Nasjonal kommunikasjonsmyndighet

Assessment of the zero-rating offer Telenor Yng «Music Freedom»

English version (courtesy translation)

Norwegian original dated 29 June 2017

Contents

1 Introduction and background

In March 2017 Telenor introduced a telephony product called "Yng" [young], exclusively for people between the ages of 18 and 28. This product includes the zero-rated offer "Music Freedom". This is the second zero-rated service in the Norwegian market, but since the offer launched by Telia / OneCall has been withdrawn from the market, Telenor / Yng is the first zero-rated offer to be assessed by Nkom.

Nkom has received information from Telenor through written correspondence in April 2017 and orally in a video conference in May 2017. The assessments in this report are based on this information and information that Telenor has published on its website.

Nkom has assessed Telenor's "Music Freedom" offer linked to the product "Yng" (hereinafter "Yng / Music Freedom") on the basis of the new net neutrality rules that came into force in Norway in spring 2017. The assessments have been made at an early stage after the introduction of this particular zero-rated offer. Further development of zero-rated offers in the market may necessitate a new assessment at a later date.

As a part of the introduction, Nkom will clarify and define the following key concepts that are used in our assessments.

In this document the term "zero-rating" means a commercial practice where an internet service provider applies a price of zero to the data traffic associated with a particular application or category of applications. This means that data used for the zero-rated content does not affect the consumer's remaining data allowance.[1]

The term "internet service provider" (ISP) means a provider of internet access services (IAS). "Internet access service" means a publicly available electronic communications service that provides access to the internet.[2]

The term "content and application provider (CAP)" means a provider of content and/or applications on the internet. (In other contexts, the term "content and application provider" may also be used to refer to providers of content and applications via specialised services, but this is not relevant in this document.)

1.1 Legal basis

The legal basis for Nkom's assessment of Music Freedom is section 2-16 of the Norwegian Electronic Communications Act on net neutrality, cf. section 2-12 of the corresponding national Regulations, which states that Regulation no. 2015/2120 of the European Parliament and of the Council of 25 November 2015 shall apply as a Norwegian regulation. These provisions came into force in Norway in spring 2017. In this document, Regulation no. 2015/2120 of the European Parliament and of the Council of 25 November 2015 will hereinafter be referred to as "the Regulation".

The Regulation contains common European rules for the regulation of net neutrality. Article 1(1) of the Regulation reads:

"This Regulation establishes common rules to safeguard equal and non-discriminatory treatment of traffic in the provision of internet access services and related end-users' rights."

Article 3(1) of the Regulation shall ensure end-users equal internet access irrespective of their location, equipment and intended use of the internet access. This applies to end-users in the

[1] BEREC Guidelines paragraph 40, cf. section 1.1

[2] Regulation 2015/2120 Article 2, cf. section 1.1

general sense (consumers and private individuals) and to professional end-users (in this context, primarily content providers and/or application providers). Article 3(1) reads:

"End-users shall have the right to access and distribute information and content, use and provide applications and services, and use terminal equipment of their choice, irrespective of the end-user's or provider's location or the location, origin or destination of the information, content, application or service, via their internet access service."

Article 3(2) of the Regulation defines limits for what kind of commercial agreements providers of internet access services can offer. The rule is that these kinds of agreements must not violate the principles of open access to the internet as set out in Article 3(1). Article 3(2) reads:

"*Agreements between providers of internet access services and end-users on commercial and technical conditions and the characteristics of internet access services such as price, data volumes and speed, and any commercial practices conducted by providers of internet access services, shall not limit the exercise of the rights of end-users laid down in paragraph 1."*

Recital 7 in the Preamble to the Regulation clarifies Article 3(2). Here it is stated that end-users should, as a starting point, be free to enter into special agreements with providers of internet access services, including commercial offers from providers, as long as they do not limit the end-users' rights pursuant to the Regulation. It is also stated that the competent authorities should intervene against agreements or commercial practices which, by reason of their scale, in practice reduce the end-users' rights and choices. When assessing whether commercial offers are in violation of the Regulation, the market position both of the relevant ISP, and also of CAP(s) included in the offer, must be taken into account.

It follows from Article 5(1) of the Regulation that the national regulatory authority (in Norway, Nkom) shall monitor compliance with the rules. Since the Regulation is part of the Norwegian regulatory regime on electronic communications (cf. section 2-16 of the Electronic Communications Act, cf. section 1-12 of the national Regulations), Nkom has the authority to perform supervision in connection with the Regulation (cf. section 10-1, first paragraph, of the Electronic Communications Act). If such supervision concludes that there has been a breach of the rules, Nkom is further empowered to issue orders to correct or cease unlawful activities in the form of an individual administrative decision, cf. section 10-6 f. of the Electronic Communications Act).

BEREC (the Body of European Regulators for Electronic Communications) has developed guidelines on the implementation of the net neutrality rules, which include an analytical method for assessing zero-rating practices. The national regulatory authorities in Europe shall use these guidelines ("*take utmost account of*" the guidelines) when interpreting the current net neutrality rules.

1.2 Norwegian net neutrality policy

The bill Proposition no. 157 (2015–2016) states that " *Safeguarding net neutrality is essential in order to ensure good, future-oriented electronic communications services for users throughout Norway and foster industrial development and innovation, and is a prerequisite for further economic, social, cultural and democratic development in modern society. The goal of the work on net neutrality is to ensure that the internet remains a well-functioning, open and non-discriminatory platform for all types of communication and distribution of content.*"[3]

Norway established guidelines on net neutrality in 2009, before the introduction of European rules on net neutrality. The Norwegian guidelines have helped secure access to an open

[3] Proposition no. 157 (2015–2016), section 4.1

internet for users in Norway[4]. By comparison, a major survey of net neutrality in the European market conducted in 2012 found multiple breaches of net neutrality in other European countries.

In 2011, Nkom clarified that the national guidelines apply to both mobile and fixed internet access,[5] and in 2014, Nkom clarified that the national guidelines cover both technical and economic discrimination, and that zero-rating would therefore be in violation of the guidelines.[6] There has previously been no zero-rating of internet traffic in the Norwegian market, in line with the established Norwegian net neutrality policy.

In connection with the replacement of the Norwegian net neutrality guidelines by the EU Regulation and the BEREC Net Neutrality Guidelines, the Norwegian authorities laid down clear policy guidelines in the bill Proposition 157 (2015–2016), stating that, insofar as it is possible within the framework of the EU Regulation, the Norwegian net neutrality policy established through many years' experience shall be maintained.[7]

2 Methodical approach

2.1 Method for assessing zero-rating

The EU Regulation does not describe zero-rating explicitly, but covers zero-rating in connection with "commercial practices", cf. Article 3(2) of the Regulation. The regulatory application of this article is described in paragraphs 30–48 of the BEREC Guidelines, and zero-rating is described in more detail in paragraphs 40–48. These paragraphs also outline a method for analysing zero-rating cases in order to assess the compliance with the rules.

There are many types of zero-rating, which may have a different effect on the end-users' access to an open internet connection. Nevertheless, the BEREC Guidelines state clearly that instances of zero-rating where specific applications are blocked once the data cap has been reached while zero-rated applications can still be used, will be in violation of the traffic management rules in Article 3(3) of the Regulation.[8]

For cases where a zero-rated practice is not in violation of the rules on technical traffic management, the BEREC Guidelines establish a method with assessment criteria for use in situations that require a more thorough assessment.

