

Appendix A



PÓST- OG FJARSKIPTASTOFNUN

Market analysis

Analysis of the retail Market for access to the public telephone network provided at a fixed location (Market 1/2008)

and

The wholesale Market for call origination on the public telephone network provided at a fixed location (Market 2/2008)

XX November 2016

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Summary and Conclusions

This document contains the Post and Telecom Administration (PTA) draft analysis of the retail Market for access to the public telephone network provided at a fixed location and the wholesale Market for call origination in the public telephone network provided at a fixed location i.e. Markets 1 and 2 in the EFTA Surveillance Authority (ESA) Recommendation on relevant markets from 2008 which was repealed by the new ESA Recommendation from 2016. The market analysis is the basis for decisions on whether to impose, maintain, change or lift specific regulatory obligations on electronic communications companies that have been designated as having significant market power.

Analyses of these markets and decisions on obligations were published in December 2012 (Market 2/2008) and June 2013 (Market 1/2008). In those analyses the PTA came to the conclusion that Síminn had significant market power on both markets.

On the retail Market for access to the public telephone network provided at a fixed location (1/2008), the following obligations were imposed on Síminn:

- Carrier selection and pre-selection
- Obligation of access; Wholesale leasing of telephone lines provided at a fixed location
- Obligation of non-discrimination
- Obligation of transparency
- Obligation of accounting separation
- Obligation of price control; Maximum price decided with cost analysis
- Obligation of cost accounting

On the wholesale Market for call origination on the public telephone network provided at a fixed location (2/2008), the following obligations were imposed on Síminn:

- Obligation to provide access
- Obligation of non-discrimination
- Obligation of transparency
- Obligation of accounting separation
- Obligation of price control; Maximum price decided with benchmarking

The PTA has now made a new analysis of these markets. As these markets are no longer in the ESA Recommendation it was necessary to evaluate whether they still fulfilled the conditions required for possible imposition of ex-ante obligations (the Three Criteria Test). The criteria that the market needs to fulfil are in the first case that there are high and non-transitory barriers to entry, in the second case that the market is not tending towards active competition and in the third case that the implementation of general rules of Competition Law will not suffice on their own to address the failures of the market.

The PTA considers that the markets no longer fulfil the first criterion which is that there are high and non-transitory barriers to entry. The PTA considers that Internet telephone service (VoIP) which is provided through a connection at a fixed location, belongs to markets for fixed telephony. With increased development and distribution of Internet telephone, the PTA considers that access to both of the above specified markets have become easier, among other things because of lower investment requirements. In addition to this, obligations on the wholesale market for bitstream make it possible to provide Internet telephone service through leased bitstream access. So it can no longer be deemed that there are high and non-transitory barriers to entry. For this reason, the relevant markets do not fulfil the first criteria. This means that there is no need to examine proof of the second criterion with respect to active competition or the third criterion with respect to the general rules of Competition Law.

Because the markets no longer fulfil all criteria specified in the ESA Recommendation, the PTA intends to lift the obligations that were imposed on Síminn with the PTA Decisions from 18 June 2013 with respect to Market 1/2008 and from 14 December 2012 with respect to Market 2/2008. As other electronic communications companies now participate in wholesale transactions with Síminn that are in part based on obligations currently in force, the PTA considers it clear that an adequate glidepath is needed before the obligations are lifted. The PTA therefore plans to prescribe that the obligations on Markets 1/2008 and 2/2008 be lifted at the end of 2017.

PTA will continue to closely monitor developments on these markets and should circumstances change significantly then the Administration will evaluate the need for a new analysis of the markets.

1.0 Introduction

1.1 General

1. This document contains the draft analysis by the Post and Telecom Administration (PTA) of the retail Market for access to the public telephone network provided at a fixed location the wholesale Market for call origination in the public telephone network provided at a fixed location. The Markets were nos. 1 and 2 in the ESA Recommendation on the relevant market from 5 November 2008 which is no longer in force pursuant to the ESA Recommendation from 11 May 2016 and they will hereafter be referred to as Markets 1/2008 and 2/2008. The PTA published an analysis of Market 1/2008 along with its Decision on obligations on companies with significant market power on 18 June 2013 and on Market 2/2008 on 14 December 2012. It is assumed that market analyses will be repeated at regular intervals in order to monitor whether circumstances change on the market. The PTA considers it now appropriate to review the previous analysis.

2. The document is based on a draft that was submitted for consultation with a letter dated 7 October 2016, where the Competition Authority, electronic communications companies and other stakeholders were offered to make observations on the market analysis. The Competition Authority submitted observations. The Competition Authority stated that it considered the analysis well made and serving its objectives and agree with the PTA in its findings. Síminn communicated to the PTA that the company did not have any comments on the findings of the analysis.

3. The market analysis and draft decisions with respect to obligations on the relevant markets are now sent to the EFTA Surveillance Authority (ESA) for consultation, see Paragraph 1 Article 7 of Act number 69/2003, on the Post and Telecom Administration, and Article 7 of the Framework Directive 2002/21/EC. Should ESA make no observations on the market analysis and on the PTA decision then the decision will be notified to the companies in question.

1.2 Electronic communications legislation

4. The Electronic Communications Act no. 81/2003 implements the European Union (EU) Directives on Electronic Communications¹ and one Directive on personal data protection in electronic communications.² EU electronic communications legislation is intended to create a homogeneous working environment for electronic communications companies in Europe, to limit barriers and create conditions for sustainable competition for the benefit of consumers.

¹ Directive of the European Parliament and Council no. 2002/19/EC from 7 March, 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access and Interconnection Directive)

2002/20/EC, of 7 March 2002, on the authorisation of electronic communications networks and services (Authorisation Directive).

2002/21/EC 2002/21/EC, of 7 March 2002, on a common regulatory framework for electronic communications networks and services (Framework Directive).

Directive of the European Parliament and Council no. 2002/22/EC, of 7 March 2002, on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

² 2002/58/EC, of 12 July 2002, concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy in electronic communications).

5. Pursuant to Chapter V of The Electronic Communications Act the PTA is obliged to define certain electronic communications markets, both in terms of service and in terms of geographical scope, in accordance with the fundamental principles of Competition Law and with the obligations pursuant to the European Economic Area (EEA) Agreement. Furthermore, the PTA is required to analyse the defined markets and determine whether they are characterised by active competition. If the PTA comes to the conclusion that there is active competition in the relevant market – that is that no operator has significant market power – it is prohibited from imposing obligations on the operators in that market. If the Administration has previously imposed obligations on undertakings in the relevant market, these shall be withdrawn and no new obligations imposed. Should on the other hand, the PTA come to the conclusion that there is not active competition on the relevant market because one or more companies have significant market power, then the institution is obliged to designate the companies in question as having significant market power and to impose on them the appropriate obligations. According to Article 7 of the Act on the Post and Telecom Administration, the PTA is obliged to consult with ESA and with other electronic communications regulatory bodies in the EEA area on the definition of markets, on market analysis and on decisions on obligations.

6. The European Commission has published Guidelines and a Recommendation on the market analysis. On the one hand there are Guidelines on market analysis and assessment of significant market power³ and on the other hand there is a Recommendation on the relevant markets.⁴ The EFTA Surveillance Authority (ESA) has issued analogous Guidelines⁵ (hereinafter called “the Guidelines,”) and a Recommendation⁶ (hereinafter called “the Recommendation”) and the PTA has made reference to the Guidelines and Recommendations from ESA and from the Commission when conducting its market analyses. In addition to this, the report of the European regulatory group of national regulatory authorities (ERG⁷) is used as a reference for obligations that may be imposed on electronic communications companies that have significant market power, for the purposes of enhancing competition⁸, along with other reports from ERG and/or BEREC which is the Body of European Regulators for Electronic Communications which has taken over the role of the ERG.

³ Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services, 2002/C 165/3.

⁴ Existing regulations are: See Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services. 2014/710/EU

⁵ EFTA Surveillance Authority Guidelines of 14 July 2004 on market analysis and the assessment of significant market power under the regulatory framework for electronic communications networks and services referred to in Annex XI of the Agreement on the European Economic Area.

⁶ Existing regulations are: EFTA Surveillance Authority Recommendation of 11 May 2016 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with the Act referred to at point 5cl of Annex XI to the EEA Agreement (Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services), as adapted by Protocol I thereto and by the sectoral adaptations contained in Annex XI to that Agreement.

⁷ Abbreviation for “European Regulatory Group of National Regulatory Authorities”. Now the institution is called Body of European Regulators for Electronic Communications (BEREC).

⁸ *Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework. Final Version May 2006. ERG (06) 33.* The document can be seen here: http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

7. In the existing Recommendation on the relevant market, four electronic communications markets that the PTA is obliged to analyse have been defined, in accordance with current electronic communications legislation and with Iceland's obligations pursuant to the EEA Agreement. Furthermore the electronic communications legislation prescribes that the PTA define these markets in accordance with circumstances that pertain in Iceland. In this connection it could be the case that the PTA market definition would vary from that prescribed in the Recommendation. The PTA is also authorised to investigate all relevant electronic communications markets in connection with market analysis, regardless of whether or not they are listed in the Recommendation. In the previous ESA Recommendation from 2008, 7 markets were defined and they included the retail Market for access to the public telephone network provided at a fixed location (Market 1) and the wholesale Market for call origination in public telephone networks provided at a fixed location (Market 2). These markets are not to be found in the current Recommendation which means that it has to be particularly examined in the light of circumstances pertaining in this country, whether they still meet the criteria to be susceptible to ex-ante obligations according to Chapter VII of the Electronic Communications Act.

