18 July 2016

Wilhelm Eschweiler, Chair
BEREC
Zigfrīda Annas Meierovica bulvāris № 14, 2nd floor
LV-1050 Rīga, Latvia

Re: BEREC Guidelines on Net Neutrality, BoR (16) 94

Dear Mr. Eschweiler,

I work at the Center for Communication, Media, and Information Technologies (CMI) at Aalborg University in Copenhagen, Denmark.[1] The mission of CMI, a cross-disciplinary center within the Department of Electronic Systems, is to explore and develop the potential of new converging communication, media and information technologies and associated platforms. Erik Skouby, a leader in developing the research on the 5G society,[2] oversees our institute and my research. One of my teachers is William Melody, regulatory economist and founder of LIRNE.[3] My research focuses on net neutrality policy, and I am one of the few academics who has attempted to measure the economic impacts of the policy across countries. I have not been compensated to prepare these comments, and the views expressed here are my own. Following is a summary of my comments.

- BEREC's guidelines circumvent the democratic process and create new Open Internet rules
- BEREC's guidelines violate the legislation's requirement of technological neutrality
- BEREC's guidelines for specialised services will create confusion and fragmentation
- BEREC's guidelines will deter competitive technological development
- BEREC's guidelines contradict the rights of user choice
- BEREC's guidelines fail on the standards of good policy

Thank you for the opportunity to submit these comments. You can contact me for further information.

Sincerely,

Roslyn Layton
Ph.D. Fellow
Center for Communication, Media and Information Technologies
Aalborg University
A.C. Meyers Vænge, Frederikskaj 12, 3rd Floor
Copenhagen, Denmark 2450

[1] http://www.cmi.aau.dk/
[2] http://www.slideshare.net/IKTPLUSS/knud-erikskouby
[3] http://lirne.net/resources/lirne_leaflet.pdf

Introduction

Today there are some 50 countries with net neutrality rules. These rules cover a range of requirements and prohibitions for telecom operators in the management of their networks. Net neutrality is a concept coined by law professor Tim Wu in a 2003 article[4] which he proposed that the internet should be a "neutral platform" for innovation. He called for user rights to access the content and services of their choice with the devices of their choice. Importantly, Wu noted that telecom operators should "police what they own", that is to say as long as telecom operators provided unrestricted access to the Internet, they could manage their proprietary networks in a prudent way. Wu offers rules about network management that should only be applied only "if necessary". That is to say, Wu's hope is that operators would act in his preferred way without the need of regulation. Importantly, Wu never discussed zero rating or specialized services. He did not even have a smartphone or mobile broadband at the time he wrote the article.

However, today's net neutrality rulemaking is unrecognizable to what Wu's article described. The concept has been appropriated by American Internet companies is effectively a form of corporate cronyism used to limit market entry by new players.[5] Regulators take up net neutrality rulemaking not because of violation, but because of self-preservation. Having succeeded to make competitive markets for telecom markets, they need something new to regulate. "An agency that has been rendered obsolete by exogenous changes in the form of technological development or new marketplace developments will find that it must provide favors to discrete constituencies in order to preserve some measure of support for its continued existence,"[6] noted Yale University scholars in "Reflections on Professional Responsibility in a Regulatory State" some 20 years ago.

To date, countries with net neutrality rules use either soft or hard measures. Soft measures are voluntary agreements by telecom operators to uphold certain principles through instruments such as self-regulation, codes of conduct, principles, and so on. Soft measures can involve oversight by telecom regulators as well as multistakeholder dialogues.[7] Historically, the countries with a long record and success with net neutrality, as measured by the level of internet innovation and lack of violation or litigation, have used soft measures. These countries include Denmark, Sweden, and Norway, Japan, South Korea, Switzerland, and the United Kingdom. Incidentally these countries are frequently praised by Internet activists for high quality broadband.[8] Moreover soft measures most closely align to Tim Wu's article for net neutrality.

