

BEREC Report on the outcome of the consultation on the Draft BEREC Medium Term Strategy for 2018-2020

1 June 2017

Contents

Executive Summary	3
Introduction	4
Section 1 - Market and Technological Developments	7
A. The end-user experience	7
B. Competitive dynamics in the digital ecosystem	14
C. Evolution of networks	19
D. Over-arching Questions	23
Section 2 - How BEREC works and engages with stakeholders	26
A. BEREC's work with the regulatory objectives	26
B. Towards a BEREC stakeholder engagement strategy	28

Executive Summary

This report summarises the responses received to the consultation on BEREC's Draft Medium Term Strategy (MTS) for 2018-2020. The MTS guides BEREC's work in the medium term and serves as the blueprint for BEREC's annual work programmes.

BEREC sought to gather input from stakeholders at an early stage of the process by requesting their views on the most important issues for BEREC to consider over this time period. Taking into account these views, the draft MTS will be submitted for further public consultation in June, before being finalised in October 2017.

In response to this initial consultation, BEREC received 16 contributions. The issues that received the most attention from stakeholders were included in Section 1 of the consultation, in particular those relating to the experience of end-users, competitive dynamics in digital markets and issues relating to the evolution of networks. Stakeholders also contributed their views on practical matters related to the way BEREC carries out its work, such as ways to promote coordination among NRAs and increase transparency and accountability.

For the most part, stakeholders agreed that the issues identified by BEREC in the consultation were important to consider as part of its strategic outlook, while elaborating on the details of these issues and providing specific recommendations. Stakeholders also highlighted a variety of other issues for BEREC to consider and actions to take.

The following section provides further background to the process behind BEREC's MTS and introduces the first question of the consultation.

Introduction

In 2017 BEREC is set to review its current Medium-Term Strategy (MTS) to make sure that its work stays relevant in relation to major developments in the digital ecosystem. The BEREC MTS has the function of guiding BEREC's work in the medium term and it serves as the blueprint for BEREC's annual work programmes. The MTS was last updated in 2014, establishing three overarching strategic objectives that follow from the policy objectives and regulatory principles that BEREC members apply in accordance with Article 8 in the Framework Directive: promoting competition and investment, promoting the internal market and empowering and protecting end-users.¹ BEREC enters this process maintaining its commitment to the three over-arching strategic objectives of the current MTS, which it still considers relevant.

In this year's update of the MTS, BEREC will seek to establish a strategy for the period 2018-2020 and invites stakeholders to take an active role in this process.

To this end, BEREC launched a consultation on its draft MTS on 8 March, running until 5 April, in which it sought input from stakeholders on how BEREC's work is perceived and on which market developments will be important for BEREC to consider in its MTS for the period 2018-2020. In Section 1 of the consultation, BEREC requested open input on what market and technological developments could influence the new strategy, while also seeking answers to questions on more specific areas, such as end-user quality, competitive dynamics in digital markets and evolution of networks. In Section 2 BEREC sought views on BEREC's work under its current objectives and how stakeholder engagement could be improved.

In response to the consultation, BEREC received 16 contributions:

1. Asociación Nacional de Operadores de Telecomunicaciones y Servicios de Internet (AOTEC);
2. Cable Europe;
3. Coalizione del Fixed Wireless Access (CFWA);
4. European Competitive Telecommunications Association (ECTA);
5. European Digital Rights (EDRi)
6. European Telecommunications Network Operators' Association (ETNO);
7. FTTH Council Europe;
8. GSM Association (GSMA);
9. MVNO Europe;
10. Public Safety Communication Europe (PSCE);
11. Roman Vilgut;
12. Sigfox;
13. Telefónica;
14. Unión General de Trabajadores (UGT);
15. University of A Coruña;

¹ BoR (14) 182, *BEREC Strategy 2015-2017*, 4 December 2014

http://berec.europa.eu/eng/document_register/subject_matter/berec/annual_work_programmes/4785-berec-strategy-2015-2017

16. One other stakeholder (confidential).

These contributions are summarised in the following sections of this report and have been taken into account in an updated draft MTS, which will be submitted for further public consultation in June. The non-confidential responses will also be published on BEREC's website.

The final version of BEREC's MTS for 2018-2020 is expected to be adopted in October 2017.

In the consultation, BEREC stated that it recognises that the MTS for 2018-2020 will be drafted in a period of regulatory evolution and the ongoing Framework Review is still at an early stage, so BEREC intended to pursue its work with the MTS independently of the Review, looking first to major market developments and stakeholder input as a source for updating its strategy.

Introductory question: Do you have any comments on the elements presented above?

Responses:

ECTA suggested that BEREC should maintain and re-affirm the three over-arching strategic objectives of its current MTS and also re-affirm how they interrelate and mutually reinforce one-another. **ECTA** also requested that BEREC re-includes the text of section 3.a. of the BEREC Strategy 2015-2017 on 'Strategic Pillar 1 – Promoting Competition and Investment' (page 3), since it considered that this was a good representation of EU policy objectives and BEREC's strategic objectives interrelate and reinforce each other.

ECTA emphasised in particular the importance of promoting competition. It also suggested that the third pillar – promoting the interests of EU citizens – should explicitly include the promotion of EU businesses.

The **FTTH Council Europe** points to a number of broad trends underway, such as the move towards FTTH in Europe. It considered that in urban areas, a likely outcome would be the emergence of oligopolies with a limited number of network operators, but that in rural areas there would be a lack of investment. However, on this issue, it stated that the benefits of end-to-end competition were very significant and outweigh service competition and cautioned that the uncertainty related to regulation of joint dominance would discourage investment. It was in favour of lowering barriers to entry in the potentially competitive urban areas, for instance via access to passive infrastructures. It also recommended an EU-wide approach to this issue based on best practices.

FTTH Council Europe also stated that the emergence of network services (e.g. 5G-Automated Driving and IoT) need a European scale of operation if they are to succeed. Therefore, it suggests that BEREC should reconsider its resistance to acting as a European Regulator in certain areas.

In the context of a new European Electronic Communications Code (EECC) and potential changes to BEREC's nature, mission and objectives, **Telefónica** suggested that the new MTS should have a clear focus on the upcoming review for electronic communications and BEREC's strategy may have to change as a result. Telefónica also highlighted the issue of "standardization

policy". It suggested that this issue was essential for technological developments and that standardisation bodies were lagging behind the needs of the market. To avoid the risk of a "winner takes all" outcome or the reliance on sectoral associations, Telefónica stated that it would welcome BEREC guidance on this issue.

