Ref: ARCEP - Discussion points and initial policy directions on Internet and network neutrality

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Dear Sir/Madam,

Thank you for offering us an opportunity to provide a formal input to the consultation paper on Internet and Network neutrality.

The GSMA represents the interests of the worldwide mobile communications industry. Spanning 219 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem.

The GSMA welcomes the opportunity to engage with ARCEP in the consultation phase on Internet and Network Neutrality and with our French Operator members looks forward to continuing dialogue and interaction in building a successful wireless ecosystem supporting our joint objectives including universal broadband coverage, innovation and growth.

Background

The GSM ecosystem is now deploying Mobile Broadband services, using High Speed Packet Access (HSPA)[1] technology, faster than any other mobile technology ever deployed. There were more than 295 networks live, with more than 1800 devices from 150 different suppliers and more than 200M connections across 120 countries worldwide at the beginning of 2010. The next generation of mobile broadband namely LTE is being deployed in the US and Nordic Countries and those countries considering refarming of 900 MHz & 1800 MHz are allowing LTE to be deployed in a 'technology neutral' approach to spectrum allocation.

Mobile Broadband does much more than just provide faster access to online services, it can also bridge the "digital divide" and bring broadband to the people worldwide who have no

[1] HSPA refers to High Speed Packet Access and encompasses HSDPA, HSUPA and HSPA+ (also referred to as HSPA Evolution)

access to cable or DSL services and are unlikely ever to do so. There are more than 4.5 billion mobile users, covered by GSM, compared with 1.1 billion fixed-line users.

Widespread Mobile Broadband coverage, coupled with innovative new devices, such as net/notebooks with integrated radio cards or dongles, advanced handheld smartphones such as the iPhone, Blackberry Bold, Android G1 and fixed wireless terminals connecting multiple devices etc, has resulted in exponential growth in data traffic. The continued development of the GSM family of technologies is designed to ensure that the mobile industry can continue to meet this fast-growing demand for secure, always-available and easy-to-use broadband services.

The Following sections provide input on ARCEP's general approach to the terms and conditions governing Internet access and comment on the six proposed directions

Questions
No. 1) The Authority invites players to comment on its proposed definitions.
No. 2) The Authority invites players to comment on its presentation of the background and issues surrounding Internet and network neutrality.

Question 1 - Comment on Definition - Public Internet Vs managed services

The GSMA considers that the issue of Internet neutrality makes sense, in the Internet and wider ecosystem (i.e. accessed through Internet Service Providers) and not for managed services which are subject to separate regulation.

We consider that defining the public Internet via the assignment of public IP addresses is relevant. The public Internet should logically correspond to the IP addresses which have been rendered public by those who hold them. However, the definition proposed by ARCEP (all public IP addresses belong by definition to the public Internet) should be amended, notably as we move away from IPv4 to IPv6 where in theory all communication end points could be assigned an IP address.

Definition - Information society service vendor (ISV)

The concept clarifies the debate as it includes the whole players of the internet value chain. It is consistent with the existing definition in the e-commerce Directive but with a wider scope. This concept allows for the inclusion of the players with a business model based on a two-sided market approach prevalent in the internet. Such a definition reflects the proper state of internet economics.

Question 2 - Issues

The term “neutrality of the internet” does not yet have a single definition, but overall refers to the relationship between the access providers (fixed and mobile networks) and content providers: websites, applications, services plus terminals (telephones, connected PCs, e-book readers, connected TVs) and the end user or consumers.

It should be noted that Mobile networks providing internet access are not exactly the same as fixed-line internet networks. There are key differences which exist between the two types of network used for accessing the internet. First of all, the physical structure of the two types of networks leads to a very large capacity difference in access, backhaul and transmission. Second of all, the usage types are not the same, mobile networks provide ubiquitous nationwide coverage across France and have very different purposes to fixed line usage. As such that, one cannot have the same requirements, rules and definitions for the two types of access.