---

[4] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=388863

[5] http://www.theatlantic.com/politics/archive/2014/09/netflix-has-replaced-google-as-the-face-of-net-neutrality/456822/

[6] Jonathan Macey & Jeffrey Miller. Reflections on Professional Responsibility in a Regulatory State. Yale Law School Legal Scholarship Repository, 1995. http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=2445&context=fss_papers

[7] For a policymaker's guide to this approach, see http://www.aei.org/wp-content/uploads/2016/06/Beyond-net-neutrality.pdf

[8] Susan Crawford, "Why Can't We Be Like South Korea? When Internet Access Is Slow or Just Nonexistent in the US, We Shrug Our Shoulders. But in That Small Asian Nation, Lousy Connections Are Not Tolerated.," *Medium*, July 23, 2015, https://medium.com/backchannel/why-can-t-we-be-like-south-korea-58d8d702030d. Danielle Kehl, Robert Morgus, and Sarah Morris, "The Cost of Connectivity 2014 - Data and Analysis on Broadband Offerings in 24 Cities across the World," *New America*, October 30, 2014, http://www.newamerica.org/oti/the-cost-of-connectivity-2014/. Rick Karr, "Why Is European Broadband Faster and Cheaper? Blame the Government," *Engadget*, June 28, 2011, http://www.engadget.com/2011/06/28/why-is-european-broadband-faster-and-cheaper-blame-the-governme/. Tom Geoghegan and Washington, "Why Is Broadband More Expensive in the US?," *BBC News*, October 28, 2013, http://www.bbc.com/news/magazine-24528383.

Hard measures are promulgated either through legislation or regulation. These measures are binding, include prohibitions on specific traffic management practices, ban certain kinds of partnerships between telecom operators and content providers, and proscribe harsh punishments. The countries with hard rules include those in Latin America, Netherlands, and Slovenia.

My forthcoming research investigates soft and hard net neutrality rules by studying the mobile apps of two similar European countries Denmark and Netherlands. These countries are similar in broadband measures and socio-economic factors. However Denmark opted for soft rules in 2011 while Netherlands imposed hard net neutrality in 2012. Some 5 years hence we find that Denmark has succeeded to create and export apps whereas local Dutch content and app development has declined. In fact, the largest Danish app (launched in 2013 after soft rules were in place) earns more revenue, traffic, and downloads than the top 20 Dutch mobile apps combined. The difference is that the Danish marketplace allows commercial freedom for any actor in the marketplace to partner with any other, whereas the Dutch model limits the ability of firms to partner and innovate. American-made content and apps take an even greater portion of the Dutch Internet today than they did 5 years ago. It is hard to believe that Tim Wu's goal was for countries to surrender their ecosystems to the USA, but that is effectively what hard net neutrality does by prohibiting the ability of local actors to partner to meet the marketplace.

BEREC guidelines circumvent the democratic process and create new Open Internet rules

Article 5 of the legislation explains that BEREC's role is confined to supervision and enforcement with some reporting requirements. The legislation does give some leeway to National Regulatory Authorities, "For those purposes, national regulatory authorities may impose requirements concerning technical characteristics, minimum quality of service requirements and other appropriate and necessary measures on one or more providers of electronic communications to the public, including providers of internet access services."

BEREC introduces new terms and associated provisions not found in the legislation; these detailed provisions on zero rating, specialized serviced, and traffic management essentially deliver the very amendments that were rejected by the EU Parliament. Evidently BEREC sees its role not to supervise and to enforce but to "interpret" the statute to create the policy it wants. As such, BEREC effectively writes new rules. This does not appear to be lawful.

BEREC's guidelines for zero rating will create litigation in EU member states

BEREC proposes a zero rating assessment criteria as follows

- Whether the zero rating circumvents the Regulation and its general aims
- the market positions of the ISPs and CAPs involved
- the effects on consumer and business customer end-user rights
- the scale of the practice and the presence of alternatives
- the effect on freedom of expression and media pluralism (ref. Recital 13).