8. A Regulation on market analysis in the field of electronic communications, no. 741/2009 was issued in 2009 with the authority of Paragraph 3 of Article 18 and Article 75 of the Electronic Communications Act. The Regulation covers the process and the main criteria to be applied when defining electronic communications markets, analysing relevant markets, making Decisions on designation of a company or companies as having significant market power and making Decisions on obligations according to the Electronic Communications Act no. 81/2003. The Regulation is based on the above specified EU instruments, Recommendations and Guidelines.

1.3 The PTA implementation of market analysis

9. As is stated in the PTA information brochure on market analysis⁹, the implementation of market analysis can be divided into three stages:

- Define the relevant service markets and geographical markets.
- Analyse each of the defined markets, determine whether there is active competition on these markets and make a Decision on whether one can find one or more companies with significant market power in a market.
- Make a decision on whether obligations shall be imposed, amended or withdrawn on companies with significant market power.

10. With respect to these markets which are no longer in the ESA Recommendation, there is an additional phase which is to assess whether the markets still meet the conditions to make them susceptible for the imposition of obligations on companies (the Three Criteria Test). The criteria in question are the follows:

- a) that there exist high and non-transitory barriers to entry;
- b) that active competition cannot be foreseen during the reference period;
- c) that the application of existing Competition Law would not on its own suffice to provide remedies where the market has failed.

⁹ The PTA information brochure on market analysis. Last updated in August 2009.
[http://www.pfs.is/upload/files/Kynningarrit_um_markaðsgreiningu_ágúst_2009\(1\).pdf](http://www.pfs.is/upload/files/Kynningarrit_um_markaðsgreiningu_ágúst_2009(1).pdf)

11. This document contains the PTA conclusions from all appropriate phases.

12. Work on this analysis commenced in mid-2016. Information from statistics gathered regularly by the PTA is used along with other available information on operations and intentions of parties to the market. Statistics, among other things on the fixed telephony network, are collected from all parties to the market at six monthly intervals. In addition to this, the PTA collects and registers information on all changes to tariffs as they take place.

13. This Preliminary Draft is sent to the Competition Authority and to stakeholders and they are offered to make observations. On conclusion of this process, the observations received will be processed and the market analysis updated. The market analysis and Draft Decision with respect to obligations on the relevant markets will then be sent to the EFTA Surveillance Authority (ESA) for consultation, see Paragraph 1 Article 7 of Act no. 69/2003 on the Post and Telecom Administration. Should ESA make no observations on the market analysis and on the PTA Draft Decision then the Decision will be notified to the companies in question.

1.4 On market analysis

1.4.1 General

14. According to Article 16 of the Electronic Communications Act no. 81/2003 as amended, the PTA shall define service or goods markets and geographical markets in accordance with the main principles of Competition Law and with obligations according to the EEA Agreement. As has been stated it is necessary for the PTA to evaluate whether the markets, as defined in the Recommendation, harmonise with Icelandic circumstances. Both the service and geographical markets must be defined before it is possible to assess whether market conditions are such that they are susceptible to the imposition of ex-ante obligations.

1.4.2 Demarcation of product and service markets

15. In Article 4 of the Competition Act no. 44/2005 a market is defined as a sales area for a product and substitute product and/or a sales area for a service and substitute service. Substitute products and services are defined as products or services that can, wholly or to a significant extent, take the place of other products or services not only on the basis of the objective characteristics of the product in question, the purchaser's intended use of them and their price, but also with respect to competition requirements and/or conditions relating to supply and demand. Products that can compete with one another are therefore called substitutable products, and each market consists of products that are mutually substitutable. Products that can be substituted for one another only to a limited extent are not considered to belong to the same market.

16. Substitutability is assessed from two points of view. First, how readily customers believe that one product can be a substitute for another (demand-side substitutability). Second, how easily a competitor of a given undertaking can adapt his production so that his product falls within the market to which a product of the given undertaking belongs (supply-side substitutability).¹⁰ Demand-side substitutability is considered fundamental to market definition, while supply-side substitutability is less meaningful and is often related instead to an assessment of potential competition.

¹⁰ See further Paragraph 39 in the Guidelines and the Explanatory Note the EU Commission Recommendation, Chapter 3.1.

1.4.3 Demarcation of the geographical market

17. When a service market has been defined, its geographical dimension must be defined. The main rule is that it is based on the scope of the electronic communications network and the legislative jurisdiction of the regulatory framework that applies to it. Geographical demarcation is also based on an assessment of substitutability of the product or service in question, on the supply side and on the demand side. The geographic market is the area where products or services are offered on sufficiently homogeneous competitive terms. In assessing demand-side substitutability, it is appropriate to consider customers' tastes and geographical purchasing patterns. On the basis of this, it is possible to define markets as local, regional, national, or transnational; that is, extending to more than one country. If a market is considered to extend to more than one country, European regulatory authorities collaborate on the market definition together with the European Commission and ESA, if appropriate.

18. Two factors are important in defining geographical markets: on the one hand scope and coverage of an electronic communications network and on the other hand price. If a telecommunications network is distributed over the whole country, then this is an indication that the geographical scope should be the whole country. If the distribution of the network is regional and there is no overlapping of regions, this is an indication that the geographical scope should be regional. If prices are the same for the entire country, this indicates that the geographical scope should be national. If prices differ according to region, this is a strong indication that supply- and demand-side substitutability do not exist and that the regions in question are distinct geographical markets.¹¹

1.4.4 Conditions for being able to define other markets

19. The PTA can define other markets than those specified in the ESA Recommendation, for example because of special circumstances in this country. In such cases there shall be consultation with ESA. When defining other markets, the following conditions need to be fulfilled to enable the imposition of obligations:

- The market shows high and non-transitory barriers to entry.
- Market structures do not tend towards effective competition in a relevant time horizon.
- Application of Competition Law alone does not adequately abolish obstacles and strengthen competition.

¹¹ Definition of the geographical dimension of markets is discussed in Chapter 2.2.2 of the ESA Guidelines and also in the COMMISSION NOTICE on the definition of the relevant market for the purposes of Community Competition Law. (OJ C372 9/12/1997) and BEREC Common Position on Geographic Aspects of Market Analysis (definition and remedies) - 5 June 2014, BoR (14) 73.

2.0 Definition of the relevant markets

2.1 Definitions of service markets in ESA Recommendations and in prior PTA analyses.

20. The markets here under discussion, Market for access to the public telephone network provided at a fixed location on the Market for call origination in the public telephone network provided at a fixed location were nos. 1 and 2 in an annex to the ESA Recommendation on relevant markets from 2008. They were defined in more detail in PTA market analyses in 2012 and 2013. The markets in question were removed in the ESA Recommendation on relevant markets from 2016, and in the EU Recommendation from 2014. Despite the fact that the Recommendation from 2008 is no longer in force and that Markets 1/2008 and 2/2008 are no longer included in the Recommendation currently in force, these markets must nevertheless be examined again, as there are obligations in force on these markets which were imposed subsequent to the last PTA analyses. This analysis must be based on definitions from prior PTA analysis, from the ESA Recommendation from 2008 and on the Explanatory Note to the EU Recommendation from 2007.

2.1.1 Definition of Market 1/2008 in ESA Recommendation

21. When defining the market, one must keep in mind the definitions of the markets in the ESA Recommendation from 2008 which was based on an analogous Recommendation from the EU Commission from 2007, and for this reason, it is appropriate to take into account the Explanatory Note that accompanied the Commission's Recommendation where there is a detailed description of how to demarcate and define the markets in the Recommendation. In the Explanatory Note to the EU Commission's Recommendation there is discussion on access to public telephone services provided at fixed locations.¹² There it is stated that access to public telephone services provided at a fixed location networks and services can be provided in a number of ways. The most common method today is to use the traditional fixed telephony network over copper-pair. Other possible ways are for example, through television cable systems, mobile phone systems that have been adapted for use with fixed connections and other wireless networks. High-speed connections can carry telephone traffic but users would in general, not switch to high-speed connections for the sole purpose of gaining access to public telephony at a fixed location. Users switch first and foremost to high-speed connections in order to have access to faster Internet services. Many users that gain access to high-speed connections also retain a low speed connection which is used for fixed line telephony which indicates that these two services are considered as complementary to each other rather than being substitute services. Regulatory bodies are nevertheless encouraged to examine increasing substitutability with respect to future developments.

22. The Commission considers that despite the fact that access to public telephone networks provided at a fixed location and telephone service (voice calls) is often sold in one bundle, it is easy for the user to switch service providers for telephone calls, that is to say, by using carrier selection or pre-selection. For this reason telephone calls are not considered to belong to the same market as access to public telephone services provided at a fixed location

23. In the Explanatory Note and in the Recommendation from the Commission and in the ESA Recommendation the relevant market is defined in the following manner:

¹² Explanatory Note pages 21-23.

Access to the public telephone network at a fixed location for residential and non-residential customers.

2.1.2 Definition of Market 2/2008 in ESA Recommendation

24. The discussion on wholesale markets for origination of telephone calls in the Explanatory Note to the above specified EU Recommendation is based on the definition of retail markets for access and for telephone calls in the public network provided at a fixed location. It is possible to differentiate between access to fixed location public telephone networks and telephone calls. A company can decide to offer this service bundled or can offer just the telephone call on its own which then goes through an access connection operated by another company.