The focus of ARCEP’s document on network operators is the logical consequence of Arcep’s sector-specific competencies, dedicated to electronic communications, and of the context of the consultation, namely the transposition in France of the Review of the electronic communications regulatory framework. However the other global actors in the internet ecosystem are absent from the debate. The most critical issue regarding Internet neutrality is the growing regulatory asymmetry between web-based often international content providers and network operators and French audiovisual content providers (under additional regulatory obligations). This issue is currently outside of this scope but ARCEP has rightly opened the debate in the third part of the consultation.

a) Data call termination

We welcome the fact that the need for allowing flexible models to fuel investments is recognized in the ARCEP document. It is important that the operators continue to have flexibility to experiment with new and different service offerings and business models as do all the other players of the internet value chain. The GSMA’s view is that all the players should fairly contribute to the funding of the network capacities used.

There’s a need to consider an evolution of the interconnection mechanisms between operators and ISVs. The ARCEP document paves the way for such an approach. It recognizes that it is important to include the possibility of future action in *ex ante* implementation of a data call termination mechanism (see below comments on 5th Direction).

b) Need for neutrality of (any) regulation- Extension of the regulatory framework to the ISVs

Any regulatory framework should equally and fairly be applied to the services provided by ISVs that directly compete with electronic communication services (ECS). Currently such services, even where they are offered as substitutes for ECS, do not have to meet regulatory obligations laid down in the field of consumer protection (emergency calls, data protection etc). As those services are substitutes for ECS, they should respect the same rules however they are offered, applying the principle of technology neutrality and whatever the type of provider.

c) Network congestion

It is widely acknowledged that the recent and explosive growth of mobile data traffic leads to a high risk for mobile networks.

On fixed networks, congestion already exists but with the imminent commercial launch of connected TV, the usages in the fixed broadband will lead to new challenges, especially an expected massive rise in users' average consumption. Consumers are likely to avail themselves of new bandwidth intensive services (e.g. high definition TV) resulting in increase in video traffic streams. Therefore network congestion is likely to become a generalised phenomenon across all types of IP networks and its effects should be highlighted and discussed in any ongoing debate.

1st direction

The Authority recommends that, to provide "Internet access," an ISP must be obligated, in accordance with the legal provisions in effect, to furnish end users with the ability to:

- send and receive the content of their choice;
- use the services and run the applications of their choice;
- connect the hardware and use the programmes of their choice, provided they do not harm the network.

The GSMA considers that there are four key components to an open internet:

- Consumers have access to the legal applications, content and services of their choice, provided they do not cause harm to the network;
- Consumers have access to easy-to-understand and comparable information on nature and quality of the services they receive;
- Mobile operators have flexibility to manage their networks in order to ensure an optimum consumer experience;
- Mobile operators are open to commercial propositions with service on providers on fair and equal terms.

Mobile data services, including internet access, are still in their infancy and subject to technological challenges. In order to continue to develop, those services have to be able to continue to grow despite the limited spectrum capacity allocated. It is recognised that any regulatory construct should support operator investment for coverage and necessary capacity ; facilitate the development of new technologies by industries and take into account the operator's need to source and distribute innovative terminals suited to the network's evolutions that allow new applications and usage. Finally an operator must guarantee a high level of quality for consumers, transparency on the conditions of usage, and support diversification to ensure a competitive market based on a choice of competitive offerings and prices.

It is considered necessary to strike a balance between:

- Absolute openness (as provided for by technical standards) and
- Choice/segmentation allowing the products (terminals, networks, content) to be useable

We support the principle of an open internet access as far as it is possible for the network operators to simplify and adapt the settings to meet the needs of the consumer and the assigned tariff.

We must stress that, while certain restrictions on internet access, notably regarding mobile access may remain, such restrictions must be transparent and clearly set out in any tariff guide, and not be discriminatory. All applications, content and internet services of the same type should be treated in the same manner.

We are pleased to note that any non-discrimination rule should be on a symmetrical basis between ISVs and network operators.

2nd direction:

The Authority recommends that the traffic management practices that ISPs

employ to ensure Internet access remain exceptional and comply with the general principles of relevance, proportionality, efficiency, transparency and non discrimination.