In thinking about telecom regulation, the starting point should be whether there is any consumer harm. To be sure, the questions of the relative market positions of firms and service alternatives are important, and such analysis is justified *after* there is evidence of problem. As for whether zero rating circumvents the aim of the regulation, there is a strong argument that zero rating *fulfills* the aims of the legislation, namely "to guarantee the continued functioning of the internet ecosystem as an engine of innovation." As for Recital 13 and the issue of media pluralism, this is not appropriate for BEREC to make such explicit guideline criterion when the statute does not state such requirements, and only anecdotally refers to other legislation. The proposal that NRAs scrutinize every zero rating in the marketplace is untenable. Should such criteria be adopted, it will herald the regulatory overreach and litigious environment that has characterized Slovenia for the last 18 months.

Throughout the guidelines there appears to be a misunderstanding about the word "discriminate" when it comes to price differentiation. There is a secondary definition of discrimination which has to do with prejudice, for example "an employment policy that discriminates against women". However, the primary definition is to recognize a distinction, to differentiate, or to perceive differences, as in "babies can discriminate between different facial expressions."[9] The economic concept of "price discrimination" is predicated upon this primary meaning. When a vendor can perceive differences between two or more customers, then it may be possible to charge them different prices for the same product (price discrimination) or to customize the product offered to each in a manner that reflects the difference (product differentiation). If the customized products impose different expended or expected costs on the vendor, then charging different prices does not constitute price discrimination.[10]

If any institution is in a position to understand zero rating and differential pricing, it is the telecom regulator. The very history of telecommunications regulation is about enabling differential pricing for telephone service. Price differentiation has existed for decades in local calling versus long distance, in interstate versus intrastate communications, in business versus consumer services, and in low versus high-volume users. If net neutrality advocates support that the Internet should be a public utility like the telephone network, then it is ahistorical and illogical that differential pricing should not be applied to the Internet, especially if the goal is to make it affordable for the maximum number of users.

One of my academic contributions is to help shed light on the lack of evidence in the debate for zero rating.[11] Last week the Slovenian court struck down bans on zero rating by the telecom regulator Akos. As I detailed in my paper, zero rating has been used in various forms by Slovenian telecom operators since 2007. There was no fanfare until July 2014 when the country's leading telecom consumer advocate complained that mobile prices were too low and that zero rating violated the country's net neutrality law. The complaint was submitted both to the telecom regulator Akos and the competition authority, which offered a detailed assessment noting that zero rating is the outcome of the country's competitive mobile market.

The Slovenia Competition Protection Agency responded to the complaint in September 2014 and noted that concerns about discriminatory traffic management are lower in a transparent and competitive environment

[9] "Discriminate - Definition of Discriminate in English from the Oxford Dictionary," accessed June 27, 2016, http://www.oxforddictionaries.com/definition/english/discriminate.
[10] Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4 edition (Boston: Pearson, 2004).
[11] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587542

such as Slovenia's, where the mobile market has 3 network providers and is increasingly competitive. The competition authority notes that zero rating reflects fierce competition in the mobile marketplace and that such offers are in fact "the fruit of competitive advantages and therefore increase efficiency and bring consumers the benefits (i.e. cheaper cinema tickets for students). Thus price discrimination increases the availability of the product to more cost-sensitive consumers and ensures an overall increase in sales volume, thereby lowering average the overall costs and increasing efficiency." It also noted how vertical integration can bring benefits to consumers. The ability to make exclusive offers also incentivizes operators to purchase spectrum and invest in networks.

The Competition authority did not recognize any abuse of market power, but suggested how a test could be performed to assess harm. It estimated that such offers amount to a few cents on a monthly subscription, a negligible amount of data. It noted that consumers have ample freedom decide what kind of content they want and that intervention is necessary only in cases where economic analysis shows that the injury to the consumers outweigh the benefits to consumers. Separately, the research reveals that zero rated applications did not experience an increase in rank among mobile applications; many experienced a pronounced decline.