MVNO Europe requested that BEREC puts the promotion of competition, the development of a true EU internal market and end-user interests (both business to consumer and business to business) at the core of its Medium Term Strategy.

MVNO Europe especially requested BEREC to ensure that its actions would enable and foster a viable and diversified European-led ecosystem for M2M and IoT, without undue fragmentation along national lines.

Also, with respect to investment, **MVNO Europe** asked that BEREC takes into account the investments of MVNOs and the contributions they make to financing mobile networks.

ETNO encourages BEREC to add to its strategic objectives the new objective of the draft EECC, that of promoting "access to, and take-up of, very high capacity data connectivity, both fixed and mobile, by all Union citizens and businesses", as well as fostering the investments needed to achieve that objective.

Furthermore, **ETNO** advised caution in attempting to foresee the competitive and technological developments which will affect the electronic communications sector, which it considered could not be predicted with any certainty.

Section 1 - Market and Technological Developments

A. The end-user experience

In the Stakeholder consultation, BEREC stated that the end-user experience depends on a range of parameters, including, inter alia:

- Performance of the networks;
- Devices;
- Factors influencing the take-up of technologies and digital services;
- Data protection, privacy and network security;
- Consumer protection.

Question:

2. Of the issues listed above, which do you consider to be the most important in shaping the end-user experience? Please explain your answer in detail.

Responses:

AOTEC considered that the “performance of the networks” as well as factors that may restrict or affect the digital experiences of the end-users are the most important issues.

It argued that a recent regulation introduced in Spain that obliges Telefónica to share its fiber in those municipalities where there aren't at least three network operators discourages investments in deployment but also discourages technology development, as the operators that use Telefónica's technology will be reliant on its technological development.

Regarding the factors that may restrict or affect the digital experiences of the end-users, **AOTEC** considered that BEREC should take into account that the range of digital experiences is significantly smaller in small municipalities. Due to this, AOTEC considered it necessary for BEREC to provide information about local operators or provide CNMC with the tools to do so.

From the **FTTH Council Europe's** perspective, the most important aspect mentioned is “consumer protection”, which it considered includes “network performance”. It pointed out the issue of users not being fully informed about the services they receive, or are likely to receive when signing up for a broadband connection. It considers that improving the information provided to customers is an obvious way of removing distortions in valuation, which can undermine trust and thereby undermine take-up and investment.

The Coalition for Fixed Wireless Access (CFWA) believed that the most important parameters in shaping the experience of the end-users are “performance of the networks” and “factors influencing the take-up of technologies and digital services”.

ECTA considered that the most important issue for end-users is competition, enabling genuine choice and the ability to effectively switch between operators.

ECTA did not see major issues of gate-keeping at the device level and, whilst it recognised that ‘data protection, privacy and network security’ were areas of concern, it agreed with BEREC’s suggestion that these mostly fell outside of BEREC’s remit.

Among the points listed in BEREC’s consultation, **ECTA** considered that the most important issues were switching between providers (relevant for points 3 and 5 in the list) and affordability (covered under point 5). It emphasised its view that genuine competition supported these issues.

It also noted that the reference to ‘shaping the end-user experience’ in BEREC’s consultation should not imply that regulators substitute themselves for market demand or determining operators’ offers.

EDRI commented on several of the issues identified by BEREC in the consultation. It stated that the “Performance of the networks”, depends to a large extent on net neutrality, which it considered should be a key priority for BEREC’s strategy. It encouraged BEREC to develop tools that can assist NRAs in monitoring and enforcing the Regulation, including Quality of Service assessments of networks. With regard to “Devices”, it stated that, since the market for mobile devices is dominated by few manufacturers that control software running in these devices, they can play a gate-keeper role which is similar to the role that providers of IAS would have in the absence of net neutrality rules. On the subjects of “Data protection, privacy and network security” **EDRI** noted that some of these issues were the responsibility of Data Protection Authorities and encouraged BEREC to focus on the technical issues that complement the legal protection of personal data, such as privacy by design, to ensure that personal data is not collected in the first place.

ETNO suggested that in order to enhance the experience of end-users, it was important to promote sustainable investment and innovation and ensure competitive markets.

It considered that the transparency framework established by Regulation (EU) 2015/2120 was quite balanced and that no further work is required on it, in particular discouraging regulatory intervention on technical architectures. **ETNO** and **GSMA** also noted that many of the identified issues are relevant beyond the telecoms sector and should be considered in the broader context, as perceived by consumers.

GSMA highlighted the importance of “consumer protection”, especially in the field of digital applications, for instance with safeguards on transparent information and the terms and conditions of use. However, in its view, it was important to ensure that information requirements were balanced and did not result in information overload. It also suggested a role for incentives and subsidies to encourage take-up of technology and digital services.

GSMA also particularly highlighted the issues of “data protection, privacy and network security” for a digital society and advocated a level playing field among all industry players in this regard.

MVNO Europe emphasised that it considers competition to be a key issue, both with regard to the ability of end-users to choose between operators and the ability of businesses that integrate communications in their products/services to choose between wholesale providers and switch between them on a pan-European scale. It recommended that regulators should not substitute themselves for market demand and should focus on enabling markets to evolve towards

sustainable competition. It also recommended that vigilance is necessary to avoid problems relating to achieving full functionality on end-user devices, which can harm customer experience.

Public Safety Communication Europe (PSC-Europe) highlighted the importance of ‘mission critical services’. It commented that it must always be possible to deliver mission critical services over any network within the EU and that devices have to support mission critical users, i.e. public safety professionals. It also highlighted reliability, availability and security issues and considered that, whilst mission critical services may be prioritised, consumers should not be severely disrupted.

Roman Vilgut believed that many end-users are discouraged from using new technologies because of privacy and security issues and stated that the private data of EU citizens should be stored within EU borders so that it falls under EU privacy regulation.

Sigfox identified a number of issues that it considered were closely related to the factors listed by BEREC and which it believed were particularly important for the adoption of IoT and for enhancing the end-user experience. For instance, in order to promote connectivity and build digital infrastructure, it was in favour of shared spectrum use, with licence-exemption, technology neutrality, harmonisation and other innovative solutions, such as LPWAN. To further promote innovation, it highlighted the importance of interoperable and complementary technologies. It suggested building trust and promoting security and resilience through the design process and by empowering industry participants to address security issues where they occur. It also expressed support for promoting inclusiveness and enhancing expertise, in particular through public policy.