The BEREC Guidelines refer to various aspects that can be used in assessments of zero-rated offerings, including zero-rating of individual applications as opposed to categories of applications, the compliance with the objective of the Regulation to ensuring the internet continues to function as a platform for innovation, the scale of the commercial practice, and the market position of the providers.[9]

Furthermore, it is specified that the authorities should take into account the extent to which the zero-rating practice limits the end-users' choice. The authorities shall intervene if the end-

[4] Proposition no. 157 (2015–2016), section 4.2

[5] Nkom, 2011, "Internett må være nøytralt!" [*The internet must be neutral!*], http://www.nkom.no/teknisk/internett/nettnøytralitet/internett-må-være-nøytralt

[6] Nkom, 2014, "Nettnøytralitet og takseringsmodeller" [*Net neutrality and charging models*], http://www.nkom.no/aktuelt/nyheter/nettøytralitet-og-takseringsmodeller

[7] Proposition no. 157 (2015–2016), section 4.4

[8] BEREC Guidelines, paragraph 41

[9] BEREC Guidelines, paragraphs 42–44

users' choice is materially reduced, but may also intervene in other cases that entail limitation of the exercise of end-user's rights.[10]

In light of the above considerations, a set of criteria has been established for assessment of commercial practices:

- The market position of the internet service providers
- The market position of the content and application providers
- The impact on the end-users (including freedom of expression and media diversity)
- The impact on content and application providers (including media diversity)
- The scale of the commercial practice
- Circumvention of the aims of the Regulation

A zero-rated service offered by an internet service provider with a strong market position will naturally have a greater range and potential impact. The offer is more likely to have material effects and reach more end-users. The internet service provider's market position will also affect the impact that the zero-rated offer will have on the various content and application providers. The Guidelines specify that the market positions should be analysed in line with competition law principles.

An assessment of the market position of relevant content and application providers will yield insight into the impact of the zero-rating. A content and application provider that has a strong market position will be more able to limit the competition opportunities of other content and application providers. In cases where the zero-rated offer does not apply to individual applications, but rather to an entire category of applications, the same factors may be assessed for similar applications that are not included in the zero-rating scheme.

In assessing the zero-rated offer, the authorities shall, in accordance with the BEREC Guidelines, take into account the effect of the zero-rating on end-users, including consumers and businesses. This includes assessments linked to the impact on freedom of expression or media diversity, and whether the offer increases the end-user's incentive to use certain content and applications. In this context, it must be assessed whether the internet service provider's agreements limits the end-user's choice.

The assessment of the zero-rated offer shall also include an assessment of the impact of the offer on other content and application providers. The Regulation refers to content and application providers as end-users, and it must be assessed whether the zero-rating affects the range, diversity and access to different content and applications. Importance shall be attached to whether a zero-rated offer makes it impossible or more difficult to enter the relevant market.

According to the Guidelines, account shall be taken of the scale of the commercial practice or zero-rating. In connection with this kind of assessment it is relevant to look at the existence of alternative offers with the same provider and whether other internet providers have similar offers. In cases where the practice is of limited scale compared with alternative offers, it is less likely that the practice is in violation of the rules.

As a final criterion, the commercial practice should be assessed against the purpose and goals of the Regulation. For example, discrimination of internet traffic or a practice that might impede innovation on the Internet will be contrary to the purpose of the Regulation.

The criteria in the assessment method described above may, together or individually, entail a limitation of the exercise of end-users' rights, meaning that a commercial practice must be regarded as in violation of the rules on net neutrality.

[10] BEREC Guidelines, paragraph 45

In assessing the impact on the end-users and the impact on content and application providers, the following factors will also be relevant: [11]

- Commercial practices that have an effect equivalent to blocking of traffic are likely to constitute a breach of the Articles 3(1) and 3(2) of the Regulation on the end-users' right to an open internet access.
- Commercial practices that apply a *higher* price to selected traffic are likely to limit the end-user's exercise of his/her rights. However, also the mere *possibility* that higher prices may be applied may discourage the development of new applications.
- Commercial practices with *lower* prices, including zero-rating, will provide an incentive for the end-users to use the zero-rated application and not use other applications. *The lower the data cap, the stronger this effect will be*.
- Price differentiation between *individual* applications is more likely to undermine the purpose of the Regulation to maintain the internet's function as an engine of innovation than price differentiation between different *categories* of applications.

2.2 Methodology for market delimitation

The assessment outlined above requires that the market has been delimited or defined. Determination of a relevant market for a specific product follows a standard procedure in accordance with European and national rules.

A relevant product market comprises products or services (the terms are used interchangeably without a difference in meaning) that are adequately substitutable for the end-user. In this context, purchasers in wholesale markets may also be considered end-users. The starting point for the definition of a relevant product market is an assessment of demand-side substitutability. However, substitutability may also exist on the supply side and may then be relevant in the delimitation of the relevant market.

Substitutability exists on the demand side when in the users' perception two or more products in the market are mutually interchangeable or substitutable on the basis of their characteristics, price and area of use.

Substitutability on the supply side exists when, as a response to a marginal price change, providers of other (non-substitutable) products, can change their production or distribution in the short term and provide substitutable products without incurring significant additional costs or risk.

An acknowledged method of analysing substitutability is known as the "hypothetical monopolist test"[12], in which the aim is to find the narrowest market in which a hypothetical monopolist can exercise market power. This test takes as its starting point a marginal (in practice 5–10%) and non-transitory increase in the price of the relevant product, based on the assumed price level in a hypothetical market with perfect competition and assuming that all other prices are unchanged. Then the effect of the price increase in the relevant market is assessed, and the total effect of the price increase on the producer's revenue is calculated.

This method depends on a significant amount of data, which will often be difficult to obtain. Approximately similar methods may therefore also be used.

In general, market delimitation will be a starting point for discussing possible exploitation of market power. An operator who competes with many other operators will have trouble exploiting market power. For example, it will normally not be profitable to set a high price as

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[11] BEREC Guidelines, paragraph 48

[12] Also known as "SSNIP" (Small but Significant Non-transitory Increase in Price)

the customers can choose to buy from a cheaper competitor. Market delimitation is therefore a matter of determining which other operators, if any, can be regarded as a competitive constraint on this operator's behaviour. To shed light on this, product-related and geographical dimensions must also be considered, in addition to substitutability on both the demand and the supply side.

The operators' market shares form the basis for assessing whether an operator has significant market power. The guidelines that underlie Nkom's ex-ante regulation state, among other things, that if a provider has a stable market share of more than 50 per cent, it can be legally presumed that the provider has significant market power. At the same time, market shares in excess of 40 per cent will normally mean that a provider has significant market power. A market share below 25 per cent will usually preclude significant market power.

In addition, any assessments ought to be supplemented with actual information on behaviour on the supply and demand sides to the extent that such information is available. On the demand side, allowance should be made for the end-users' access to information, the costs of switching and other lock-in mechanisms, among others. On the supply side, account should be taken of a provider's actual opportunity to change production, as well as any regulatory conditions that prevent rapid market entry by competitors in the market.

3 Description of the service offer

3.1 Telenor Yng Music Freedom

Telenor launched the product Yng in March 2017 and introduced Music Freedom as a zero-rated offer linked to this product. Telenor Yng is a mobile subscription for people between the ages of 18 and 28, which, among other things, lets subscribers stream music from certain content providers without this use being deducted from the data allowance included in the subscription. In terms of what happens when the subscriber turns 29, Telenor's customer service department says that "*Nothing happens to your subscription: you keep Yng until you choose to make a change to your subscription.*" Telenor describes the product on its website.[13]

In response to the question of which content providers are included, Telenor writes on its customer service pages that "*Music Freedom currently includes Spotify, Tidal, Google Play Music and Apple Music.*" A subscription with the content provider is not included in Yng, but the data volume used to stream music is not deducted from the data allowance included in the subscription.

