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3 Group's response to the Commission's consultation on open internet and net neutrality

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This paper contains the response of the **3** Group in Europe to the Commission's consultation on the open internet and net neutrality, dated 30 June 2010.

The **3** Group is part of Hutchison Whampoa Limited's telecommunications division and includes the following operating companies in the EU: Hutchison 3G Austria GmbH, Hi3G Denmark ApS, Hutchison 3G Ireland Limited, H3G Spa (Italy), Hi3G Access AB (Sweden & Norway) and Hutchison 3G UK Limited (together, H3G).

The HWL telecommunications division, comprising the **3** Group, Hutchison Telecommunications International and Hutchison Telecommunications Hong Kong, was the first global 3G operator, with licences in 10 countries[1]. Our 3G services were first rolled out in March 2003. The HWL Group had over 26.8 million 3G customers globally and over 17 million in Europe as of 30 March 2010.

Summary

The **3** Group is pleased that the Commission has initiated a debate about the open internet and whether net neutrality regulation is required in Europe. In the discussion to date, there has been no clear definition of what net neutrality means and no definition of the problem that needs to be addressed. The **3** Group believes net neutrality is part of a wider debate about convergence and how Europe would like to see internet services develop and the policy tools needed to support that development.

Fundamentally, competition between Internet Service Providers (ISPs) will be the best guarantor that customers have access to the applications, content and service they want. In summary, the **3** Group's views on the main questions raised in the Commission's consultation are:

- There are no problems that require regulation of ISPs additional to that already in place as part of the revised regulatory framework.

- From the perspective of mobile operators, management of traffic to deal with congestion will be essential to providing customers a good quality of service.

- In addition, traffic management will allow competitive differentiation of services, which should be welcomed in a competitive market. Mobile operators should be able to offer "managed services" with differentiated price and quality offerings alongside "plain vanilla" internet access.

- Transparency of how operators manage the traffic on their networks will be important, to enable consumers to make informed choices. However, existing legislation in the regulatory framework is sufficient.

- Minimum quality of service requirements are unlikely to be necessary in a competitive market, since customers will not accept an unsatisfactory service. Furthermore, it is impossible for mobile operators to guarantee a minimum speed as the service that customers experience depends on many factors outside the operator's control, such as atmospheric conditions and exact place and time of customer usage, neither of which can be predicted with certainty. Therefore it is impossible to guarantee neutrality in the treatment of traffic.

- Regulation at different levels of the supply chain must be neutral, to avoid competition distortions, especially with convergence of telecoms and internet services. The Commission should examine the implications of convergence and how best to guarantee the open internet

[1] Australia, Austria, Denmark, Hong Kong, Ireland, Italy, Macau, Norway, Sweden and the UK.

and universal connectivity as proprietary internet applications becoming increasingly used for communication.

- Any obligations at the retail level will need to be matched by corresponding obligations at the wholesale level.

I. Introduction

The **3** Group is the leading operator in Europe in promoting mobile data services. This has been the case since the **3** Group businesses first launched in 2003. Initially, the **3** Group focused on providing customers with access to hosted data services with limited access to the public internet. Under this "walled-garden" approach, the **3** Group businesses developed their own portals ("Planet 3"), which allowed access to hosted content. The walled-garden approach was partly driven by the limited technical capabilities of the early 3G handsets and networks, which were not sufficiently robust or technically refined to provide full internet access. In particular, early versions of mobile web browsers were not optimized for viewing internet pages, which meant that, although it was technically possible to browse the internet outside the walled-garden, it was difficult, there were few mobile enabled web sites and it was often a poor user experience.

As the number of mobile enabled websites on the internet increased, it became apparent that there was demand amongst mobile users for full internet access. The **3** Group responded to this in November 2006 with the launch of its "X-Series" service. This service allowed open access to the internet. It was supported by robust internet-enabled smart phones and a service package that allowed unrestricted internet access. To enable simple access to the most popular services, the **3** Group worked with Yahoo!, Skype, Google, Microsoft and eBay to offer their services through the **3** portals in a format that was easy for the customer to access and use. This was necessary at that time because few applications were optimized for mobile use.

