FreeByte

July 17, 2016

RE: **Draft BEREC Guidelines on implementation by National Regulators of European net neutrality rules**

Comment Paper Focus:

(1)   **Mechanical advantages of toll-free / zero-rated autonomous apps as compared to in-network toll-free / zero-rated methods; and**

(2)   **The vital need to preserve <u>ECHR Article 10 (freedom of expression)</u> protections pertaining to the creation and use of non-carrier autonomous software applications facilitating lower cost or free data connectivity**

FreeBand Technologies, Inc. thanks you for the opportunity to submit comments on the Draft BEREC Guidelines on implementation by National Regulators of European net neutrality rules.

FreeBand Technologies, Inc. is the creator of the FreeByte subsidized data platform, the world's first system of autonomous, subsidized data software **applications**. Our work commenced in 2010 in Silicon Valley and we have introduced our technology to market participants in China, India, the US, and EU over the past six years[1]. During this time, we have been deeply involved in not only developing the technical features needed to deliver subsidized data to those in need of affordable connectivity, but have paid particular attention to satisfying key social benefit imperatives in the provisioning of subsidized data to those persons who would benefit from such, and have done so from a technology, legal, public policy, and economic perspective.

As such, we would like to share our findings on these matters and assist BEREC in formulating guidelines that are in the shared best interests of government, business, and citizen stakeholders, irrespective of whether the online experiences relate to information retrieval, education, entertainment, personalized services, healthcare, commerce, government access, or otherwise.

Specifically, we will put forth what we believe to be the **optimal[2] manner in which to offer subsidized data** (as noted above, taking into consideration issues relating to

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[1] A complete description of our technology is available on our website (www.freebyte.me) and via patent disclosures published by the respective patent offices of China, India, the EU, and the US.

[2] As an early advocate of global subsidized data as a means of closing the digital divide and enfranchising those who have traditionally not had meaningful access to connectivity (*e.g.*, the unconnected / the under-connected), we are aware of several types of data subsidy that might satisfy the multiple needs of stakeholders. However, there will be, by definition, a single implementation that is optimal in terms of satisfying the needs of the greatest number of market stakeholders.

technology, law, public policy, and economics) and in the process provide feedback relating to issues set forth in the BoR (16) 94.

Core Assumptions – Types Of Subsidized Data Frameworks To Be Prohibited

As a starting point for our recommendation, it is important to establish certain core assumptions pertaining to establishing and maintaining "subsidized data"[3] frameworks. Based on our many years of analysis and development in the field of subsidized data, we believe the following core assumptions can serve as important legal and policy tests for what types of subsidized data framework are likely to violate the stated prohibition of discriminatory connectivity practices. And while these assumptions are not drawn literally from the language of EU regulations pertaining to the prohibition of discriminatory connectivity practices, they are consistent with the spirit and intentions of such regulations.

• Prohibition One: Any instance where the Internet service provider ("ISP") has the ability to arbitrarily or in a biased manner decide which online content and/or services (whether accessed through traditional web pages, native apps, or analogous) are afforded "subsidized data" status. By way of example, an ISP that approves one or more content provider(s) for subsidized data status while denying other similarly situated content providers of such status would be presumptively arbitrary absent a compelling and rationally related justification for such denial (obscene content, hate speech content, etc.). In contrast, an ISP that offers similarly situated content providers access to subsidized data status on fair and equal terms (*e.g.*, the ISP offers identical commercial terms for the provisioning of equivalent subsidized data experiences to all similarly situated content providers for use by their end users) would not be deemed an arbitrary action on the part of the ISP.[4]

• Prohibition Two: Any instance where the ISP offered a subsidized data status to any one or more of its own online products or services ("ISP products") on more favorable terms as compared to other similarly situated providers of non-ISP products or services.

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[3] For purposes herein, the term "subsidized data" shall be used to avoid the confusion surrounding various and often conflicting definitions pertaining to "toll-free data", "zero-rated data", "1-800 data", "free data" or analogous technology and/or business model titles, whether such relates to the provisioning of full subsidy or partial subsidy of data. The key factor in the analysis herein pertains to the fact that a quantum of data consumed by the end user (*e.g.*, the consumer) is being fully or partially subsidized by some third-party to the end user, irrespective of whether such subsidy is provided by the subsidizer so as to foster their own commercial, governmental, and/or societal objectives in the field of communications or otherwise.

[4] For purposes of this paper, the term "gatekeeper" and "gatekeeping" will be avoided as the terminology often has both distorting positive and negative connotations based upon the perspective of the reader. For instance, gatekeeping is a proper function of an ISP in the sense that they have a duty to protect the public from harmful experiences (*e.g.*, obscenity, hate speech, violence inciting online content). On the other hand, a gatekeeper may wrongly and discriminatorily exclude worthy and deserving entities from participating in a particular online market by virtue of its ability to manage fair and unobstructed access to the ISP network. Instead, the author herein will focus on the issues in terms of whether they exhibit motivations, features, and/or results that are (a) "arbitrary" vs. "rationally related", (b) "fair" vs. "discriminatory", (c) "ISP influenced" vs. "end user determined", or (d) "non-transparent" vs. "transparent".