In reply to Nkom's letter, Telenor writes that "*In Telenor's opinion, Telenor Yng is an internet access service as defined in Article 2.2 of the Regulation. No priority is made between different content, nor is there any blocking. The requirements laid down in Article 3 of the Regulation are thus fulfilled. Furthermore, since the zero-rating applies to a content category, Yng does not affect competition between content service providers.*"

Telenor also writes in its reply to Nkom's letter:

- "*Yng contains Music Freedom, which involves zero-rating of traffic related to a content category: music streaming services (currently available from the suppliers Spotify, Tidal, Apple Music and Google Play Music).*"

[13] https://www.telenor.no/privat/mobil/mobilabonnement/yng/

- "*Telenor has not considered the market position of providers of the content services, nor is it relevant to Music Freedom. This is a service that zero-rates all traffic within the category as far as this is practicable.*"
- "*On launch, traffic related to the providers mentioned within the category is zero-rated. Telenor will strive to include all providers within the category that are requested by Telenor Yng target group, as far as this is practicable.*"

Regarding what happens once the data allowance is used up, Telenor describes on its customer service webpages that music streaming works "*provided you have data left in your data package*." Telenor continues "*Yng has automatic boosters that are activated if the included volume of data has been used up, so you will never be downgraded or throttled."* and "*It is called Autobooster, and you automatically receive 1GB of data for only NOK 49, in the event that you run out*."

In addition, in its reply to Nkom's letter, Telenor writes: "*Autobooster works such that Yng is in fact a volume-rated subscription with increments of 1GB after the first increment is used up (i.e. the customer's agreed data allowance + Data Rollover + Data Switch). There is thus not any assigned data allowance that is used up. The question of differences in traffic management before and after the data allowance has been used up is thus irrelevant. Telenor handles all traffic identically.*"

To the written question from Nkom about how Telenor identifies which traffic to zero-rate and what technical method is used, Telenor writes that: "*The technical method used for traffic detection is based on detection of signatures such as IP addresses, protocols, CDN providers, host names, etc.* ***Exempt from public disclosure [*** [redacted] *]. This means that all traffic receives identical technical treatment, for example in terms of speed and priority. This means that Telenor does not have access to information about what kind of music, which songs or which artists the customer is listening to. The analysis of traffic patterns is only used to ensure correct calculation of the total volume of data for those providers supported in Music Freedom so that customers can make use of these services without worrying about how much data they are using on music streaming and to aggregate statistics on consumption.*"

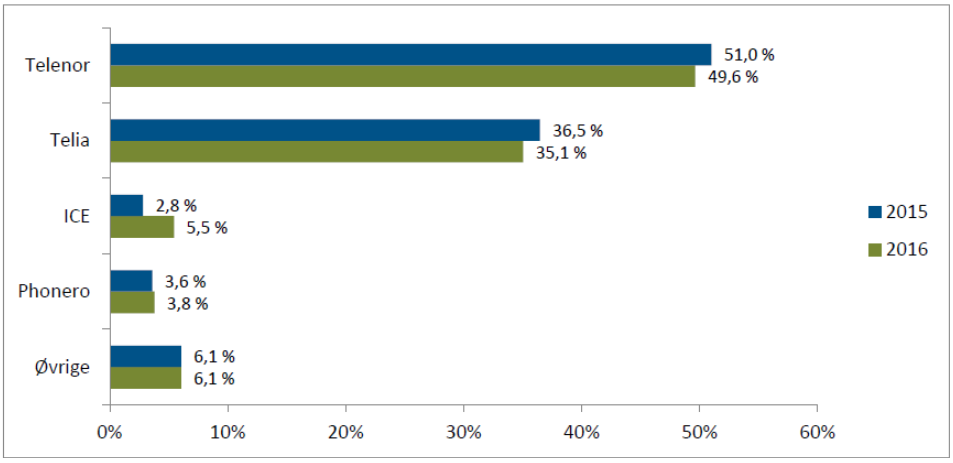
To the written question from Nkom about how Telenor distinguishes traffic that is to be zero-rated from other internet traffic, and how Telenor ensures that all traffic related to the zero-rated content is actually detected, Telenor writes: "*Telenor uses a standard technical solution, as described above, to detect traffic that is to be zero-rated. As mentioned above, this standard solution in the industry is designed to correctly detect traffic that is to be zero-rated. Any incorrect rating of traffic will be treated in the usual way. In our opinion, this is not an issue related to net neutrality, but is covered by the ordinary rules of electronic communications and consumer law. Any disputes can be brought before the Consumer Complaints Commission for Electronic Communication (BKN).*"

4 Description of the markets and assessment of effects

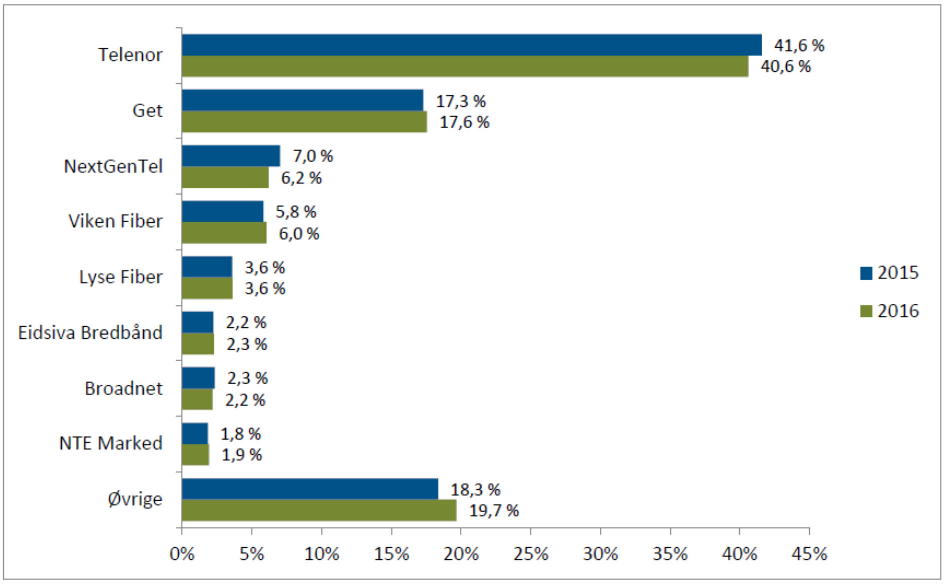
4.1 The internet access market

As mentioned above, the method for assessing a zero-rated offer involves analysing the market position of the internet service providers, and in this context it is relevant to delimit the market for internet access. The internet can be accessed via a fixed network or a mobile network. Nkom has a good overview of the electronic communications industry and has delivered analyses and statistics on the fixed and mobile markets in the period after the market was liberalised. In addition, Nkom's market analyses and market decisions have resulted in access to Telenor's mobile network, and Telenor's fixed copper and fibre access network are regulated in Norway.

There are many providers of fixed or mobile network access in Norway. At the end of 2016, there were three network owners in the mobile market, one of whom is also a buyer of national roaming in order to obtain coverage outside their own coverage area. In addition, there were five mobile virtual network operators (MVNOs) and 15 independent service providers. There were approximately 120 broadband providers over the fixed network on the same date. At the end of 2016[14] there were about 2.1 million subscriptions for fixed broadband, and about 6.2 million subscriptions for mobile telephony and mobile broadband combined. The figures below[15] show market shares over the past two years for the retail markets for mobile telephony and mobile broadband combined and for fixed broadband.