The telecom regulator did not respond until some months later, after what appeared to be pressure created by the activist and the country's leading telecom journalists in a series of articles. In January 2015 Akos issued a series of rulings on zero rating, banning free Slovenian content, customer service applications, a Slovenia-based cloud service, and Deezer. Further, this was all done while approving the zero rating of the incumbent's proprietary cloud service, HBO-Go, and the European soccer championship, for which the state-owned incumbent purchased the broadcasting rights. The Slovenia's telecom operators sued Akos, claiming that various bans on zero rating were not only arbitrary and capricious, but violated the nation's network neutrality law. Akos argued that net neutrality equates to prohibitions on price discrimination and thus zero rating is illegal.

The net neutrality law in Slovenia was created primarily for theoretical and ideological reasons, not because of evidence of harm.[12] Lawmakers rejected a provision that outlawed price discrimination and promulgated the law on December 31, 2012.[13] The court reiterated the Slovenian net neutrality law in its decision, saying that "network operators and Internet service providers must preserve the open and neutral nature of the internet. Thus they must not restrict, delay or slow down Internet traffic at the level of individual services or applications." But it ruled that the definition does not constitute a prescription for the financial treatment of traffic. The court explained, "The non-charging of transfer of certain data does not constitute a breach …nor can it be regarded as a restriction, restraint, or slowing down Internet traffic at the level of individual services or applications. Nor can it be equated with the prohibition of equal treatment and positive price discrimination cannot be extracted by any interpretative method."

[12] "Posvet v Zvezi Z Osnutkom Predloga Novega Zakona O Elektronskih Komunikacijah," *Ministrstvo Za Visoko Šolstvo, Znanost in Tehnologijo*, November 10, 2011, http://www.arhiv.mvzt.gov.si/si/delovna_podrocja/informacijska_druzba/elektronske_komunikacije_in_posta/javne_obravnave_predlogi/arhiv/.

[13] Article 203 of the Electronic Communications Act (Official Gazette of the Republic of Slovenia, Nr. 109/12, 110/13, 40/14 – ZIN-B and 54/14 – CC dec.)

The court noted that price discrimination is allowed in net neutrality law and that the competition authority's explanation of the practice confirmed the correctness of the the operators' arguments. BEREC's guidelines will set up member states on a path for inevitable litigation that has taken Slovenia 18 months to resolve. The guidelines for zero rating should be removed in favor of ex post competition law.

BEREC's guidelines violate the legislation's requirement of technological neutrality

Essentially the guidelines BEREC proposes wants to wall off all digital innovation to the confines of the internet. It does not want to allow innovative services to emerge on operator-owned facilities even though there are good reasons to provider them there, namely the ability to assure better quality, security, and privacy. This effectively denies users choice and innovation.

Article 1, Recital 2 of the proposed BEREC guidelines States:

> *"The measures provided for in this Regulation respect the principle of technological neutrality, that is to say they neither impose nor discriminate in favor of the use of a particular type of technology."*

However, upon examination of said measures, one finds a consistent effort to indirectly define Internet technology through a context of extreme limitations and penalties.

Firstly, the proposal states in Article 3(3):

> *"Providers of internet access services shall treat all traffic equally, when providing internet access services, without discrimination, restriction or interference, and irrespective of the sender and receiver, the content accessed or distributed, the applications or services used or provided, or the terminal equipment used."*

An enormous contradiction lies in the assumption that treating all traffic equally results in non-discrimination of applications or services. Nothing could be further from the truth. All applications do *not* have equal traffic requirements. Thus, treating all of their traffic equally is, in reality, a form of unjust discrimination against specific applications with tighter performance requirements. In such a situation, it is not the most innovative product which "wins". An environment of equal traffic treatment only rewards particular applications, with particular performance requirements, expressing particular network usage patterns.