25. It is stated that the initiation of telephone calls in wholesale can be in the form of minute or transmission capacity. The market is considered to contain both origination for ordinary telephone calls and for data transmission through dial-up connections. The origination of telephone calls at wholesale level is sometimes sold along with other service items such as transit.

26. In the Appendix to the Recommendations the market is defined in the following manner:
Call origination on the public telephone network provided at a fixed location.

27. This refers to that part of telephone call that is neither considered to be transit nor call termination in a public telephone network at a fixed location in a national context.

2.1.3 Definition of Market 1/2008 in market analysis from 2013

28. In its analysis from 2013 the PTA based its definition of the retail market for access to public telephone services provided at a fixed location on the ESA Recommendation for the market in question from the year 2008. The PTA has come to the conclusion that the definition of Market 1/2008 to be found in the ESA Recommendation applies in most respects in this country. The PTA conclusion was, however, not exactly in line with the discussion on this market in the Explanatory Note to the Recommendation of the EU Commission, as the PTA considered access through a high-speed connection to be part of the market. This does not refer to the high-speed connection itself, but to the service provided through the connection which is access to VoIP service that uses telephone numbers. The PTA definition of Market 1 was as follows:

Access to the public telephone network at a fixed location for residential and non-residential customers.

This market includes any kind of connection with an electronic communications network that provides fixed line access to public telephone services for non-residential and residential customers, regardless of the electronic communications infrastructure or technology on which the access is based. This means that the market in question is not limited to analogue PSTN and digital ISDN access to the copper local loop, but it includes access to public telephone networks provided at a fixed location through other access networks with a fixed network connection point (which includes access to VoIP fixed telephony which uses telephone numbers provided over a high-speed network with the assistance of a variety of technical solutions, including both xDSL and fibre-optic connections).

2.1.4 Definition of Market 2/2008 in market analysis from 2013

29. In the analysis of Market 2/2008 from 2012, the PTA defined the service market in accordance with the ESA Recommendation from 2008 in the following manner:

Call origination on the public telephone network provided at a fixed location.

This refers to that part of a call which is neither categorised as transit nor termination of a call. The service considered to be part of this market is the setting up of calls, choice of route in the telephone exchange and connection for the origination stage of the call. At this stage, transit from the end user by local copper loop to the distribution frame and from there to the first telephone exchange on the route before reaching the next stage is included, the next stage being either transit or termination of the call.

30. Telephone calls to Internet service providers (dial-up connections) were considered to be part of the market for call origination

31. Calls were considered to belong equally to the market, regardless of whether they were between networks or totally within the same network. Calls that have origination or termination in another kind of network can to some extent be included in the market to the extent that they go through a domestic fixed location public network.

32. A distinction was however not made between the telephone calls made by individuals on the one hand and companies on the other.

33. The PTA considered various service items offered in wholesale in connection with transit of calls and that were necessary to enable interconnection between networks to be part of the relevant market.

2.2 PTA definition of Market 1/2008 in current circumstances

2.2.1 General

34. When making its definition of the market in this instance, the PTA kept in mind the definitions in the ESA Recommendation from 2008, the EU Commission Explanatory Note from 2007 and the PTA definition made in 2013 which is expounded here above.

35. PTA does however examine a number of factors that could influence the definition of the markets, considering among other things whether any changes in technology or in consumer behaviour that have taken place in the last 3-4 years could mean that the definitions should be amended. The following sections deal with the factors in question.

2.2.2 Varying technology on networks provided at a fixed location

2.2.2.1 PSTN and ISDN

36. In the PTA analysis from 2013 it was considered that PSTN and ISDN services would belong to the same service market. The PTA considers it very unlikely that a small but significant and lasting increase in the price of telephone services to residential users would prompt large numbers of users to purchase ISDN subscription, as a large number of customers had already converted their PSTN subscription to ISDN subscriptions in the past years without the proportional price difference between these two subscription options having changed significantly. In addition to this, a significant number of residential customers had transferred their ISDN subscription back to PSTN subscription because the share of broadband (xDSL) in data transfer had increased steadily, and had reduced the use of dial-up connections. Since 2013 the number of ISDN connections has continued to fall. The PTA considers that PSTN and ISDN access belong to the same market. It is however likely that during the coming years, PSTN and ISDN will disappear from the market and that VoIP will replace older technical solutions as will be discussed in more detail in Section 5.

2.2.2.2 VoIP that uses telephone numbers

37. Internet phone service of this type is normally operated through telephone exchanges which are interconnected with the public PSTN/ISDN telephone system and they use telephone numbers in accordance with number structure for fixed telephony services in order to enable communication between users. Service providers of this type of Internet telephone provide users either with a broadband connection and Internet phone or they offer simply an Internet phone service through broadband access from another service provider. A VoIP telephone exchange operated by service providers is usually equipped with most of the options for providing service that traditional PSTN/ISDN telephone exchanges have.

38. The functionality of these Internet telephones is to a large extent analogous to normal PSTN/ISDN telephone services. Most users that use this kind of Internet phone use it instead of a traditional fixed line phone. The vast majority of households and workplaces in the country have access to high speed connections which means they could easily switch from PSTN/ISDN service to VoIP.

39. Electronic communications companies market VoIP service that uses telephone numbers as a substitute service which replaces PSTN service and there are even instances where it is not mentioned that the service is provided with a specific technology, except in the case of what is called nomadic service. All telephone service provided through fibre-optic is in VoIP form. VoIP will in the coming years, completely replace PSTN service which is becoming obsolete.

40. The PTA published an announcement regarding Internet phone services on 3 February 2006. The announcement stated that given the Recommendations in Electronic Communications Committee no. ECC/REC/(05)03, from 10 May, 2005, and taking into account the observations received from stakeholders, it was the opinion of the PTA that Internet telephone services could be substitute services for fixed line telephony services. In other words, the PTA considered that one should not distinguish on the basis of the technology used when providing fixed telephony services. So the provisions of the Electronic Communications Act no. 81/2003 on fixed telephony services apply to Internet phones as appropriate, including the provisions on access to emergency services through the number 112, number display, phone tapping and operational security. This announcement enabled the use of traditional fixed line phone numbers for Internet phones, including number transfer if this service is fixed to a specific location for the end user.

41. If VoIP is however not fixed to a specific location (nomadic service) then a dedicated number series shall be used, 49x xxxx and number transfer between such services and fixed location services is unauthorised.

2.2.2.3 VoIP that does not use telephone numbers

42. In general these are what were called peer-to-peer calls which are solutions where telephone calls are normally processed through appropriate software in private computers with the help of headphones/speakers and a microphone so that the user can have a conversation with other users through the Internet that have analogous software and equipment. This service is normally free but it is usually not possible to use it to call or receive dialled calls from PSTN/ISDN networks.

43. It is only possible to connect to a limited group of users in this manner so it is unlikely that small but significant price increases for access to the fixed telephony network would lead to a large group of users converting to Internet phone calls in this category. There is reason to believe that Internet phone calls of this kind are mainly used as an addition to traditional fixed line usage and not instead of it. The proportion of substitutability could certainly increase in the case of international calls. One could, for example, consider that many users have very little need to be able to access all telephone numbers abroad through their fixed line telephone or to be themselves available. Then the solution of being able to communicate with a closed group of users (without using telephone numbers) could be satisfactory. It is however unlikely that this use of Internet phone would lead to many individual customers cancelling their subscriptions to traditional fixed line telephones. For this reason it is not possible to consider Internet telephone service of this kind as a realistic option to connections with a fixed telephony network.

44. Variations of this service can offer telephone calls from computers to telephone numbers for a fee. This possibility increases the usability of the service and provides the option of being able to call almost any end-user. The substitutability of this service is however limited, with respect to traditional fixed telephony services in that it is not possible to call the Internet telephone user from a traditional fixed line telephone.

45. It was the PTA conclusion in its market analysis from 2013 that VoIP which did not use telephone numbers did not belong to the relevant service market. The main reason for this conclusion was that in most such services it is not possible to call any party one chooses through the number system. In addition to this, it is not possible to call a user of such VoIP service from a telephone using the number system. The PTA considers that changes have not taken place since 2013 that would give reason to change the previous conclusion and for this reason, considers that this type of service is not part of the Market for access to the public telephone network provided at a fixed location.

2.2.3 Access to mobile phone systems

46. In the Recommendation a distinction is made between markets for public telephone services provided through a fixed line network on the one hand and through a mobile phone network on the other. The main rule is that one should neither consider access to public telephone services through a mobile phone network, nor telephone traffic that originates in mobile phone networks as part of the predefined market for access to public telephone services provided at a fixed location. Here in this country there has been a significant reduction in the number of users and of minutes in public telephone services provided at a fixed location in recent years, while the number of users and minutes of traffic in mobile phone services has increased during the same period.¹³ This could indicate that a number of users have switched from public telephone services provided at a fixed location to mobile phone services. The PTA does not consider that market circumstances in Iceland today call for a change in the distinction between these two markets.

2.2.4 Conclusions on the demarcation of Market 1/ 2008

47. With reference to the discussion here above it is the PTA conclusion that all fixed telephony service through connections provided at a fixed location that use telephone numbers, belong to the relevant market, regardless of the technology used, i.e. PSTN, ISDN or VoIP. The PTA intends to adhere to the following definition of Market 1/2008:

Access to the public telephone network at a fixed location for residential and non-residential customers.