Combined market shares for mobile telephony & broadband based on number of subscriptions



Market shares for fixed broadband measured by number of subscriptions. All forms of access

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14 http://www.nkom.no/aktuelt/nyheter/stor-økning-i-bredbånd-over-fiber

15 Ekomstatistikken.no

In Norway, the market for access and call origination on public mobile communication networks is defined as a separate wholesale market that is subject to pre-regulation (Market 15). Telenor has been designated an undertaking with significant market power in this market. In addition, Telenor has been designated an undertaking with significant market power in the wholesale market for full and shared access to fixed access networks (Market 4) and the market for wholesale broadband access including bitstream access (Market 5). A hypothetical retail market for internet access could be related to all these three predefined fixed or mobile markets.

In its decision of 20 January 2014, Nkom concluded that Telenor has significant market power in wholesale markets 4 and 5. The analysis of the markets[16] revealed that mobile network-based broadband access is not sufficiently substitutable with fixed / location-bound broadband access from the end-users' point of view. The associated retail market for the two wholesale markets mentioned above is defined as fixed broadband in the retail market, residential and business.

The production of fixed broadband and mobile broadband currently uses very different input factors. A provider of fixed broadband that has its own fixed access network, but that does not have its own mobile network, cannot easily adapt production without making significant investments. The situation may be rather different for a buyer of access with a lower degree of investment in own infrastructure, because change will not require a similar level of investment. However, the influence these kinds of providers have on the markets is not more limited than that of providers with their own access network. Nkom therefore believes that there is limited supply-side substitutability between fixed / location-bound broadband access and mobile-based broadband access.

In its decision of 1 July 2016[17], Nkom concluded that Telenor has significant market power in the market for access to mobile networks (Market 15) and has imposed specific obligations on Telenor, including an obligation to provide access to its mobile network. It is apparent from the analysis annexed to the decision that both supply-side substitutability and demand-side substitutability rule out that fixed telephony is part of the same market as mobile telephony. A total of five retail markets related to the relevant wholesale market have been identified. These are telephony-enabled mobile services (residential and business), mobile broadband (residential and business) and machine-to-machine communication. Yng / Music Freedom is a mobile telephony product and can be linked to the retail markets for telephony-related mobile services and mobile broadband. Telenor is by far the largest provider in all these market segments.

Against this background, Nkom believes that the market for internet access in this case can be delimited to access through a mobile network. The assessments of the zero-rated offer from Telenor are thus only relevant in connection with the retail markets for mobile internet access. Nor does zero-rating have any real significance in the retail market for fixed broadband, where end-users pay for internet access based on speed and not data volume.

Telenor has stated that they consider the competition in the retail market to be well-functioning, with reference to data rollover as a good illustrative example.

Based on the above, Nkom assumes that the relevant market for assessment of Yng / Music Freedom is internet access via mobile devices. The market analyses and market shares relating to the above-mentioned wholesale and retail markets for mobile networks and services indicate clearly that Telenor has significant influence in this retail market. The service Yng /

[16] https://www.nkom.no/marked/markedsregulering-smp/marked/marked-4-og-5/_attachment/11551?_ts=143afd7ad39

[17] http://www.nkom.no/marked/markedsregulering-smp/anbefaling-2004/marked-15/vedtak-2016

Music Freedom is thus offered by a player with controlling influence in the relevant retail market.

4.2 The content market

An assessment of whether Telenor's zero-rated offer is in compliance with the net neutrality rules must be based on a content market, and the market position of the content providers must be identified. This kind of an assessment consists of two steps: first, the scope of the content market must be defined, and then the different content providers must be analysed on the basis of this market.

In terms of delimitation of the content market, there are few sources to rely on. Telenor has not stated whether the company has conducted any form of competition-law analysis or suggested to delimit the market. Thus, Telenor has not provided any indications of whether the scope of the market has been assessed. By contrast, Telenor uses the concept "content category" in connection with the scope of the music streaming service and has currently included the following four players: Spotify, Tidal, Apple Music and Google Play Music. Further, Telenor identifies the following product characteristics for music streaming services:

- They are services that offer access to a large and international catalogue of music
- The music is copyright-cleared for the Norwegian market
- The customers can subscribe to get access to the content provider

In a video conference on 31 May 2017, Telenor explained in more detail their understanding of the term "content category". In order for a service to belong to the category "music streaming services", as used by Telenor, the following criteria must be fulfilled, cf. Telenor's e-mail[18]:

"As we attempted to explain at the meeting, Telenor has not operated with a strict categorisation, but rather has been focused on the target group's demands and perception of relevant music streaming services, in addition to the support capability of the technical method. Based on this, Telenor attached importance, right from the launch of the concept, to inclusion of all relevant subscription-based services with an on-demand available catalogue of copyright-cleared music content.

A definition of 'content category' can probably be derived from the fact that Music Freedom deals with zero-rating of traffic related to on-demand music streaming services where users can subscribe in order to gain legal access to a catalogue of music for playback or streaming on their mobile phones. The customers in the target group for the Yng subscription primarily regard providers that offer a broad catalogue of music, such as Spotify, Tidal, Apple Music and Google Play Music, as relevant providers for their needs. ***Exempt from public disclosure [*** [redacted] *].*

Telenor would clarify that such an approach does not automatically mean that Telenor will exclude music streaming services that may have other characteristics or is bound to this means of operation. As mentioned initially, this is determined more by the actual demands / needs of the target group. For the sake of clarity, we would also repeat that Music Freedom contributes to the customer getting an increased volume of data that they can use for other services."

Nkom asked how Telenor assesses the market position of the content service providers, and Telenor responded:

[18] E-mail from Terje Nord, Telenor, 2 June 2017

"In Telenor's Yng subscription, Telenor has chosen to zero-rate traffic linked to a content category. […] Telenor has not considered the market position of providers of the content services, nor is it relevant to Music Freedom. This is a service that zero-rates all traffic within the category as far as this is practicable."

As part of the assessment of the content market, it is relevant to describe technical and functional aspects of streaming services. This is shown below.

Streaming is the process of playing a media file (such as radio, television, music and film) at the same time as the content is being downloaded over the internet from a server to a terminal. A distinction is drawn between audio streaming and video streaming, and these will usually not be substitutable for users, although there may be exceptions to this, such as playback of music from YouTube.

Streaming differs from *downloading* of media, in that in the latter case, the media content is downloaded before it is played back. The media file is then played back locally on the terminal, which does not need to be connected to the internet during playback. Podcasts are an example of downloading of media content, but downloading is also used by typical streaming applications such as Spotify and Netflix, either to allow content to be played outside the coverage area or to save money by downloading via Wi-Fi to avoid using the data allowance associated with the mobile subscription.[19]

Audio streaming is typically used to listen to music and radio broadcasts. *Music streaming* is used by popular applications such as Spotify, Tidal (formerly WiMP) and Deezer, and offers subscription to music from all over the world. *Radio streaming* is used to transmit radio channels over the internet as a supplement to broadcast radio (terrestrial networks and satellite). Radio streaming uses individual transfer of content (unicasting) as opposed to broadcasting, enabling user-controlled playback of stored radio programmes (radio-on-demand) in addition to direct transmission of radio, called "linear radio" (similar to "video on demand" and "linear TV").