- <u>Prohibition Three:</u> Any instance where the ISP offered a subsidized data status to one of its key commercial partners, subsidiaries, and/or affiliates ("ISP preferred entities") on more favorable terms as compared to other similarly situated non-ISP preferred entities.

Core Objectives – Features of A Permissible Subsidized Data Framework

In addition to the prohibitory assumptions set forth above, a subsidized data framework should simultaneously achieve the following core objectives if it is to be optimal in terms of fairly and equitably serving all stakeholders.

- A permissive subsidized data framework must be "ISP agnostic" (often referred to as "carrier agnostic") if it is to avoid the prohibitions set forth in the core assumptions set forth above. Of note, technologies should be encouraged that allow the greatest number of ISPs (e.g., mobile and fixed line carriers), online market participants, and consumers to participate in the subsidized data activities by utilizing the same (or substantially similar) means for doing so.

- A permissive subsidized data framework must equally afford application providers (large and small) the opportunity of competing for the patronage of end users by offering to subsidize the data requirements associated with their online offerings (whether related to advertising, services, commerce, content acquisition, or otherwise), and the manner of competition must be transparent to all involved and be resistant to any discriminatory practices (accidental or intentional) of carriers. Similarly, such mechanisms must be end user determined (the consumer has absolute freedom of choice in terms of using or not using a subsidized data service) and such consumer decision process should not be subject to undue ISP influence.

- A permissive subsidized data framework must empower all end users to get connected and stay connected, and foster an improved and continuous bargaining posture *vis-à-vis* those parties that are seeking to engage with these end users online, irrespective of whether the parties seeking the engagement are commercial entities, not-for-profits, government bodies, individuals, or otherwise. This will entail fostering a competitive environment where consumers that wish for third-parties to engage with them may determine what an acceptable competitive relationship entails (*e.g.*, offers of more free data generally, more free data at more opportune times, more free data in more opportune locations).

- The dynamic and interplay between all stakeholders in a subsidized data framework (*i.e.,* the party sponsoring the data, the end user receiving the subsidized data, the carrier, and the regulatory bodies charged with protecting the public interest in mobile and fixed line communication networks) must at all times be absolutely transparent, egalitarian, and based upon end user self-determination and freedom of choice.

Optimal Subsidized Data:
Autonomous, Network Independent, Client Side Applications

Notwithstanding the breadth of the current net neutrality debate, there has been omitted a very important analytical dimension that we would like to set forth and that we would

respectfully ask BEREC to please consider in their current rulemaking process. Namely, that the any permissible zero-rating options also be assessed in terms of two distinct "technical mechanisms":

a) a technical mechanism implemented entirely or partially within the ISP / carrier's formal network (a <u>network-centric</u> solution); or

b) a technical mechanism implemented entirely outside the ISP / carrier's formal network (a <u>client-centric</u> solution).

These extra technical implementation dimensions are important in the analysis for establishing and maintaining an optimal subsidized data ecosystem in that <u>subsidized data operations conducted within the ISP network are by their very nature more prone to ISP bias and undue influence</u>[5] than those analogous operations that are performed outside of the ISP network, instead performed within a client-hosted application (an "app"). **In fact, the advantages of the latter over the former are so compelling that we believe that these dimensions should be included within the core assessment criteria for allowing any data subsidy activity.** As such, a basic summary of the relative strengths of each approach are set forth in the table below:

Key Issues Relating To Subsidized Data	Analysis Of Subsidized Data Provisioning Via	
	Network-Centric Technical Mechanics	**App-Centric Technical Mechanics**
Network Security	*Poor: Subsidized data audit requires significant and repetitive coding of network that may compromise security.*	*Strong: Subsidized data audit takes place within the "four walls" of the app, and therefore there is <u>no coding</u> within the network that would compromise network security.*
Network Scalability	*Poor: Subsidized data audit requires significant and repetitive coding of network that will make scaling across system difficult.*	*Strong: App developers create and maintain their own code base via the subsidized data app, thereby ensuring greatest scalability potential.*

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[5] The author in no way suggests that ISPs / carriers currently engage in bias or undue influence behaviors, but merely points out that the potential is more likely in a situation where the ISP controls the means of providing subsidized data – namely control of the network and invasive insights into consumer data use.