This market includes any kind of connection with an electronic communications network that provides fixed line access to public telephone services for residential customers, regardless of the electronic communications infrastructure or technology on which the access is based. This means that the market in question is not limited to analogue (PSTN) and digital (ISDN) access to the copper local loop, but it includes access to public telephone networks provided at a fixed location through other access networks with a fixed network connection point which includes access to VoIP fixed telephony which uses telephone numbers provided over a high-speed network provided at a fixed location with the assistance of a variety of technical solutions, including both xDSL and fibre-optic connections.

2.3 PTA definition of Market 2/2008 in current circumstances

2.3.1 General

48. When making its definition of the market in this instance, the PTA kept in mind the definitions in the ESA Recommendation from 2008, the EU Commission Explanatory Note from 2007 and the PTA definition made in 2012 which is expounded here above.

¹³ See further discussion in Section 5.

49. PTA does however examine a number of factors that could influence the definition of the markets, considering among other things whether any changes in technology or in consumer behaviour that have taken place in the last 3-4 years could mean that the definitions should be amended. The factors in question are discussed in the following Sections.

2.3.2 Internal use

50. The PTA assumes in the market analysis that both fixed telephony that goes between networks and fixed telephony that is totally within the same network belong to the market being examined here. Underlying constituent parts in fixed telephony retail service are origination and termination of telephone calls, and in some instances transit of telephone calls. Electronic communication companies need this service to be able to provide retail fixed telephony services. The use of these service items creates demand on the wholesale market, both in cases where such transactions are made within the same company or between companies.

51. It is appropriate to note that in the Explanatory Note to the EU Recommendation from 2007, internal traffic is not exempted in the definition of Markets 2/2008 and 1/2016 (previously 3/2008), as seems to have been done in the definition of call termination in mobile phone networks.¹⁴ The Norwegian electronic communications surveillance body (NPT) published an analysis of these markets in November 2015, where internal traffic was considered to belong to Market 2/2008 and ESA raised no objections to the definition.

2.3.3 Telephone calls with dial-up connection for Internet access

52. In its analysis from 2012, the PTA considered that dial-up connection telephone calls through Internet service providers were part of Market 2/2008 for call origination, but not part of Market 1/2016 for call termination. The use of dial-up connections is now very rare and this distinction has almost no significance for the conclusions of this analysis. The PTA therefore considers there to be no reason to examine this factor further and for the time being it adheres to its conclusion from 2012.

2.3.4 Differentiation between services for companies and individuals

53. In the ESA Recommendation from 2008 and in the PTA analysis from 2012, no distinction was made between the corporate and individual markets for retail fixed telephony. There is no difference between origination of telephone calls sold in wholesale depending on whether they are intended for retail sale to companies or individuals. The service and pricing are the same. The PTA considers that no changes have occurred on the market which can alter the prior conclusion on this issue.

2.3.5 Various services are necessary in connection with interconnection.

54. According to the Síminn reference offer there are various services other than origination and termination of calls offered in connection with the interconnection of fixed telephony networks.¹⁵ These service items are among other things, connection into a connection area, connection to current from the interconnection point, connection of signal routes, signal traffic and various services for carrier selection and pre-selection. The services are more or less necessary in order to be able to interconnect with the Síminn network. Charges for this service are only to a small extent related to use. They are mainly fixed charges, that is to say set-up and/or monthly charge.

¹⁴ See the Explanatory Note to the EU Recommendation from 2007, page 44.

¹⁵ See Appendix 3a to the Síminn reference offer from November 2013 and Appendix 3b from August 2011; <http://heildsala.siminn.is/talsimi/>

55. There is little discussion on services related to interconnection of fixed networks in the Recommendation. Many of these services cannot be attributed to one particular wholesale market for fixed telephony services rather than another. For this reason, it seems most reasonable to divide the income from the services proportionately between Markets 2/2008 and 1/2016 when market share is measured by revenue. Income from these items is however not likely to have a significant impact on market share so the PTA considers there to be no reason to include them when market share is measured. Nevertheless, the PTA considers that the services are part of the wholesale market for fixed telephony services. This means that obligations could be imposed in connection with the service items.

2.3.6 Calls to and from other kinds of networks

56. The PTA has deemed that if a telephone call originates in a domestic network then its origination part belongs to Market 2/2008 regardless of the type of network or service the call is made to, as the service provided by the fixed telephony network in this connection is not unlike that which is the case when a telephone call is totally within a fixed telephony network and the pricing of this part of the service is the same. The PTA considers that this has not changed since the last analysis was made.

2.3.7 Call origination in Internet telephone (VoIP)

57. With reference to the discussion here above in Section 2.2.2 on fixed telephony service through a packet switched electronic communications network (VoIP), it is the PTA conclusion that call origination in an Internet telephone which uses a telephone number and which is provided through a network at a fixed location, is part of Market 2/2008.

2.3.8 Conclusions on the demarcation of Market 2/ 2008

58. The PTA has come to the conclusion that the definition of Market 2/2008 should remain unchanged from the definition provided in the PTA analysis of the market in 2012. In this analysis the PTA will use an analogous definition to the one used in the prior analysis of Market 2/2008:

Call origination on the public telephone network provided at a fixed location.

This refers to that part of a call which is neither categorised as transit nor termination of a call. The service considered to be part of this market is the setting up of calls, choice of route in the telephone exchange and connection for the origination stage of the call. At this stage, transit from the end user by local copper loop, or by any kind of connection provided at a fixed location (e.g. bitstream connection) to the distribution frame or to an analogous network connection point, and from there to the first telephone exchange on the route before reaching the next stage, before reaching the next stage which is either all transfer or termination of the call, is included.

59. Telephone calls to Internet service providers (dial-up connections) were considered to be part of the Market for call origination

60. Calls belong equally to the market regardless of whether they are between networks or totally within the same network.

61. The PTA considers there to be no reason to distinguish between calls of individuals on the one hand and companies on the other. Corresponding underlying wholesale aspects of individuals' calls and those of companies must belong to the same market.

62. The origination part of a telephone call which originates in a telephone network provided at a fixed location belongs to the relevant market even if it terminates in another kind of network.

63. The PTA considers various service items offered in wholesale in connection with call origination and that are necessary to enable interconnection between networks are part of the market.

3.0 Definition of geographical market

3.1 General

65. A geographical market covers a geographical area where stakeholder companies participate in supply and/or demand of the relevant goods or services where conditions for competition are the same or sufficiently homogeneous and where it is possible to demarcate the geographical area from neighbouring area where conditions for competition are significantly different. In assessing demand-side substitutability, it is appropriate to consider customers' tastes and geographical purchasing patterns. It is customary to demarcate geographical electronic communications markets with reference to the distribution of the relevant electronic communications networks and to the jurisdiction of the legal framework that applies to the relevant market.

66. In accordance with the ESA Guidelines¹⁶ one must take into account and define the market as that geographical area where the product in question is offered to customers with similar and sufficiently homogeneous competition conditions. When markets are defined geographically it is not necessary for the competitive conditions of electronic communications companies to be exactly the same. It suffices that they are similar or sufficiently alike and for this reason it is only areas where competition circumstances are really "different" that cannot be considered to be the same geographical market.

67. Among the significant factors when assessing geographical markets are the nature and characteristics of the product or service in question, possible entry barriers and/or customer behaviour, the number of service providers, a clear difference in market share of companies in the area in question and surrounding areas or a significant price difference between areas. Then one can examine whether there is a difference in marketing and/or quality of service between geographical areas.

68. ERG (now BEREC) has issued Guidelines that constitute a joint position on various aspects relating to the geographical division of markets. There it is stated among other things that the increased distribution and increased market share of new electronic communications networks can in some locations have led to conditions for competition being different between particular regions within the same state. Should there be any doubt as to whether a country is all one market, then it is advisable to begin by performing a simple preliminary examination of market conditions, taking into consideration demand and supply substitutability between areas and where the homogeneity of the competition environment is examined with respect to the distribution of new electronic communications networks, pricing and the characteristics of services. If the conclusions of the preliminary examination indicate that they are not different market areas, then there is no reason to perform a detailed analysis.

3.2 Access and origination of telephone calls in a fixed telephony network

69. In its analysis from 2012, the PTA came to the conclusion that the geographical market for call origination in a public telephone networks provided at a fixed location (Market 2/2008) was the whole country. The same geographical demarcation applied to access to a public telephone network provided at a fixed location for residential non-residential customers

¹⁶ See Section 2.2.2

(Market 1/2008), as stated in the PTA analysis from 2013. There have not been significant changes to the criteria for this assessment since the analyses in question were made.

70. The Síminn public network provided at a fixed location reaches all inhabited areas in the country. The copper local loops of the subsidiary Míla are installed into all homes in the country and are connected to the Síminn telephone exchanges throughout the country. The same laws and regulations apply to the operation of fixed telephony networks everywhere in the country and a company's licence to operate such a network applies throughout the country and the rules governing universal services lead to a duty to have such connections on offer for all citizens. All companies on the market offer one price for public telephone services provided at a fixed location at all locations in the country. The PTA further considers that there is no difference in preferences or purchasing pattern of users by region. In the opinion of the PTA, it is not possible to demarcate an area where conditions for competition are significantly heterogeneous to that which applies elsewhere in the country.

71. Circumstances are such that clear and stable geographical boundaries can generally not be found for the networks of the network operators that have been installed or are being developed. The network operators with the exception of Míla that are now operating are still expanding their network distribution. Distribution does not follow any particular trend but rather seems to be quite unpredictable and even random in some instances.