Nkom is not aware of any competition analyses that define a market that would naturally include the service Music Freedom. However, as a basis for further assessment, the existence of a relevant market is assumed and furthermore that it is possible to delimit a market for music streaming. In this context, it is relevant to assess whether the content market also includes content such as radio streaming or any other non-audiovisual or audiovisual content.

This kind of assessment requires a substitutability assessment, cf. the section above on market delimitation. In general, demand-side substitutability will be deemed to exist if a small, but significant, non-transitory price increase would cause customers to choose another product. However, it is difficult to determine exactly what is covered and what can be excluded from a hypothetical market of this nature. In the light of the subject of assessment in this analysis, Nkom believes that it is not necessary to be completely exact in market delimitation.

In respect of substitutability assessments between radio and music streaming, there do not appear to be any clear arguments to conclude that such substitutability exists. Traditional music streaming often uses playlists where listeners themselves control the content in detail, while in the case of music programmes on the radio, it is usually the presenter who controls the choice of music. Telenor stresses that their customers must subscribe to a provider of music streaming services, and such subscriptions may, in Nkom's understanding, be payable or free. Nevertheless, it can queried whether the offer of popular playlists in streaming applications (cf. Spotify "radio" and Tidal "top 40") and radio channels such as NRK MP3, P5

[19] Downloading playlists for offline listening is covered by the zero-rated offer Music Freedom, cf. https://www.telenor.no/privat/kundeservice/mobilhjelp/yng.jsp

Hits, P6 Rock, P8 Pop and Radio Top 40 can be regarded as substitutable. It is also known that T-Mobile's Music Freedom includes radio channels in its offering.[20]

Another relevant, adjacent market is the streaming of audiovisual content with music, such as music videos. It is reasonable to assume that a significant, non-transitory increase in the price of music streaming services would contribute to more people wishing to use services that are free of charge to use, such as YouTube. Therefore Nkom does not rule out that the content market for music streaming may also include streaming of music videos, cf. Tidal Music Video. Alternatively, music videos can be regarded as an adjacent application, cf. the discussion in section 2.1. In a video conference on 31 May 2017, Telenor confirmed that Yng / Music Freedom does not currently include zero-rating of YouTube.

Content markets and advertising markets can have a reciprocal influence. Advertising markets may be affected by the fact that some traffic flows are zero-rated. However, Nkom finds that in this case it is not proportionate to analyse any possible consequences in these markets since the Music freedom service, as long as it is limited to the product Yng, is expected to have little influence on the advertising market. In principle, however, it will be relevant to consider the influence of an advertising market when assessing the impact on content providers.

In terms of supply-side substitutability, Nkom assumes that in connection with the current case it is sufficient to assess whether providers of other content services, such as radio streaming for example, would change or expand their production to produce music streaming if there was a small but significant price increase on music streaming. A provider of music streaming is expected to have expertise in music and copyright. There are no licensing conditions like there are for radio broadcasts distributed in the terrestrial network, and there is limited evidence that there is supply-side substitutability between radio streaming and music streaming.

In terms of supply-side substitutability between music streaming and streaming of audiovisual music content, such as music videos, expertise in music and copyright will generally be required qualifications for providers of both these kinds of services. They are also expected to have reasonably similar customer groups, and marketing and other activity by retail businesses is not expected to be very different. Services like YouTube offer music in video form, either music videos, or so-called "lyric videos", and also group them into playlists. YouTube is free for the users, but shows advertisements between the videos. There is reason to believe that a large proportion of the target audience also uses services like YouTube to listen to music. This is particularly relevant since most artists publish on YouTube, while there are usually restrictions in the agreements related to the music services concerned. It is therefore found that supply-side substitutability may exist between music streaming services and offers of audiovisual music content.

Although there is no comprehensive market delimitation, Nkom believes that, based on the above, it has been established that there is a market for music streaming over the internet that may also include audiovisual music content. This may be regarded as the relevant content market that is to be assessed against provisions on net neutrality.

As regards the market position of the content providers, there is insufficient information available on market shares or similar data that could provide a basis for drawing a conclusion. However, the critical issue in this regard is to assess whether the Yng / Music Freedom service ensures equal treatment of the content providers and whether any discriminatory treatment affects the market positions in the content market.

The music streaming market is currently dominated by a few major operators. Yng / Music Freedom includes use of Spotify, Tidal, Google Play Music and Apple Music. The Stockholm-

[20] https://www.t-mobile.nl/datavrije-muziek

based Spotify is the largest of these music streaming services with over 50 million paying customers worldwide[21]. Apple Music is the second largest service with over 20 million paying customers worldwide. The service is owned by Apple Inc., one of the world's largest technology companies. Google Play Music is a relatively new player in the music streaming market, but is run by the industrial giant Google. The final content provider currently included in the Yng / Music Freedom zero-rated service is Tidal. Tidal is the continuation of the former Norwegian company "WiMP". Tidal fronts its own business as an artist-owned joint venture, with the artist Jay-Z as the main owner[22].

Exempt from public disclosure [[redacted]].

Although there is reason to believe that most of the customers using music streaming services are covered by the four content providers that are included, it must be clear that there are more providers that are not currently included in Yng Music Freedom. One example of this is Soundcloud. Soundcloud allows artists, both established and newcomers, to share their music directly with a worldwide audience[24]. Other content providers offering similar products in Norway include "Napster"[25] and the Norwegian streaming service "Beat"[26].

Based on the assessments above, Nkom finds that there is a market that includes the category music streaming. Telenor has confirmed that the company does not intentionally discriminate between content providers in this content category. Provided that this is implemented consistently and that the category is properly defined, Yng / Music Freedom will have limited impact on the competition between the content providers.

However, Telenor confirms that demand from its customers determines which streaming services they include in the zero-rated offer. The use of demand as a parameter for inclusion in the service may lead to differential treatment of the content providers and thus have the potential to adversely affect competition, cf. the main conclusion below.

4.3 Impact on the end-users

Net neutrality shall protect the end-users' freedom to choose which applications they want to use on the Internet. In connection with zero-rating, the end-users are offered an additional data allowance that they cannot use freely; the additional data allowance is reserved for content predetermined by the internet service provider. Zero-rating of selected applications and content is thus capable of steering the end-users' choices. An alternative to the above would be to offer a corresponding data allowance that the end-user could use freely at his/her discretion.

When certain applications are offered at a lower price, or free of charge, the end-users will have an incentive to use these applications instead of other applications. When the selection is a whole class of applications, the incentives will not be as strong as for individual applications. However, this presupposes that the class is clearly defined and that associated traffic can be identified correctly, which will not always be the case in practice.

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21 https://www.bloomberg.com/news/articles/2017-03-02/spotify-hits-50-million-paid-subscribers-lifting-music-industry
22 https://support.tidal.com/hc/en-us/sections/201053161-About-TIDAL
23 [redacted]
24 https://soundcloud.com/pages/contact
25 http://us.napster.com/availability
26 http://www.beat.no/

The lower the data cap compared with the additional data volume for use by the zero-rated content, the greater the end-users' incentive to use the zero-rated offer. Consumers typically want to use "free" data and tend to be more economical in their use of paid data.

The price structure for Yng shows that the price per GB is lower than for the "Frihet" subscription for small data allowances and higher than "Frihet" for larger data allowances. It is reasonable to assume that young people will generally have lower data caps, and that this may therefore have a larger impact on young people. (Nkom's survey from 2013 found a lower data cap for mobile broadband for people under 30.)