Telefónica noted its agreement with the transparency framework established by the Regulation (EU) 2015/2120. However, it specified that the goals of Quality of Service measurement should be to ensure compliance with transparency provisions and should not go further than this. Instead, it suggested that NRAs should focus their investigations on issues that they identify based on customer complaints.

Telefónica also highlighted the importance of on-line platforms in the digital world, which it suggested have the potential to become bottlenecks and gatekeepers on the internet. It believed that the focus of net neutrality should not only be on internet service providers, but on all parts of the internet value chain. In **Telefónica’s** view, the current Commission proposal for the EECC would not be able to solve all issues relating to the balance between telecoms operators and OTTs, so it saw the potential for BEREC to play an important role in creating fair rules for all market players.

University of A Coruña (UDC) highlighted both the perceived quality of the service and the price of the service as having a positive impact on the experience of end-users. It also referred to studies that suggest that the use of increasingly sophisticated mobile devices and the experience of using 4G mobile networks were also influential. It also stated that whilst “data protection, privacy and network security” may not seem to influence the end-user experience, this was only true to the extent that users were unaware of these issues.

Question:**3. *How can the interests of digitally disengaged citizens be best protected?*****Responses:**

AOTEC encouraged regulators to protect local operators and provide more information about them to citizens.

CFWA stated that, in order to ensure that all citizens could equally benefit from digital innovations, BEREC should consider the latest technological developments and trends, as well as and the increasing business volumes in FWA (Fixed Wireless Access) sector. It considered that FWA could play an important role in spreading connectivity among digitally disengaged citizens and reaching the targets of the Digital Agenda for Europe 2020.

In **EDRI's** opinion a strong focus on net neutrality was needed to ensure that users can access the content of their choice. Without this, EDRI warned that there was a risk end-users would become digitally disengaged.

ECTA considered that competition and functioning market dynamics were essential to allow genuine choice among different quality and price points, effective switching and the discovery and conversion of latent demand for all end-users, including digitally disengaged end-users.

ETNO suggested that the interests of digitally disengaged citizens can be best protected by creating an environment of trust , which meant using simply, easily enforceable rules that are widely applicable. In its view, regulators should rely on horizontal consumer protection and privacy rules wherever possible, rather than sector-specific ones.

It also stated that demand and take-up of digital networks and services should be stimulated through public policies and that regulation needs to strike the right balance between ensuring reasonable safeguards and granting consumers the right to make informed decisions.

Similarly, **GSMA** placed emphasis on striking the right balance between ensuring reasonable safeguards for all citizens while also allowing them to take responsibility and make informed choices. It also suggested that Member States should promote digital inclusion mainly in terms of digital skills and the availability of digital services.

MVNO Europe emphasised that, in its view, genuine competition, supported by regulation where appropriate, was the best way to encourage the development of services that attract digitally disengaged citizens.

Telefónica believes that any measure related to the protection of potentially disengaged citizens should be considered as a part of public policies and should be promoted and financed by public budgets. It also made reference to better tax treatment (VAT) for telecommunications services.

With regard to Universal Service Obligations, in its view the evolution of the market has made these unnecessary and counterproductive, due to the distortions they cause. Instead, it suggested that the objectives of such obligations should be addressed by focusing on two issues: coverage

and affordable prices. It considered that improved coverage could be achieved with public funds under the existing broadband state aid guidelines and that affordable prices should be treated in the domain of public policy.

Question:

4. *What can be done by BEREC to improve the end-user experience by providing more and easier-to-use information?*

Responses:

CFWA believed that BEREC should ensure that consumers have a wide range of information on the availability, speed, quality and the pricing policies of the services provided by Ultra Broad Band (UBB) operators. However, it was also concerned about the potential for excessive information requirements on small and medium-sized operators and the potential for detailed information about networks and coverage to be used for anti-competitive purposes by competitors if this information was made public.

EDRi suggested that, by informing end-users about the EU's rules on net neutrality, BEREC and NRAs could empower end-users. It also suggests that BEREC should inform end-users of the potential impediments to free choice of content and applications, such as zero rating and content bundling strategies.

The **FTTH Council** considered that, in terms of the specific problem regarding speeds and take up, a comprehensive monitoring system (actual vs. advertised speeds, measurements of timing parameters (e.g. latency or jitter), level of congestion in the network, performance of IAS compared to specialised services, quality as perceived by end users, IAS offers on the retail market (e.g. availability and penetration)) should be put in place to ensure consumers are not being systematically misled. It also recommended the implementation of a requirement on the relation between access performance and advertised speeds and a requirement on minimum access speeds.

GSMA is of the opinion that information and transparency are crucial factors to increase trust in digital services, however it was in favour of simplified and consumer-friendly information requirements and cautions against requiring ever-increasing amounts and forms of information, which can be confusing and provide little practical value to consumers. It is expressed support for self- or co-regulation, advocating a horizontal approach, taking into account various, often voluntary, good practices of operators across the Member States.

Similarly, in **ETNO's** view improvements can be made by learning from best practices across the EU Member States, taking into account the input of all relevant stakeholders, including users and industry providers. It anticipated that such best practices should ensure that information is useful to consumers and presented in the appropriate format, and that the information requirements are proportionate to the benefits for consumers.

Furthermore, **ETNO** proposed that BEREC should issue guidelines on terms and conditions for digital applications that should be applied by all the players operating in the digital market and

should coordinate with the European Data Protection Supervisor (EDPS) on the issue of data protection.

Roman Vilgut suggested that information should be presented in a clear way that was easy for consumers to use and that consultation with consumer rights organisations may help in this respect.

Telefónica suggested that new rules need to be proportionate, ensuring effective and consistent protection standards, while not preventing new business models.

Question:

5. Are there any other significant trends/developments that BEREC should consider in relation to the end-user experience?

Responses:

AOTEC suggested that BEREC should also take into account oligopolistic tendencies of the European digital market in relation to the experience of end-users.

EDRi is of the opinion that BEREC should pay close attention to vertical integration strategies between IAS providers and Content and Application Providers (CAPs), as well as content bundling and other marketing strategies for "branding" otherwise relatively homogeneous internet access services, since it sees a risk that these practices can create economic incentives to violate key net neutrality principles and discriminate against services from other CAPs.

ETNO underlined the importance of technology-neutrality, maintaining fair competition between all digital market players. It also suggested that regulation should seek to enhance transparency and availability of choice, relying on non-discrimination principles and interventions should be targeted and proportionate.

ETNO also encourages BEREC to consider changes in the digital environment deriving from IoT services, in particular on data ownership and end-user experience, refraining from interfering with the development of innovative business models.