Network Reliability	*Poor: Subsidized data audit requires significant and repetitive coding of network that may compromise quality of service.*	*Strong: Subsidized data audit takes place within the "four walls" of the app, and therefore there is <u>no coding</u> within the network that would compromise network reliability.*
Network Maintenance	*Poor: Subsidized data audit requires significant and repetitive coding of network that will increase costs to the ISP and the communities it serves.*	*Strong: Subsidized data audit takes place within the "four walls" of the app, and therefore there is <u>no coding</u> within the network that would adversely impact the carrier's cost of maintaining the network.*
Network Optimization	*Poor: Subsidized data audit requires significant and repetitive coding of network that will not be responsive to real-time market dynamics.*	*Strong: Subsidized data apps exist as a swarm of independent and competing services, each vying for the engagement of the end user and utilizing subsidized data as the incentive mechanism. This enables a real-time market dynamic that fosters the highest and best use for all data within the network at any given time, benefitting both the ISP and the end user.*
End User Privacy	*Poor: Subsidized data audit requires invasive deep packet inspection (DPI) of online end user activity by carrier.*	*Strong: Subsidized data audit takes place within the "four walls" of the app, and therefore there is no deep packet inspection of online end user activity by carrier.*

End User Choice	Poor: Subsidized data audit requires significant and repetitive coding of network that will limit the number of subsidizing parties willing to support the subsidized ecosystem.	Strong: Subsidized data apps exist as a swarm of independent and competing services, each vying for the engagement of the end user and utilizing subsidized data as the incentive mechanism. This enables an innovative, rapidly evolving, and diverse ecosystem of apps that an end user may choose from.
End User Cost	Poor: Subsidized data audit requires significant and repetitive coding of network that will limit the number of subsidizing parties willing to support the subsidized ecosystem which will in turn limit the savings to be passed on to the end user community.	Strong: Subsidized data apps exist as a swarm of independent and competing services, each vying for the engagement of the end user and utilizing subsidized data as the incentive mechanism. This fosters an ecosystem where the end user has considerable bargaining power vis-à-vis the app provider, resulting in greater amounts of free data accruing to the end user which in turn lowers the overall cost of their online activities.
End User Transparency	Strong: Subsidized data audit will be capable of informing the end user community of the various levels of freeness associated with a particular online service.	Strong: Subsidized data apps will be capable of informing the end user community of the various levels of freeness associated with a particular app-based service.
Data Blocking	Poor: Subsidized data audit enables the ISP to "see" which services are subsidized and which are not, and this information could be used to block data opportunistically.	Strong: Subsidized data apps appear identical to non-subsidized data apps from the perspective of the network, and therefore the ability to identify and block is greatly mitigated with a subsidized data app.

Data Prioritization	*Poor: Subsidized data audit enables the ISP to "see" which services are subsidized and which are not, and this information could be used to throttle data opportunistically.*	*Strong: Subsidized data apps appear identical to non-subsidized data apps from the perspective of the network, and therefore the ability to identify and throttle is greatly mitigated with a subsidized data app.*
Network Agnostic	*Poor: Subsidized data audit is by definition unique to the configuration of the network and therefore will never be agnostic.*	*Strong: Subsidized data apps – like traditional apps -- are not ISP or network dependent. So long as they are configured to the OS of the end user client device they will be able to operate as designed irrespective of platform.*
Equal Bargaining Power Between ISP & End User	*Poor: Subsidized data audit and implementation grants carriers ability to influence the subsidized data process vis-à-vis the end user directly, and will manifest in new ISP data subsidy rights due to existence of contract privity between the ISP and the end user.*	*Strong: Subsidized data apps represent contract privity only between the end user and the app provider, avoiding the accumulation of disproportionate data subsidy rights to the ISP as it is not the immediate provider of data subsidy functions to the end user.*
Market Competition	*Poor: Subsidized data audit requires significant and repetitive coding of network that will limit the number of subsidizing parties willing to support the subsidized ecosystem that will in turn limit the amount of competition inherent within the system.*	*Strong: Subsidized data apps exist as a swarm of independent and competing services, each vying for the engagement of the end user and utilizing subsidized data as the incentive mechanism. This enables a persistent competitive state for all market participants to adhere.*
Market Innovation	*Poor: Subsidized data audit requires significant and repetitive coding of network that will limit the number of subsidizing parties willing to support the subsidized*	*Strong: Subsidized data apps exist as a swarm of independent and competing services, each vying for the engagement of the end user and utilizing subsidized data*

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	ecosystem that will in turn limit the amount of innovation inherent within the system.	as the incentive mechanism. This fosters an environment where app providers will constantly need to innovate to differentiate their offering from competitors (whether engaged in subsidized data or not).

European Convention On Human Rights Article 10:
Freedom Of Expression Protections For Software Application Developers

In addition to the above-cited mechanical benefits of an "app-centric" model for the provisioning of subsidized data, there is another aspect that we believe will be critical to the analysis – the protections afforded by Article 10 of the European Convention on Human Rights pertain to freedom of expression.

