

Fragen für das Fachgespräch des Ausschusses Digitale Agenda am 17. Juni 2015

1) Wie beurteilen Sie die gegenwärtigen Erfahrungen bezüglich der Einhaltung der Netzneutralität auf nationaler, europäischer und auch auf internationaler Ebene? Gibt es Entwicklungen, die eine gesetzliche Verankerung der Netzneutralität als notwendig oder nicht notwendig erscheinen lassen? Wie kann neben einem neutralen Internet eine gesicherte Qualität für bestimmte Anwendungen gewährleistet werden und in welchen Fällen ist dies notwendig?

For many years, opponents of Net Neutrality have argued that it is a “solution in search of a problem.” At the same time, they have argued it is essential to break with the principles of Net Neutrality in order to develop “smart networks” that generate revenue streams sufficient to finance expansion of infrastructure. Only one of these claims can be true. All of the evidence suggests the latter claim is true. Network operators have clearly stated their intentions to develop pay-for-play business models that privilege some types of content over others. They will do this if regulatory oversight permits this change in the underlying principle of nondiscrimination that is the foundation of the Internet as we know it. There is no reason to doubt them at their word. These companies are bound by fiduciary duties to increase revenue, profits, and shareholder value. If they did not seek to engage in these practices – if regulation permits – that would be an unexpected outcome.

The possibility of Net Neutrality rules in many countries – including large markets such as the US and the EU – have stalled the implementation of discriminatory business models because of the risk they might be later ruled unlawful. In the wireline market, the regulatory structure of the telecommunications market remains in place in most countries, creating either the reality or the perception that regulators might intervene if presented with discriminatory practices by ISPs. Moreover, serious debates over whether and how to create explicit Net Neutrality rules have been active and heated for as long as technology has been available in the market capable of network-scale discriminatory routing. Consequently, few network operators have chosen to invest in discriminatory practices in this environment of uncertainty. It would be surprising to find widespread violations in these circumstances.

However, in the wireless data market, discriminatory practices in routing and pricing are common. Many carriers have a history of blocking or throttling voice-over-the Internet applications, peer-to-peer applications, and other high-bandwidth or low-latency services. Zero-rating is happening in many markets. Moreover, recent disputes between large content providers and large ISPs (e.g. Netflix and

Comcast) have resulted in months of degradation to popular consumer services without a hint that ISPs were concerned about losing customers in response to discriminatory practices. Limited competitive pressures, high switching costs, and the widespread nature of the practices across many ISPs explain this outcome.

The most common suggestion for preserving Net Neutrality while permitting new kinds of “quality of service” offerings of IP networks is a new type of service – “specialized services.” The only method of regulatory authorization for “specialized services” that will successfully preserve Net Neutrality and the right incentives for network operators and content/services companies is a form of structural separation. In the Federal Communications Commission's recent Open Internet Rule, these services are not even called “specialized” – a method of distinguishing them from other services provided over the Internet. They are called “non-Broadband Internet Access Services.” That is – specialized services could be offered on a physically or logically separate facility to Internet access. They must not be sold as Internet access, bundled with Internet access, or used in ways intended or having the effect of violating the Net Neutrality principle on the Internet access service product. Vigilant oversight and strict transparency requirements should apply to these services if and when they emerge in the market. They should be evaluated on a case by case basis. There may be a market for specialized services – although that is far from demonstrated. The number of actual use cases that have a plausible requirement for specialized quality of service over the Internet (and which are not already operating on a structurally separate network) are few and far between – far fewer than the number of actually deployed business models that clearly violated Net Neutrality. One might argue that “specialized services” are a solution in search of a problem.

2) Wie bewerten Sie die Position der Bundesregierung, Spezialdienste in engen Grenzen zu erlauben, allerdings in dem alle Dienste einer solchen Klasse dann gleich zu behandeln sind und im Übrigen das Best Effort Internet nicht negativ beeinträchtigt wird?