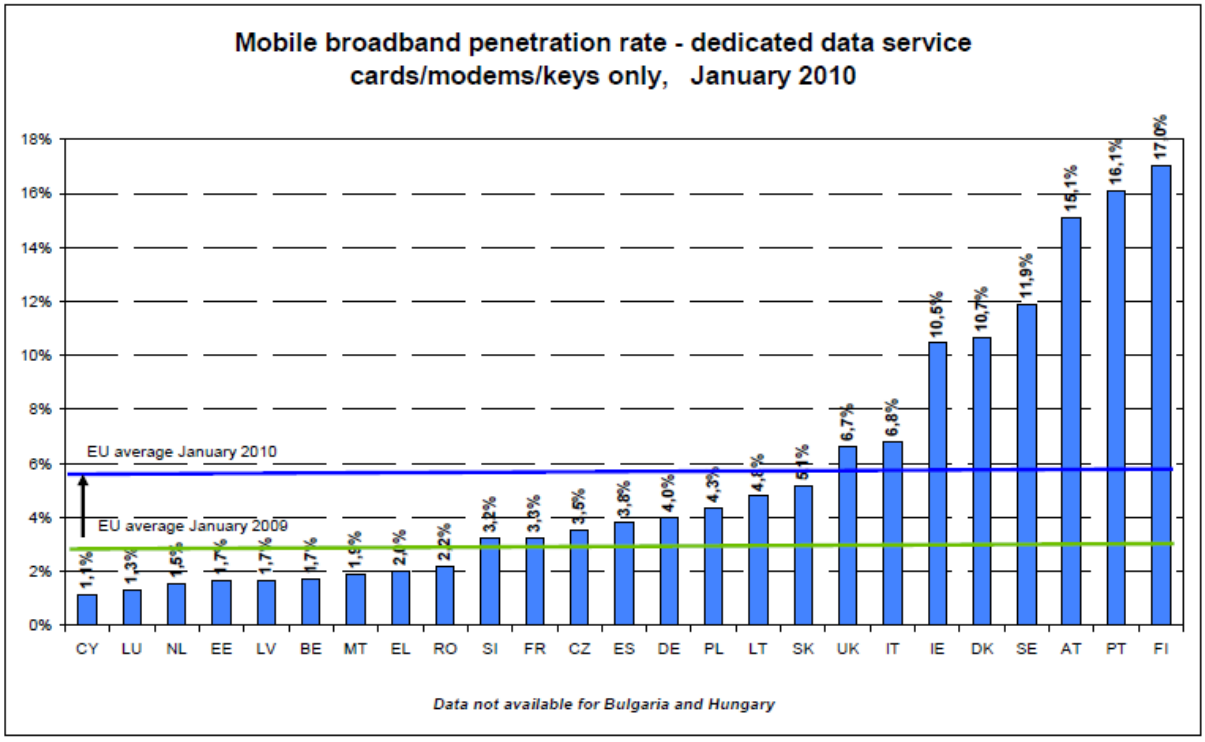
Since the launch of X-Series, the **3** Group has continued to offer unrestricted access to the internet, whilst at the same time working with content and application providers to offer services optimized for the handset. These include providers such as Facebook, Skype, Windows Live Messenger, Google and Yahoo!.

The huge growth in demand for mobile data and mobile internet services started in 2007. This was driven by (i) improvements in handsets and the availability of low cost mobile broadband modems; (ii) the upgrade of 3G networks to HSDPA, thus allowing faster download speeds; (iii) the increasing number of applications optimized for mobile use; and (iv) attractive pricing. The chart below shows how data usage has increased on 3UK's network and now represents over 95% of capacity use on the network, with voice making up less than 5%.

3UK monthly traffic volumes showing that data volumes grew rapidly following the launch of mobile broadband and now far exceed traffic on 3 UK's network

[✂]

The take-up of mobile broadband varies significantly across the EU. The chart below comes from the Commission's 15th implementation report.[2] It shows mobile broadband penetration as at January 2010 varying from 1.1% in Cyprus to 17% in Finland.



With the exception of Finland and Portugal, the countries with the highest penetration of mobile broadband are the six countries in which the **3** Group is present. This shows the importance of an operator committed to 3G and willing to challenge existing business models by launching new services at prices that will attract mass market adoption.