In respect of safeguarding the users' freedom of choice, Telenor states: "*Yng customers' exercise of their rights is strengthened or unchanged in terms of their freedom of choice to use services on the Internet. Preliminary results show that among customers who have changed from a Telenor subscription to an Yng subscription,* ***exempt from public disclosure*** *[[redacted]] customers have a larger or unchanged volume of data. In addition, when these customers are able to use music streaming services without this affecting their remaining data allowance, the customers will clearly have greater freedom to use other services on the internet. Yng customers can also use Data Switch, which provides customers with an additional 1GB of data for other internet services, by switching from unlimited use of voice services to 60 calls per month.*"

Nkom believes that it is most relevant to compare the Yng subscription with another subscription with a corresponding data allowance and where the end-users are free to choose which content on the internet they want to use their entire data allowance on. From this perspective, the end-users' freedom of choice is limited by the Yng subscription.

Telenor further states that "*It is Article 3(3) of the Regulation (cf. paragraph 1) that refers to the relevant legal assessment. [...] Recital 7 in the Preamble further states that there should be a threshold before a commercial practice can be considered to be in breach of the Regulation, cf. the phrase 'end-users' choice is materially reduced in practice'.*"

As described in the methodology section at the beginning of this report, the BEREC Guidelines lay down that the national regulatory authority shall consider the extent to which the end-user's choice is limited. The national regulatory authority shall intervene if the choice is materially reduced, but the Guidelines specify that the national regulatory authority may also intervene in other cases that could qualify as a limitation of the exercise of end-users' rights[27].

To the written question from Nkom on Telenor's assessment of Yng in terms of the effect on end-user rights as a result of zero-rating of selected music streaming services, Telenor responds: "*On launch, traffic related to the providers mentioned within the category is zero-rated. Telenor will strive to include all providers within the category that are requested by Telenor Yng target group, as far as this is practicable.*"

Nkom finds that the end-users are not (sufficiently) informed that they are entitled to request inclusion of additional content providers in the zero-rated category and how this can be done in concrete terms.

Nkom also holds that zero-rating of a category of applications such as Music Freedom affects the end-users' freedom of choice, even though this impact is probably weaker than it would be if a single application were zero-rated. The BEREC Guidelines state that *it is less likely* that zero-rating of an entire category of applications will be in violation of the Regulation than zero-rating of individual applications.

[27] BEREC Guidelines, paragraph 45

Nkom believes that the content market is broader than Telenor's definition of the content category appears to suggest. This market will naturally encompass more music streaming providers than the four included in Music Freedom, cf. the discussion in section 4.2. Thus, specific limitations have been imposed on the end-users' freedom of choice.

It is known that in practice it is difficult to achieve reliable identification of traffic from applications. The zero-rated offer "Binge On" from T-Mobile in the US is probably one of the best-known examples of zero-rating. A critical investigation of Binge On's identification of applications that were to be zero-rated revealed that the identification process did not work as intended.[28] If identification of traffic for zero-rating is not performed properly, customers risk unforeseen expenses and the customers do not receive the service they were promised.

The method used by Telenor to identify traffic from applications is probably different from that used by T-Mobile's Binge On. It is therefore not possible to draw any direct conclusions about Telenor's service offering based on a comparison with Binge On. However, there are nevertheless grounds to emphasise how complex it is to correctly identify applications, as well as the consequences for the end-users if the identification does not work properly.

Nor does Nkom rule out the possibility of further objections being raised regarding the criterion of "impact on end-users" if identification of the applications for zero-rating was found not to work correctly.

An assessment of the impact on the end-users also includes assessing any impact on freedom of expression.[29] If the content that is zero-rated does not include user-generated content, this may constitute favouritism of commercial content. In respect of Telenor Yng, this service offering will include commercial music providers, currently four specific providers, while user-generated and non-profit content is excluded. This could lead to a reduction in the significance of the open internet as a platform for freedom of expression, even though this reduction is of limited importance in terms of music streaming.

Based on the information provided by Telenor and the assessments described above, Nkom has concluded that there are indications that the current Music Freedom offering can adversely affect end-users' freedom of choice, unless a number of concrete aspects of the zero-rated scheme are improved, cf. the main conclusion below.

4.4 Impact on the content and application providers

The Internet is intended to be an open platform for providers of content and applications. The zero-rating of certain applications and selected content means that internet service providers pick "winners and losers" among the content providers, rather than the end-users choosing content on a free basis. It is well-known that end-users have strong preferences for zero-rated content as opposed to content that the users have to pay to download via their internet connection.[30] Content that internet service providers have pre-selected for zero-rating automatically becomes more attractive than other content offered on the internet. The

[28] Northeastern University, 2016, Marketing and Communications. Northeastern researchers find T-Mobile's Binge On doesn't live up to the hype, http://www.northeastern.edu/news/2016/06/northeastern-researchers-find-t-mobiles-binge-on-doesnt-live-up-to-the-hype/
- David Choffnes et al, Northeastern University, 2016, BingeOn Under the Microscope: Understanding T-Mobile's Zero-Rating Implementation, david.choffnes.com/pubs/bingeon_sigcomm16.pdf

[29] BEREC Guidelines, paragraph 46, bullet item 3

[30] BEREC report 2015 - How do consumers value net neutrality in an evolving Internet marketplace? http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/5024-berec-report-on-how-consumers-value-net-neutrality-in-an-evolving-internet-marketplace-a-report-into-ecosystem-dynamics-and-demand-side-forces
- CTIA - The Wireless Association. 2014. CTIA Mobile Wireless Service Survey. http://www.ctia.org/docs/default-source/default-document-library/2014-ctia-mobilewireless-service-survey-final.pdf

providers of the zero-rated content thus gain a competitive advantage over other content providers.

Content providers on the internet are expected to want the content they publish to be distributed broadly and frequently. It cannot be excluded that content providers are willing to pay a distributor that can help ensure extensive distribution. As Nkom understands the zero-rated offer "Music Freedom", it does not involve financial transactions or other compensation between content providers and Telenor.

Telenor states that "*On launch, traffic related to the mentioned providers within the category is zero-rated. Telenor will strive to include all providers within the category that are requested by Telenor Yng target group, as far as this is practicable.*" Nkom would nevertheless point out that no information has been published stating that content providers can register to be included in this service and explaining how to do this. Only four well-known music streaming services are included in the zero-rated scheme, and it is not explained when and how Telenor will seek to include more music streaming providers.

It is known from other zero-rated offers that content providers within a content category that want to have their content included in a zero-rated platform must follow a certain procedure to be included. As an example, the previously mentioned T-Mobile offers the zero-rated service "Binge On" in the US market. This platform is open to all music streaming providers, but experience shows that it takes a long time for providers to be added to the platform. This is especially true of small providers of streaming services[31].

Telenor claims that "*The Yng subscription has no effect on the competitive situation among the content providers. Like much else on the internet, competition among content providers is played out in a global / supranational music market, while only relatively marginal adaptations in content and services occur locally*." Nkom believes, however, that unless arrangements are made for inclusion of other music providers in the scheme, this will constitute significant discrimination of small providers and newcomers in the market for music streaming.

The market for music streaming is by no means limited to international providers only, although this market does appear to be developing towards high concentration around a few major providers worldwide. One well-known music streaming provider was originally established in Norway – WiMP[32], founded by Aspiro and Platekompaniet in 2010. Schibsted acquired a major shareholding in the company for a period, and in 2015 WiMP was taken over by Tidal. Looking at the situation from a Scandinavian perspective, Spotify, established in Sweden in 2008, has grown into one of the largest global providers of music streaming. These are examples of providers that were established nationally and then developed to become significant international / global providers.

