

BEREC

Work programme 2018

DIGITALEUROPE response (8 November 2018) - Our answers have been marked in line with the text at the relevant sections of the Strategic Priorities.

About us:

DIGITALEUROPE represents the digital technology industry in Europe.

Vision - A European Union that nurtures and supports digital technology industries, and that prospers from the jobs we provide, the innovation and economic benefits we deliver and the societal challenges we address.

Mission - To foster, on behalf of our members, a business, policy and regulatory environment in Europe that best realizes our vision. We will achieve this by working as positive partners with the European Institutions and other European and global bodies and, through our national trade associations, the member states of Europe.

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I. BEREC work in 2018

1. Strategic Priority 1: Responding to connectivity challenges and to new conditions for access to high-capacity networks

Very high-capacity networks have become central for end-users to enable them to enjoy the full potential of the digital ecosystem and access to some non-replicable elements is important to promote and protect competition, but the variance in the deployment of high-speed networks has led to different market conditions across Europe. The BEREC Medium-term Strategy 2018-2020 includes as a strategic priority the continuation of its work on identifying competition problems that may arise in different Member States as high-speed networks are being developed and legacy networks phased out or where markets have become mature – with the intention to increase awareness on how incentives to invest change with changing market conditions and how competition is affected. The Work Programme 2018 therefore includes the following activities that contribute to this strategic goal.

1.1. Access to physical infrastructure in market analyses

Duct and pole access have become more and more relevant in the context of increasing infrastructure competition and fixed mobile convergence, where operators need access to the fixed incumbents' ducts and poles to deploy high capacity access and backhaul networks. Additionally, the directive on measures to reduce the cost of deploying high-speed electronic communications networks (2014/61/EU) emphasizes the role of access to physical infrastructure on the deployment of new generation networks, addressing measures, such as the sharing and re-use of existing physical infrastructure, which are expected to create conditions for a more cost-efficient network deployment. Although most NRAs are including duct and pole access in their market analyses, there is currently no clear guidance from the current framework on the relevant market in which it should be included. BEREC considers it especially interesting to identify how NRAs have chosen to address access to physical infrastructure in their market analysis, whether there is a common approach among NRAs, as well as EC views on the approaches proposed by NRAs. The report to be prepared will provide a snapshot of how access to physical infrastructure is regulated among BEREC countries, EC views on NRA decisions, and will also provide an analysis of the opportunity to isolate this market in order to conduct market analyses that would be methodologically robust and consistent with the regulatory framework.

Deliverables

BEREC Report on access to physical infrastructure in market analyses

Public Consultation: No

Adoption in Plenary 4 for publication

1.2. Pricing for access to infrastructure and civil works

The Broadband Cost Reduction Directive (BCRD) is intended to reduce the cost of high speed broadband deployment by increasing transparency on and enabling access to existing physical infrastructure, including non-ECN infrastructure, deployable for high speed broadband networks, by promoting coordination of civil works between different network operators and ECN operators and finally by fostering access to existing passive in-building infrastructure.

In 2017 a report was completed on the „Implementation of the BRCRD” giving an overview of the tasks appointed to NRAs and how they were implemented (where this has already been the case). One of the challenges identified in some MS relate to the price setting for access to existing physical infrastructure as foreseen in Article 3.

Since the determination of pricing terms is one of the more complex issues addressed by the BRCRD it will be studied in more detail in a follow-up report. Pricing terms might become relevant in all three areas of the Broadband Cost Reduction Directive (access to existing physical infrastructure, coordination of civil works, access to passive inbuilding infrastructure). Potential questions arising in this context include, but are not limited to:

- How should prices be determined in cases of Article 3 (physical infrastructure), Article 5 (civil works) and Article 9 (in-building physical infrastructure) by the dispute settlement body?
- How can consistency of pricing across different disputes be ensured? Are case-specific characteristics (e.g. differences in geographical properties or in methods used for civil works) the determining factor of individual prices or can pricing be generalised?
- How can the terminological differences regarding pricing criteria be interpreted from the viewpoint of the dispute settlement body?
- Should the differentiation between cases where the requested network operator is either a public electronic communication network (ECN) operator or a non-ECN operator as mentioned in Article 3 (5) subpara 3 also be applied to cases of Article 5?
- In the case of a non-ECN operator being requested regarding Article 3 or 5: Which cost and risk components should be considered by the dispute settlement body when determining the price?