72. There have been no significant changes in the structure of public telephone networks provided at a fixed location since 2012-2013. The coverage of the Síminn public telephone network provided at a fixed location is the same as before. Vodafone operates telephone exchanges at many locations in the country. The equipment of other electronic communications companies on the fixed telephony market is mostly limited to the Capital City Area but the PTA has considered and still considers that this should not impact the geographical demarcation of the markets as the networks of these parties are on a small scale and their market share is small.

73. With increased use of VoIP service, fixed telephony service will not be limited to individual networks. Service providers can use any access network they choose to carry the service and they can gain wholesale access to transit routes from network operators at any location in the country.

74. The difference in quality and service is one more issue that one has to take into account and assess whether it impacts the geographical division of the market. In the opinion of the PTA there is no significant difference in quality and service by region and the competition environment does not vary by region in this respect.

75. On the basis of the above specified preliminary investigation, the PTA considers there to be no need to make a more detailed analysis of geographical circumstances on the wholesale Market for call origination and on the retail Market for access to the public telephone network provided at a fixed location. Competition conditions are not sufficiently heterogeneous between individual regions to justify dividing the country into regional markets and in addition to this, the boundaries in distribution of networks provided at a fixed location are still unclear. With the above in mind, the PTA conclusion is the same as before, i.e. the geographical demarcation of the wholesale Market for call origination and for the retail Market for access to the public telephone network provided at a fixed location, is the whole country.

4.0 Conclusions of market analyses 2012 and 2013

4.1 Market 1/2008

76. In 2013, when the previous analysis of the Market for access to the public telephone network provided at a fixed location was published, Síminn still had by far the largest share. The Síminn share had dropped since the analysis of the market was made in 2008 from 84% in 2008 to just under 71% in 2011, by revenue. The Vodafone share at wholesale level was 18% in 2011. There were four other companies on the market, Tal, Símafélagið, Hringdu and Nova and their combined share was about 10%. It was the PTA conclusion that Síminn still has significant market power on this market and that this would not change during the coming 2-3 years.

77. The PTA considered that the Síminn economies of scope and scale constituted a barrier for new companies entering the market. The PTA considered the market for fixed line telephony to be a mature market, and for this reason the limited growth opportunities represented a barrier for new competitors. In addition to this, The PTA considered that the Síminn ease of access to capital strengthened the company's position against new competitors on the relevant market.

78. The PTA also considered that Síminn's bundling, its varied service offer and vertical and horizontal integration contributed to the company's increased market strength on the relevant market.

79. The PTA considered that Síminn had a dominant position on the market and that active competition would not flourish during the estimated period of validity of the market analysis. Although entry into this market had in some ways become easier, The PTA considered that entry barriers still existed, among other things, in the form of the Síminn economies of scope and size. The PTA designated Síminn as having significant market power on Market 1/2008.

80. Subsequent to the analysis the PTA decided to maintain obligations on Síminn for carrier selection and pre-selection, wholesale access to connections to the public telephone network provided at a fixed location, non-discrimination, transparency, accounting separation, price control and cost accounting.

4.2 Market 2/2008

81. On Market 2/2008 (origination of telephone calls), Síminn still had by far the largest share. The Síminn share had dropped since the analysis of the market was made in 2008 from 69% in 2008 to about 60% in 2011, by total volume of traffic. The Vodafone share at wholesale level was 38% in 2011. Three new companies, Símafélagið, Hringdu and Nova had entered the market but their combined share was less than 2%. It was the PTA conclusion that Síminn still had significant market power on this market and that this would not change during the coming 2-3 years.

82. The PTA evaluation of entry barriers, of conduct of parties to the market and of other issues that impact competition on the market, was much the same as for Market 1/2008.

83. Subsequent to the analysis the PTA decided to maintain obligations on Síminn for access, non-discrimination, transparency, accounting separation, cost accounting and price control with benchmarking.

5.0 Overview of the situation on fixed telephony markets

5.1 Parties to the markets

84. When the PTA analysis of the fixed telephony markets were made in 2012 and 2013 there were six companies that sold subscriptions to fixed telephony services at retail level, Síminn hf., Fjaraskipti hf. (Vodafone), IP-fjaraskipti ehf. (Tal), Símafélagið ehf., Hringdu ehf. and Nova ehf. Today there has been a change such that 365 ehf. has taken over Tal electronic communications services, Snerpa has started resale of fixed telephony service using IP technology (VoIP) through its own bitstream and fibre-optic network and Hringiðan provides resale of VoIP service. In addition to these companies, Globalcall has offered international telephone calls on a network provided at a fixed location during the past years.

85. 365 ehf. and Hringiðan do not operate their own fixed network telephone exchanges. The other companies operate their own electronic communications networks, but to varying degrees. Síminn operates more telephone exchanges than any of the other companies and they cover all inhabited areas of the country. Vodafone operates dozens of telephone exchanges at many locations in the country. The companies Hringdu, Nova and Símafélagið operate telephone exchanges in the Capital City Area while Snerpa provides Internet telephone service (VoIP) on its own network in the West Fjords.

86. When the first PTA analysis of fixed telephony markets was made in 2008 there were three companies that sold public domestic fixed telephony services at retail level, Síminn, Vodafone and Tal which has now merged with 365 miðlar. A number of smaller companies sold only prepaid telephone cards for international calls. In the next PTA analysis of the market, two companies had entered at retail level i.e. Hringdu and Símafélagið, and Nova which offered fixed telephony through a fixed network solely on the corporate market. Prepaid telephone cards for international calls were still being offered but the parties selling them were not the same as before. Heimsfrelsi had disappeared from the market; Atlassími merged with Tal and a new company called GlobalCall had entered the market.

87. There are now 10 companies on the electronic communications market that offer retail fixed telephony, i.e. Síminn, Vodafone, 365 miðlar, Nova, Hringdu, Snerpa, Símafélagið, Hringiðan, Tismi and GlobalCall.

88. Síminn is by far the largest electronic communications company in Iceland and offers comprehensive electronic communications services. In 2015 the company's market share in subscriptions for fixed telephony was about 62% which is a reduction of about 5% during the period 2011-2015. The company previously had a monopoly in electronic communications and was owned by the state until 2005. In 2007 the operation of the Síminn core network was placed in a separate company, Míla. Despite this separation, the companies are still closely related as they are both part of the same company group. Síminn and/or Míla have been designated as having significant market power on most of the markets that have been subject to analysis by the PTA.¹⁷ Síminn owns and operates telephone exchanges across the whole country and sells telephone services to homes and companies and for this purpose it leases trunk lines and local loops from Míla. The parent company Skipti which formerly held ownership of Míla, Síminn and more subsidiaries in telecommunications, information technology and media operations, has now been incorporated into Síminn and dissolved. Míla has thus become a subsidiary of

¹⁷ See overview of market analyses on the PTA website: <http://www.pfs.is/fjaraskipti/markadsgreining/>

Síminn instead of an affiliate. Síminn was registered on the stock exchange (Nasdaq Iceland) in October 2015 and the company's largest shareholders are pension funds and investment funds.

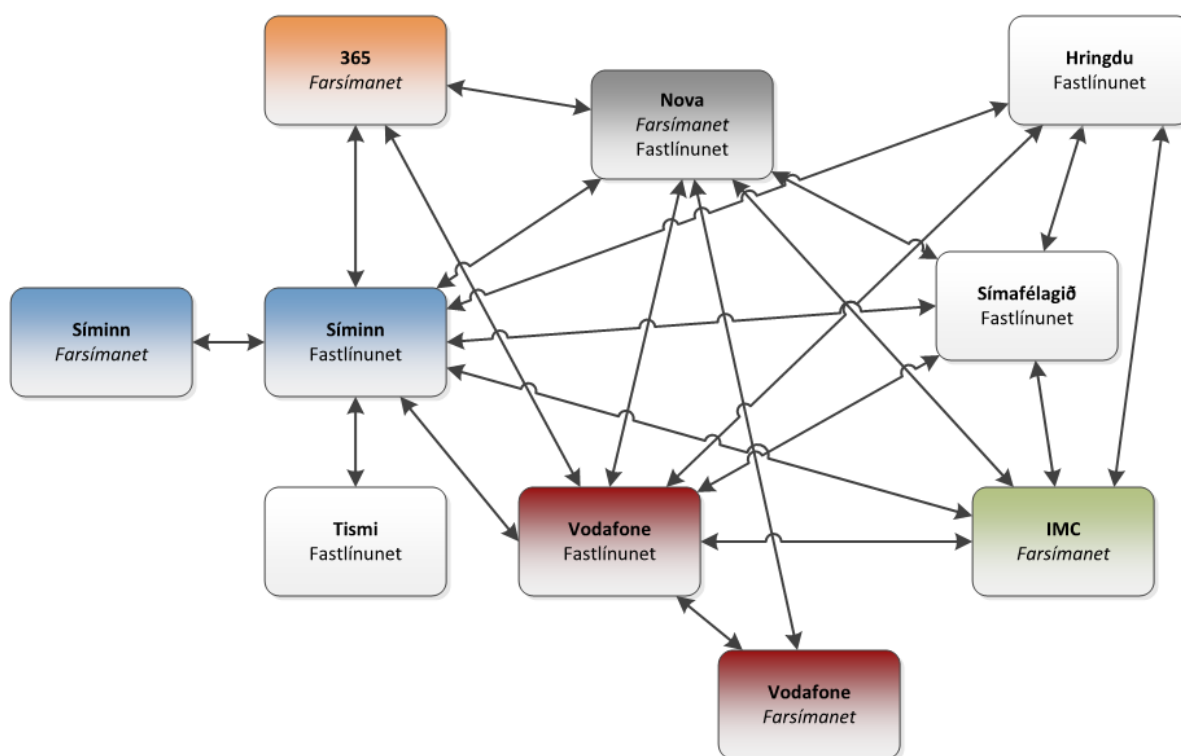
89. Vodafone is the next largest electronic communications company on the fixed telephony market with about 23% market share and this company's share has been stable in recent years. The number of telephone exchanges owned by Vodafone has increased in recent years and the company now operates dozens of exchanges across the country. The company was registered on the stock exchange in 2012 and is mostly owned by pension and investment funds.