The only method of regulatory authorization for “specialized services” that will successfully preserve the right incentives for network operators and content/services companies is a form of structural separation. That is – specialized services should be offered on a physically or logically separate facility to Internet access. They must not be sold as Internet access, bundled with Internet access, or used in ways intended or having the effect of violating the Net Neutrality principle on the Internet access service product. Vigilant oversight and strict transparency requirements should apply to these services if and when they emerge in the market. If these services are permitted for sale to content and service providers in this form, they should certainly be handled under reasonable and non-discriminatory terms and conditions. That is, all buyers of specialized services should be offered the same quality of service for the same price.

There is no method to offer prioritized quality of service for some traffic over the Internet without harming other kinds of traffic. The Net Neutrality debate is technically a choice about how to respond to congestion and packet loss in particular routers or over particular links in a network between a content/service provider and end users. One solution is to increase capacity in the network to accommodate an increase in traffic flow. If bandwidth in the physical infrastructure increases, congestion reduces, and packet loss is no longer a problem. (This is how net neutrality is tied to infrastructure expansion -- abundant capacity eliminates the problem.) Another solution is to monetize the congestion by selling priority access -- “paid prioritization” -- offering paying customers the chance to skip the queue at congested routers. This model requires discriminating between content, application or service providers that have paid for prioritization and those that have not. But by necessity, any prioritization of packets at congested points in the network in order to honor this quality of service request will reduce available bandwidth for all other traffic in the queue and degrade (or terminate) the delivery of that non-prioritized traffic.

3) Wie beurteilen Sie die aktuellen Entwicklungen auf europäischer Ebene? Wie beurteilen Sie den Entwurf der Europäischen Kommission, des Europäischen Parlamentes und den Entwurf der derzeitigen Ratspräsidentschaft? Wie könnte eine Einigung im Trilog aussehen und - wenn eine Einigung mit den derzeit vorliegenden Vorschläge nicht erreicht werden kann - gibt es denkbare Alternativen? Wie bewerten Sie die unterschiedlichen Vorschläge für eine Definition der Netzneutralität und wie die unterschiedlichen Vorschläge für eine entsprechende gesetzliche Verankerung bzw. Festschreibung als Grundprinzip? Wie bewerten Sie die unterschiedlichen Definitionen von Spezialdiensten?

A strong Net Neutrality rule requires three central components with clear terms and definitions, strong transparency requirements, and vigilant procedures for oversight and adjudication of complaints. First, there must a clear prohibition of blocking, throttling or paid prioritization of traffic on Internet access services. Second, there must be clear terms and conditions for “reasonable network management” – the differentiation between packets in routing for engineering rather than commercial purposes. And third, there must be clear terms and definitions separating broadband Internet access services from all other services that might be offered over the same facility or using Internet Protocol.

The proposals from the three institutions of the European government vary significant on these points. The proposal of the European Parliament sets the highest standard. The key differences are in the first and third of the key components. None of the three institutions provides a clear prohibition on paid prioritization – rather they offer affirmative rights of end-users to access or provide all content, applications, and services. This may have the same effective result; but in all cases greater clarity

would be desirable. The European Parliament position is the only proposal that clearly defines Net Neutrality. All three institutions have similar language on reasonable network management and compromise text in this area appears feasible. The divergence between the three texts is significant in the definition and restrictions on specialized services. Here the Parliament's language presents the clearest and most protective requirements. The proposals of the Commission and the Council appear quite far apart from the views of the Parliament on this question. Without adequately containing the scope of specialized services, there is strong concern that these exceptions will undermine the entire rule.

4) Wie bewerten Sie die im Entwurf der Ratspräsidentschaft vorgesehenen

Ausnahmetatbestände, die es erlauben sollen, vom Prinzip der Netzneutralität

abzuweichen (etwa „parental control measures“ oder „unsolicited messages“)? Wie

bewerten Sie das bislang ausdrücklich fehlende Verbot von Deep-Packet-Inspection?

In welchem Verhältnis steht aus Ihrer Sicht der Komplex der Netzneutralität zum

Komplex der Roaming-Gebühren?

Parental control measures should not be considered a part of a Net Neutrality. As a general policy, content judged illegal or undesirable by law enforcement or end-users should be taken down or filtered through existing and standardized procedures at end-points on the network, not through traffic management inside the network.