Deliverables

BEREC Report on pricing for access to infrastructure and civil works

Public Consultation: Yes

Adoption in Plenary 3 for public consultation

Adoption of final Report in 2019

1.3. Geographical market definition

The BEREC Common Position on geographic aspects of market analysis (definition and remedies)¹ was published in June, 2014. After its publication, many of the NRAs have applied this common position in the context of market definition and remedies geographical segmentation, and in October 2014 the EC published a new recommendation on relevant markets. This report is aimed to provide an overview of experiences in NRAs applying geographical segmentation of both markets and remedies. Among other issues, the report will address issues taken into account by NRAs for the definition of subnational markets and/or differentiated remedies, as well as methodologies, tools and other relevant aspects in relation to geographical differences in competition. This report could feed into a future update of the BEREC Common Position on geographical segmentation.

Deliverables

BEREC Report on geographical market definition

Public Consultation: No

Adoption in Plenary 4 for publication

1.4. Benchmarking on technical and economic replicability assessment in the context of symmetrical access

In 2017, BEREC produced a report on NRA experiences of imposing symmetric regulation with a focus on the rationale for and scope of symmetric access interventions and the powers that were invoked to impose symmetric access. Since then, BEREC has produced a position paper to broadly support the EC's proposals to retain the existing provisions on symmetric regulation such that they are coherent with the SMP regulation and to enable NRAs to impose appropriate access obligations where operators lack access to viable alternatives to non-replicable assets. Although the relevant text (Article 59 (2) in the European Electronic Communications Code (EECC)) has not been finalised, the concept of economic and technical replicability is expected to be similar to the relevant text in the current framework (Article 12 (3) Framework Directive (FD)), which states that symmetric obligations can be imposed up to the first concentration point where "duplication of such infrastructure would be economically inefficient or physically impracticable." In this context, this report will set out NRA experiences of assessing technical or economic replicability in order to impose symmetric access requirements. The report will consider how and under which circumstances these tests have been applied, any issues/problems NRAs encountered when applying these tests, and whether further guidance is required from BEREC on applying these tests in the future.

Deliverables

¹

http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/4439-berec-common-position-on-geographic-aspects-of-market-analysis-definition-and-remedies

BEREC Report on technical and economic replicability assessment in the context of symmetrical access

Public Consultation: No

Adoption in Plenary 2 for publication

1.5. L2 WAP/advanced bitstream offers for undertakings (M4)

BEREC already analysed layer 2 wholesale access products (L2 WAP) in recent years and published a report on common characteristics of layer 2 wholesale access products (BoR (15) 133) imposed as a remedy on the wholesale local access market (market 3a) and the wholesale central access market (market 3b) and also a common position on layer 2 wholesale access products (BoR (16) 162) on these markets.

According to the EC's Recommendation on relevant product markets of 2014, the wholesale high-quality access market (market 4) includes not only leased lines (with traditional and/or alternative interfaces) but also other high-quality access products, if they fulfil certain criteria. Therefore, in recent years, several NRAs not only included high-quality access products other than leased lines, in particular advanced bitstream products, in market 4 but also imposed such products as a remedy on the SMP operator.

In order to get a deeper insight into these products and to contribute to consistent access products as well as to foster the knowledge transfer between NRAs, the project will analyse layer 2 wholesale access products imposed on market 4 with a focus on advanced bitstream products (not including Ethernet leased lines). The objectives are:

- to give an overview of layer 2 wholesale access products currently in place on market 4 based on experiences of NRAs;
- to analyse to what extent layer 2 wholesale access products in different countries have characteristics in common and to identify these common characteristics; and
- to analyse the main differences between layer 2 wholesale access products imposed on market 4 and layer 2 wholesale access products imposed on markets 3a and 3b.

Deliverables

BEREC Report on the L2 WAP/advanced bitstream offers for undertaking (M4)

Public Consultation: No

Adoption in Plenary 2 for publication

1.6. Update on Common Positions markets 3a, 3b and 4

Based on the conclusion of the BEREC Report on the assessment to consider whether there may be a need to review the Common Positions on markets 3a, 3b and 4 that will be adopted in December 2017, BEREC will organize an internal workshop to discuss potential changes arising from the EECC and its impact on the possible revision of the CPs.