With regard to the monitoring of Internet Access Services, **ETNO** and **GSMA** also stated that a clear distinction should be drawn between the end-user experience and contractual compliance. In their view, the end-user experience is broader and includes factors beyond operators' responsibility (e.g. if end-users' devices or home infrastructure negatively impacts the experience related to speed).

The **FTTH Council** believes that trust and security, particularly in the context of a more pervasive digital environment will be very important and suggested that BEREC could have a role in assuring end-users in this regard.

MVNO Europe suggested that BEREC's Medium-Term Strategy for 2018-2020 needs to reflect the fact that, in context of M2M/IoT, choice will be affected by pan-European or even global

considerations. Therefore it recommended that BEREC seeks to ensure a 'home market' at European scale for European businesses, including European MVNOs.

One stakeholder mentioned that the aim of the Open Internet Regulation, and of BEREC's Guidelines on the Regulation, was to remove gatekeepers for internet access and to improve and enhance the user experience. However, in its view, the Regulation and the Guidelines have not entirely achieved their goals. It described the Regulation as primarily contemplating internet access as delivered through terrestrial service providers' networks to homes, businesses, and mobile devices. It believed that there was a lack of consideration of internet access via networks with a limited capacity, such as satellites, or provided in confined spaces, such as aeroplanes and that this could cause the Open Internet Regulation to have a substantial negative impact for the end user experience. It recommended that BEREC should consider a more flexible interpretation of the Regulation that takes into account networks with limited capacity and particular circumstances of use.

Roman Vilgut suggested that any connected product should be marked as such, especially IoT-devices.

Telefónica emphasised the importance of having a regulatory framework for consumer protection that is future-proof and that can accommodate changes in a dynamic environment such as the digital sector. In its view, the best way to achieve this is by using a holistic approach, with the same principles across the value chain. It also suggested that an updated Competition Law for the data economy could be used to tackle non-monetary transactions.

UDC expressed its support for a different pricing structure for electronic communications markets, whereby operators would charge service providers a proportionate and equitable fee for data traffic, which would subsidise end-user bills.

B. Competitive dynamics in the digital ecosystem

In the Stakeholder consultation, BEREC stated that some important issues in this field include, inter alia:

- Increasing **market consolidation** and **cross-sector mergers**
- Tendency towards **oligopolistic markets**
- Emergence of **less homogenous competitive conditions**
- Appearance of **new entrants**
- **Cooperation** between ECS operators (e.g. network and spectrum sharing)
- **Interaction between ECS operators and other sectors** (i.e. between ECS operators and device manufacturers, content providers, the automotive industry, etc.)
- **Coopetition** (competition and cooperation) between ECS and OTT providers
- Introduction of the **e-SIM** which might change the competitive landscape in the mobile industry
- Ongoing popularity of **bundled services** which might increasingly take the form of service which combine not only communication and audio-visual services, but other types of services as well, which may lead to the emergence of new business models and value chains

Question:

6. **What aspects of the issues listed above do you believe to be most important? Please explain your answer in detail**

Responses:

AOTEC: Inter-sectoral convergence and oligopolistic tendencies are the aspects that AOTEC considers the most important, together with the tendency to provide bundled services.

Cable Europe was of the view that symmetric or non-SMP based access should only be applied in rare cases to deal with certain instances of local monopolies, and should not replace the role that SMP plays within the regulatory framework. In its view, infrastructure based competition is the most sustainable type of competition and the principle that telecoms-specific regulation should be reduced as and where competition increases, has proven to be a recipe for success. It argued that any departure from the SMP concept would undermine investment incentives, in particular for cable operators, which are the main challengers to the incumbents in the majority of EU member states.

Another aspect touched upon by **Cable Europe** concerns bundled services. **Cable Europe** considered that the treatment of bundles, as currently proposed by the EC and endorsed by BEREC, risks disrupting the emerging of new business models based on the IoT. Illustrating its concerns, it provided an example whereby a leasing contract for a connected car that is delivered together with a SIM card and a mobile subscription would be subject to the very specific rules on contract duration (article 98) of the code.

CFWA highlighted its concerns about the distribution of spectrum among mobile operators and oligopolistic conditions more generally.

It also proposed that NRAs should start analysing spectrum optimisation, taking into account rural, sub-urban and remote areas, where there can be significant amounts of “free spectrum” that cannot be used due to regulation.

ECTA agreed with each item on the list of important issues identified by BEREC in the consultation, while emphasising in particular issues relating to the treatment of SMP positions, properly addressing non-competitive tight oligopolies in a manner which respects legal certainty, and the avoidance of regulators unduly or artificially fragmenting markets geographically. It also wished to express support for predictable, rigorous processes, the need for decision-makers to consult stakeholders fully and provide reasoned justifications for regulatory intervention and for deregulation. It referred to certain provisions, such as symmetric wholesale access regulation, and additional measures (for instance concerning co-investment agreements, the specification of how joint SMP can be identified and how to address non-competitive tight oligopolies) and re-affirmed its view that these issues should also be subject to the same rigorous processes as other regulatory interventions.

ECTA also made reference to previous representations it has made in response to BEREC consultations on oligopolistic markets, the relation between wholesale physical network access and wholesale virtual access and on the issue of sub-national geographic market segmentation. It stated that these remain relevant for BEREC’s MTS.

EDRi viewed all the issues listed by BEREC as relevant, but it recommended focusing on:

- Interaction between ECS operators and other sectors
- Coopetition (competition and cooperation) between ECS and OTT providers
- Ongoing popularity of bundled services

In particular, **EDRi** suggested that BEREC should closely monitor interactions between ECS providers and CAPs, such as vertical integration strategies, since such strategies and content bundling can create economic incentives to violate key net neutrality principles, for instance through zero-rating or through “services other than internet access services” (“specialised services”).

ETNO suggested that the subjects of market consolidation, cross-sector mergers and oligopolies, should be assessed by ex-post competition authorities, rather than by BEREC. With regard to “oligopolistic markets”, **ETNO** and **GSMA** suggested that the presence of few players in electronic communications markets was natural in such a capital-intensive industry.

On the subject of the “emergence of less homogenous conditions”, **ETNO** and **GSMA** expressed support for geographic segmentation of remedies. They also suggested that commercial agreements between operators are important in this regard and should be taken into account by NRAs, as proposed by the EC in the draft EECC. **GSMA** also proposed a shift from SMP regulation to symmetric regulation focused on non-replicable network elements.

