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**Summary**

Sweden (SE) believes that the principles of openness on Internet and net neutrality are issues of vital importance for innovation, freedom of speech and freedom of information. Everything and everyone on the Internet should be treated equally irrespective of origin, destination or type of information. That said, all electronic communications networks need functionalities to ensure network performance and to support specific services in the networks. Network management is one of these functionalities.

It is reasonable that operators are able to prioritize certain types of services and that operators have the possibility to block content that threatens the network such as spam and viruses. They should also be able to block illegal content such as e.g. child pornography if required. As long as the Internet traffic follows what has been agreed upon in individual subscriptions, and the open character of the Internet connection is preserved, there are no problems with net neutrality. To avoid problems with lack of openness and net neutrality it is however of vital importance that the competition on the market is well functioning. This means that consumers must have access to clear and adequate information of the terms of condition for their Internet subscription, continuous information of the service delivered and good possibilities to switch operator without high transaction costs.

For the time being we see no real signs of serious problems with openness of Internet and net neutrality on the Swedish or the European markets. But it is of outmost importance that the EU Commission, Governments and National Regulatory Agencies (NRAs) carefully monitor the market and its developments. The market for electronic communication is in a critical phase, new business models are being developed and heavy investments in infrastructure are needed. If serious problems were to arise on the market the NRA must be able to take immediate action. Lack of openness and net neutrality could jeopardize freedom to speech, flow of information and

innovations on the market. From an innovation perspective it is important that SMEs developing new, innovative services are able to reach their markets and grow.

SE therefore welcomes that the NRAs in the revised EU Directives get a clear responsibility to monitor net neutrality and the possibility to set minimum quality of service requirements of services provided over electronic communication networks.

## **SE response to the Commissions consultation**

***Question 1: Is there currently a problem of net neutrality and the openness of the internet in Europe? If so, illustrate with concrete examples. Where are the bottlenecks, if any? Is the problem such that it cannot be solved by the existing degree of competition in fixed and mobile access markets?***

From SE point of view there are no serious problems with openness and net neutrality in Sweden or in Europe today.

The types of traffic management that are most common today are when operators prioritize certain types of service e.g. critical alarm services and real time services e.g. IP-TV and IP-telephony to assure quality of service. It is also reasonable that operators have the possibility to block content that threatens the network such as spam and viruses. They should also be able to block illegal content such as e.g. child pornography if required. Many operators also provide managed services where certain services, applications or content are prioritized. As long as the Internet traffic, which has been agreed upon in individual subscriptions, is not affected by this prioritization there should be no issues with net neutrality.

But the market for electronic communication is in a critical phase. New business models are being developed and heavy investments in infrastructure are needed. The market therefore needs to be monitored carefully and if serious problems arise the NRA must take action.

***Question 2: How might problems arise in future? Could these emerge in other parts of the internet value chain? What would the causes be?***

Since the market for electronic communication is in a critical phase of development problems could arise in the future. It will most likely be more common with commercial agreements between network operators and service providers of managed services. We will undoubtedly also see a development towards increased demand (and supply) of high capacity services which in turn will put pressure on the

network operators to make investments in their networks. Under such circumstances problems with net neutrality might arise.

From an innovation perspective it is important that SMEs that are developing new, innovative services are able to reach their markets and grow. Restriction on this growth due to agreements between larger companies could undermine Europe's ability to develop competitive online services and applications.

It is therefore of great importance that the market development is carefully monitored by the NRAs so discriminatory behavior can be avoided.

***Question 3: Is the regulatory framework capable of dealing with the issues identified, including in relation to monitoring/assessment and subsequent enforcement?***

In the revised EU Directives the NRA gets a new role with regard to monitoring net neutrality and the possibility to set minimum service quality requirements. SE welcomes that the NRA gets a more clear responsibility and adequate tools to handle problems with net neutrality if and when they should arise.

If the NRA discovers problems with net neutrality its first action should be to try to reach a voluntary sector agreement or code of conduct that states the fundamental principles of net neutrality. The advantage with such an agreement is that it involves stakeholders in the process and that a wider range of stakeholders can be included than those covered by the Electronic Communications Act. If the problems remains or accelerate the NRA should consider a regulation of the market and e.g. set minimum service quality requirements of an Internet access.

SE believes that the NRA's new legislative tool should be applied and evaluated before any additional measures (remedies) are discussed and implemented.

***Question 4: To what extent is traffic management necessary from an operators' point of view? How is it carried out in practice? What technologies are used to carry out such traffic management?***

All electronic communications networks are in need of functionalities to ensure that network performance is acceptable and to support specific services in the network. Network management is one of these functionalities. Network management can be performed regardless of content, service, origin or destination. Network management, such as prioritizing traffic, does not automatically violate the principles of net neutrality.