Whilst mobile internet (on a mobile handset such as a smart phone) and mobile broadband (through a dedicated modem) services have proved immensely popular with customers and a huge commercial success, the rapid growth in data use has created problems for mobile networks. Traffic is growing faster than operators can install new capacity and the uneven distribution of traffic means that certain customers in certain areas and at certain times of day are affected much more than others. In response, operators are looking at ways of managing the congestion so as to optimize the experience of their customer base. This means making additional capacity available but it also includes the use of traffic management techniques. The **3** Group expects demand for mobile data services to continue to increase and, with it, the need to deploy traffic management.

Mobile operators are also differentiating their offer to customers in an attempt to gain competitive advantage. They may continue to offer an operator portal that allows easy access to the most popular services, alongside unrestricted internet access. This experimentation with different offerings is part of the competitive process and gives customers greater choice as well as leading to innovative new services. Prioritising certain content and offering differentiated services is part of the normal competitive process and benefits customers.

The use of traffic management to address congestion or to prioritise certain services should not be seen as a market failure that needs to be regulated. It is a way of enhancing the functioning of the internet and the overall customer experience and should be welcomed. Differentiation also benefits

[2] Figure 2, page 5, Progress report on the single European electronic communications market 2009 (15th report), 25.5.2010.

customers by giving them choice and is a normal part of any competitive process. The key is to ensure customers are given sufficient information to be able to make informed choices about the different offerings available.

These points are explained in the following sections. The **3** Group only operates mobile networks in Europe and so this response is from the perspective of a mobile operator only.

II. Is there a current problem? Could there be a problem in the future? Is the regulatory framework adequate to address any current and future problems? (Questions 1 – 3)

The **3** Group is pleased that the Commission has launched a debate about net neutrality and the open internet. There has been much discussion about these concepts and some parties have called for regulation, but there has never been a clear definition of what net neutrality means in the context of the European telecommunications sector and what problems there are that necessitate regulation. The **3** Group sees the debate about net neutrality as one aspect of the underlying issue of convergence and how regulation needs to evolve as highly regulated telecoms services compete with unregulated internet applications.

The Commission describes the "end-to-end" principle and asks whether this principle is under threat as traffic volumes increase and new business models emerge. It explains how this principle has been important for allowing intelligence and innovation to take place at the "edge" of the network, rather than in the network core, and that this has led to *"spectacular"* levels of innovation in content and applications. The Commission's perceived threat to this principle comes from access providers (internet service providers, ISPs), which the Commission characterizes as having market power, although the *"multi-sided nature of the market"* means they have strong incentives to make a wide array of content available.

The **3** Group questions some of these underlying assumptions.

First, the intelligence and innovation has not been solely at the edge of the network. In the case of mobile networks, a significant amount of investment and innovation has taken place in the network itself; both in the core network and in the radio layer. Mobile operators have invested in network upgrades to support HSPA, without which mobile internet and mobile broadband services would not be attractive. Traffic management (described further in section III (below)) is a further innovation that improves the functioning of the internet and the customer's experience.

Second, it is not evident the ISPs have the market power that the Commission implies. The relative market power of ISPs and content or application providers varies. An ISP negotiating with a small, little known application provider in a sector where there are many competing applications may well have the stronger negotiating position. However, this is not true of the same ISP negotiating with a global "must have" application. The Commission implies that the ISP may be able to act as a "bottleneck" and consequently have considerable bargaining power. Equally, the application provider can threaten to block access to its application from users having an IP address associated with the ISP. In practice, therefore, the relative market power of both ISP and application or content provider depends on their strength in the market. This is no different to many other markets, such as a supermarket negotiating with its suppliers. The situation does not require special regulation.

Indeed, regulation that limits the commercial freedom of one side of a bilateral relationship could have unintended and undesirable consequences. One possibility is that application or content providers would have no incentive to use the networks of ISPs efficiently. Application and content providers have choices over how their services use network resources, for example, through the use of different compression technologies or codecs. Absent commercial incentives they may choose a design that uses bandwidth inefficiently. It is more likely they will use the network resources efficiently if they have commercial incentives to do so. This means ISPs must have the commercial freedom to provide incentives, such as the ability to prioritise or de-prioritise or to levy differential charges. It is essential,

therefore, that ISPs have the commercial freedom to incentivize application and content providers to use the network resources efficiently.