The GSMA believes that the second orientation put forward by ARCEP is too prescriptive and too constraining on operators of fixed and mobile networks. The mobile industry plays an important role as an enabler and creator of digital applications, content and services that run across the Internet. The continued emergence of new business models will preserve consumer choice and safeguard the Internet as a rich source of innovation. This requires operators to manage services on their networks, in order to deal with dynamic traffic flows and congestion, and to tailor delivery to the specific individual service requirements, within the limits of finite capacity and network resources.

As demand for the mobile internet continues to grow at an exponential rate, mobile operators need to manage the traffic on their networks in order to deliver an optimum consumer experience. Many more devices are being equipped with mobile connectivity, such as laptops, smart meters, environmental sensors, health monitors, and navigation systems. However, the traffic that can be carried at any one time on mobile networks may be limited by the finite amount of spectrum available and also because capacity investment in the access, backhaul and transport networks cannot be infinite and must be economically sensible. Furthermore, devices accessing the Internet via a mobile base station have to share the available spectrum with other devices in the same area. Mobile operators also have to balance different types of traffic to give priority to certain services such as calls to emergency services.

Operators do not support an un-managed approach, whereby all services have to be provided on a best-effort basis only. Operators strive to fulfil diverse customer expectations in a very dynamic and innovative market, which cannot be achieved through one-size-fits-all solutions. Services in the future will be ever more sophisticated. In order to deliver the right customer experience, network intelligence will be essential. This is of course true for managed services but it is also true for open Internet access: intelligent traffic management is meant to improve customers' experience and a prohibition of traffic management in Internet access service cannot be good for the overall quality of Internet access.

First of all, effective investment in Internet access cannot take place if network usage is not regulated by an economic signal which incentives a rationale and efficient level of network usage. Without such a signal, investment in capacity has a high risk of being fruitless. Investment efficiency in Internet access is enhanced by establishing transparent, and non-discriminatory Internet traffic management mechanisms. Such mechanisms may improve quality to services which require it, and imply temporary regulation, during busy periods, of the applications which exceed reasonable usage of available resources.

The most difficult questions correspond to the cases where the traffic management is operated for resources allocation when all the demands exceed the available capacities. The approach proposed in the consultation, *i.e.* an exceptional situation to be dealt with thanks to investment, appears excessive and has to be moderated in order to take several realities into account:

- Investment in ever increasing capacity can be a solution only if the economic signals for usage of the network are well signposted, otherwise, investing in new capacity would be useless as any additional capacity may be consumed by applications which waste capacities or are inefficient in network usage
- The network is not always dimensioned to an exceptional circumstance (such as a four yearly FIFA World Cup, since these traffic patterns only last for four weeks); traffic management is always required to ensure that regular applications have decent quality even if the network is overloaded as a result of any specific event
- If traffic management is prohibited and no relevant economic signal is sent to (large) originators of traffic the only solution left to operators is to reject congestion outside their network by limiting interconnection capacity.

The Authority analysis also omits the effects of the dynamic interaction between demand and capacity in TCP/IP networks such as the internet. Many applications and services are designed to increase their flow until saturation or to multiply their flow when saturation occurs in order to continue the connection. This characteristic of the demand is not taken into account in the analysis even though it is essential to have a global view of TCP/IP based application behaviour.

Subject to the necessary amendments to take the above remarks on traffic management into account, GSMA supports the principles proposed by ARCEP namely relevance, proportionality, effectiveness, transparency and non-discrimination. GSMA firmly advocates for the removal of the “exceptional” principle as it is clear that the current approach where no account is taken of efficiency in bandwidth usage, would not be sufficient to avoid huge structural congestion and preserve the best effort internet.

Quality of service level for “Internet access” 3rd direction

A connection to the Internet must be provided with a sufficient and transparent quality of service. To guarantee this, the Authority is launching sector-specific efforts to qualify the minimum quality of service parameters for Internet access, and is working to implement specific indicators.

A preliminary remark is that the regulatory interest in the quality of service for “Internet access” seems to come from the fear that capacities allocated to “managed services” are taken away from “Internet access”. Such a vision does not correspond to the reality: managed services have a positive impact on any Internet access service.

- Price - the low level of internet access service pricing results from the contribution of other managed services delivered by network operators to the covering of common costs. Without the revenues of the managed services, the internet access would have to be sold at a higher price at the expense of the availability and usage of internet.