Net neutrality and roaming: As a matter of policy, there is no relationship between the two issues.

5) Vertreter der EU-Kommission haben erklärt, dass Spezialdienste, die „allgemeines

Interesses“ genießen, Vorrang im Internet genießen müssen. Ist eine abgrenzungsscharfe

Definition möglich, welche Dienste fallen nach Ihrer Auffassung in diese Kategorie und wie sollte das „allgemeine Interesse“ konkret definiert sein?

The intent and definition of this exemption from Net Neutrality rules for a class of hypothetical use cases for specialized services is unclear. Specialized services that make a claim for prioritized treatment should be evaluated on a case by case basis. It is not feasible to pre-judge a category of specialized services as automatically authorized in the public interest.

6) Wie bewerten Sie die Regelungen zur Netzneutralität in anderen Ländern, insbesondere in den USA, vor dem Hintergrund der jüngsten Entscheidung der US-Regulierungsbehörde Federal Communications Commission Internet Providern das Blockieren oder Verlangsamung legaler Inhalte und Angebot von parallelen Netzinfrastrukturen zu untersagen? Ist aus Ihrer Sicht ein Regelungsregime geeignet, als Vorbild für eine nationale bzw. europäische Regelung zu dienen? Wie bewerten Sie die bislang gemachten Erfahrungen in den Ländern, in denen die Netzneutralität gesetzlich verankert ist? Wie bewerten Sie Initiativen wie „Internet.org“ und deren Ausgestaltung?

The Federal Communications Commission in the United States voted on February 26, 2015 to adopt strong net neutrality rules. The full text of the rules -- published on March 12th -- represents the most specific and strict net neutrality rules ever issued by any regulator. It is based on years of debate, thousands of pages of comment and analysis provided by the stakeholder community, and a robust regulatory theory supported by a very rich evidentiary record. It is an exemplar of good policy-making, a standard-setting rule that should be emulated by other nations.

The new rules apply to all providers of broadband Internet access services, including mobile. These are the key provisions:

The Order prohibits providers of Internet access service from blocking or throttling (or engaging in any other “unreasonable interference” to) lawful content, applications, services, or devices (subject to reasonable network management) (para. 111-137);

The Order prohibits providers of Internet access service from engaging in “paid prioritization” practices that offer preferential treatment on the network to specific traffic in exchange for money or other consideration (para. 125-132);

The Order provides that all exemptions from the rules for “reasonable network management” must be suited to a technical purpose, not a commercial one, and enhanced transparency rules apply that require disclosure of network management practices to consumers (para. 154-181 and 214-224);

The Order extends the oversight of the regulator to include (for the first time) the points of interconnection between the Internet backbone and consumer Internet access providers. It does not apply the full net neutrality rules to these exchange points, but it does require exchange of traffic to be “just and reasonable” and applies a case-by-case approach to adjudicating complaints against this standard (para. 194-206);

The Order provides an exemption from the rules for all services that are not broadband Internet access services (i.e. “specialized services”) but are offered over the same infrastructure -- including, for example, VoIP, cable TV, and health monitoring. The distinction in the definition is that these services are limited in purpose, do not provide broader access to the Internet, and do not have the effect of circumventing the ban on paid prioritization (para. 207-213).

The analysis that accompanies and justifies the rule adopts the logic of the original principles of nondiscrimination built into the architecture of the Internet. The FCC rules clearly express that increased capacity rather than monetized congestion represents the best response to rising levels of traffic in response to consumer demand. The new rules are premised on a theory of market development the Commission calls the “virtuous cycle” (para. 77 and 102). Under this concept, new applications and services are developed by innovative businesses that require ever more bandwidth and quality of service. In response, more and more consumers are attracted to the broadband provider’s Internet service to gain access to these new applications and services and buy connections at higher speeds. And these new revenues drive further investment in infrastructure to support the next generation of higher bandwidth applications. In this way, all participants in the value chain enjoy mutually beneficial growth in the marketplace and the public service goals of building a robust information infrastructure and achieving higher levels of technology adoption are met.