It is already the case that network operators have obligations that application and content providers do not, even when they are offering competing services. The obligation to retain traffic data or to provide customer location typically falls on the mobile network operator and not the application or content provider. As telecoms and the internet increasingly converge, this differential regulatory treatment is likely to increasingly distort competition between competing services. It will become increasingly important to ensure equality of regulatory treatment throughout the internet value chain.

Third, competition between ISPs ensures that customers continue to enjoy unrestricted internet access should they choose it. A customer has in fact the choice to select an ISP that offers a low cost internet access that might not allow access to certain high bandwidth applications. As long as consumers know what they are buying, this would seem an acceptable practice that enhances customer choice.

Fundamentally, competition between ISPs will be the best guarantor that customers have access to the applications, content and service they want. As long as customers have the information they need to make well informed choices, there is no need for regulatory intervention. The recently revised regulatory framework specifically requires operators to inform subscribers of any limitations on the services and applications they can access (Article 21(3)(c) of the revised Universal Service and Users' Rights Directive) and traffic management techniques in use (Article 21(3)(d)). These provisions would seem to be sufficient to provide the required transparency. They are not yet in force, so it is too early to conclude they are inadequate to address the perceived problem. Further regulation of ISPs now would, in effect, be to conclude that the revised regulatory framework is not adequate even before it comes into force and even without identifying an actual (rather than theoretical) problem.

Regulation of converged services

The net neutrality debate has focused on the threat to the open internet from telecoms operators (ISPs) blocking access to certain content, services or applications on the internet. For the reasons described above, the **3** Group believes this threat has been exaggerated, especially in Europe, where competition between network operators is strong. Nevertheless, the **3** Group accepts that operators should not be permitted to block access to lawful content, services or applications.

The problem lies deeper, and arises from the convergence of two different systems: regulated voice telephony, and the unregulated internet. In telecoms the mandatory interconnection obligation exists to ensure universal end-to-end connectivity: any user can call any other user throughout the world. It also facilitates competition by preventing the emergence of dominant closed user groups that refuse to connect with rivals. Absent the obligation to interconnect, there is always a risk that the market will 'tip' in favour of a single dominant, or even monopoly, provider.

In contrast to the regulated telecoms system, the internet is populated with proprietary applications that are not interoperable with other competing applications, for example, in VoIP, social networking sites and instant messaging. These proprietary applications create closed user groups and a tendency for one dominant platform to emerge. This is potentially a greater threat to innovation on the internet than network operators blocking services.

The global benefits of telecoms interconnection are well understood. These benefits must be preserved as communications services shift progressively to the internet, away from the circuit-switched world of mandated interconnection. The regulatory debate should focus on how to ensure interoperability of basic communication services on the internet. The Commission should examine how best that can be achieved. One option is a 'mandatory interconnection' obligation on providers of communications services on the internet to mirror that for telecoms services. These communication services typically display a network effect and are therefore the services where consumers would get the greatest benefit from interoperability and which have the greatest tendency to monopoly.

To recap, the **3** Group agrees with the objective of keeping an open internet. It does not believe the open internet is threatened by telecoms operators, at least not in the competitive markets that exist in Europe. Nevertheless, it is prepared to accept an obligation not to block lawful content, services or applications. At the same time, to counter the threat to the open internet and to the principle of universal connectivity that comes from proprietary platforms, the Commission needs to examine what obligations there should be on providers of internet communications services to preserve the benefits achieved in telecoms.

III. Traffic management (Questions 4 – 9)

Congestion

The introduction to this response describes the huge growth in data traffic carried on the **3** Group's networks. As traffic increases the **3** Group is installing additional capacity to meet the demand. However, it is difficult both from an operational perspective and from a financial perspective to install capacity quickly enough to meet the growing demand. Operationally, the **3** Group is utilizing additional carriers of spectrum on the busy cell sites, but these carriers are limited. Most of the **3** Group businesses have only 3 blocks of spectrum. [✂] It is also possible to install additional cell sites, but planning restrictions means that this is not always possible and even when it is, the process for approval is so long that the cells are unlikely to be available in time to meet the growth in demand.