ARTICLE 10 -- Freedom of expression

1. Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to <u>receive and impart information and ideas</u> without interference by public authority and regardless of frontiers. This Article shall not prevent States from requiring the licensing of broadcasting, television or cinema enterprises.

2. The exercise of these freedoms, since it carries with it duties and responsibilities, may be subject to such formalities, conditions, restrictions or penalties as are prescribed by law and are necessary in a democratic society, in the interests of national security, territorial integrity or public safety, for the prevention of disorder or crime, for the protection of health or morals, for the protection of the reputation or rights of others, for preventing the disclosure of information received in confidence, or for maintaining the authority and impartiality of the judiciary.

As has been discussed in court cases (*e.g.*, <u>Bernstein vs. United States</u>, U.S. Ninth Circuit) and other opinion pieces[6] for many years, the generally held view is that absent a compelling state interest, governments should refrain from enacting laws that restrict freedom of expression that manifest in the creation and delivery of software code (*e.g.*,

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[6] See "<u>The Legal Regulation of Software Interoperability in the EU,</u>" Boris Rotenberg, 2005, where "...because software constitutes expression in the sense of Art. 10 ECHR. This may come as a surprise, but one should bear in mind that source code is written in a language, and is a form of scientific expression and instructional literature (*i.e.* showing how to produce something). Exchanges in the form of source code amount to a search for 'better' software through deliberation. Like mathematics for mathematicians, source code is the language of computer scientists. Scientific or instructional expression of this kind has always been at the core of the right embedded in Art. 10(1), as exemplified in <u>Handyside</u>, in which the prohibition to disseminate a schoolbook was at stake."

software applications). Of note, it is clear that subsidized data apps are "publications" by unregulated third party software developers and reside on the personal property of the end user, outside the ISP's / carrier's regulated core network. Under Article 10 of the ECHR as currently interpreted, such an app is likely to be afforded the protection of free expression and should not be constrained absent a compelling and accepted state interest. In the alternative, application software coders will be censured in how, where, and with whom they create and distribute their creative works and this in turn could also limit publication freedoms for other forms of written expression.

Further, the author herein has included a quick reference "decision tree" for subsidized data connectivity regulatory analysis as an attachment to this paper.
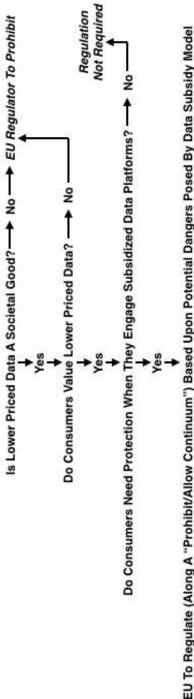
Thank you and kind regards,

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Attachment: *Decision Tree For Subsidized Data Connectivity Regulatory Analysis*

Subsidized Data Connectivity Regulatory Analysis

Is Lower Priced Data A Societal Good? → No → *EU Regulator To Prohibit*

Yes ↓

Do Consumers Value Lower Priced Data? → No → *Regulation Not Required*

Yes ↓

Do Consumers Need Protection When They Engage Subsidized Data Platforms? → No → *Regulation Not Required*

Yes ↓

EU To Regulate (Along A "Prohibit/Allow Continuum") Based Upon Potential Dangers Posed By Data Subsidy Model

Data Subsidy Model 1: "NETWORK-CENTRIC" Provisioning

A. Requires carrier to inspect data flow via deep packet inspection (DPI) — Consumer privacy invasive

B. Carrier knows which apps are subsidized and could potentially prioritize to achieve non-transparent objectives — Potential for consumer abuse

C. In-network data management more costly to implement and maintain — Greater costs to consumer

D. In-network data management is less secure — Consumer vulnerable

E. In-network data management activities rightfully subject to EU regulatory oversight — Regulatory costs

F. In-network data management functions confer new carrier-consumer contract privity rights to carrier — Unequal bargaining power pertaining to app usage

Data Subsidy Model 2: "APP-CENTRIC" Provisioning

A. Carrier not required to perform deep packet inspection (DPI) — Consumer privacy respected

B. Carrier is "blind" as which apps are subsidized and therefore cannot prioritize to achieve non-transparent objective — Consumer fairness preserved

C. In-app data management less costly to implement and maintain — Lower cost to consumer

D. In-app data management is more secure — Consumer better protected

E. In-app data management activities likely outside EU regulatory oversight — Modest regulatory costs

F. In-app functions (not involving carrier consents) do not establish new carrier-consumer contract privity rights — App usage not to be interfered with by carrier

G. In-app functions (not involving carrier consents) a form of software dev free speech — Article 10 protection

Regulatory Continuum

Prohibit ◄ - - - - - - - - - - - - ► Allow

Increasing In-Network Activities *Decreasing (To None) In-Network Activities*