90. 365 miðlar is the third-largest with respect to share of the fixed telephony market with about 11% market share in 2015. The company does not operate its own telephone exchange to provide fixed telephony service and only operates on this market as a resale party at retail level.

91. The companies Nova, Hringdu and Símafélagið operate telephone exchanges in the Capital City Area. GlobalCall only sells international calls in retail and does not have interconnection with the public fixed telephony network which means that the company does not operate on the relevant wholesale market. Snerpa resells VoIP service, but only to customers connected to its own bitstream or fibre-optic networks which only cover municipalities local to the company in the West Fjords. Hringiðan has recently started resale of VoIP service. Tismi is a new company on the market which has made an interconnection agreement and has been allocated telephone numbers. The total share of the above specified companies was about 5% in 2015.

92. There has been a very large increase in interconnection of networks since 2008. As one can see in figure 5.1 there are 6 fixed networks and five mobile phone exchanges in operation that interconnect in this country. The majority of these networks have more than one interconnection. All companies that have a fixed network telephone exchange have an interconnection with the Síminn fixed network. These companies are Vodafone, Símafélagið, Tismi and Nova. IMC and 365/Tal on the other hand only have interconnections with their mobile phone networks.

Figure 5.1 Interconnection of telephone networks in Iceland



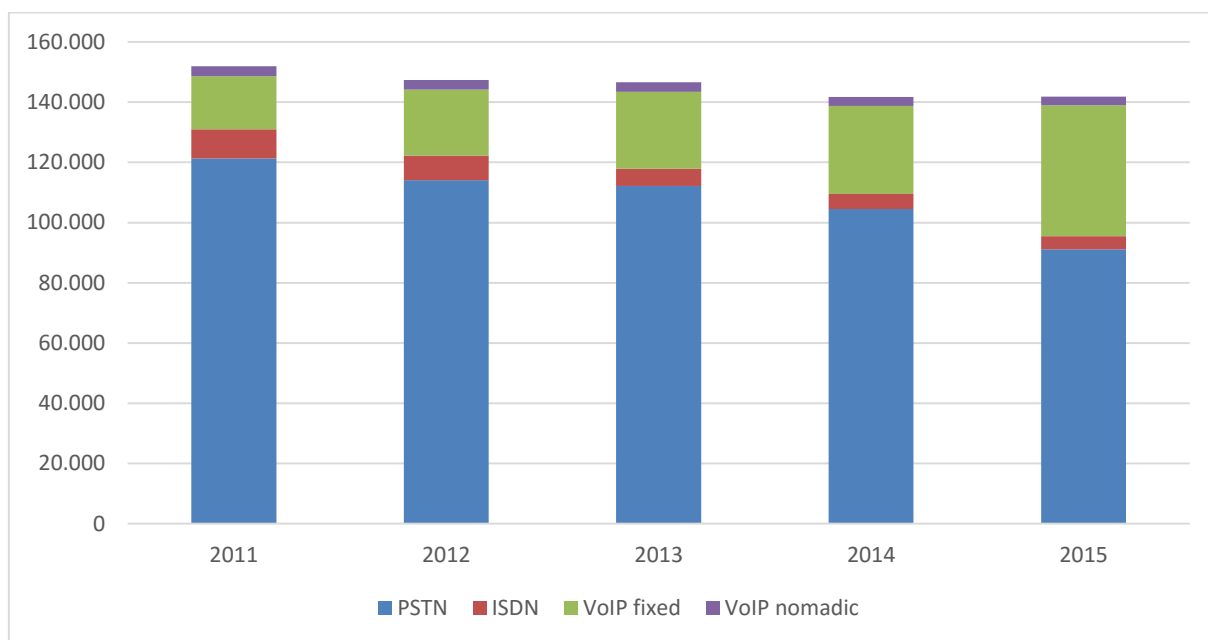
Source: Post and Telecom Administration

5.2 Supply and demand

93. Until the year 1997 there was steady growth in demand for user lines in the public telephone system provided at a fixed location (PSTN). In 1996 ISDN connections were first offered and they gave the possibility of having two connections active at the same time, for example, Internet and telephone. Demand for ISDN grew quickly in the first years after its introduction and demand for PSTN decreased accordingly. Around the turn of the century the number of subscribers and the use of fixed telephony peaked which can be attributed to the use of PSTN and ISDN for access to Internet service with dial-up through a modem. Since that time the number of subscriptions has steadily declined, particularly through traditional fixed telephony, i.e. PSTN. The number of subscribers in PSTN service was in excess of 140,000 in 2008 and now is just over 91,000 at the end of 2015.

94. Use of VoIP has increased significantly in recent years. Users of VoIP telephones through a fixed network connection point were just under 6,000 at the end of 2008 while they were 43,000 at the end of 2015. The number of users in nomadic service has been relatively stable and there were just under 3,000 users at the end of 2015. Despite this growth in the number of subscribers to VoIP service, the total number of subscribers to fixed telephony is on the decline. Development in number of connections is shown in figure 5.2

Figure 5.2 Number of subscriptions to fixed telephony service by access method 2011-2015

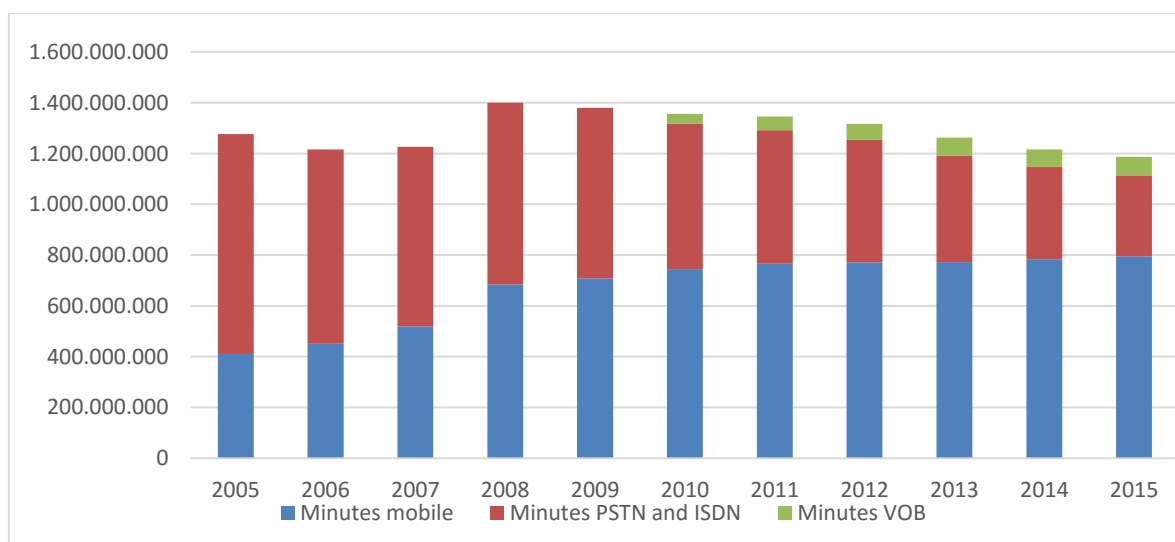


Source: Post and Telecom Administration

95. Changes in the amount of telephone traffic on wholesale markets for telephone calls are proportionate to changes in traffic on the retail market for fixed telephony service. There have been significant changes to calling patterns in the fixed network system. There has been a significant decline in calls that originate in the fixed line system from over 2 billion in 2001 to about 582 million in 2011 and the volume dropped to under 400 million minutes in 2015.

96. This change results among other things from changed circumstances on the telephone market. Internet service is now almost exclusively accessed with bitstream connections using the xDSL technology over copper lines or fibre-optic, while ISDN or PSTN dial-up connections have to all intents and purposes disappeared. Telephone calls from mobile phone systems have also had a major impact.