- Sociological - Bundled offers – Internet, voice and TV – have attracted a wider population to internet usage than what would have happened with only a basic internet offer.

The recent extraordinary development of the mobile internet and compelling devices such as blackberry, iPhone, e-readers, etc. has been possible thanks to the development of infrastructure and mobile technologies largely as a result of mobile telephony delivered by the operators. The whole technical chain had to be optimized to reach the current level of usage. It has been possible thanks to the integrated management of the services and the network resources by the operator.

The innovation in the operators’ network for their own managed services leads to the infrastructure roll-out and the bandwidth increase. This innovation fuels innovation in public internet: the innovation in managed services leads to the improvement of capacities and network infrastructures, which increases the quality of public internet access services and foster innovations for internet.

QoS

To impose a regulatory construct that the managed services do not degrade the internet quality as proposed by ARCEP could lead to deprive ‘internet’ from the unused available capacities when the other services are not running and thus reduce the average quality and capacity for internet access.

The global nature and flexibility of internet allows it to use at best not only the resources that are dedicated to it but also the unused capacities of managed services when they are not being used. For allowing such a function, the other services must have priority over the resources when they need it. At that moment, a limited degradation of internet due to the launch of the managed service can occur but it is the counterpart of the overall improvement resulting from the access to unused capacities of managed services.

Moreover, network quality of service is merely one link in the internet access chain – a customer's quality of experience (QoE) depends to the same degree on the level of QoS of all the networks gone through, on the servers hosting the services which customers chose to access, the terminal type, its operating system, browser and the type of application used. An alternative approach could be an economics based approach that incites network users to work towards efficient usage and so allow a relevant dimension of the network resources. The quality of the internet access also depends from the behaviour of the information society service vendors (ISV) in terms of efficiency, responsibility and non-discrimination. The ISV behaviour shall also be in scope and a key part of any ARCEP analysis.

Relevant QoS parameters may also vary depending of service: for instance real time versus non real time.

All things considered, the exercise should involve all of the actors and not just network operators, and it appears to us to be a very complex and very long process to put in place, as ARCEP rightly underlines. The determination of sufficient QoS seems, at this stage, to only have the potential to be a largely theoretical exercise not reflecting actual end user service experience.

Managed services 4th direction

To maintain all of the players' capacity to innovate, all operators must be able to market "managed services" both to end users and information society service providers (ISV), in accordance with competition laws and sector specific regulation, and provided that the managed service does not degrade the quality of Internet access.

The development of managed services improves the quality of internet, as already discussed and in summary:

- It fuels technological development and the increase of network capacity
- Allows the sharing of the common costs of infrastructure (affordability of triple play offers)
- Allows the use of capacities dedicated to managed services for internet when the managed services are not running

Our view is that it would be detrimental and inappropriate to make a ruling of "non-degradation" of internet by the managed services. It shall not mean that operators are prevented to use for internet the capacities temporary available or to offer managed services (the necessary resource for managed services should also be useable for internet services)

The discussion on any economic models for managed services should not directly be in the consultation's scope, which is focussed on the public Internet. Concerning network resources for Internet access, the economic issues are relatively simple: traffic independent costs should be covered by traffic independent revenues, namely subscriber's fees for Internet

access, and traffic dependant costs should be covered by price paid for traffic by those who originate the traffic, which may be ISV, content providers or retail customers. For the managed services, economic relations between network operators and their partners may be more complex and be the result of commercial negotiations based on revenue sharing for instance, as long as they comply with sector specific regulation and with competition law.

Guaranteeing a non-lowered quality of access to the internet in all circumstances would amount to either only offering managed services or defeating the purpose of the very concept of managed services. Furthermore, it is going to be difficult to strike a balance between "best effort" internet and managed services, in a rapidly changing market. We have no guarantee of how the market will develop. The GSMA concludes that it is inappropriate to consider fresh constraints should be imposed on operators, in particular in relation to the boundary between managed services and best-effort internet. We also support the ARCEP's view on the best effort characteristic of the internet access and believe that we should preserve it in the future. This means that no guarantee of service can be applied on this access which constitutes only the transmission of packets in the network and not an end-to-end delivery of one specific service as is the case in the managed part.