Even if it were possible to meet all the demands for additional capacity at all times, it is unlikely to be financially viable. Customers would not be prepared to pay for a network that has sufficient capacity to meet demand on every cell site at all times of day. Just like the road or rail networks, consumers accept that there is a trade-off between capacity and price and accept that in busy locations at peak times there will be congestion. [✂]

Therefore, it is inevitable that there will be some congestion on mobile networks in some locations at certain times of day. The question then becomes how to deal with that congestion.

One option would be to leave traffic unmanaged and accept whatever customer experience resulted from that. It would mean that an important voice call could be disrupted by the background software update of another user. This is akin to having no traffic light or roundabouts on the road and just leaving drivers to fight their way through the congestion. It may also be contrary to the (possible) quality of service requirements under the revised framework, since these would be impossible to achieve with any certainty.

The development of traffic management technologies has provided an alternative. Traffic management allows operators to improve the functioning of the internet and customers' overall experience. It may mean prioritizing voice calls, including VoIP, over software updates or certain peer-to-peer applications. Of course, different operators may take a different view of which services they should (de-)prioritise to improve their customers' experience, but that is part of the competitive process and provides customers with choice.

For mobile operators, traffic management will be essential if customers are to get a satisfactory quality of service. An unmanaged network would mean many customers experiencing poor quality to time critical services because of capacity demands from background, routine or low priority traffic. This is not in customers' interests.

In practice, congestion occurs only on a small proportion of cells at peak times of day. Traffic management techniques are deployed to deal with those peaks. Examples from the **3** Group businesses include:

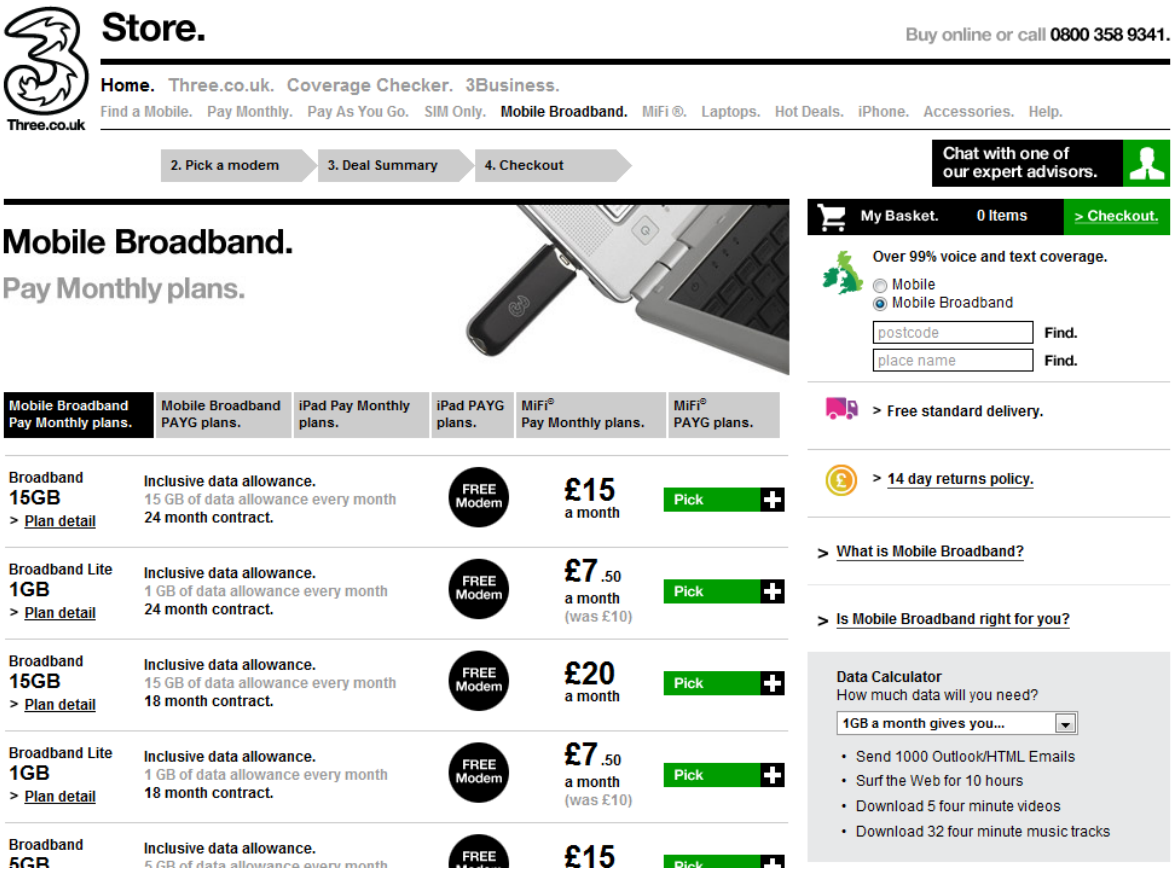
[✂]