With regard to the “appearance of new entrants”, **ETNO** suggested that the rise of new drivers of infrastructure competition should be taken into account in market analyses.

ETNO and **GSMA** described the benefits of “cooperation between ECS operators”, in particular network and spectrum sharing, and suggested that this should be facilitated to meet demand and technical requirements and should not be the subject of specific regulatory fixes.

In the context of “interaction between ECS operators and other sectors” and the emergence of services in which connectivity is only an element of the service, **ETNO** suggested that regulatory approaches focusing on a specific kind of service or provider will soon become outdated and ineffective. Instead, it recommended that regulation should be principle-based in order to not stifle or interfere with the emergence of new business models.

With regard to “coopetition (competition and cooperation) between ECS and OTT providers”, **ETNO** and **GSMA** suggested that a greater focus should be placed on retail level demand or the end-user perspective to reflect the part that OTTs play in the value chain and the way that services are consumed and substituted by end-users.

With regard to the introduction of “eSIMs”, according to **GSMA**, it is important to ensure that OTTs and other app providers, that do not invest in frequencies and infrastructure, do not free-ride on the operators’ efforts and investments, which it feared would dis-incentivise investment in connectivity and quality of services and thus be detrimental for end users and innovation.

Finally, with regard to “bundled services”, **ETNO** stated that the variety of business models requires a consistent regulatory approach.

FTTH Council broadly agreed with BEREC’s analysis and saw the emergence of new entrants, coopetition and oligopolistic markets all continuing. It considered that these elements are being driven by a very strong push towards FTTH in Europe. It believed that a range of new dynamics are likely to emerge with more regional operators cooperating to extend their network reach and to increase their service availability, but that these evolutions will also depend on the amount and form of regulatory oversight imposed on the market.

MVNO Europe agreed that the issues identified by BEREC are relevant for mobile markets. It also suggested that BEREC should keep future technology evolution under objective review in order to understand whether more pro-competitive approaches to radio spectrum licensing become available and viable. It also stated that active promotion of competition remains appropriate, to enable markets to evolve towards sustainable, effective competition.

Among the issues identified in the consultation, **Sigfox** highlighted the “emergence of less homogeneous competitive conditions”, the “appearance of new entrants”, “cooperation between ECS operators” and the “introduction of the e-SIM”.

Telefónica believed that the most relevant of the issues is the appearance of new entrants, with particular reference to on-line platforms.

Telefónica also commented on the issue of oligopolies – it stated that the telecoms sector does not generally suffer the typical negative features associated with oligopolies in economic theory or other sectors. It was also concerned that “oligopolies regulation” risked being both inefficient and ineffective and could discourage investment at a time when it was particularly needed. It also considered that such regulation would run counter to the objective of removal of ex ante regulation and greater reliance on ex post competition law.

UDC considered that the “interaction between ECS operators and other sectors” may be the most important. It noted that the growing digitalisation of services and the construction of collaborative digital platforms are leading to the construction of new digital ecosystems in which ECS operators try to achieve an advantageous position by entering into direct competition with traditional service providers.

UGT Comunicaciones advocated for a greater focus on economic growth and, in particular, employment, within the regulation of the telecommunication markets.

Question:

7. Are there any other significant trends/developments that BEREC should consider in relation to the digital ecosystem?

Responses:

AOTEC highlighted concerns about the continued survival of mobile virtual network operators, which it believed would cause a reduction in the choice of bundled services available to consumers.

ECTA referred to certain policy-making and regulatory trends, whereby NRAs have taken decisions relating to fiber access networks, permitting SMP operators to architect their networks in a manner which it considers would impede physical wholesale access, and thus severely restrict competition. **ECTA** considered that this was contrary to the 2010 EC Recommendation on Regulated Access to Next Generation Access Networks and suggested that BEREC should adopt a position on these practices, which it viewed as incompatible with BEREC’s fundamental stance on competition. Similarly, **ECTA** identified other policies adopted by NRA relating to metallic access networks that appeared in its view to favour SMP operators. It considered that this was impeding competition and the development of technology that enable co-existence and competition.

ECTA expressed its opinion that the digital revolution and the emergence of the Industry 4.0 makes is more important than ever for electronic communications network operators and service providers to be able, through a pro-competitive regulatory framework, to freely choose their strategic alignment. It noted that this was particularly important for business markets in sectors such as transport, healthcare, energy, utilities, government and education.

The **FTTH Council** expressed concern at any suggestion that the approach to tight oligopolies would lead to automatic regulation. It considered that this was not suited to oversight by ex-ante

regulators and is best left to ex-post supervision. It was concerned about the impact of unnecessary regulatory intervention and the potential negative effects on investment.

EDRI emphasised the importance of net neutrality principles and suggest that BEREC work with other competent authorities, such as Data Protection Authorities, when necessary.

ETNO and **GSMA** highlighted the particular characteristics that can arise in in the context of two-sided or multi-sided markets, including in the cases where zero-rated services are offered. They also highlighted the importance of customer data, which can become a valuable asset and can be used to design and target services. **ETNO** also made reference to fixed-mobile substitutability and competition between platforms in the digital ecosystem and, more generally, suggested that NRAs should take into account that rapidly changing digital markets require an even greater flexibility and a forward looking view with regard to market definition in order to capture the dynamic ever-changing nature of these digital business models.

MVNO Europe pointed to a relatively new development whereby connectivity is being 'baked-into' products/services of non-telecoms companies, and sold by non-telecom companies, sometimes without a recurring (telecoms) subscription, such as with e-Books, car maintenance, mapping and infotainment. It highlighted concerns about restrictive practices of MNOs and regulatory obstacles in some Member States that may affect these developing markets.

It suggested that for M2M and IoT services, there should be a single, EU-wide authorisation regime, with complete harmonisation of the regulatory obligations. As an alternative to this, it suggested that a country-of-origin principle, in which the MVNO would have to comply only with the regulatory obligations applicable in its home country, could also be a solution.

MVNO Europe also stated that continued vigilance regarding e-SIMs remained appropriate.

Sigfox suggested that, regarding IoT market competition, regulators should ensure that the existing competition rules are applied and there is fair competition on the merits and that there can be interoperability at the application level to enable complementary solutions to emerge.