5th direction
To eradicate the opacity that currently exists in data interconnection markets and to obtain information that will be useful to exercising its powers, the Authority will soon be adopting a decision on the periodical collection of information on these markets.
Based in part on this information, the Authority will later assess whether it is necessary to implement regulation in these markets

French operators have experienced dysfunctions on the interconnection market and the GSMA supports the principle of a regulatory monitoring of the data interconnection market:

- A peering policy based on symmetric traffic is consistent and a sound basis for exchanging traffic

However it is not easy to have it properly implemented, especially for providing access to all the sites available on the internet for clients of network operators, ISP clients are dependent on the good will of any transit operator for access to certain websites. A content provider can opt for a degraded quality for a particular ISP's clients compared to what they provide to other ISP access operators.

Traditionally, peering was only applied between "peers" *i.e.* between two operators with balanced exchange of traffic. Thus ISPs did not have peering agreements with the main ISPs and network operators (tier 1) but paid transit costs. The advent of several major service providers such as Google and YouTube changed this state of affairs[2]. The attractiveness of such aggregated content and the volume of this (amongst the most bandwidth intensive services) forced the main ISPs to agree to peering agreements with those service providers on the internet..Those new agreements require very significant investment on the part of ISPs, without the latter having the power to force the providers of services on the internet to a minimum of efficiency in their bandwidth consumption and usage.

[2] It should be noted that Google and others have built huge distributed datacenters and IP infrastructure including peering to facilitate delivery of it's content, services and SaaS

Nevertheless, there is no mechanism which gives the providers of services on the internet the incentive to optimise the network efficiency of their services. The lack of constraints, in particular in respect of the posting of content intended for use by mobile users, is not sustainable in the long term. Thus, above a certain traffic asymmetry threshold, it becomes necessary that ISPs should be able to introduce payments . For example, marginal traffic costs should be borne by the providers of services on the internet. Those providers would then have an incentive to deliver theit content efficiently. This decision needs to be taken at an international level.,
The current situation puts the digital economy at stake as the ISP has neither the incentive to invest in order to meet the demand for ever increasing capacity nor do the ISVs and subscribers have an incentive to use network resources efficiently.

In light of the concerns expressed above we would advocate ARCEP to consider:

- Collecting relevant data for having a global understanding of the market
- Investigating opportunities for possible regulation

Any intervention may pave the way for a gradual setting up of a data termination model, a number of possibilities exist and are being considered including one which supports the principle of:

- Allowing the financing of the data services on the networks concerned (at the level of the incremental costs in the long run),
- A payment by the players that are the best placed for making a relevant usage, *i.e.* the operator which “pushes” the content towards the network concerned (identified with its AS number),
- Allowing the transit operators to pass the traffic costs on the content supplier/editors.

Failing which, ISPs must be able to optimise the data flows transmitted by local loops, in particular by local wireless loops. Treatments involving http acceleration, video format compression, and de-prioritisation of certain protocols at busy times are among the many means of incentivising the providers of services on the internet to be efficient and/or to improve customer experiences. These treatments must obviously be non-discriminatory in line with competition law and remain transparent for the user.

6th direction (1st element)

ISPs must provide end users with clear, precise and relevant information on the services and applications that can be accessed through their data services, of the traffic management practices employed on their networks, the quality of service of these offers and their possible limitations. As a result, the terms “Internet” and “unlimited”, for instance, must only be used if they satisfy the terms defined in section II.a and ff.

Moreover, the Authority is committed to a system whereby ISPs will periodically publish quality of service indicators that are specific to their retail market data services.

6th direction (2nd element)

The Authority therefore recommends that:

- In the case of offers of partial access to the services available on the Internet, due to the blocking (outside the scope of regulatory obligations) of certain services, websites or protocols, which is generally the case on mobile networks today, operators cannot qualify these offers as “Internet access” so as not to mislead end users. Only an offer that has all the characteristics of “Internet access” (see above) may employ this terminology;- the term “unlimited” cannot be used to describe service offerings that include “fair use” type limitations that restrict consumption over time

6th direction (3rd element)

The Authority will complete its work, in tandem with the DGCCRF and consumer associations:
- to define, with the leading ISPs and the associations that represent them, common best practices for “fair use” policies for situations when they are relevant;
- to have quality of service indicators that are specific to retail market data services published periodically, notably for “Internet access”, both fixed and mobile.