The **3** Group sees these kinds of traffic management techniques as essential for mobile operators to provide their customers with a good overall experience of the service. The **3** Group sees no grounds

for regulatory intervention to restrict or prevent the use of these kinds of traffic management technique. Mobile operators should be free to deploy them as they feel appropriate. Different operators may use different techniques and prioritise different services depending on the services they want to promote (for example, the **3** Group wants to ensure customers have a good web browsing experience) and their customer base (for example, business users or consumers). As long as operators are transparent about the traffic management techniques they use, customer are then able to choose the mobile network that offers the services that matches their needs.

The **3** Group businesses have different ways of informing their customers about traffic management policies and are looking at how best to inform customers in a simple but comprehensive way. As an example, **3** UK provides a tool on its website to help customers understand what they will get from a data package and so enable them to make an informed choice as to the package most suitable for them:

Data calculator on the 3 UK website when browsing through its Mobile Broadband offers

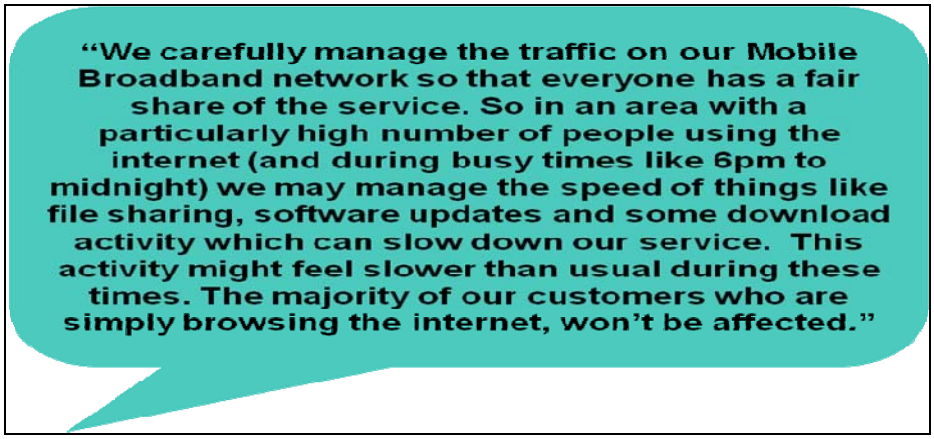


The Data calculator on the **3** UK online store shows to the prospective customer what he/she can get out of their chosen bundle. In the image above for example, 1GB a month would allow a customer to:

- Send 1000 Outlook/HTML Emails
- Surf the web for 10 hours
- Download 5 four minute videos
- Download 32 four minute music tracks

In addition **3** UK provides, on its website, an explanation about its traffic management policy:

3 UK's traffic management policy explained on its website (www.three.co.uk)



Managed services

Operators may also want to offer what the Commission describes in its consultation as "managed services". To some extent this competitive differentiation already exists. Again, it should be seen as a positive development, offering customers choice over the services available and encouraging experimentation and innovation. It allows operators to package services to match their customers' preferences.

The popularity of the iPhone and the iPad and the applications store and the recent launch of Amazon's Kindle show there is a lively market for new mobile services and new ways of offering content. These innovations are bringing about a more open and 'neutral' mobile internet by allowing greater consumer choice and by allowing content, application and service providers easy access to millions of users.

