



ELSEVIER

Contents lists available at [ScienceDirect](#)

Telecommunications Policy

journal homepage: www.elsevier.com/locate/telpol

Zero-rating arrangements of mobile Internet access service providers – An analysis of main factors shaping the need for regulatory interventions

Torsten J. Gerpott

Chair of Strategic and Telecommunications Management, Mercator School of Management, University of Duisburg-Essen, Lotharstr. 65, 47057, Duisburg, Germany

ARTICLE INFO

Keywords:

Application providers
Data service pricing
Internet access service
Mobile network operators
Network neutrality
Use-dependent/-independent tariffs
Zero-rating

ABSTRACT

Zero-rating is the practice of providers of radio-based Internet access for moving telecommunication devices of excluding traffic generated by specific online applications from usage counted towards capped allowances or strictly metered tariffs of their end customers. Worldwide and particularly in the European Union (EU), current regulatory frameworks for zero-rating arrangements (ZRA) imply that regulators have to examine on a case-by-case basis whether they prohibit a concrete ZRA or impose restrictions. Such conditions are set because regulators believe that a ZRA runs counter to the interests of end customers or application providers or impedes effective competition between application and Internet service providers. Thus, it is necessary to clarify which case features ought to be inspected in such zero-rating assessments and which feature levels speak against or in favor of regulatory measures linked to ZRA. The present article identifies nine design features of ZRA, three characteristics of customer groups targeted by such offers and three background characteristics of the markets for Internet access services and applications which are of special importance in decisions concerning the need to regulate (to abstain from regulating) zero-rating practices of mobile network operators. The analysis shows that in many instances interests of end customers, application providers as well as of politicians seeking to promote the competitive dynamics on mobile Internet access service and application markets are best served if regulatory authorities tolerate ZRA and control for potential harmful effects after their market launch. Moreover, the study reveals that empirical research on customer reactions to ZRA is urgently required.

1. Introduction

1.1. Background and core characteristics of zero-rating arrangements

In the past years the rapid expansion in global Internet Protocol (IP) data traffic has been widely recognized. In 2017 alone, the worldwide IP traffic originating from fixed devices such as PCs or mobile equipment such as smartphones rose by almost 27% compared to the previous year (Cisco, 2017, p. 31). This trend is expected to continue at least for quite a number of years: According to Cisco (2017), the global IP traffic in fixed networks will grow at an annual rate of 22.4% from 2017 to 2021 to 187.4 petabyte per month at the end of the prediction period. Similarly, Cisco (2017) forecasts that during the same time slot IP traffic that travels over various generations of cellular mobile access networks will soar at a yearly rate of 44.1% to 48.3 petabyte per month in 2021. In 2017

E-mail address: torsten.gerpott@uni-due.de.

<https://doi.org/10.1016/j.telpol.2018.03.003>

Received 5 December 2017; Received in revised form 5 March 2018; Accepted 5 March 2018
0308-5961/© 2018 Elsevier Ltd. All rights reserved.

private households generated about 82% of the worldwide IP data traffic and this consumer share is likely to rise even further in the near future (Cisco, 2017, p. 31).

As a consequence of this demand, operators of telecommunication (TC) networks all over the world are under pressure to design their prices for Internet access services through an intelligent mix of use-independent (“flat”) schedules and use-dependent schemes with various types of data allowances. This mix should not stifle Internet use intensity in the consumer market on the one hand. On the other hand it should support operators in recouping their investments in additional network capacities required to cope with the increasing IP data traffic. *Zero-rating arrangements (ZRA)* are an important type of such advanced pricing strategies for Internet access services.

The common key feature of all Internet access service offers with zero-rating elements is that the data transportation volumes customers generate in the publicly available Internet through the use of *specific applications*¹ selected *a priori* with major participation of TC network operators are not counted against the data allowance/cap already included in the monthly base price customers pay to get access to the Internet. ZRA imply that customers have chosen tariffs with some kind of usage-based pricing mechanisms and capped data allowances. Such rate plans involve throttling the speed in receiving or sending data, complete blocking of access to the Internet or some kind of volume-based price calculation in case that customer data consumption in a billing period exceeds the use allowance included in their tariff (BEREC, 2016; DotEcon, 2017; Marsden, 2017; Rossini & Moore, 2015; Stallman & Adams, 2016). ZRA imply that TC network operators analyze Internet traffic to figure out whether data packets are assigned to a zero-rated application or not. Thus, ZRA are also characterized as an “application-based” pricing approach (Sen, Joe-Wong, Ha, & Chiang, 2012, p. 93).