In terms of the difference between zero-rating of single applications and categories of application, the BEREC Guidelines state that zero-rating of entire categories is less likely to undermine competition in the application market than zero-rating of individual applications. Telenor's Music Freedom will be a case of zero-rating of a category, provided that Telenor implements a system to ensure that other music providers can be included in the category.

An assessment of the impact on the content providers also includes assessing any impact on diversity of media.[33] The fact that Telenor's Music Freedom only includes selected providers of

[31] Center for Internet and Society at Stanford Law School, 2016, Binge On violates key net neutrality principles, https://cyberlaw.stanford.edu/blog/2016/01/t-mobiles-binge-violates-key-net-neutrality-principles
- Barbara van Schewick, Stanford Law School, 2016. T-Mobile's Binge On Violates Key Net Neutrality Principles, https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf

[32] https://no.wikipedia.org/wiki/WiMP

[33] BEREC Guidelines, paragraph 46, bullet item 4

music streaming will act as an obstacle to musicians who are not affiliated with these providers and who are either associated with other music streaming providers or operate independently of music streaming providers.

Based on the assessment above, Nkom believes that Yng / Music Freedom has the potential to influence what content is preferred and could thus have an anti-competitive effect on excluded content providers, unless a number of concrete aspects of the zero-rated scheme are improved, cf. the main conclusion below.

4.5 The scale of the commercial practice

According to the net neutrality guidelines, account shall be taken of the scale of the commercial practice, or zero-rating, in the market. In this analysis, the national regulatory authority will, among other things, evaluate alternatives, both alternative subscriptions with the same provider and other internet service providers with similar offerings. In cases where the scale of the practice is limited compared with alternative offerings, it will be less likely that the authority intervenes.

Providers of internet access have traditionally launched their offerings based on a combination of volume and speed. On mobile networks, payment for speed has largely been phased out, and the price is therefore usually based on data volume alone. Offers of extra data without an increase in price have traditionally been included either in start-up offers, package deals or winback offers. None of these offerings have set conditions about the content that the extra data volume can be used for. The service Music Freedom is the second[34] instance of zero-rating of specific data traffic in Norway.

As was shown in section 4.1, Telenor has a large market share and has a controlling influence in the Norwegian mobile market. Telenor's Music Freedom service thus has a significant reach. However, the scale of the commercial practice entailed by Music Freedom is limited to the age group 18–28 years. According to Telenor, this age group comprises approximately 770,000 people in Norway. At the end of March, there were **exempt from public disclosure** [[redacted]] subscribers to Yng, which constitutes about **exempt from public disclosure** [[redacted]] of the potential target audience. At the end of May, there were **exempt from public disclosure** [[redacted]] customers with an Yng subscription, which constitutes around [[redacted]] of Telenor's customers aged between 18 and 28 years.

Based on the fact that the end-users are free to choose alternative products that are not zero-rated, both from Telenor and from other providers, Nkom finds that the scale of the zero-rated service is currently relatively limited in the Norwegian internet access market. However, if corresponding or similar zero-rated offerings become more widespread, Nkom may reach a different conclusion in the future. In this connection, Nkom refers to the fact that Telia has recently launched a zero-rated music streaming offer for all its subscribers, which may be of significant importance for future assessment of this criterion, cf. the main conclusion below.

4.6 Circumvention of the aims of the Regulation

The purpose of the Regulation is described in the first recital of the Preamble: "*This Regulation aims to establish common rules to safeguard equal and non-discriminatory treatment of traffic in the provision of internet access services and related end-users' rights. It aims to protect end-users and simultaneously to guarantee the continued functioning of the internet ecosystem as an engine of innovation.*"

[34] Telia / OneCall previously offered "Fri nettradio" [free online radio] to selected customer groups

Traffic management and end-user rights have to a certain extent been analysed above, and the main conclusion is that the additional data allowance offered by zero-rating favours the zero-rated content. In this perspective, zero-rating constitutes positive discrimination of the zero-rated traffic and corresponding negative discrimination of other traffic.

In terms of maintaining the internet's function as an engine of innovation, this is linked to the motivation of the content and application providers to develop new ways of using the Internet, as has been the case for many years through the rapid growth of the use of the internet as a communications platform for an ever wider range of content and applications.

Content and application providers have good opportunities to develop new products because these can be established on computers that communicate via the internet access service without requiring further facilitation from the internet service provider. Zero-rating changes this situation, in that the internet service provider has to incorporate relevant content and application providers into the zero-rating system, in order for them to benefit from the scheme.

The complexity of the incorporation process varies between the different internet service providers' zero-rating schemes. In some cases, the content and application providers' product will disqualify them from inclusion or payment will be required for inclusion, while in other cases, it may be sufficient to adjust the product. In yet other cases, it will be sufficient to contact the internet service provider and ask to be included.

The content and application provider will have to repeat this inclusion process for each individual internet service provider that uses zero-rating, and will thus entail transaction costs that do not exist when internet service providers do not use zero-rating. Transaction costs could pose a significant barrier to small content and application providers, especially for start-up companies and non-profit organisations.

The assessment of the criterion "circumvention of the aims of the Regulation" for Yng / Music Freedom in isolation is based on the assumption that the service functions as specified by Telenor. First, in terms of non-discriminatory traffic management and end-user rights, Nkom's assessment is that Yng / Music Freedom cannot be deemed to circumvent this part of the Regulation beyond what is stated in the assessment of the other criteria above.

Second, in terms of maintaining the internet's function as an engine of innovation, Nkom assumes that Telenor makes sure that content providers that meet the inclusion criteria will be zero-rated in line with other content in the same category. Nkom assumes that Telenor will make arrangements in the near future to ensure that other content providers in the same category can be easily incorporated into the zero-rated offer. Nkom also finds that Yng / Music Freedom cannot be regarded as circumventing this part of the Regulation, provided that the inclusion process functions in practice as Telenor describes.

Nkom has also assessed whether Telenor's new feature "Autobooster", launched in connection with the Yng subscription, is in fact a circumvention of the rules laid down in the Regulation. With Autobooster, once the ordinary data allowance is used up, an additional allowance is automatically added for a fixed price, and there is no limit on how many times this can be done. Telenor says that subscribers cannot turn off Autobooster. This means that end-users with Yng subscriptions never run out of data, and Telenor therefore does not have to decide what happens to the zero-rated content when the general data allowance has been used up.

It is well-known that, according to the net neutrality guidelines, it is not accepted that zero-rated content can still be used if other content is throttled or blocked once the data cap has been reached. By introducing Autobooster, Telenor avoids this problem. Nkom nevertheless interprets the situation such that this is essentially a general consumer issue and less an issue specific to net neutrality.

However, Nkom is generally committed to maintaining the pace of innovation in the Norwegian market. In this context, Nkom believes it is important to avoid adverse effects on innovation caused by zero-rating, especially among start-up companies and non-profit organisations, for example, if zero-rating were to become more widespread. If Telenor does not adapt the zero-rated offer, it will, however, be in violation of this criterion, cf. the main conclusion below.

5 Overall assessment of Telenor Yng Music Freedom

Nkom's understanding is that Telenor Yng Music Freedom does not use technical traffic management and thus is not in violation of Article 3(3) of the Regulation. Nkom has therefore assessed Music Freedom against Article 3(2) of the Regulation, cf. the methodological approach in chapter 2.