Experimentation in pricing is an important part of that innovation. It gives customers choice over how to pay for content. These innovations point to a well-functioning market and not one in need of regulatory intervention. In fact, by limiting pricing freedom and by preventing networks from partnering with a single provider, regulatory intervention to restrict operators' ability to differentiate their services could make it far more difficult for many new services to come to market. A product like the Kindle, which uses the internet but only allows access to one content provider (Amazon), might not be possible under net neutrality rules. The most successful implementation of VoIP on mobile, Skype on **3**, was the result of a close collaboration between Skype and the **3** Group. This included a large investment from the **3** Group to optimise Skype for the mobile network and to ensure a high quality service. While the **3** Group businesses allow their customers to use all VoIP services on their network, it was the **3** Group's investment in ensuring quality and in promoting the Skype service that helped to make it a success. This required the **3** Group to favour one VoIP service over others. It would not have been possible under certain interpretations of net neutrality regulation.

Experimentation and the ability to innovate are important elements of any market. This is especially so for a market that is growing as rapidly as the mobile internet. Regulatory intervention now risks freezing the market around the existing business models and pricing structures. This may suit market players profiting from the current business models, but it may not be in consumers' interests. The **3** Group knows well the way regulation can inhibit price and service innovation when it is built around established business models. We simply do not know what innovative services could emerge in the future. Nor should the contractual arrangements between ISPs and content or application providers be regulated or constrained in any way. As explained above, it is simply not true that ISPs have a bottleneck monopoly over application providers. The truth is there is a bi-lateral negotiation and the relative power may differ between different parties. The relationship is one of mutual benefit since

consumers only buy mobile broadband to get access to content and applications. Mobile operators have an interest in offering new services that may grow to become the next Facebook or YouTube.

The **3** Group therefore sees the ability to offer managed services and to be allowed to differentiate in quality and price within those managed services as important elements for mobile data services. Mobile operators should be able to use traffic management tools to support that differentiation. The contractual arrangements between mobile operators and content or application providers should not be regulated.

The **3** Group recognises the importance of the end-to-end principle and the essential role the internet plays in providing users access to information. Therefore, the **3** Group sees managed services as complementary to allowing users basic access to an unrestricted internet service. Operators should not block lawful content, services or applications but should have the ability to offer differentiated managed services in addition to basic internet access.

As with traffic management to deal with congestion, transparency of managed services will be essential to a well functioning market. Consumers must have the information to make informed choices.

IV. Minimum quality of service (Questions 11 – 14)

Under the **3** Group's proposed approach, where mobile operators offer basic unrestricted internet access and are free to offer managed services on top of that, regulation to enforce minimum quality of service would be unnecessary.

Setting minimum quality of service requirements on mobile operators poses technical difficulties. The nature of spectrum means that operators do not have full control over service speeds. Atmospheric and technical conditions (for example, extreme weather conditions, unforeseen emergency situations that cause congestion in certain cells, etc.) can make a difference to propagation characteristics. This means that operators are unable to ensure neutrality in the treatment of traffic. The most that regulators could do would be to specify a quality of service that must be achieved "on average" or "in a minimum of 90% of cases", for example.

However, the question must be posed as to why it would be necessary to impose minimum quality of service requirements on mobile operators. The competitive market in most EU Member States is driving operators to invest huge sums in upgrading their networks from 3G to HSPA, to HSPA+ and ultimately to LTE. Similarly, operators are investing to install new capacity through new cell sites and through acquiring more spectrum for mobile broadband services. In this market, characterized as it is by competition to provide faster and more reliable mobile data services, there seems little role for regulatory intervention.

V. Conclusion

The **3** Group is pleased that the Commission has opened a debate on the open internet and whether there is a need for net neutrality regulation in the EU. There has been much said about possible market failures but little evidence to show actual market failures. In fact, a proper examination of Europe's mobile markets shows healthy competition to provide customers with better, faster services and to offer new innovative services. It is vital that operators have the commercial freedom to experiment and innovate with managed services in terms of business models, price and quality. The ability to manage congestion is also essential to providing customers with a good service.

The counterbalance to that commercial freedom is the need to be transparent with consumers about the traffic management policies deployed, and the nature of the managed services. Similarly, the **3** Group recognizes the importance of the internet to modern society, and recognizes a legitimate requirement for operators to provide unrestricted internet access, possibly alongside any managed services they may also wish to offer.

The **3** Group believes the Commission should look at the underlying problem of how to regulate with convergence of highly regulated telecoms services and unregulated internet services. In particular, the Commission should examine how to preserve the benefits of universal connectivity that have been achieved in telecoms as communications increasingly moves to internet applications that are often proprietary closed user groups.