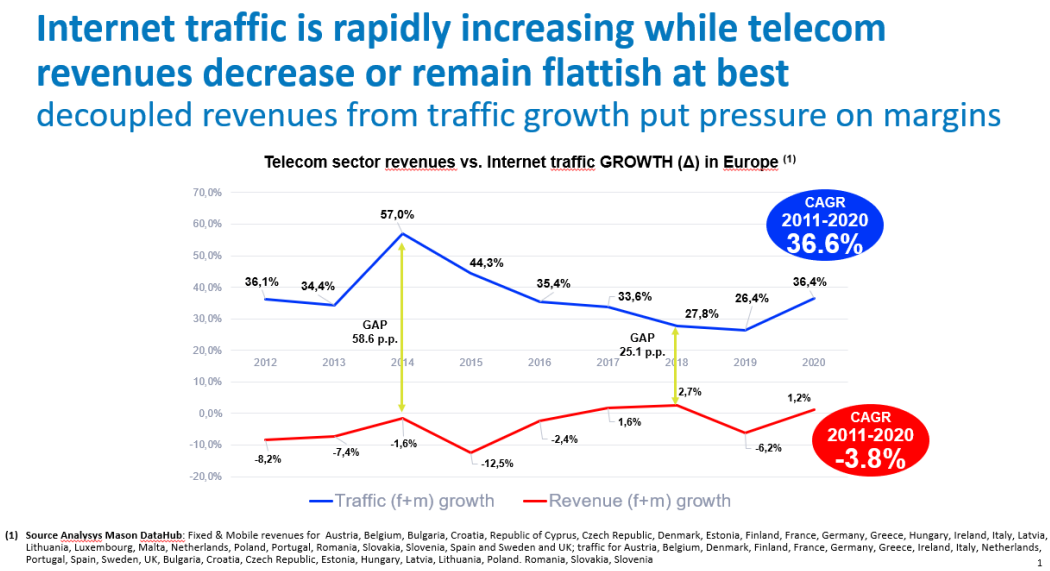


Exhibit 2 - *Source: Telefonica based on data from Analysis Mason Data Hub*

Current telecoms' revenues are generated by end users' flat rate mobile data plans and fixed broadband subscriptions, while large CAPs do not pay for the traffic conveyance service to end users over telecom national networks. Thus, the higher traffic volumes delivered, higher costs incurred and lower margins for network operators as revenues remain unchanged. As Exhibit 2 shows, and contrary to CAPs statements, Internet traffic is not fully paid by users through their Internet Access Service. This situation where traffic is decoupled from revenues is not sustainable.

Current market dynamics and strong bargaining power asymmetries do not allow ISPs to negotiate fair terms for such specific traffic costs generated by largest CAPs.

> A clear indication of asymmetries in bargaining power can be found on IP transit markets. Content and applications services provided by gatekeeper CAPs are essential to the Internet ecosystem from the demand side, having access to these is a must have for end users; and the quality at which such services are provided is as relevant as the services themselves. The routing and interconnection strategies of CAPs, connecting closer or directly with ISPs, do make a difference

in the quality perceived by end users (delay & jitter). CAPs have the possibility to bypass an operator if it disagrees with the terms of a contract for such direct interconnection. The CAP has the possibility to reroute their traffic through a variety of alternative free routes instead of negotiating a contractual relationship directly with one ISP. The use of free peering by large content providers, entering operator networks through interconnection gates that are not properly designed for such extra traffic, inevitably leads to congestion. Congestion is a problem for the operators and for the consumers if not managed properly, it has an impact on the QoS, with customers perception attributing to ISPs full responsibility of poor performance. In fact, it was a practice not long ago by some CAPs to publish a quality benchmark of ISPs interconnection points to influence public opinion while negotiating with such ISPs.

A regulatory solution is needed to address this market failure, securing largest CAPs pay a fair a reasonable and fair price for the traffic conveyance service. This is already acknowledged in the proposed European Declaration on Digital Rights and Principles stating that adequate frameworks are to be developed so that all market actors benefiting from the digital transformation make a fair and proportionate contribution to the costs of infrastructures. Telefonica welcomes BEREC initiative identifying this issue as a "relevant topic for further analysis" (p. 70) and endorses the "OTT Fair Share and IP interconnection markets" workstream announced in last stakeholder forum, offering Telefonica's full engagement with BEREC including the participation in the stakeholder meetings taking place up to September 2022 and to provide input for the different reports, public consultation and others as better suits BEREC's needs. Telefonica would be happy to share views and the potential solution that could best address identified market failure. We would also like to recommend BEREC to accelerate to the utmost extent possible this workstream considering the current state of the public debate on the issue.