Mobile operators aim to provide clear and understandable information to consumers on how their mobile internet connection is managed in order to deal with congestion, the efficient operation of services and the quality of the end user experience. Any limitations, restrictions or conditions shall be clearly and proactively communicated to the customer at the time of purchase.

GSMA operator members are firm believers in the notion of the consumer dictating the success of any service or product. That is why mobile operators are committed to giving consumers access to any legal applications, content and services that are available, providing they do no cause harm to the network.

High speed mobile Broadband is a relatively new offering and requires continuing investments by operators, it is our contention that operators are free to build a service mix of voice and data at a tariff that reflects these investments. Therefore, operators may choose to offer & build tariffs which include certain applications and services together ; others may be optional. It is ultimately to the consumer to make a decision on which tariff best suits his/her requirements according to clear and transparent information.

Use of term “internet”: “Only an offer that has all the characteristics of “Internet access” may employ this terminology” The GSMA supports the generic openness principle for all the services available on the internet.

We consider that the best way to cope with terminology issues is to improve the internet literacy of the consumers and to develop stakeholders working groups (public authority, consumers associations, operators and Industry Associations).

However there is a need to go beyond theoretical statements and to keep in mind the effect that a total and uncontrolled openness may provoke on network performance and the QoS for consumers.

The banning of blocking of certain types of services for all online offers even outside ‘internet access’ as proposed by ARCEP, appears disproportionate and unjustified. In order to offer

services at an attractive price, while making the better use of resources, it seems reasonable to have the possibility to define the offers on the principle that:

- A basic internet access may not give access to absolutely all services as long as options are available to the customer to get total access. For instance, if a specific Internet service such as peer-to-peer uses additional network capacity, it seems fair that customers who do not want to use this service may pay a lower price.

ARCEP proposes that the use of the term “unlimited” cannot be used to describe service offerings that include “fair use” type limitations.

We share the objective of clarification. However, any regulatory decisions in this respect should be based on evidence which is not provided in the consultation. Fair use policies meet an important client need which is to allow ‘all you can consume’ bundles, without any fear of overcharging. It also gives an economic signal to the users inciting them to use the resource reasonably (recognising that there is some constraint on consumers regarding data volume received). It should be recognised that fair use as applied by French operators:

- Is normally applied only to a small proportion of end-user customers, the thresholds set out by operators as regards each package are always significantly higher than the average usage observed,

- Aims to ensure that access to the network is available to all, rather than a small percentage of ‘bandwidth hogs’.

However, we acknowledge that the association of “unlimited” and “reasonable” is unclear. It may be relevant to find a terminology that would more clearly reflect the notion of “restriction beyond a threshold”. It is legitimate that the contract provides conditions for protection against inappropriate usage (like resale practices). Such clauses have been put in place for unlimited fixed telephony offers without any detrimental consequences for consumers.

To conclude on this point, we support ARCEP’s approach to “complete work on “fair use” clauses and quality of services indicators, in tandem with the DGCCRF and consumer associations. French Operators currently participate in these working groups.

Comments on ARCEP Question on Other Dimensions in Network Neutrality

1. *Competition is the best way to deliver the choice that consumers and businesses want.*

The GSMA supports an open internet that enables consumers and business customers to access the content, applications and services of their choice, in ways that provide them with the best possible experiences and services. Competition is the key to ensuring that consumers and business customers have as much choice as possible. In a highly competitive mobile services market consumers are able to choose from a wide range of providers and options to access the internet and select offers that best suit their needs.
It is consumers that dictate the success of any given service or product. That is why mobile operators are committed to giving consumers access to any legal applications, content and

services that are available. Operators may choose to provide packages that included certain applications and services and others that do not. Ultimately it is the consumer that decides which tariff or package best suits his or her requirements.