Deliverables

Internal Expert Workshop

DIGITALEUROPE fully agrees with strategic priority 1, responding to connectivity challenges, as connectivity remains BERECs and NRAs core competence and area of responsibility. The digital transformation of European economies and societies starts with the deployment of ubiquitous high-capacity networks. Therefore BEREC inevitably and inherently as part of its existing role will have a crucial part to play in ensuring Europe succeeds and reap the full potential and benefits of digital transformation.

Further, DIGITALEUROPE welcomes the workstream and focus on access to physical infrastructure. Increased sharing and creation of synergies to avoid unnecessary duplication of civil works, which still accounts for around 80% of cost of network deployment, can play a crucial part in lower cost and thereby enabling all players to invest. One element to take into consideration is whether the work on access to physical infrastructure could be done in a more holistic manner, not only looking at it from the perspective of market analyses. Whilst it can be part of SMP regulation there are also other tools at NRAs' disposal to facilitate this and the report could look at various best case practices from Member States. Additionally, it would be interesting as well for the report, as part of this more holistic approach, to examine the extent to which increased sharing of physical infrastructure could create more competitive dynamics in a manner that would reduce the need for SMP regulation, incl. at other layers. Similarly, there might be synergies to be had with the workstream on symmetrical access. The aim should include to look not just at how these obligations have been or could be applied on top of existing (SMP) regulation but also how such obligations could potentially be applied in a manner making regulation overall smarter and more focussed.

DIGITALEUROPE also welcomes the work stream assessing the experience to date with geographic segmentation of markets and remedies. This can be an important element of ensuring regulation is proportionate and targeted as well as ensuring NRAs focus efforts where most needed.

As a general note, whilst we understand that these above reports are intended to merely report and describe existing experience and practices, we would recommend there nonetheless to be some form of public consultation of stakeholders in order to ensure that the wider stakeholders' views and experiences in how these regulations have been applied can be taken into account as well.

2. Strategic Priority 2: Monitoring potential bottlenecks in the distribution of digital services

Against a back-drop where the internet continues to change the ways in which digital services are delivered and consumed, where more actors are becoming involved in the digital value chain and where interaction between service and network providers is changing, the second strategic priority of the BEREC Medium-Term Strategy is to evaluate/analyse how the various digital markets evolve in the coming three years – looking particularly at how market power is distributed, the existence of potential bottlenecks to competition and how these can be best addressed. For this strategic priority, BEREC will carry out the following projects.

2.1. Data economy

The role of data becomes increasingly relevant in most sectors of the economy. The telecommunication sector is no exception, especially given its growing interactions with other sectors that are at the core of data economy (online telecommunication platforms, audio-visual content providers, etc.). Taking this into account, BEREC considers that it is important to study implications derived from data economy on the telecommunications sector.

After a global analysis of the impact this trend may have on competition (in particular in terms of barriers to entry), this prospective report will focus in particular on how it might affect the regulation conducted by NRAs at present or in the future.

Given that data economy is a wide topic covering different technologies and business models and that a variety of stakeholders are involved, BEREC plans to develop a series of activities aimed to specify the issues to be addressed. First, a heads workshop at Plenary 2 with key relevant stakeholders involved in data economy will be organised. Second, the relevant EWG will organise seminars with other organisations such as the Organisation for Economic Co-operation and Development (OECD), which has worked extensively in this area. The objective will be to identify the issues related to the transition towards a data-driven economy in Europe that might have to be taken into account by NRAs in the future.

Based on that initial feedback, BEREC will also organize a public consultation to collect different views on this topic and will publish a final report in 2019.

Deliverables

Heads Workshop at Plenary 2

Seminars with stakeholders - second half of 2018

First open public consultation after Plenary 3

Adoption of consultation Report Plenary 4

Adoption of BEREC Report on Data Economy in Plenary 2 2019

2.2. Location of the network termination point

The definition of the location of the network termination point has an impact on the freedom of end-users to choose the equipment used at their customer premises. For example, in case of an internet access service, this definition decides whether end-users have the possibility to use their own router or if they have to use the router provided by the internet access service provider. The reason is that the network termination point represents a boundary for regulatory purposes between the regulatory framework for electronic communications networks and services and the regulation of telecommunication terminal equipment. It is the NRA which has the responsibility to define the location of the network termination point according to the current regulatory framework (Universal Service Directive (USD) recital 6) and this is also foreseen in the proposal of the EC for an EECC (recital 19). The proposal of the EC for a new BEREC regulation includes that BEREC shall issue guidelines on common approaches to identify the network termination point in different network topologies (Article 2 (1e)).