II. Domain Name Server

Telefonica welcomes the inclusion of the DNS function of Internet as a stand-alone market relevant for the functioning of the Internet ecosystem. The DNS used to be a global system of routing translation (names to IP addresses) where different parties collaborated between them in an open manner. No one had a global dominance because the service was provided by a myriad of Internet Service Providers.

But this situation has changed dramatically. Despite the primarily function of translation into IP addresses remains unaltered, the way it works has changed a lot, appearing players that either alone or in collaboration with few other players, dominate the market.

This is reflected in the Figure 20 of BEREC Report according to Telefonica understanding. While BEREC concludes that the DNS resolver market has not a dominant player(s) because the picture shows that 77% of EU DNS resolver usage is in the hands of ISP, it is neglected that European ISP market is enormously fragmented.

EU 27 have more than 100 ISPs, so it represents that, on average, its individual share of DNS usage is less than 0.77%. This compares with global players that have a least 12.7% or 2.9%.

Furthermore, the fact that these players *different from ISPs* providing the service in a different layer than ISPs are dominant in some other parts of the Internet ecosystem (browsers, OS, devices, etc.). They can extend their market power to this adjacent market and increase their share overnight, just asking users with a biased question when opening the browser, using the OS, the device, etc. that most of the users will accept not to be disturbed every single time they want to use the service with the question of whether want to use its own DNs service. Worst, very few users will understand what switching from one DNS resolver provider to another really means. Moreover, while the OIR applies to the DNS service if provided by ISPs together with the Internet Access Service, other providers of DNS service are not subject to any alike obligations and thus these gatekeepers as identified in the report are legally able to implement actions restricting competition and consumer choice prohibited to ISPs by the OIR.

Additionally, the analysis of BEREC is wrong when analysing whether one player could potentially block a competitor, because this is not how a dominant provider will behave. It just needs to *convince a* user once or take profit of *consumer's inertia* and the choice will stay almost forever.

Therefore, Telefonica don't share BEREC view that the DNS market should not present competition dynamics and potential bottlenecks and that this should be reflected in the conclusion of the Report.

Finally, while BEREC analysis of the DNS resolver market seems to focus on the openness on the market itself, the Report doesn't consider the impact in the whole Internet ecosystem performance if traffic routing decisions (address translation) are in the hands of few players if they have outages, fails or attacks.

Telefonica considers that a more distributed and redundant architecture like the one provided by operators is better shaped to deal with such problems.

Telefónica would recommend BEREC a deeper analysis of the DNS market and, recommend the appropriate remedies in case a market failure is identified.

III. Traditional regulated markets - Updated definition of Relevant markets to properly reflect changes in the internet ecosystem.

Within the analysis carried out by BEREC in this report, we were surprised that, although it analyses the role of the different actors in the internet value chain, at no point does it study the role that these internet actors' services have as substitutes for traditional communications services or whether current regulation should be updated due to the predominant and changing role of OTTs over time.

i. Interpersonal communication services: voice and messages

Traditional interpersonal communication services like voice and messages, are the paradigm of regulated services. In the meantime, the use of interpersonal communication

services, voice, and messages, provided by OTTs has been increasing sharply over the last years and this trend is expected to continue in the future.

They are sufficiently close substitutes from the end-user's perspective, but they are not included in the product market definition. Current regulatory practices do not reflect this approach and interpersonal communications services provided by OTTs are not included in the relevant analysis and therefore remain unregulated.

According to CNMC Data, the daily use of instant messaging is twice as high (62%) as that of the mobile calls (25,6%).

Frequency Use of call and messaging through traditional ECS and OTTs (% users, Q4 2018)