For example, a best-effort system that treats all traffic equally favors text-based messaging apps, while disadvantaging VoIP and real-time video. To conclude simply that because traffic is treated equally, thus then follows that the probability of diverse application outcomes for the user are equally distributed, is to embrace an erroneous cause-and-effect-relationship. We must keep such ill-conceived rationalizations out of the broadband discussion. Packets are also not people,[14] and we should not confuse the differential treatment of bits as inherently unjust. To truly serve citizens is not to simply bend to the whims of those professing a

[14] Martin Geddes "Network neutrality: nasty or nice?" last accessed July 17, 2016 http://www.martingeddes.com/think-tank/network-neutrality-nasty-nice/

requiem of elementary measures of packet "equality" or dumb capacity; It is to allow network operators to *engineer for outcomes.*[15]

Furthermore, attempts to limit the Internet to equal traffic actually *goes against the very design of the internet protocol itself*. If one consults RFC 791[16] (the definition of the IPv4 protocol) Section 1.2, one shall find the following:

> *"The internet protocol is specifically limited in scope to provide the functions necessary to deliver a package of bits (an internet datagram) from a source to a destination over an interconnected system of networks. There are no mechanisms to augment end-to-end data reliability, flow control, sequencing, or other services commonly found in host-to-host protocols. The internet protocol can capitalize on the services of its supporting networks to provide various types and qualities of service."*

In other words, the Internet Protocol was designed with no traffic guarantees, intended to work over a system of supporting networks which provide a variety of types of service with varied quality characteristics. Network operators are now trying to develop and offer assurances and quality options to their customers, as is prescribed in the design of the Internet Protocol. However, a regime of network neutrality promises to prohibit such options, resulting in non-assured and unguaranteed internet services as the *only* option for consumers. This disconnect is further exacerbated as networks transition to IPv6, as the design of the IPv6 protocol expands upon such capabilities by also allowing optimization of particular packet "flows"[17].

Any such rulemaking with a stated goal of treating all traffic equally not only favors particular applications and unquestionably inhibits customer choice, but such is also in direct conflict with the design and intended operation of the Internet Protocols.

Finally, Article 6 (Penalties) of the BEREC guidelines states *"The penalties provided for must be effective, proportionate and dissuasive."* To effectively dissuade the use of any particular network functionality through implementation of penalties is blatantly *not* technology agnostic behavior. Any claim that an entity can restrict and penalize specific network technical functionality in a technologically neutral manner is, on its very face, absurd. Such measures indisputably define the technology, with very real functional ramifications.

BEREC's guidelines for specialised services will create confusion and fragmentation in the member states.

The proposed BEREC guidelines regarding specialised services are a grotesque display of overregulation, containing undefined (and likely undefinable) measures which may be applied unevenly. Such practice would be in great detriment to the stated goal of a "digital single market". Such ex ante proposals create complexity and problematic management.

---

[15] Martin Geddes "Economics of bandwidth" last accessed July 17, 2016 http://www.martingeddes.com/think-tank/economics-bandwidth/

[16] John Postel (editor) "INTERNET PROTOCOL DARPA INTERNET PROGRAM PROTOCOL SPECIFICATION" RFC 791 (September 1981) http://www.ietf.org/rfc/rfc791.txt

[17] S. Deering, R. Hinden "Internet Protocol, Version 6 (IPv6) Specification" RFC 2460 (December 1998) http://ietf.org/rfc/rfc2460.txt

The language in Article 3(5) requiring that the alternative services must be "optimised for specific content, applications or services, or a combination thereof" and that such optimisation is "objectively necessary in order to meet requirements for a specific level of quality". What exactly, one must ask, is "objectively necessary optimisation"?

Furthermore, the measures state a condition that "the network capacity is sufficient to provide the specialised service in addition to any IAS provided." How does one create a benchmark of "sufficient capacity" in a shared-capacity system, especially one operating in a context of rapidly morphing traffic patterns? The introduction of just a single application or service can vastly alter customer usage behaviours.