The project has the goal to foster the knowledge transfer between NRAs and to get a deeper insight in the definitions of the location of the fixed network termination point used by NRAs in Europe. This is helpful for NRAs and for BEREC, in case it will get the above mentioned competences in the future.

The objectives of the project are as follows. Firstly, it aims to give an overview of the definitions of the location of the fixed network termination point laid down by NRAs in Europe. Secondly, it aims to identify both the main approaches used by NRAs as well as the major criteria which had an impact on their definition of the location of the fixed network termination point. The analysis will include how the different stakeholders (e.g. network operators, equipment manufacturers, consumers) were involved in the decision of NRAs as well as their position and arguments brought forward regarding the location of the fixed network termination point. The project will take into account the activities of CEPT on the topic "location of the network termination point".

Deliverables

BEREC Report on the location of the network termination point

Public Consultation: No

Adoption in Plenary 3 for publication

2.3. Internet of Things (IoT) Indicators

According to a 2015 study by the European Commission, less than 1% of objects are currently connected to the internet. Nevertheless, the number of IoT connections within the European Union (EU) is estimated to increase from approximately 1.8 million in 2013 to almost 6 billion in 2020. International organisations like the OECD and the International Telecommunication Union (ITU) have already initiated discussions on monitoring the Internet of Things. BEREC's work on the topic so far has focused on enabling IoT. Therefore, BEREC plans to assess the potential to monitor the development of IoT in Europe. The project will also take into account the activities in OECD.

As the number of internet-enabled devices, and consequently the requirements for network resources, increases, there is a need to reflect the importance of this sector in the work of BEREC. The work of this report will be to assess what type of measurement of IoT NRAs are already conducting on the supply-side and/or on the demand-side, and to assess if there is, at this stage, any common set of IoT-related indicators which BEREC could regularly collect in the coming years (possibly from 2019 onwards) in order to provide a realistic statistical overview of the IoT landscape.

The first task will be to formulate a survey for NRAs on what data is collected from the supply-side and/or the demand-side with respect to IoT. This questionnaire will look at the availability of data, examples of survey data collected by NRAs, the reasons for gathering data, and the difficulties encountered in sourcing information through surveys.

Given the relative contemporaneity of IoT, there may not be a significant amount of supply-side data available; however, the report will discuss what legal powers NRAs do/don't have with respect to gathering information on IoT from service providers. Additionally, given the work that the European Commission is doing on the area of the Internet of Things, it will be worth considering, through the questionnaire to NRAs, their views on whether IoT indicators should be benchmarked and, if so, which services, under the broad umbrella of IoT, should be considered. Questions to consider include:

- What types of data measuring IoT are necessary and of most interest to NRAs?
- What definition(s) of IoT devices should be used?
- What is the best way to measure IoT network traffic?

Deliverables

BEREC Report on IoT Indicators
Public Consultation: Yes
Adoption in Plenary 3 for publication

DIGITALEUROPE recognises BERECs interest in understanding the 'data economy', writ large, and the impact to the telecoms industry. As such we also recognise that the focus of the data economy relevant work streams under "Strategic priority 2: Monitoring bottlenecks in the distribution of digital services" rightly is on monitoring and understanding the telecom sector in this wider context. This is of course important and intrinsically linked to other more core elements of BEREC's role and work, i.e. taking a broader and holistic view of the wider competitive forces in the market, also in turn rendering telecom markets more dynamic and competitive potentially necessitating less regulation.

Finally, we recognise and appreciate that outreach to other institutional stakeholders that are already involved in this area is already foreseen as part of BEREC's work. This of course extends beyond OECD and includes other existing EU and national bodies that already have a role, incl. formal, in parts of the data economy and to identify and deal with issues related to the transition to and impact of the data economy on competition, not limited to the telecom sector. Having the needed expertise to analyse the data economy beyond telecommunications is indeed crucial to ensure balanced policy outcomes – BEREC should therefore take existing

efforts in other fora into account to avoid duplication or any blind angles in the analysis identifying issues that are already dealt with elsewhere.