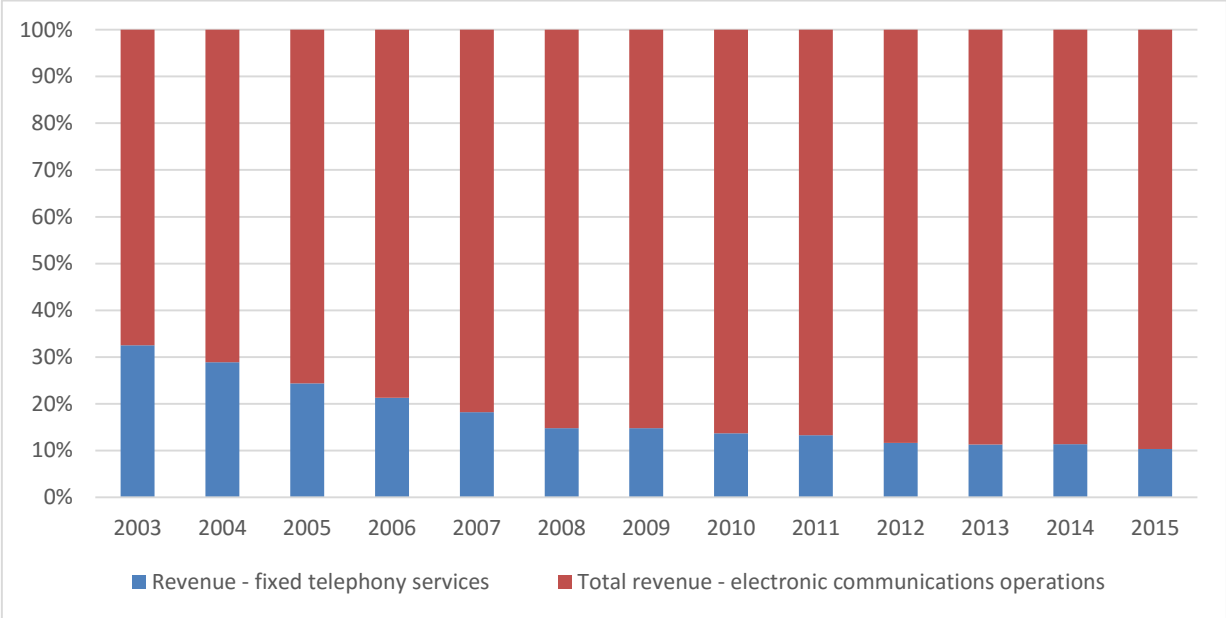
Figure 5.3 Number of minutes in telephone service 2005-2015



Source: Post and Telecom Administration

97. The importance of fixed telephony services is steadily decreasing in comparison to other electronic communications services. Figure 5.4 here below shows the proportion of revenue from operation of fixed telephony service as a proportion of total revenue in electronic communications operations in the country. In 2003, revenue from fixed telephony service was just over ISK 8 billion of the total turnover in the electronic communications market of just under ISK 25 billion which represents about one third of this market. In 2015, this revenue had declined to about ISK 5.5 billion of a total turnover of ISK 55 billion on the electronic communications market which represents about one tenth of the market. If we compare this to price development from 2003, it is clear that there has been a very significant real decline in revenue from fixed telephony services during the period as a revenue of ISK 8 billion at 2003 price levels is equivalent to ISK 15 billion at 2015 price levels

Figure 5.4 Proportion of fixed telephony services revenue of total revenue from electronic communications operations for the years 2004-2015

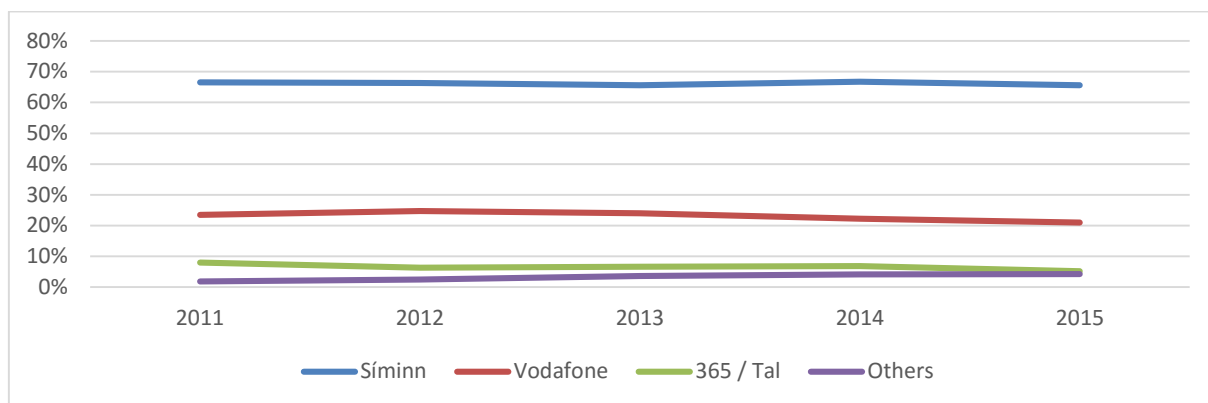


Source: Post and Telecom Administration

5.3 Market share

98. In the summer of 2007 Síminn had an overwhelmingly dominant market share on the markets for access to public telephone services provided at a fixed location. Measured by revenue, the Síminn share on Markets 1/2008 and 2/2008 was in the range of 79-84%. In the year 2011 the Síminn share had shrunk somewhat. On Market 1 as it is defined today, i.e. for residential and non-residential customers, the Síminn share by revenue was 72%. The Síminn share in revenue has since declined and was 66% in 2015 and one can expect it to decline even further in the coming years. The following figure shows the development of the Síminn market share and of the shares of other companies on the market for the period 2011-2015 by revenue. These figures include all fixed telephony services, including those using the regulated access products and VoIP.

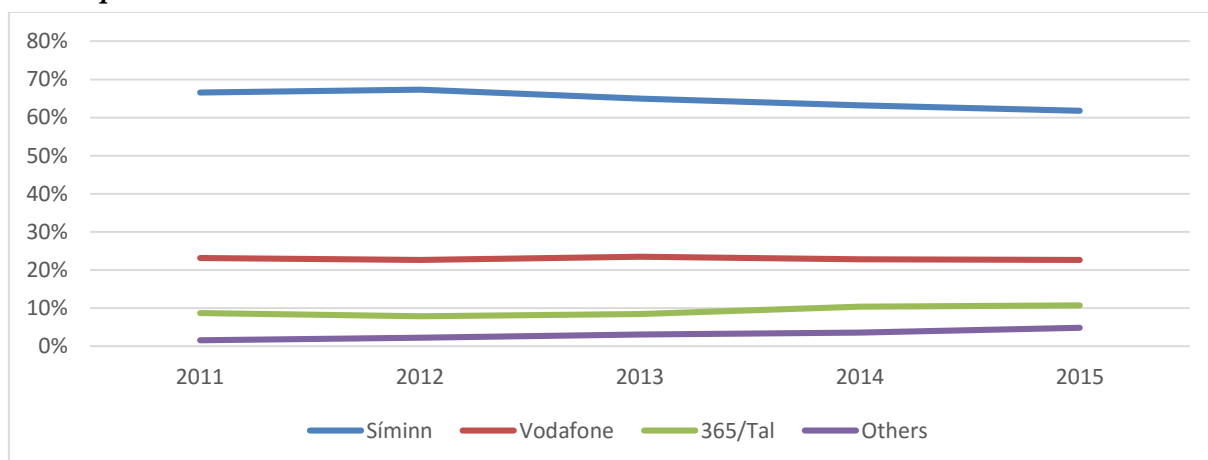
Figure 5.5 Public telephone network provided at fixed location - Market share by revenue 2011-2015



Source: Post and Telecom Administration

The Síminn share by number of subscriptions has declined since the prior analysis but is still high, while the market share has dropped from 82% in 2007 to 67% in 2011 and 62% in 2015. Vodafone has held its market share measured by number of customers but has given way slightly when measured by revenue. The shares of smaller customers have grown to a small extent during the period. The following figure shows the development of the Síminn market share and of the shares of other companies on the market for the period 2011-2015 by number of subscriptions.

Figure 5.6 Public telephone network provided at fixed location - market share by subscription 2011-2015



Source: Post and Telecom Administration

5.4 Price development

99. Pricing of fixed telephony services is now largely no longer comparable with the prices that previously applied. Having taken into account price levels and with the addition of the line charge one can conclude that the least expensive Síminn subscription in 2016 is about one third more expensive than the least expensive for the years 2007 or 2012, the years that were compared when the last analysis was made. On the other hand there is the fact that there are currently 1,200 minutes of usage included for a “home phone” in the subscription for 2016. If one allows for full use of such 1,200 minutes and the price converted to current price levels, then the total price for equivalent service is 30% and 50% less expensive respectively for the years 2007 and 2012.

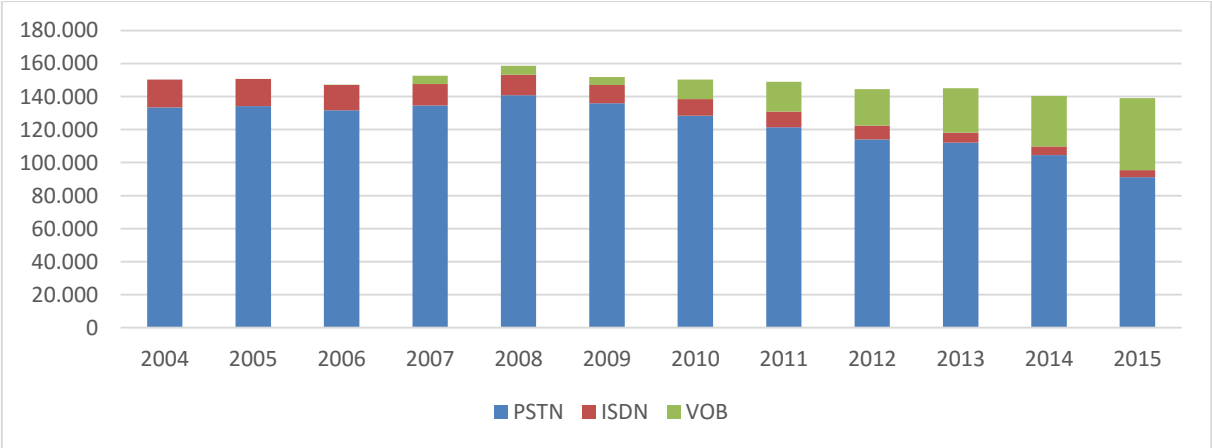
100. Fixed telephony services are generally marketed today with a large amount of use included in the fixed monthly charges, even unlimited use of both fixed line telephone and mobile phone. There seems to be considerable competition in fixed telephony services and each and every service provider offers such subscriptions. Their prices are similar when one compares subscriptions with corresponding benefits included. The marketing seems to be based on having substantial benefits included, but in the light of declining use of the service it must be considered unlikely that fixed telephony service operators will need to allow for significant outlay to supply the benefits. One could assume that consumers are buying peace of mind by tying the household electronic communications costs to a specific amount in ISK where they can use the service as they please without incurring additional costs that are collected later. The same kind of consumer behaviour and development of presentation of service in recent years can be seen both on the market for mobile phone service and for Internet service through a dedicated connection.