Prioritizations in IP-networks are in principle only necessary when there is a risk of network overload. To handle situations with overloaded networks e.g. during peak hours, operators can choose to either invest in more capacity or to apply traffic management. From an openness and net neutrality point of view it becomes vital to what extent traffic management tools are used before the operator choose to invest in more network capacity.

***Question 5: To what extent will net neutrality concerns be allayed by the provision of transparent information to end users, which distinguishes between managed services on the one hand and services offering access to the public internet on a 'best efforts' basis, on the other?***

The most important tool to minimise problems with net neutrality is a well functioning competition on the market. This includes that consumers should have access to clear and adequate information of the terms of condition for their Internet subscription, continuous information of the service delivered and good possibilities to switch operator without high transaction costs.

It is also important that the Commission, Governments and NRAs carefully monitor the development and take necessary actions if required. From a standpoint of innovation and growth, the open and non-discriminatory character of the Internet should be preserved.

Public authorities and consumer organizations can also play an important role to enhance consumer awareness of the terms of conditions in different Internet subscriptions and increase the possibilities to make active and balanced choices. E.g. public authorities could put pressure on operators to provide transparent and relevant information regarding their services but they could also work intensively with consumer information and e.g. recommend websites that compares different operators Internet subscriptions. It is also of importance that consumers, on a regular basis, have the possibility to verify that the network operator delivers the services agreed upon e.g. with regard to speed.

***Question 6: Should the principles governing traffic management be the same for fixed and mobile networks?***

From a general point of view the same principles of net neutrality should be applicable to fixed and mobile networks. On the other hand it is important to consider the differences in network structure between the two. Users in fixed networks usually have a dedicated access while users in a mobile network share the capacity. The quality of the access will therefore be more stable in a fixed network compared to a mobile network where the capacity will vary over time due to e.g. geographic conditions, weather, number of simultaneous users, etc. The network operators' incentive to manage traffic will

therefore be greater in mobile networks. This must be balanced against the principles of openness and net neutrality. The competitive situation on the market and whether the consumers in reality easily can choose another operator or service will be of great importance.

***Question 7: What other forms of prioritisation are taking place? Do content and application providers also try to prioritise their services? If so, how – and how does this prioritisation affect other players in the value chain?***

It is possible for operators to block other service providers' applications and services over Internet. For instance, operators could be blocking competitors VoIP-services in mobile networks that compete with their own services.

This type of behavior is questionable. It is possible to claim that as long as there is a well functioning competition on the market with a good selection of operators and services, and as long consumers are given clear and adequate information regarding the terms of conditions of the service, consumers can choose the Internet subscription that matches their demand. On the other hand it is possible to claim that if the services become too complex there is a risk that consumers do not have the possibility to make extensive comparisons between different offers, which will hamper competition. It is also possible to claim that blocking of certain services discriminates these service providers and creates barriers to entry the product market which in turn leads to less competition. If the development forces consumers to buy low price Internet subscriptions with restricted Internet access it could affect the possibility of creating and receiving information and services, which in turn could jeopardize freedom of speech, freedom of information and the power of innovation on the market.

***Question 8: In the case of managed services, should the same quality of service conditions and parameters be available to all content/application/online service providers which are in the same situation? May exclusive agreements between network operators and content/application/online service providers create problems for achieving that objective?***

It is reasonable that operators are free to make business agreements with different service providers to bundle and market these services with their own. But it is also reasonable that all service providers are treated equally and have the same possibility to reach an agreement. Well functioning competition on the market is key to avoid discrimination since it makes it possible for service providers to choose between different network operators to distribute their services. And again, the bandwidth allocated to these managed services should not impact on the Internet access provided.

A consequence of bundling could be that consumer mobility and the possibility to make active and balanced choices are hampered, which in turn will have a negative effect on competition.

***Question 9: If the objective referred to in Question 8 is retained, are additional measures needed to achieve it? If so, should such measures have a voluntary nature (such as, for example, an industry code of conduct) or a regulatory one?***

If the NRA, after an analysis of the market, finds that the principles of net neutrality are being violated the first action should be to negotiate a voluntary agreement (code of conduct) of the principles of net neutrality between the different stakeholders on the market. The advantage with such an agreement is that the stakeholders are involved in the process and that a wider range of stakeholders can participate than those included in the Electronic Communications Act. If the problems remain or are enhanced the NRA should consider to regulate the market, e.g. by setting minimum quality of service requirements for an Internet access.

***Question 13: In the case where NRAs find it necessary to intervene to impose minimum quality of service requirements, what form should they take, and to what extent should there be co-operation between NRAs to arrive at a common approach?***

The openness of the Internet and net neutrality has an international dimension. This, together with the objective of a common inner market for electronic communication services, suggests we should seek a common line of action within EU. How this cooperation should evolve depends very much on how possible problems with net neutrality develop in each individual Member State.