As regards the IoT indicator, it is of course beyond debate that IoT and traffic from internet-enabled devices and M2M applications is growing and having an impact on traffic flows. There is already significant data available on this, including by several of DIGITALEUROPE members (e.g. the yearly Cisco Visual Networking showing that by 2021 there will be 13.7 billion M2M connected devices accounting for 5.1% of all IP traffic globally) as well as from industry analysts such as Gartner. DIGITALEUROPE and its members would be happy to contribute its and its members' expertise in this area and understand better what indicator would be and what purpose it would serve that would create added value to what already exists.

Representing a broad section of the wider digital ecosystem and data economy, DIGITALEUROPE looks forward to further contributing with its technical expertise and extensive cross-sectoral experience to this BEREC workstream.

3. Strategic Priority 3: Enabling 5G and promoting innovation in network technologies

BEREC will make 5G a strategic priority in its Medium-Term Strategy with the aim to enable European-scale solutions that may help reap the benefits of early and coherent implementation in terms of innovation, productivity and growth in the internal market. BEREC within its competences in 2018 will actively and closely follow the development of 5G, will work in close cooperation with the RSPG to contribute to the removal of potential hurdles to a smooth and quick implementation in the Member States and will support the consistent 5G deployment across the Member States.

3.1. 5G, IoT and security

While 5G technologies are under development, European countries are preparing the award of new frequencies for their roll-out. The development of IoT, one of the cases foreseen for 5G, has multiplied the number of devices that are connected to the internet via fixed and wireless networks. Some of these devices, which may implement technologies other than mobile, may not meet the necessary level of security and, as a consequence, they may become an internal threat to internet providers and to users themselves.

The same difficulties may arise with the development of 5G and BEREC seeks to strengthen the awareness of its members about network security. To this end, in 2018 BEREC will organize a workshop on 5G, IoT and security that will gather experts from BEREC. The European Union Agency for Network and Information Security (ENISA), relevant standardization organisations and other relevant organisations such as the RSPG will attend

The objective of the workshop is to outline the security issues relating to IoT and to 5G, to consider the proportionality between the level of security and the development of new services and to highlight the potential differences between 4G and 5G with regard to security challenges.

Deliverables

Joint BEREC-ENISA workshop on 5G, IoT and security
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Timing: Plenary 1

3.2. Best practices report regarding spectrum authorization and award procedures with a view to 5G

As 5G technologies are being developed, European countries are considering the granting, amendment or renewal of frequency licences which could accommodate these technologies.

The design of the selection procedures for frequency licences and the conditions attached to these licences may have consequences on the structure of national mobile markets (either by enhancing competition or by limiting it).

NRAs could therefore benefit from an exchange on best practices with regards to the market-shaping aspects of frequency licence granting, amendment or renewal. These aspects concern inter alia the size of spectrum lots, conditionalities between lots, spectrum caps and floors, the geographical scope, attached conditions (such as provision of certain services), the selection criteria and the possible combination of bands (multiband awards).

BEREC will give an overview on the current practices with regards to market shaping aspects in a report. In doing so, BEREC will consider the work already done by RSPG on the subject and exchange with RSPG on the report. Additionally, the ongoing work within COCOM should also be taken into account.

Deliverables

BEREC Best practices report regarding spectrum authorization and award procedures with a view to 5G

Public Consultation: No

Adoption in Plenary 3 for publication

DIGITALEUROPE finds that the success of 5G in Europe will depend on early spectrum availability, harmonization of spectrum access and securing adequate investment in 5G networks.

Vertical services will require even more harmonization than mobile broadband, to ensure that products can be developed on a European basis. While European countries have been extremely successful in the technical harmonisation of spectrum, there is still little to no harmonisation of the licensing conditions applicable to each band. With different licensing conditions applicable in different countries of Europe, there is little hope to achieve the promises of the single market, especially for vertical applications which do not necessarily benefit from large economies of scale. While pan European licensing mechanisms have been regularly rejected by Member States, DIGITALEUROPE notes that most European countries manage to adopt CEPT/ECC decisions without ending up unduly restricted in their national flexibility. DIGITALEUROPE recommends adopting mechanisms to ensure as comprehensive as possible a harmonisation of the licensing conditions (license duration, price, spectrum packaging and availability, regulatory conditions) applicable in each European country to any spectrum band.