The FCC’s net neutrality rules seek to set the market incentives for all participants in the Internet marketplace to play their roles in the virtuous cycle. But the regulator concludes that without clear net neutrality rules, broadband network owners have a clear incentive to discriminate (para. 79), irrespective of whether they have market power over competitive service providers (para. 84). Each network operator has a monopoly over its own subscribers, and only rules requiring an open market will guarantee the persistence of the virtuous cycle. The explicit prohibition on blocking, throttling, paid prioritization or any other form of discrimination is intended to protect the most beneficial market structure.

One shortcoming of the FCC rules is that it is unclear in its application to so-called “zero-rating” – the practice of offering services for free over the Internet that would normally incur mobile data charges. Internet.org is a prominent example of the practice conducted by Facebook. Though the intention of

low-cost access to online services is laudable, the practice has the effect of restricting users to an Internet experience that is clearly not the Internet but is marketed as the Internet. This is not a conventional Net Neutrality violation, but it is a practice that clearly runs counter to the principles of the Open Internet in the FCC rule.

7) Wie verhält sich aus Ihrer Sicht die Frage der Netzneutralität zur Innovationsfähigkeit? Ist Netzneutralität Voraussetzung für die Innovationsfähigkeit oder ist Netzneutralität ein Hindernis für die Innovationsfähigkeit?

The entire history of the Internet – including all of the innovations that have emerged from this network and transformed modern social and economic life in connected societies – occurred under a functionally “net neutral” market for content, applications and services. (Prior to the debates over Net Neutrality in the last ten years, the Internet was run on these principles by default or according to pre-existing telecommunications law.) The notion that nondiscriminatory open markets on the Internet hinder innovation is difficult to justify given this enormous body of evidence to the contrary.

8) Teilen Sie die Auffassung, dass die Bewertung des Themas Netzneutralität stark von der zur Verfügung stehenden Bandbreite abhängt, bzw. das Thema Netzneutralität sich in seiner politischen Bedeutung deutlich reduzieren könnte, sofern ausreichende Übertragungskapazität zur Verfügung steht?

Yes. Adding capacity to congested links on a network will largely resolve the debate over Net Neutrality because it eliminates the need for picking and choosing which packets will make it through congested routers. Even significant incremental upgrades to capacity (as opposed to preemptive overprovisioning to meet anticipated peak loads) reduce the incentive to create a business by selling prioritization. Rather, the incentives shift towards carrying more and more traffic to increase the value of subscription to the Internet access service by the end-user and the viability of transmitting more content and services.

9) Welche Rolle spielt die Verwaltung der Netze? Sind intelligent verwaltete Netze angesichts des rasant ansteigenden Datenverkehrs eine Lösung, um erstens Kapazitätsengpässen vorzubeugen und zweitens einem veränderten Nutzungsverhalten gerecht zu werden? Teilen Sie die Ansicht, dass zukünftig über das sogenannte Overprovisioning so viel Bandbreite zur Verfügung gestellt werden könnte, dass das Netzwerkmanagement im Sinne eines Lastenmanagements weitestgehend entbehrlich wird? Teilen Sie die Auffassung, dass – solange es nicht genügend Kapazität gibt – es dringend der gesetzlichen Verankerung der Netzneutralität

bedarf und dass Spezialdienste, wenn überhaupt, nur in engsten Grenzen zulässig sein sollten? Wo liegen die vertretbaren Grenzen von notwendigen Netzwerkmanagement (etwa bei vorübergehenden Netzwerküberlastungen) und von unzulässigen Eingriffen in die Netzneutralität?

A certain degree of reasonable traffic management on a network is necessary and desirable. All network operators do this. Traffic management has many benefits when implemented for engineering purposes to balance load, to handle latency sensitive traffic in times of congestion, and to implement cyber-security policies. Traffic management practices are especially relevant on wireless networks.