Customer premise devices not designed for using the Internet *in general* but for accessing a *narrow* range of applications (e.g., networked game consoles, e-book readers) are typically not at the heart of economic policy discussions concerning the need to regulate ZRA or to tolerate them without specific state interventions (cf. Frieden, 2017a, p. 1017; Stallman & Adams, 2016, p. 7). The reason for this is that ZRA bundled with such *specialized* devices are of much less relevance in debates on whether zero-rating practices harm or promote the availability and freedom of end-user choice of Internet applications. Thus, the present article also excludes ZRA tied to single-purpose customer devices. Instead it focuses on programs in the context of *general* purpose equipment construed to access any kind of Internet application (e.g. laptop, tablet, smartphone). Similarly, “earned data plans” are subsequently not taken into account. In such plans, an entity subsidizes the Internet access of end-customers over a limited period of time or with a limited data volume in direct exchange for specific actions performed by the users (e.g., watching an ad, recommending a product) (A4AI, 2015, pp. 5–7; Belli, 2017, p. 108; Galpaya, 2017, pp. 13–14; Sambuli, 2016, p. 70; Stallman & Adams, 2016, pp. 6–7). However, such plans are not a prototypical ZRA because they are application-agnostic. Therefore, they do not share the key characteristic of ZRA, namely to exempt *specific applications* (preselected by TC network operators) from the data allowance of some of a carrier's customers.

To date, there is a dearth of statistically representative studies on the frequency of offers bundling Internet access services with ZRA (supply-side). Similarly, we lack investigations on the adoption of such bundles among consumers (demand-side) in specific national TC markets, let alone across various countries. Instead, the bulk of the literature describes a few case examples of ZRA from a limited set of countries (cf. Allen, Daly, Marcus, de Antonio Monte, & Woolfson, 2017; Carrillo, 2016; CRC Columbia, 2016; Marsden, 2017; Rossini & Moore, 2015; Sandvine, 2017; Yoo, 2017). An exception is a recent market analysis of DotEcon (2017, pp. 5–21, 99–100) contracted by the European Commission. This study finds that in September 2016 various ZRA were widely spread both in the EU member countries and in North America for radio-based mobile Internet access services. Besides, the researchers detected that ZRA for wire-line services were very rare. Furthermore, a BEREC survey of the national telecommunication regulators in the EU suggests that in April 2017 *mobile* network operators (MNO) in 24 (out of 28) EU countries offered ZRA spanning on average three application categories (with music streaming and social media services being the most frequently provided service types) (BEREC, 2017, pp. 7–10). Hence, the evidence indicates that ZRA are much more common for mobile radio-based than for fixed line Internet access service offerings. Therefore, the remainder of the analysis focuses on ZRA for Internet access services based on (2G, 3G or 4G) radio access networks for users on the move – regardless of the fact that most arguments should also hold in the context wire-line access services at fixed locations.

1.2. Purpose of the present investigation

There is no agreement among scholars and practitioners with regard to the necessity of regulating ZRA. One group of discussants highlights that ZRA subtly violate net neutrality principles in the sense of the non-discriminatory transport of all data packets over the Internet without quality deterioration or prioritization of specific applications through measures of TC network operators (Crawford, 2015; Curwin, 2015; Kimball, 2015; McSherry, Malcolm, & Walsh, 2016; van Schewick, 2015). They argue that such rate plans have the consequence that customers mainly focus their use on a narrow set of zero-rated applications. Therefore, ZRA would harm

¹ Application(s) is understood here as a comprehensive term that includes contents and services (e.g., information, entertainment, communication or sales/distribution of any type of other products/services) provided over the Internet. This broad interpretation is advisable because legal documents and zero-rating related publications mostly and vaguely refer to such “content, applications or services” (Art. 1 (1) Regulation (EU) 2015/2120) without clearly separating these three concepts. Cf. Stallman and Adams (2016, p. 1, footnote 3). In line with Art. 2 (1) and Art. 3 (5) of Regulation (EU) 2015/2120, however, in the present work the term application(s) excludes services other than standard Internet access services which are optimized for particular technical requirements and purposes. Such special services are mostly not generally available to the public and are charged in addition to basic Internet access services. At a general level, application providers use electronic transport capacities sold by suppliers of Internet access services.

Download English Version:

<https://daneshyari.com/en/article/6950223>

Download Persian Version:

<https://daneshyari.com/article/6950223>

[Daneshyari.com](https://daneshyari.com)