DIGITALEUROPE believes that national regulators will play a critical role in these discussions through ensuring EU wide harmonization not only of technical parameters but altogether of access to spectrum for different services.

National regulators and BEREC also have a critical role to play to clarify which investment models apply to which vertical services. Though services are likely to be operated over generic 5G networks, they would most likely require specific investment for which the current investment model (fit and designed for public mobile ECS) may not be appropriate. For example: what is the investment and deployment model to enable 5G deployment for ITS along the roads in Europe?

The importance of cooperation, coordination and harmonization not only of the technical but also licensing conditions therefore cannot be underestimated. DIGITALEUROPE supports in this context also positive steps taken forward by the EU Commission in its review of the telecoms regulatory framework and the European Electronic Communications Code.

For further information, please consult our detailed papers on 5G and licensing and authorisation models:

http://www.digitaleurope.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=2531&language=en-US&PortalId=0&TabId=353

http://www.digitaleurope.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=2536&language=en-US&PortalId=0&TabId=353

3.3. Infrastructure sharing

In promoting infrastructure sharing, NRAs have been trying to achieve a good balance between the enhancement of competition through infrastructure roll-out and a limitation of the cost and impact of the roll-out of existing mobile networks.

The future roll-out of 5G networks may multiply the number of base stations with the use of small cells and of higher frequency bands than those of existing networks. As a consequence, NRAs may have to revise the existing arrangement existing on infrastructure sharing in their respective countries.

To this end, NRAs would benefit from having a panel of existing infrastructure sharing situations. BEREC will therefore describe in a report the different existing sharing models (passive infrastructure, frequency infrastructure, etc.) and for each of them, the geographical areas in which they are applied, the technology (2G, 3G, 4G) that is used and the legal framework that enables it.

On the basis of the outcome of this report, BEREC's plan is to further continue this work with the aim of drafting a Common Position.

Deliverables

Report on infrastructure sharing

Adoption for publication in Plenary 2

Common position on infrastructure sharing

Adoption for Public Consultation in Plenary 4: Yes

3.4. Best practices report on coverage obligations with a view to 5G

In addition to the market-shaping aspects of the award procedures described above, NRAs may have to elaborate the coverage obligations that will be attached to the future frequency licences, in particular in the bands where 5G technologies will be rolled out.

In doing so, NRAs may wish to have a focus on the coverage of areas which are identified in the joint BEREC-RSPG report on facilitating mobile connectivity in ‘challenge areas’ in particular for indoor coverage and transportation ways.

The objective of this workstream is to collect existing coverage obligations in relation to each challenge area and if possible to identify best practices and to elaborate recommendations that might be helpful when taking into account 5G technologies. The result of the workstream will be compiled in a report. In doing so, BEREC will exchange with RSPG on the report.

If appropriate, this report will be combined with the best practices report regarding authorization and award procedures with a view to 5G.

Deliverables

Best practices report on coverage obligations with a view to 5G

Public Consultation: No

Adoption in Plenary 4 for publication

3.5. Carry-over and follow-up work on monitoring mobile coverage

In 2017, BEREC published a preliminary report in view of a Common Position on monitoring mobile coverage, facilitating a common understanding and fostering a consistent approach on how mobile coverage information can be made available and understandable among NRAs and to the public throughout Europe.

In 2018, further development on this workstream would allow to assess more in detail the range of current NRA practices and provide a clearer picture of the current state of mobile coverage in Europe. In particular, BEREC would explore in depth how each NRA set the metrics defining their mobile coverage and how their respective coverage maps are designed.

The work would benefit from collecting inputs from RSPG and could also take into account the Commission’s broadband mapping initiative.

Deliverables

Common position on monitoring mobile coverage

Public consultation: yes

Adoption for public consultation in Plenary 2

DIGITALEUROPE welcomes the key focus on 5G, not just a Strategic Priority 3 but also its declared central priority within all 5 strategic priorities. The overall aim of BEREC’s work in this space should be to foster and facilitate 5G.

5G is not just the next generation of mobility but rather the next generation of networking and due to its technical capabilities in particular in terms of extremely low latency (<5ms) and Dynamic Resource Allocation (network slices to fit the unique needs of the respective

application, device or user), it is inherently IoT friendly. (In addition of course to the significant capacity improvements.) 5G networks will be able to support hundreds of thousands of devices, and being more efficient with device battery use, to the tune of ten times as many devices in an area as LTE (i.e. 4G could support 100k devices per sq.km; 5G can support 1 Million per sq.km). It also provides deep coverage for machines within environments (i.e. in-road parking sensors) and extremely low demands on battery operation to enable 10 or more years of use).