C. Evolution of networks

In the Stakeholder consultation, BEREC stated that some important issues related to the evolution of networks include, inter alia:

- **Network convergence** between fixed and mobile technologies
- The expansion of **IoT and M2M services** and the potential impact of this on numbering, spectrum use, roaming, licensing, etc.
- **Investment in high speed networks** to ensure capacity for bandwidth-heavy services
- **Fixed wireless technologies** as a potential alternative to certain fixed NGA networks
- Importance of **access to civil infrastructure** in the context of network deployment
- **5G deployment** and the emergence of associated new business models and regulatory challenges
- Technological changes which have the potential to impact on regulation. These include new ways to handle network resources, such as **Software Designed Networking (SDN)** and **Network Function Virtualisation (NFV)**, and the potential evolution of **networks generated and operated by the end-users themselves** (e.g. mesh networks, free licences, spectrum sharing).

Question:

- 8) What aspects of the issues listed above do you believe to be most important? Please explain your answer in detail.**

Responses:

Cable Europe classified some of the issue related to the “evolution of networks” into two groups: 1) existing technologies (“network convergence”, “IoT and M2M”, and “fixed wireless technologies”; and 2) technologies under development (“5G deployment” and “SDN/NFV”. Under the first category, it considered that current regulation provides important protection for the transparency that exists today. However, it also highlighted the issue of cybersecurity in relation to IoT and M2M, for which it suggested that BEREC and the NRAs have a critical role of educating consumers and cooperating with electronic communication operators on this issue.

With regard to technologies that are still under development, such as 5G, SDN and NFV, Cable Europe stated that various stakeholders have already provided a clear message – that it is too early to consider these issues in terms of regulation and they should be given time to mature. Instead, it recommended a continuous exchange of information between the various stakeholders.

CFWA urged a fair treatment of SIM-based and non-SIM-based IoT devices, in particular regarding the allocation of spectrum. It also suggests that work should be done to support the harmonization of the 868 MHz band to ensure that European industry and, in particular, European Wireless Internet Providers can introduce IoT connection services across the EU.

ECTA agreed with BEREC’s identification of the issues relating to the ongoing and expected evolution of networks. It suggested that BEREC and NRAs need to monitor technology

development, and in particular the inclusion of ‘things’ (via the Internet and/or via specialised services) as receivers and transmitters, which it considered would give rise to changes in the value chain and questions relating to the identification of end-users, providers and intermediaries.

ECTA also recommended that incumbent operator advantages and remaining privileged relationships with public sector entities should also be addressed. For instance, **ECTA** suggested that BEREC could encourage NRAs to assess the market share of the operator found to hold SMP on wholesale fixed network access markets for the provision of network and services to the public sector, taking into account also the ownership or control of mobile networks by these SMP operators. In addition, **ECTA** emphasised its view on the importance of predictable rigorous processes, both for mandating and for withdrawing wholesale access regulation.

EDRi considered that 5G deployments, SDN/NVF and end-users’ generated and operated networks to be of utmost importance. **EDRi** encouraged BEREC to monitor the ongoing development of the 5G standard with a view to ensuring that the final standard will not be technically incompatible with the non-discrimination principles in the Net Neutrality Regulation. **EDRi** suggested that networks generated and operated by the end-users should be supported by BEREC to the greatest extent possible by identifying additional frequency bands for unlicensed spectrum use. It pointed out that user-operated networks will depend on the availability of networking hardware and, without standardised frequencies for unlicensed use, it is highly unlikely that such equipment will be developed and offered for sale to the EU citizens.

In **ETNOS’s** view all mentioned issues are important at present and may remain important over the next years. In particular, investment in high speed networks and 5G deployment were considered key factors to meet the EU connectivity goals and the increasing bandwidth needs of end users. In this context, **ETNO** encouraged BEREC to look at ways to promote the deployment of high-speed fixed and mobile networks in a technology neutral way.

FTTH Council Europe stated that it agreed in general with BEREC’s assessment, but considered that more could be said about technology choice and technology neutrality. It also suggested that more emphasis could be placed on rural connectivity.

GSMA suggested that the ambitious targets set by the European Commission for a “Gigabit Society” are unrealistic with current levels of investment. It stated that accelerating the rate of investment would be challenging because willingness to pay substantially more for higher broadband speeds is limited and the returns on investment in the European telecom industry have been low over the past years. It also argued that competing mobile infrastructures must remain excluded from ex-ante regulation in order to allow investment in 5G networks. It also suggested that a review of the adequacy of the existing Open Internet Regulation and associated BEREC guidelines will be required.

MVNO Europe agreed that the technology developments listed in the consultation were relevant for mobile markets, but it suggested that BEREC should avoid focusing on the capabilities of specific technologies and should instead maintain a principled stance on the justification for regulatory intervention in order to support sustainable competition.

MVNO Europe supported the idea that network convergence between fixed and mobile, along with NFV/SDN and 5G deployment deserve particular attention on BEREC's part, in order for it to continue to support a pro-competitive environment and to ensure that competition does not regress as a result of incumbent operators' structural advantages.

Roman Vilgut suggested that the most important issue to consider was high speed networks, for instance wireless technologies or 5G.

Sigfox offered a number of comments relating to the issues identified in the consultation. Firstly, with regard to "network convergence", it highlighted the issue of interoperability in the IoT industry, which it believed should be promoted at the application layer. Secondly, it discussed spectrum issues for IoT and M2M services, stating that existing regulation in the EU were suitable for IoT development, whilst also suggesting that licence-exempt regimes should be preserved and expanded. With regard to "access to civil infrastructure", it stated that regulators should ensure fair and non-discriminatory access for all stakeholders. Finally, it highlighted "5G deployment" and the role of new business models, regulatory challenges and technological change, such as SDN and NFV.

From **Teléfono's** point of view "investment in high speed networks" (Very High Capacity Networks in accordance with the terminology of the EECC) is by far the most relevant during the period considered. It considered that the Digital Single Market can only be realised when all European citizens, businesses and public administrations are connected to reliable, high-speed and affordable networks.

Telefónica also suggested that it was still too early for 5G to have a significant impact and that it was also premature to consider regulation of SDN/NFV as the technology is still in its initial stages. Therefore it did not consider these issues as priorities during the period covered by the Medium Term Strategy.

Question:

9) Are there any other significant trends/developments that BEREC should consider in relation to evolution of networks?

Responses:

CFWA expressed its views on the importance of technology neutrality and the maintenance of fair competition among telecoms operators, including those that provide different services (e.g. mobile and fixed wireless operators, content providers, device manufacturers). In particular, it highlighted the issue of the distribution of spectrum.

EDRi suggested that BEREC should ensure that NGN continues to be open and competitive. It also suggested that particular attention should be paid to technological developments which may interfere with the current net neutrality framework.

With regard to NGA networks and 5G, the **FTTH Council** considers that BEREC has an important role to identify the right goals and setting a path to achieve those goals over time.