Nkom assumes that the relevant market for assessment of Music Freedom is internet access via mobile devices. The market analyses and market shares relating to the wholesale and retail markets for mobile networks and services indicate clearly that Telenor has significant influence in this retail market. The service Music Freedom is thus offered by a player with controlling influence in the relevant retail market.

Telenor has not defined the content market that is relevant in this context. However, they have defined and delimited the content category "music streaming". Telenor's own delimitation assumes that the music service is a subscription service, facilitates on-demand music, has a sufficiently broad catalogue of music and is in demand by the customer group. The company states: "*Furthermore, since the zero-rating applies to a content category, Yng does not affect competition between content service providers.*"

A zero-rated offer that includes an entire category has less potential to undermine competition in the content market. Conversely, a zero-rated offer related to one or a few selected applications has greater potential for negative effects. Nkom believes that Telenor's current definition of the content category is too narrow as it excludes non-commercial music offerings. In Nkom's opinion, service offerings that are not based on a subscription contract also include relevant content that is a natural part of this category.

Nkom regards it as positive that end-users are offered additional data as part of the subscription. It is however common for providers to increase the data allowance of their subscriptions from time to time, whereas with zero-rating, the provider dictates what the end-users can use the extra data allowance for. Norwegian end-users are currently offered much lower data allowances than users are offered in a number of other comparable countries. This makes zero-rating extra problematic since the included allowance that can be used is relatively small compared with the data allowances in a number of other countries.[35]

In general, end-users will have reduced freedom of choice in that the extra data allowance is exclusively reserved for a particular type of content and cannot be used freely. Users prefer "free" data and tend to economise on their use of the paid data in the limited allowance included in the subscription. This effect is even stronger among end-users whose subscription includes a small data allowance. Telenor has stated that data usage for music streaming is usually in the range of 10–20% of the total volume of data used. The zero-rated offer thus has a significant effect on the content market.

The zero-rated offer Music Freedom only applies to the streaming providers Spotify, Tidal, Google Play Music and Apple Music. Telenor has nevertheless stated that more providers than

[35] Digital Fuel Monitor, "Data caps and prices: country comparison", http://dfmonitor.eu/prices/country/

the four mentioned above can be included in the zero-rating scheme, but this has not yet been done as far as Nkom knows.

The impact on the content and application providers depends on how providers that cannot be included in the scheme might be discriminated against compared with the zero-rated providers. Nkom has shown that the content market comprises more providers than the four included by the zero-rated scheme. Nkom holds that unequal treatment of providers in the same market can have an anti-competitive effect.

If arrangements are made to enable more content and application providers to be included in a zero-rating scheme, providers requesting to be included may nevertheless encounter administrative barriers put in place by the ISP. Instances of zero-rating in other countries show that content and application providers have to follow a specific procedure to be included in a scheme and that this does not always work as presupposed.[36]

Correct identification of traffic that is to be zero-rated is a prerequisite for this assessment of the service offer. In the assessment, importance has also been attached to the fact that the intention is inclusion of an entire category of applications in the zero-rated scheme, and this assumption will no longer be correct if the system for identification of traffic has weaknesses. It is a fact that in practice it is difficult to achieve reliable identification of traffic from applications.[37]

The impact on content and application providers and end-users must also be seen in light of how the offer affects the diversity of the media content that is made available. Nkom refers to the recently published investigation from the Norwegian government's media diversity committee[38], which attaches importance to better access to socially important journalism. Nkom holds that this reinforces the need to ensure that any zero-rated offers do not reduce the user's freedom of choice, for example, by favouring selected commercial content and excluding user-generated and non-profit content.

The assessment of Music Freedom also took into account the scale of the zero-rating and the availability of alternatives, including services offered by alternative providers and alternative subscriptions with the same provider. Nkom finds that in terms of scale, zero-rating is currently relatively limited in the Norwegian market. In small-scale situations, it is generally less necessary to issue orders.

However, recent developments, such as Telia's introduction of zero-rating for all its mobile subscribers with data allowances above a certain size, suggest that this is already changing. In view of the fact that three different zero-rated offers have been introduced on the Norwegian market in the first half of 2017, i.e. in the same period as the phasing out of the previous Norwegian net neutrality guidelines, Nkom deems it likely that the scale of zero-rated offers will continue to increase going forwards.

As regards the assessment of whether the zero-rated offer Music Freedom constitutes circumvention of the aims of the rules on net neutrality, it is first of all relevant to assess whether there is discrimination of traffic on the internet. The current zero-rated offer from Telenor involves economic discrimination of certain applications. However, in principle the offer is delimited to an entire category of applications as discussed above.

[36] Center for Internet and Society at Stanford Law School, 2016, Binge On violates key net neutrality principles, https://cyberlaw.stanford.edu/blog/2016/01/t-mobiles-binge-violates-key-net-neutrality-principles

[37] Northeastern University, College of Computer and Information Science, 2016, Northeastern researchers find T-Mobile's Binge On doesn't live up to the hype, http://www.northeastern.edu/news/2016/06/northeastern-researchers-find-t-mobiles-binge-on-doesnt-live-up-to-the-hype/

[38] https://www.regjeringen.no/no/dep/kud/org/styrer-rad-og-utvalg/gjeldende-styrer-rad-og-utvalg/utvalg-mediemangfoldsutvalget/id2440827/

In line with the purpose of the Regulation, Nkom shall ensure that the pace of innovation is maintained in the Norwegian market. In connection with zero-rating, content and application providers become dependent on inclusion in a deal offered by the individual ISP in order to be able to compete on an equal footing. This will constitute a transaction cost that could be an obstacle, especially for start-up companies and non-profit organisations. Nkom believes that this kind of transaction cost can have a negative impact on innovation.

It can also be questioned whether the Autobooster offer can be regarded as circumvention of the Net Neutrality Guidelines' requirement that zero-rating cannot occur after the data cap has been reached, since subscribers are simply given an additional allowance when their original allowance has been used up. Nkom has nevertheless concluded that this is essentially a general consumer issue and, to a lesser extent, an issue specific to net neutrality.

After an overall assessment of Telenor's zero-rated offer Music Freedom, Nkom has not found it proportionate to issue any orders at the present time. Since Telenor has stated that they want to allow other content providers to be included in the scheme, the company is first being given the opportunity to translate its intentions into practice.

Nkom therefore expects Telenor to make arrangements for simple inclusion of other content providers in the zero-rated offer and to actively provide information about this. The adaptations ought to clearly describe how content providers and end-users can contact Telenor to request inclusion, typically via a dedicated webpage for easy registration.

It is also important that, once Telenor has established a system for inclusion in the zero-rated scheme, new content providers are included promptly and efficiently. At the same time, it is essential that traffic from the various zero-rated applications in the category is identified correctly to prevent individual content providers from being discriminated against.

Nkom's general approach to zero-rating is that it has an adverse effect both on the end-users' freedom of choice and on competition between different applications and categories of applications. If the zero-rating schemes in the market do not function as presupposed above, and especially if the scale also increases significantly, Nkom is likely to have to reassess its analysis of zero-rating in the market.

Internet service providers' zero-rated offerings and end-users' acquisition of such subscriptions are likely to develop dynamically in the Norwegian market in the coming years. Nkom refers to the decision of the Norwegian parliament, Stortinget, to seek to maintain the Norwegian net neutrality policy within the framework of the European net neutrality rules[39]. This will define the premises for Nkom's assessment of zero-rating in the Norwegian market over time.

[39] Proposition no. 157 (2015–2016), section 4.4