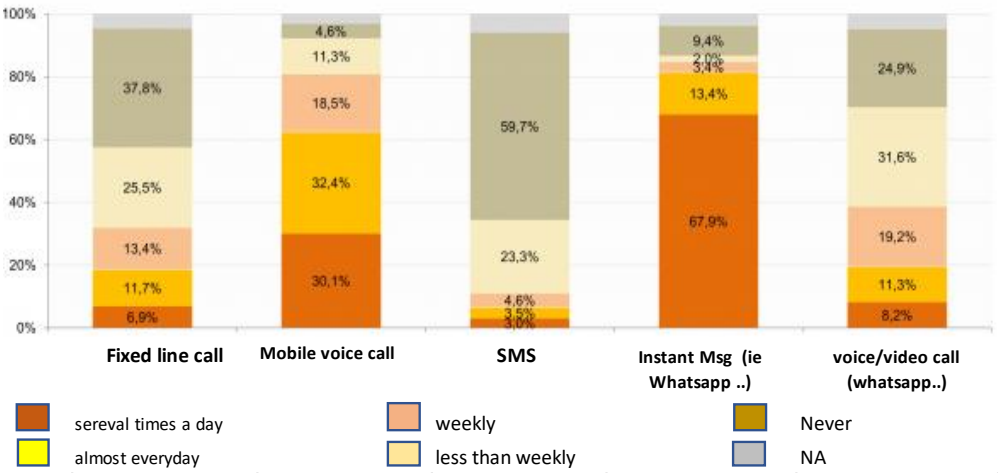


Exhibit 3 *- Source: CNMC: https://www.cnmc.es/prensa/panel-de-hogares-rsultados-OTT-20220520*

Telefónica has been requesting a "level playing field" under the criterion of imposing similar obligations on similar services. This should imply imposing new obligations on providers of interpersonal communications services, such as WhatsApp or Skype, which are competing with incumbent operators and are subject to less regulatory burden than them.

ii. Video services

A case in point is video-on-demand services (VoD). Specifically, in the analysis of the competitive dynamics of the report, though VoD services are identified as an active part of these dynamics, at no point is the role that these providers play in the traditional Pay-TV market as substitute service providers studied.

Recent data reflects the predominant role that these VoD platforms are acquiring over time in the different European markets:

Use of pay platforms to watch audio-visual content online (% of households)

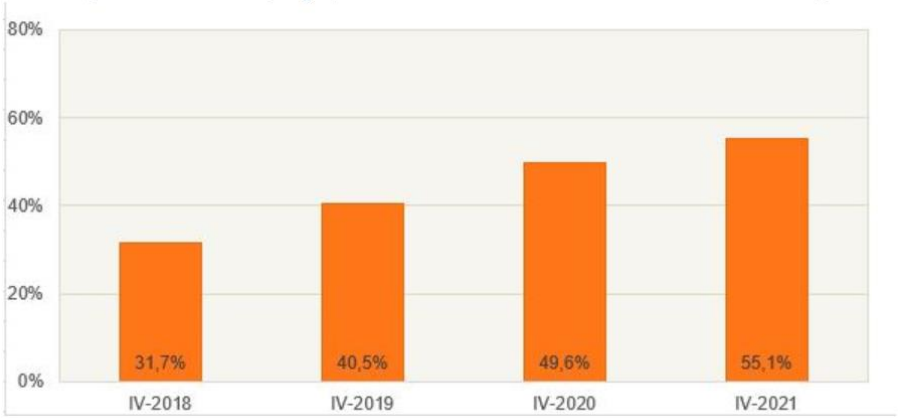


Exhibit 4 *- Source: CNMC data.*

https://www.cnmc.es/prensa/panel-hogares-consumo-audiovisual-20220527

It is therefore more than necessary for NRAs to update the definition of relevant markets and to consider those services provided by OTTs that directly compete with traditional telecommunications services, and are, therefore, substitute services for them.

Hence, we believe that BEREC, in its analysis, should have reflected the following considerations in the role that OTTs are playing in the definition of traditional relevant markets within the internet value chain:

- The convergence and the role that digital services play out are breaking traditional market definition analysis. For instance, OTTs that compete in the same market with telecom operators (such as in Pay-TV) but through different types of technology, should be included in the same relevant market.
- Market definition should consider substitute services coming up from digital services that compete aggressively in traditional markets, especially in the analysis of whether an operator enjoys a dominant position in the given market. This is the case of the OTTs in our industry, where it should be analysed whether OTT's services may provide partial or full substitutes to traditional telecommunication services.
- This substitutability for the specific case of VoD is out of debate based on the following structural changes in the market:
    - Increased penetration of pay television services in Europe and the increase of pay television subscribers on OTT platforms and not so much on traditional electronic communications services.
    - Change of consumer's demand regarding audio-visual content while the offer of contents of the traditional pay television operators is already insufficient and consumers demand several platforms at the same time.

Accordingly, we are confident that BEREC will take all these points into consideration in the review of report while feeding properly the EC that might review its Market Definition Notice during 2022.

IV. Internet Access and Open Internet Regulation

We take full note of BEREC assessment of the Internet Access Services market analysis recognizing it is “mostly dynamic, thanks, among other factors, to the regulation that has been imposed, in most countries, in order to ensure a more diversified offer at lower prices to the users.”