Lastly, the proposal relies on NRAs for assessment of specialised service conformance. Such an approach can, and will, result in distinct specialised services support in some countries, but not in others. That is a broken service model. Applications and services may end up being shopped to countries based on prospective support for their individual app being classified as a specialised service. What happens when a specialised service approved in one country crosses a national border to an area that does not share the opinion of a specialised service being "objectively necessary"? Moreover, there is an inherent conflict of interest in the judging of specialised services which are provided by network operators that are direct agencies of the government versus private providers.

The costs of overregulation and compounding regulation from years of failing update is communications laws are not benign. The European Commission recognized this in 1999[18] and it still hasn't been resolves. A review of the literature of the impacts of economic regulation (price controls, market entry conditions, production obligations, the regulation of contract terms etc) in the telecommunications sector show a the detrimental impact of telecom regulation to innovation.[19] Outdated regulation creates a dead weight loss in the economy as resources are diverted to regulatory compliance and away from welfare-enhancing innovation. A study across all major industries from 1997-2010 found that less regulated industries outperformed overregulated ones in output and productivity and grew 63 percent more. Overregulation increases barriers to entry for entrepreneurs, which slows economic growth. [20] Moreover outdated regulations "crowd out" efforts" to create new and better systems.[21]

Ex ante regulation of specialised services creates more problems than it solves. Harm from specialised services, even if it arises, can be left to competition law.

[18] European Commission, 1999, A New Framework for Electronic Communications Services COM, 539 final, 10.11.1999, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l24216.
[19] Luke Stewart, "The Impact of Regulation on Innovation in the United States: A Cross," *Information Technology & Innovation Foundation,*, June 2010, http://www.itif.org/files/2011-impact-regulation-innovation.pdf. See p. 18
[20] Patrick McLaughlin and Richard Williams, "The Consequences of Regulatory Accumulation and a Proposed Solution | Mercatus," *Mercatus Center*, February 11, 2014, http://mercatus.org/publication/consequences-regulatory-accumulation-and-proposed-solution.
[21] Ibid

BEREC's guidelines will deter competitive technological development

Perhaps most troubling, is the second subparagraph of Article 3(5):

> *"Providers of electronic communications to the public, including providers of internet access services, may offer or facilitate such services only if the network capacity is sufficient to provide them in addition to any internet access services provided. Such services shall not be usable or offered as a replacement for internet access services, and shall not be to the detriment of the availability or general quality of internet access services for end-users."*

Such implies that any attempt by a user to purchase network service to replace the inadequate functionality provided by vanilla best-effort Internet Access Service would be prohibited. Such is a preposterous notion that no network innovation can provide a better Internet experience than the Internet technology we currently use.

Network technology is being fiercely developed, globally, to meet the needs of new, interactive, multimedia demands on the internet. Any restrictions at this stage, will hinder EU technological network development, and related network expertise. New network designs will be forbidden or die in regulatory exhaustion, regardless of promise, for the sole sake of historical Internet technology preservation. The EU will undoubtedly find itself surpassed as other countries research and develop novel networks and creative capacity allocation solutions for their designated portions of the Internet.

BEREC's guidelines contradict the rights of user choice

Obscenely, there is a deep contradiction with stated goals of the proposal. Recital 7 speaks of end-users having rights "to access and distribute information and content and to use and provide applications and services of their choice". However, nearly all of the measures contained in the BEREC proposal ultimately contradict the goal, by restricting and/or eliminating user choice.

Treating all traffic equally

The proposal expresses that it is a "basic principle" of the Regulation to "treat all traffic equally when providing IAS." Such is most likely based on a flawed logical construct in which all applications, when treated equally by the network, are believed to thus *perform* equally. Unfortunately, reality is not that simple. The diverse field of users, networks, and applications requires fluid abilities to allocate and shift network variables *to fit the specific needs of the application and the user*. As discussed earlier, treating all traffic equally inherently favors particular applications, while disadvantaging others.