In that vein, IoT and security is part of the broader picture as security is an enabler of IoT with IoT in turn being an important driving factor for deployment of 5G networks. As such, DIGITALEUROPE recognises that BEREC has an interest in understanding and raising the awareness of IoT security amongst NRAs, again taking into account that other bodies and areas of EU law already exists, as also foreseen by holding the workshop with ENISA. DIGITALEUROPE would be very pleased to share its IoT and cyber security expertise and would strongly encourage BEREC to open up the workshop to external stakeholder if this is not already the case.

4. Strategic Priority 4: Fostering a consistent approach of the net neutrality principles

The fourth strategic priority of the Medium-Term Strategy is to foster a consistent approach of the net neutrality (NN) principle. Besides the deliverables described below, BEREC will act as a forum that supports national regulators in applying the Regulation in a consistent way throughout Europe. BEREC will continue its work looking at how net neutrality is affected by changes in markets and new technologies and to encourage national regulators to share experience on the practical implementation of the Regulation and the BEREC guidelines.

4.1. Development of a net neutrality measurement tool

This work item shall manage the development process of the measurement tool specified in the 2017 BEREC Report providing practical guidance regarding the technical implementation of a net neutrality monitoring system. Thus, BEREC with support from the BEREC Office shall adopt tender documents and consequently supervise the tendering process, and eventually supervise the development project of the net neutrality measurement tool consisting of the three elements: open source software, reference system and BEREC portal to be set up by the contractors. The supervision shall include technical and governance aspects in line with the 2017 net neutrality regulatory assessment methodology report.

Deliverables

Tender Specification for the development of a net neutrality measurement tool

Public Consultation: No

Adoption in Plenary 1

4.2. Implementation of the NN Regulation

In this workstream, BEREC will monitor the implementation of the net neutrality provisions. Also, BEREC will receive the annual national net neutrality reports and the answers to an internal questionnaire in order to develop an annual European-level net neutrality report. In addition, a forum is facilitated to (informally) discuss national cases and questions relating to the consistent application of the Net Neutrality Regulation, also covering cases of zero-rating. This workstream should build on the experiences from BEREC's 2017 net neutrality workstreams.

Deliverables

BEREC Report on the implementation of the NN Regulation

Public Consultation: No

Adoption in Plenary 4 for publication

4.3. Net neutrality - Input to an evaluation

The TSM Regulation, in particular Articles 3, 4, 5 and 6 (net neutrality provisions), shall be reviewed and the Commission shall submit by 30 April 2019 a report to the European Parliament and the Council, accompanied, if necessary, by appropriate proposals with a view to amending the Regulation.

BEREC will provide an Opinion for the EC in which it will evaluate the experiences with the Regulation and the BEREC guidelines. For this Opinion, BEREC will also take into account upcoming new technologies (such as 5G) and services (specialized services, IoT/Machine to Machine (M2M) services, etc). In this Opinion BEREC will in particular address the relationship between these developments and the Net Neutrality Regulation.

Deliverables

Input to the Review of Regulation 2015/2120

Public Consultation: No

Adoption in Plenary 4 for publication

DIGITIALEUROPE welcomes BEREC's continued work on net neutrality, particularly those aspects that seek to ensure a common understanding and interpretation of the rules. This is crucial to avoid fragmentation in the single market. As part of this work, BEREC should recall to pay attention to ensuring interpretation, including how it is applied at national level, is in the line with the Net Neutrality Regulation itself and as such the implementing work on the Regulation could be considered to also include an element of public consultation.

Similarly, the foreseen input for the first Commission evaluation of the Regulation should also be considered to at least as part of its evidence gathering process to include a public consultation. This should particularly be the case for any recommendation the opinion might make to "address the relationship between these developments [5G, specialised services, IoT/M2M] and the Net Neutrality Regulation."

5. Strategic Priority 5: Exploring new ways to boost consumer empowerment

The focus of increasing consumer empowerment and engagement is to ensure that consumers have the information and tools to make informed choices and engage effectively with the market. In the past, BEREC has preliminary focused on ‘market shaping’ activities that encourage investment and which promote competition and connectivity. BEREC in its Medium-term Strategy aims to complement this work by prioritizing a more active role in the coming three years with assessing and promoting consumer empowerment and consumer protection.