The central question around network management is whether the purpose is driven by engineering requirements or commercial interests. The latter provides an incentive to maintain scarcity of bandwidth in the network. This is not compatible with the goals of broadband policy to grow infrastructure, nor it is conducive to innovation. It is not reasonable to expect that a business model built on monetizing congestion will take revenues from that business and invest in bandwidth that will eliminate the congestion that is the premise of the business model.

10) Wie können Unternehmen – die von der bereitgestellten Infrastruktur und der Ermöglichung von Spezialdiensten profitieren – dazu gebracht werden, die zusätzlichen Gewinne, die sie mit Spezialdiensten erwirtschaften, in den Erhalt und Ausbau der Netzinfrastruktur zu investieren? Müssen dafür staatliche Rahmenbedingungen geschaffen werden, oder liegt es ohnehin im Interesse der Unternehmen, um auch zukünftige Produkte vermarkten zu können?

The logic that permitting violations of Net Neutrality lead to investment in infrastructure that will grow the digital economy suffers from significant weaknesses. Because the sale of quality of service implies significant congestion in the network (otherwise the purchase of prioritization would not be worthwhile) – it is unlikely that these revenues will translate into significant investment in provisioning bandwidth that would effectively eliminate the congestion that is being monetized. The only way this logic works is if the new investment is poured into provisioning specialized services that are pay-for-play, at the expense of the rest of the network's traffic. If it is not coming at the expense of other traffic, there is no congestion for which it is worth paying to avoid.

Following this logic, the EU's top line goals on technology policy have inherent contradictions. On the one hand, Brussels appears sympathetic with incumbent telecommunications network owners who seek deregulation, permission to consolidate, and authorization to violate net neutrality. On the other hand, Europe is very committed to growing its own "Silicon Valley" and cultivating an entrepreneurial

ecosystem of innovators that create new business, win global market-share, and generate consumer demand for Europe's online products. According to the FCC's regulatory theory of the "virtuous cycle", these goals are not compatible. The best method to foster innovation and firm creation in the "over-the-top" market is to guarantee low barriers to market entry and nondiscriminatory treatment on the network. An non-neutral network infrastructure would have the opposite effect.

A related argument indicates that the creation of pay-for-play IP services will be a major disadvantage to European content and services companies in particular – vis-a-vis their larger American competitors. Not only will European companies lose out from weakened incentives for robust infrastructure and high barriers to enter pay-for-play delivery markets, these trends will favor American companies with existing market power. This is ironic, because much of the Net Neutrality debate in Brussels is articulated as extracting revenues from American Internet giants to support Europe's local markets. However, the immediate pressure of current market forces in a pay-for-play Internet (stripped of net neutrality rules) forecasts an outcome that is highly unlikely to reverse the trend of American monopolization in digital content and service market segments. A market that permits monetizing congestion is more likely to lock in the monopoly market shares of the current group of Internet mega-brands. In a market that requires large sums of liquid capital to buy prioritized treatment (and armies of lawyers to negotiate separate deals with dozens of network operators), the largest players in today's market will have an enormous advantage. And the incentives for today's monopolists will be to raise the barriers for entry to the fast lane in order to further distance themselves from any potential competitors. The winners in this new market will be EU telecoms and American content and service providers -- in other words reinforcing current market power in adjacent sectors rather than creating conditions for competitive innovation in either. This thesis is supported by the conspicuous silence of many of Silicon Valley's largest and most valuable companies in FCC's recent debate over net neutrality. They did not actively support or oppose the rules because they win either way.

11) Welche Rolle kommt im Kontext der Netzneutralität technischen Entwicklungen im Mobilfunkbereich zu (5 G)?

It is a difficult task to speculate on the future of 5G networks that do not yet exist. However, the vision of 5G is that in the future we will have software-defined networks and software-defined radio that work together seamlessly and totally transparent to the user. The other defining feature of the 5G dream is extraordinarily high bandwidth and very low latency. In order to deliver 1GB/s on a smartphone inside a nano-cell with near zero latency, networks will essentially need FTTx everywhere. Robust provisioning of bandwidth will be a necessary foundation for these networks; and such low latency will mean zero congestion. Zero congestion means no prioritization and therefore no need to have a conflict over Net Neutrality. It will simply exist as a default.