Furthermore, even when network operators are allowed to provide different QoS groupings of so-called "alike" situations to receive "similar treatment", such does not allow for increased granularity of service customization. QoS groups or classifications can only offer rough, approximate profiles of traffic treatment, whereas every application has its own distinct performance requirements. In addition, the Internet is global, with end-to-end quality of experience being the ultimate determinant of quality. Therefore, per-hop, and thus per-category performance requirements can change based on the distance the traffic is required to travel. Performance is also dependent on the capabilities and characteristics of every particular network it must traverse. Simple QoS groupings, while definitely possessing the potential to improve performance, are not the

last play of the Internet quality game. There is much room for further research and development which does not fit within the constraints of these proposed regulations. The proposed measures greatly inhibit development, and thus the current and future service choices of users.

Not monitoring specific content p. 17
Banning traffic management based on assessments derived from content monitoring is also user-choice folly. In many cases, especially in a complex variable system, the best way to serve users is through auto-detection and auto-configuration. Consumers are not network engineers, and thus algorithms which can analyze an individual user's traffic to dynamically fit their network services to the applications which they are using would be extremely useful. The consumer can just turn on their device, and use it to satisfaction without being forced into complex configuration of traffic parameters, per-packet-flow or per-application. Such are innovative possibilities which, in an environment under these regulations, cannot and will not develop.

No Blocking, slowing down, alteration, restriction, interference, degradation, or discrimination between specific content, applications, or services.
Once again, we see a failure of vision in the proposal. There are countless reasons a user may *want* an ISP to take such actions, on the user's behalf. A short list of potential uses, all which may be banned by the language contained in the Regulation proposal:

- Blocking of specific, regional, or global endpoints from communication with equipment configured with the user's IP Address.
- Blocking excessive, undesired content.
- Slowing down traffic based on a user's particular time-sensitivity.
- Slowing down less important (to the user) traffic to ensure capacity for more important applications.
- Altering fonts or color schemes of content to a user's particular presentation wants or needs (colorblindness, poor eyesight, etc.)
- Altering text for regional compatibility, Internet-wide translation services, or shorthand to conserve data usage.
- Any restriction or interference with content the user deems undesirable or problematic.
- Degradation in traffic timeliness can be a byproduct of ISP services useful for user-desired enhanced security. Users on future networks may request a secure store-scan-forward or extra layers of encryption on a per-app basis.
- Degradation of the timeliness of general application background traffic (when the app is not in actual use) in scenarios without real-time concerns could potentially free up network capacity scheduling opportunities for more time-sensitive uses.
- Discriminating (justly) between applications or content during extreme traffic anomalies, as a way to maintain a base level of communication capability/usability of a particular information app.

Specialised Services
Finally, the specialized services definition, while giving the appearance of increasing user options, actually restricts them. Users do not care about what the EU designates as a particular underlying network service, they only want their applications to function appropriately. By forcing specialized services to be beholden to increased regulation, scrutiny, and arbitrary judgement, the government is creating a dis-incentive to network

support of the full set of individual application idiosyncrasies. The enhanced regulation of such "specialised services" ultimately affects user-choice by dictating exactly which choices are allowed to be offered. Any functionality which cannot be offered, axiomatically cannot be chosen by the user.

BEREC's guidelines fail on the standards of good policy

To bring quality control to the guidelines, the following checklist will help BEREC determine that its guidelines conform to the standards of good policy. The items to check for include whether the guidelines are

- Aligned with national laws and institutional goals
- Based on rational, comprehensive data and evidence—both quantitative and qualitative
- Clearly states the reasons why it's needed and the proposed outcome
- Provides a framework for achieving the outcome
- Concise, clearly communicated and widely understood
- Creates value and benefits with measurable outcomes
- Monitored, evaluated, and reviewed regularly.

It bears mention that extreme versions of net neutrality are being challenged in a number of countries. Slovenia just struck down bans on zero rating. Litigation in the US will likely continue. This letter explains that BEREC's guidelines appear to contravene the EU legislation on a number of fronts. As such, BEREC is wise not make guidelines that violates **national laws and institutional goals**.