GSMA believed that BEREC should consider the use of the networks enabled by SDN, NFV and 5G slicing, fostering new business opportunities and satisfying future end-user needs. However it also stated that new technologies, such as SDN, NFV or new innovative interfaces or services should not be included in the scope of the sector specific regulation, such as the EECC. It also recommended that BEREC should consider the increasing use “Big Data” by electronic communications service providers.

One stakeholder highlighted the role of satellite networks in 5G deployment and urged forward planning and dialogue by both satellite and terrestrial sectors.

It emphasized the principle of technology neutrality, taking into account how different technologies can and should interwork. In particular, it pointed out that 5G access should not be considered as a solely terrestrial wireless technology and regulation should be flexible enough to incorporate other technologies, such as satellite systems. It stated that such considerations should also be applied to the issue of access to spectrum resources, taking into account that satellite systems have been operating in the bands above 6GHz for many years. As terrestrial mobile systems move into spectrum bands above this range, it recommended that they should focus on bands not used already by satellite already and that attention should be paid to issues of co-existence of both sectors. It also suggested that ample spectrum resources are needed to support current and future services, including those relating to the IoT and M2M.

PSC-Europe stressed the importance of “mission critical services” and argued that they should be treated fairly both in technical and commercial terms and should not be burdened with excessive pricing.

D. Over-arching Questions

Question:

10) Are there any market or technological trends that have not been addressed above? Please explain your answer in detail.

Responses:

EDRI considered that regulatory decisions to safeguard open internet access will have implications for freedom of expression and media pluralism. It suggested that BEREC provides practical guidance to NRAs on assessing such implications, for instance through the organisation of workshops in cooperation with Art 29 Working Party, the European Data Protection Supervisor and civil society experts.

GSMA re-affirmed its views on the relevance of multi-sided platforms, including in cases where zero-rated services are offered, and suggested that a holistic approach to assessments of competition was needed.

ETNO stated that Artificial Intelligence technology and Machine Learning, based on the analysis of large amounts of data, could create bottlenecks in service provision and should be evaluated to guarantee transparency, openness and competition.

In **PSC-Europe's** view, the 'mission critical marketplace' has to be addressed in addition, which it stated has monetary and social benefits.

Sigfox highlighted the potential role for LPWAN, as well as other solutions for IoT/M2M services deployed under unlicensed regimes.

Question:

11) Over the next three years, which market or technological trends do you anticipate having the most significant impact on the ECS markets? Please explain your answer in detail.

Responses:

Sigfox highlighted the potential impact of IoT and complementary technologies on industry.

ETNO and **GSMA** foresaw an increased substitution of traditional communication services by internet based communication (e.g. OTT) and therefore considered it of utmost importance to create an environment where all players can compete in an equal footing.

PSC-Europe anticipated that mission critical communications would have the most significant impact on the ECS market over the next three years.

Telefónica considered that the most relevant trends would be:

- The rise of strong infrastructure competition from cable and alternative FTTH players;

- The evolution of DOCSYS technology that will allow Cable operators to offer wholesale services and, consequently, the need to consider the self-provisioning of wholesale services when analysing Market 3 in future reviews;
- The new possibilities provided by new and enhanced network infrastructures (fixed and mobile);
- The transition to all IP networks;
- Market consolidation;
- More complex and heterogeneous markets, made up of pockets of strong infrastructure competition, areas with lack of NGA coverage, mobile substituting fixed for certain market segments;
- IoT/M2M services becoming increasingly more relevant;
- Services provided by platforms on top of the networks;
- Fixed and mobile convergence;
- Big data.

UDC anticipated that over the next three years, there will be an exponential progression of cloud services offered by operators, leading to risks associated with the privacy of citizens.

Question:

12) Do NRAs and BEREC have the appropriate tools to deal with anticipated market changes and associated regulatory challenges over the next three years? Please explain your answer in detail, and, if possible, outline potential solutions.

Responses:

ECTA highlighted its concerns that the NRAs and BEREC may in future not have at their disposal the required tools to identify market failure and intervene in an effective and appropriate way in the light of the draft EEC and the ITRE Committee draft report.

EDRI considered that enforcement and consistent application of the Net Neutrality Regulation will be one of the challenges for NRAs in the coming years. It also suggested that the new tasks entrusted to NRAs, in particular with regard to ensuring citizens' fundamental rights through net neutrality, will require new tools and competencies among the NRAs in the EU.

ETNO considered that, as far as BEREC and NRAs competencies are defined in the current EU framework for electronic communications, they have the appropriate tools.

One stakeholder considered that there was still a risk related to consistent implementation of the Net Neutrality Regulation, in particular relating to connectivity in transportation on a Pan-European level. In its view, BEREC's Guidelines do not contemplate scenarios in which there is inherently limited capacity, such as during transport by sea or air. It considered that there was a lack of guidance that was impeding business decisions and suggested that a common understanding was needed to facilitate pan European services. It also suggested that NRAs should be given the means to reach a common understanding.

In **Sigfox**'s view, existing legal and regulatory frameworks are appropriate for the emergence and take-up of the IoT market. It also encouraged the sharing of good practices between Member states and national regulators.

Telefónica considered that the new EECC should provide the appropriate tools. It also suggested that the current review represents an opportunity to move away from what it considered to be a heavy handed ex-ante regulatory regime to lighter and more responsive ex-post regulatory oversight, as well as a greater role for voluntary commercial arrangements.

Question:

13) In which ways can technological and market developments impact upon promotion of the single market?

Responses:

EDRi emphasised the importance of net neutrality provisions in promoting the single market by ensuring that markets are open and competitive for all participants.

Sigfox expressed its optimism that a single market would benefit from new business models linked to IoT expansion.

Telefónica was of the view that technological and market developments have a decisive influence on the promotion of the single market. However, it also stated that access networks have a local character and should be locally regulated, taking into account the different situations that can apply in a given location.

Section 2 - How BEREC works and engages with stakeholders

In this section of the consultation, BEREC sought input on the way it works to support implementation of the objectives in the regulatory framework and on how it consults with stakeholders.

A. BEREC's work with the regulatory objectives

Question:

14) Do you have a concrete example where better coordination/harmonisation between NRAs would be or has been particularly beneficial for your activity, either directly or indirectly?

Responses:

According to **Cable Europe**, BEREC stakeholder meetings are an important way in which to gather views from various sources. It suggested that BEREC and the NRAs should leverage this interaction with the operators to launch educational campaigns for consumers. In its view, many of the complaints about electronic communication services are based on factors that are external to the operators. It suggested that BEREC and operators could work on improving the sector's reputation, which it considered to be one of the most transparent.