Current Internet access markets are dynamic and competitive, especially in those markets where infrastructure competition has developed, this is the case for Spain. Regulation has eliminated entry barriers in a way that has favoured the provision of Internet access services from competing fixed and mobile networks.

In fact, in general terms, European markets are highly competitive, and users can easily switch provider to that better addressing their needs among the multiple existing choices: in most national markets at least 3 wireline and 3 wireless network-based providers, and many other providers offering services to users based on wholesale services delivered by network operators.

In the assessment, BEREC points to Open Internet Regulation as the reason or the main safeguard to ensure consumer choice and market openness, while the BEREC statement highlighted at the opening of this section points to market competitiveness as the driver of market dynamism.

On this regard, we agree with this final consideration and argue the main reason safeguarding consumer choice is not Open Internet Regulation, but strong market competitiveness. This strong market competitiveness, recognized by BEREC as stated in previous paragraphs means should an IAS provider impose any kind of restriction to access or distribute any content or service over the Internet, affected users could easily switch to another provider. Such practice would result in a significant loss of customers and revenues for the provider implementing the restrictions and an equivalent gain for market competitors, thus becoming a market deterrent to implement such practices. Any other potential ISPs practice favouring specific agents or CAPs to the detriment of others could be address by competition authorities applying antitrust legislation.

This argument is also supported by the strong growth and development of OTTs in the US market, where Net Neutrality regulation was repealed in 2017. Despite US has not had in place a ad-hoc regulation safeguarding Net Neutrality and Internet openness, US based Internet companies have thrived over the last lustrums to become the world largest companies by market capitalization, with no harm for Internet end users being accounted for in the same period by network providers / ISPs. A reality far from predicted Internet dooms day by net neutrality supporters following the repeal of the regulation.

Markets watchdogs’ focus, in both the US and EU, has been placed upon largest OTTS, as capable of limiting Internet openness and Internet users’ freedom. The Digital Markets Act and the Digital Service Act are precisely two EU legislative tools aiming to limit the market power abuse and limitations to consumer choice as the new Internet bottlenecks.

In fact, there are no signs on restrictions to consumer choice by ISPs in the US market neither in EU, where the legal cases on potential breaches of Open Internet Regulation have been limited since the regulation entering into force and related to diverging views

on the Open Internet regulation regarding commercial Zero Rating practices; to note these are, in legislations were permitted such as US and many Latin American countries, widespread commercial practices highly valued by customers.

Zero Rating practices has been fully prohibited in the EU after an EU Court ruling providing a highly unexpected interpretation of the Open Internet Regulation. This ruling diverged from NRAs' approach to the implementation of the regulation and forces ISPs with Zero Rating commercial offers to halt them, having to confront both, operational costs to discontinue a commercial service, in some cases highly adopted, and customer's discontent as no longer able to enjoy a service they have been enjoying for some years now.

While the EU ruling has a direct operational impact, it calls into attention the relevant legal uncertainty EU ISPs are subject to. The ruling has declared non-compliant a commercial practice European regulators had assessed as in line with the regulation in 2016, even providing in 2020 an assessment methodology for Zero Rating with the aim of easing design of compliant Zero Rating offers. What is to be expected for upcoming new innovative services based on 5G differential capabilities such as network slicing? Would Europe, its citizens, businesses, and ISPs, as well as CAPs be able to benefit from new network capabilities such as NaaS? Will Europeans be able to enjoy the Metaverse and the myriad possibilities it offers though high-quality access services? Or a new legal process could again provide a more restrictive interpretation of the regulation outlawing new services taking full benefit of these innovations? And Europe be left behind other jurisdictions with more commercially flexible frameworks while equally safeguarding consumer choice and market openness?

It is now time to reconsider if European Open Internet regulation is fit for purpose and whether it achieves the expected aim with minimum regulatory intervention and innovation hinderance. We all agree on the need to preserve Internet Openness and consumer choice, while penancing at the same time consumer and societal welfare. It is just question of finding the most adequate solution.

Concluding remarks

Telefonica welcomes renewed BEREC interest in analysing Internet ecosystem and market dynamics. On this regard, we would like to recall EU conclusions leading to the adoption of legal tools to ensure that digital markets remain fair and contestable, namely by imposing measures to digital gatekeepers through the Digital Markets Act and the Digital Services Act.

It is time now to go beyond pure technical analysis of market dynamics and directly address identified market failures. Identified topics, Fair Share Payments, DNS, Traditional regulated markets and OIR, deserve further BEREC involvement and work in the coming months.

Telefónica

www.telefonica.com