BEREC's premise of evidence for net neutrality amounts to its survey of disclosures for traffic management from 2011.[22] While it was a good step to conduct the survey, BEREC did not perform (or to the extent that it was made public) any checks to whether the restrictions occurred. BEREC then extrapolated "discrimination" based upon the contract language. A lot has changed in the market for internet access service in 5 years. BEREC should at least update its knowledge before it makes sweeping guidelines.

With a **rational data collection process to gather evidence**, BEREC could gain some credibility for its policy. However, the process to do so will likely uncover that the ecosystem is competitive and that proactive net neutrality rules are not needed. I believe this is why regulators don't use evidence to promote network neutrality policy, because there is none. See the comments from former FCC economist Tim Brennan who called the FCC's Open Internet rules an "economics free zone", because the FCC did not include any economic analysis in its rules. Brennan has updated his comments to say that the order was "wrong, unsupported, and irrelevant."[23]

BEREC did conduct a user survey[24] which offered a number of interesting and nuanced interpretations, but a key takeaway was that people stop caring about net neutrality when it means they have to pay more for

[22] http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/45-berec-findings-on-traffic-management-practices-in-europe
[23] http://www.freestatefoundation.org/images/Is_the_Open_Internet_Order_an_Economics_Free_Zone_062816.pdf
[24] http://www.wik.org/fileadmin/Studien/2015/2015_BEREC_Summary_Report.pdf

broadband service. BEREC guidelines are so obtuse that it is impossible to map them back to the user issues described in the survey.

One of the failings of the network neutrality advocates is the inability to define a clear vision of what should change when rules are in place. "Without Net Neutrality, the next Google would never get off the ground,"[25] observes Save the Internet, a leading global advocate for net neutrality. If we take them at their word, we should see the next Google emerge from countries with hard net neutrality rules. But it never has. The fact of the matter is that the world's internet traffic is increasingly concentrated to a few destinations. Countries with hard net neutrality rules experience an increase in the market share of the largest providers such as Google and Netflix. Moreover, as my research shows, local content and app development declines. As such, BEREC needs to provide a **concise, clearly communicated, and widely understood** reasoning for why it needs such a policy that effectively bars market entry of competitors, denying them the ability to differentiate. If BEREC creates guidelines that neither forbid nor allow a practice, then it fails on this standard.

If the telecom regulator can make a coherent policy based one evidence with a supportable goal, then it should be able to **provide a framework for achieving the outcome and measure the value and benefits created by the policy.** That is utterly absent here.

There is no doubt that regulators excel in increasing the paperwork required of telecom operators, but it should be mindful and consider that any new rules are not burdensome. For example, the FCC Open Internet rules in the U.S. fall especially heavy on small providers. One estimation is that one man-year of paperwork is required to comply. This puts small providers out of business, the opposite of the stated goal of creating competition.

A good set of guidelines would clearly state the reasons why it's needed and the proposed outcome but BEREC guidelines come nowhere near to the stated goals of the EU policy, a guarantee of human rights and a guarantee of the Internet as the engine of innovation. If BEREC were forthright, it would tell the EU that these goals are outside of its remand. In any case, BEREC's guidelines are overreach. One has no idea what an open neutral network is supposed to look like, other than what appears to be protectionism for Google and Netflix.

The guidelines should **provide a framework for achieving the outcome**. It is not clear what the outcome should be, and the guidelines are both vague and complex.

The guidelines should create value and benefits for people with measurable outcomes. It appears that this standard will be utterly absent. There is little value created with these guidelines other than more work for regulators, lawyers, and regulatory compliance staff. To be sure, some value will be created for established Internet companies. It would be interesting if BEREC could report on how the guidelines improve the shareholder value of the American firms which will benefit.

[25] Press F. Net Neutrality: What You Need to Know Now [Internet]. Free Press. [cited 2016 Jun 20]. Available from: http://www.savetheinternet.com/net-neutrality-what-you-need-know-now