BEREC in 2018 will contribute to this strategic priority by analysing switching processes by having a look at contracts and evaluating a single European contract information sheet.

5.1. Report on termination of contracts and switching of provider

The report will analyse the different aspects that have an impact in the change of a provider considering number portability procedures but also the identification of other matters that may facilitate or hinder switching. A particular focus will be put on bundles (e.g. different legal frameworks of the elements included in a bundle such as electronic communication and audiovisual bundles or switching between heterogeneous bundles) and the practicalities in switching of internet products. This workstream will cover notice periods, data portability (e.g. user profiles), treatment of failures in the process, technical developments (e.g. e-SIM), early termination compensations, contract durations, loss of service during the switching process etc.

On the termination of a contract, after or during the initial commitment period, BEREC will examine the obligations that end-users might have in relation to the termination of such a contract in terms of financial compensations regarding special offers or receiving a terminal equipment.

Deliverables

BEREC Report on termination of contract and switch of provider
Public consultation: Yes
Adoption in Plenary 4 for public consultation

5.2. Report on best practices for ensuring equivalence of access and choice for disabled end-users

One of BEREC’s strategic priorities is empowering and protecting end-users. Under this principle, BEREC recognises the need to take account of the interests of vulnerable consumers, including those with disabilities. In this context, BEREC envisages a fresh look at the provision of electronic communications services for disabled end-users across Europe, in particular focusing on best practices to promote equivalent access and choice.

In line with the previous workshops held by BEREC and the report on the equivalent access and choice for disabled end-users and as a move forward, BEREC will provide a report about best practices of measures and initiatives that have been carried out in this context by the relevant stakeholders (NRAs, equipment manufacturers, providers of electronic communication services, application and content providers, consumer associations and associations representing disabled end-users).

Deliverables

BEREC Report on best practices for ensuring equivalence of access and choice for disabled end-users

Public Consultation: No

Adoption in Plenary 1 for publication

5.3. Report on contractual simplification

In today's electronic communication markets, contracts between providers and end-users take different forms and cover different categories of information. It is important that such contracts provide clear and relevant information helping end-users to take informed and correct decisions when acquiring electronic communication services.

With the end-users being in the centre of its actions, BEREC constantly addressed these issues in its work programmes in the previous years. In order to continue the work in this direction, BEREC will provide a benchmark report on contractual simplification, covering in particular a simplified information sheet – comparing the applicable rules and formats, the monitoring procedures, the costs incurred, the benefits achieved and the developments in the market in general. This work will constitute the basis for developing a "single" European contract information sheet.

Deliverables

BEREC Report on contractual simplification including a single European contract information sheet

Public consultation: Yes

Adoption in Plenary 3 for publication

5.4. European Benchmark of the pricing of bundles

In the context of convergence and an increasing number of fixed-mobile mergers, markets are evolving towards convergent products. Following this trend, in more and more countries, the most competitive prices are set for triple, quadruple and quintuple bundles, with fixed voice usually included in fixed broadband services.

Therefore, stand-alone benchmarking cannot reflect the actual real prices faced by customers in a convergent world and the price for stand-alone services is no longer a good proxy on how prices are evolving. A benchmark to collect data on the prices of different products typically consumed in a household is needed.

This benchmark would allow for a realistic comparison of the expenses for telecommunication services faced by consumers. The benchmark would utilise empirical evidence to allow price checking, should the arguments raised by operators for much cheaper bundle prices actually hold.

A key requirement for this project is a database of tariffs based on pricing information from all 28 EU Member States. Given that this project involves the contracting of an external service provider, its completion is foreseen in 2019. This project is split into two separate phases:

- Phase 1: Definition of the questionnaire/fields to be collected by the external service provider for the purpose of comparing prices and prepare the tender specifications. This will be presented at P2 2018.
- Phase 2: Supervision the tendering process and definition of a methodology to compare bundle prices (to be completed in the second half of 2018); make the comparison based on the defined methodology and using the database of tariffs. The final benchmarking report will be presented at P2 2019.

Deliverables

Report on European Benchmark of the pricing of bundles (Phase 1)

Public Consultation: No

Adoption in Plenary 2 for publication