ECTA considered that better coordination and harmonisation has resulted from the Common Positions on WLA, WBA (WCA) and WLL (WHQAFL) markets. It also suggested that in general improvements may be achieved by placing greater emphasis on best practices, in particular identifying specific competition issues and market failures that appear in several Member States and adopting best practice remedies that have demonstrated their effectiveness in addressing those problems.

ETNO similarly suggested that BEREC could contribute to the development of the Digital Single Market by promoting the adoption of best practices.

According to **GSMA** there may be scope for better coordination and harmonization between NRAs on the issue of the IoT. It considered that it is important that new regulatory initiatives, such as the proposal to allow the extraterritorial use of national number ranges for M2M, do not inadvertently become unduly restrictive and a de-facto barrier to the Digital Single Market. It considered it very important to retain the flexibility, whereby NRAs are free to decide whether they create specific M2M numbering ranges or allow extraterritorial use of existing national number ranges for M2M use. It also suggested that regulation should not be applied in a disproportionate or inconsistent way to innovative IoT services at the national level before the market has had a chance to develop. It considered that BEREC has an important role to play in facilitating consistent, harmonised best practices in this regard.

MVNO Europe highlighted the issue of Mobile Termination Rates, for which it considered that progress has been made, but full harmonisation remains elusive. It also pointed to the

harmonisation of ECNS notification/authorisation requirements, for which it noted that BEREC considered and proposed its own system after the European Commission included it in its 2013 legislative proposal, but BEREC did not take its proposal forward after the issue subsided in the 2013/2014 co-legislative process. It noted that the issue is now on the co-legislators' agenda again.

MVNO Europe also suggested that BEREC leadership is particularly necessary on M2M/IoT-related issues, to ensure that a pan-EU 'home market' is enabled for European companies, including MVNOs.

Telefónica stated that, in the case of the prevention and adoption of measures against fraud, good coordination and harmonisation would be of the utmost importance.

Question:

15) How do you consider that BEREC could further contribute to the development of a Digital Single Market (e.g. best practice dissemination)?

Responses:

EDRi reinforced its view about the importance of consistent application of the net neutrality rules in the EU.

With regard to the issue of numbering in the context of M2M/IoT **GSMA** suggested that BEREC could further contribute to the development of a Digital Single Market by ensuring that no unnecessary administrative burden and complexity is added at national level for market participants.

Telefónica was in favour of timely industry involvement in BEREC guidance and suggested that BEREC should further increase transparency and engage more regularly with industry stakeholders. **Telefónica** also considered that the future role of BEREC should not be based on binding powers or executive tasks, but more on its capacity to provide timely technical guidance that facilitates harmonised implementation of EU regulation.

B. Towards a BEREC stakeholder engagement strategy

BEREC currently engages with stakeholders (including the EU institutions) in a wide variety of ways, such as thematic workshops, public consultations, public debriefings, the annual BEREC Stakeholder Forum and through press releases and information on its web page, twitter and YouTube channels.

Question:

16) Which of the above described practices can be used in order to increase BEREC's transparency and accountability? Are there any additional proposals for BEREC to increase its transparency and accountability?

Responses

ECTA welcomed any measures to ensure that any and all other stakeholders are able to effectively make their representations and also expressed support for the process of public consultations on draft NRA decisions.

ECTA also suggested that BEREC could engage with its stakeholders in specific transparent case studies from specific NRA decisions and analyse the effectiveness or lack of effectiveness of market failure identification and related remedies as well as the replicability in other Member States.

EDRi considered that public consultations and thematic workshops with all relevant stakeholders as the best ways for BEREC to increase transparency and accountability.

ETNO and GSMA believed that all of the listed communication channels were important to assure transparency and accountability.

Telefónica stated that public workshops and public consultations provide a good basis to increase engagement with stakeholders, but expressed support for more involvement with the industry, for instance through the creation of a forum with the industry to discuss relevant issues, provide channels to ease direct communication with operators, and to have specific meetings with stakeholders when required.

Question:

17) Do you consider that BEREC's current engagement with stakeholders provides the opportunity to engage in the work of BEREC at the right time and at the right level? Are there any particular areas where you believe BEREC could improve or do things differently?

Responses:

EDRi encouraged BEREC to continue and expand its efforts to engage directly with stakeholders.

ETNO and GSMA considered it important that stakeholders' views were taken into account during the whole process while policy is elaborated (i.e. from the beginning of Expert Working Group

proceedings). They also stated that public consultations should always be promoted and that reports should always be made public. They also urged BEREC to justify the reasons for not accepting stakeholders' suggestions.

Telefónica believed that there is substantial scope for progress, in particular with regard to the activities of BEREC Expert Working Groups (EWGs). It encouraged BEREC to continue engaging in open discussions and increase the transparency of its work, in particular by subjecting its foreseen activities to public consultation.

Question:

18) How can BEREC improve its communication to stakeholders and to the public? More specifically, which instrument(s) (press releases, public debriefings, information on the website, etc.) do you consider to be particularly useful and why? Do you have any proposals for new channels of engagement or for the improvement of the existing ones?

Responses:

Roman Vilgut highlighted the issues of publicity and timeframes for stakeholder input, in particular, suggesting that the timetable for this discussion is very short and that more could be done to publicise the consultation.

Telefónica made a number of proposals related to BEREC's communication with stakeholders and the public. For instance, it suggested more regular workshops and exchanges between Expert Working Groups and the sector, including at the early stages of BEREC's work. It also proposed greater dialogue between BEREC and stakeholders, such as that in the Stakeholder Forums, and expressed support for public consultations on all relevant items in BEREC's Work Programme.

ETNO also expressed support for the exchanges with BEREC Expert Working Groups and for workshops and consultations on all items in the BEREC Work Programme.

EDRi urged BEREC take a transparent, multi-stakeholder approach to its engagement and also suggested BEREC could encourage NRAs to increase their interaction with public and civil society organizations.

According to **GSMA**, all of the listed methods of communication were useful, although it placed greater emphasis on the content of the communication, in particular recommending a more evidence-based or economic approach to work.

MVNO Europe would like to be completely sure that is directly informed about all BEREC thematic workshops, enabling them to act as potential participants and contributors.

It also requested that BEREC makes relevant links available to stakeholders on a mailing list, e.g. in a daily or weekly update, and also requested e-mail alerts for new items on BEREC's website.