Transparency is the key to consumers being able to exercise informed choice. Mobile operators are committed to providing consumers with clear explanations of how their mobile internet connection is managed in order to deal with congestion, the efficient operation of services and the quality of the end user experience. Any limitations, restrictions or conditions will also be clearly and proactively communicated.

2. *Operators need to manage traffic to deliver the choice, innovation and customer experiences we all want*.

The mobile industry plays an important role as an enabler and creator of digital applications, content and services that run across the internet. The continued emergence of new business models will preserve consumer choice and safeguard the internet as a rich source of innovation. This requires operators to manage services on their networks, in order to deal with dynamic traffic flows and congestion, and to tailor delivery to the specific individual service requirements, within the limits of finite capacity and network resources.
As demand for the mobile internet continues to grow at an exponential rate, mobile operators need to manage the traffic on their networks in order to deliver an optimum consumer experience. Many more devices are being equipped with mobile connectivity, such as laptops, smart meters, environmental sensors, health monitors, and navigation systems. However, the traffic that can be carried at any one time on mobile networks is limited by the finite amount of spectrum available. Devices accessing the internet via a mobile base station have to share the available spectrum with other devices in the same area. Mobile operators also have to balance different types of traffic to give priority to certain services such as emergency services.

Operators do not support an un-managed approach, whereby all services have to be provided on a best-effort basis only. Operators strive to fulfil diverse customer expectations in a very dynamic and innovative market, which cannot be achieved through one-size-fits-all solutions. Services in the future will be ever more sophisticated. In order to deliver the right customer experience, the ‘intelligence’ of the network will be essential.

3. *The internet is a powerful force for innovation and should remain free to develop. Digital networks and services are a dynamic, progressive part of modern societies.*

The internet is all about democracy, freedom of access to information and continuous innovation and improvement. Its power and adaptability to deliver this has been central to its continuous progression.

Operators will continue to create innovation opportunities for all by ensuring that differentiated services, sustainable business models and innovative devices can be developed, trialed and tested in the market.

The internet stimulates and enriches modern societies. Its uses are as varied and as individual as the citizens and organisations who access it. Operators want to apply open principles to deliver choice, innovation and differentiation. Operators don't want the potential of the internet to be stifled by an indeterminate openness concept.

In order for consumers to continue to benefit from mobile broadband services, ongoing investment is needed in efficient and open networks. Mobile operators will continue to support and invest in the evolution of new internet-based services, networks and infrastructure. However, we require flexibility at every level of the broadband market so that service providers and content providers can negotiate commercial arrangements regarding network operation and content distribution.

Provided there is sufficient transparency to consumers regarding their ability to access or use internet services, applications and content, allowing this commercial flexibility is the best way to develop innovative new business models and expand consumer choice, while at the same time developing efficient uses of network resources. In order to find innovative revenue streams that will support further network investment and lower prices for consumers, network operators need continued flexibility to experiment with different service offerings and business models as all participants in the internet ecosystem.

Network technologies and the resulting digital services that run across them, all need an open, flexible environment to work, evolve, improve and innovate in. Differentiation is driving innovation and enabling new services to emerge that in a 'best-effort' environment could not be successfully provided.

Services in the future will be ever more sophisticated. In order to deliver the right customer experience, the 'intelligence' of the network will be essential.

4. *The European Union's competition law and electronic communications regulatory frameworks underpin openness and transparency while allowing continued innovation in networks, services and business models*

The European Union has robust regulatory and competition law frameworks that protect consumers against anti-competitive behaviour. The revised EU framework for electronic communications includes additional transparency measures that further enhance consumers' ability to make informed choices regarding their internet service. In addition, NRAs dispose of a new reserve competence to prevent a possible degradation of service quality for consumers.

In highly competitive markets for fixed and mobile broadband, pre-emptive regulation that would restrict traffic management[3] and service differentiation would undermine Europe's digital economy by excluding new business models, locking in today's technologies, and hampering necessary innovation.

Yours faithfully

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[3] GSMA Brochure on Traffic Management; The Internet working for consumers http://www.gsmworld.com/our-work/public-policy/regulatory-affairs/net_neutrality.htm