101. A steady decline in number of customers and even more rapid decline in usage and the fact that usage is now not charged specifically for a large number of customers, explains the fall in revenue. Customers are fewer and revenue from each customer is on the decline because even though fixed monthly subscription charges have increased when one takes into account the line charge, the included amount of usage more than makes up for this increase, and has probably resulted in a reduction in total charges to a significant number of customers. Síminn has however maintained its share in revenue, though all the company share in number of subscriptions has declined slightly.

5.5 Technical development

102. Until 2006, PSTN and ISDN services were almost universal on the fixed telephony market. Since and including 2006, VoIP was being offered to general users. Since 2010, the number of users of fixed telephony services in the form of VoIP has increased steadily and now represents about one third of users.

Figure 5.7 Number of subscribers to fixed telephony service by technology 2004-2015



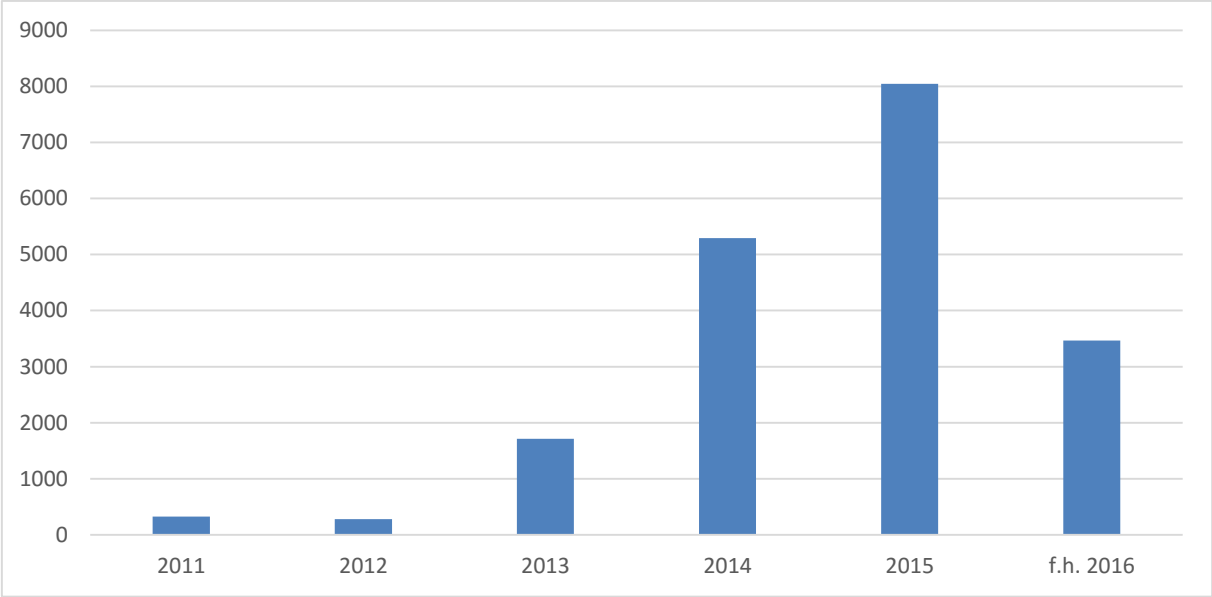
Source: Post and Telecom Administration

103. Users of VoIP telephones through a fixed network connection point were just under 6,000 at the end of 2008 while they were 43,000 at the end of 2015. The number of users in nomadic service has been relatively stable and there were just under 3,000 users at the end of

2015. Despite this growth in the number of subscribers to VoIP service, the total number of subscribers to fixed telephony is on the decline.

104. A number of smaller electronic communications companies today use Síminn wholesale access to fixed telephony lines¹⁸ with related service, i.e. single billing carrier pre-selection (SB-CPS) service. The number of subscribers with Síminn counterparties in this service now amounts to several thousand.

Figure 5.8 Number of wholesale Single Billing – Wholesale Line Rental

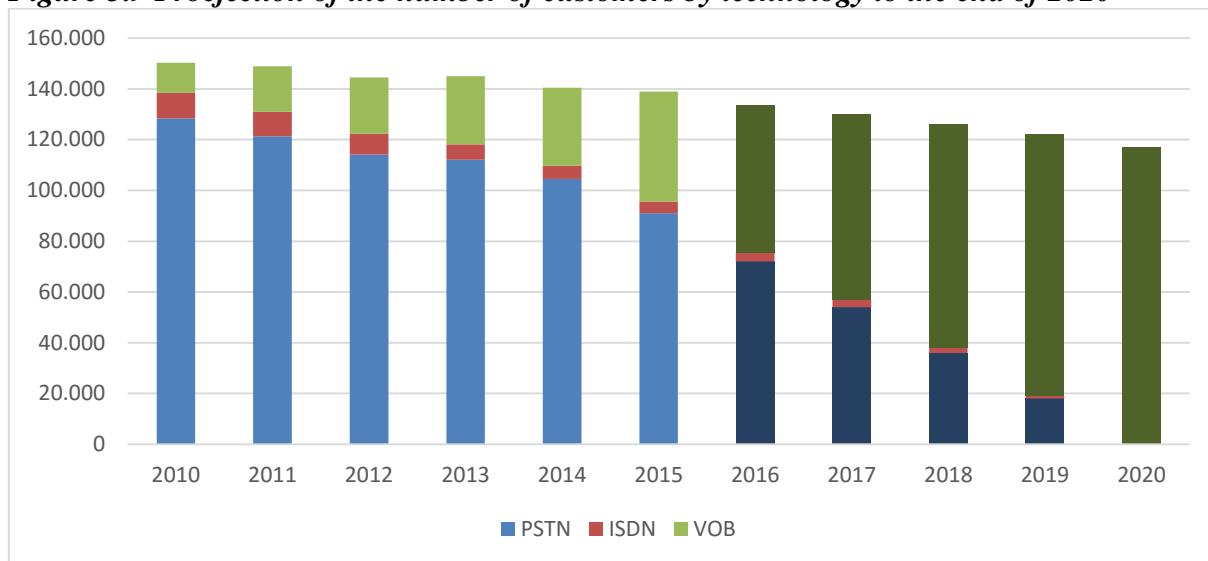


105. Most if not all service providers now direct their attention at IP technology as future transit technology for fixed telephony services. The telephone exchange equipment on which traditional fixed telephony networks are based have now been in use for decades and it is becoming increasingly difficult to maintain this equipment or even to procure spare parts. It is therefore clear that within a very few years, fixed telephony services in this country will migrate from traditional PSTN technology to IP protocols.

106. At the beginning of 2016, Síminn announced its plans to parties to the market and to the PTA, to migrate fixed telephony services to IP. Síminn then intended to publish a schedule before the end of April 2016 with the dates for the migration of the company’s telephone exchange system from PSTN to IP, where one year’s notice would be given, such that the first changes would be made in April 2017 and where by the end of 2020 the migration will be completed. Síminn has however not yet announced such a schedule with dates. If by the end of 2020 Siminn and other fixed telephony operators will have migrated all of their customers to VoIP and the number of customers continues to fall as is has so far the market may develop as projected in the following picture. Darker colours signify the projected numbers.

¹⁸ Widely known abroad as “Wholesale Line Rental WLR””; in this country the service has been called single billing carrier pre-selection (SB-CPS).

Figure 5.9 Projection of the number of customers by technology to the end of 2020



107. Though the above specified schedule for organised migration of whole telephone exchange areas from PSTN to IP has not yet seen the light of day, Síminn marketing work and that of other electronic communications companies operating on the fixed telephony services markets is increasingly aimed at directing their customers from PSTN to IP. For example, only IP technology is on offer for fixed telephony services provided over fibre-optic. There are furthermore, various products or product bundles with Internet service and “home phone” on offer where the product or bundle allow for the “home phone” being converted from PSTN to IP telephone where service is provided through customer premises equipment for Internet service (router).

108. The PTA considers it necessary to discuss various possible options for providing VoIP service and to discuss the position of fixed telephony service as an independent service and its future in the IP environment.

109. In the Gagnaveita Reykjavíkur fibre-optic network GR ends its connection with an endpoint device in the home of the customer. There are several connectors in this endpoint device. Some of them are connectors for network cables where specific connections are allocated for IPTV and where one can directly connect a set-top box (STB). Other network connectors are allocated for Internet service and a router with Wi-Fi access points is connected to one of them. There is also a connector on GR endpoint devices for a traditional PSTN home telephone as there is terminal adapter (TA) in the endpoint device which converts between VoIP technology and PSTN, so that customers do not need to acquire a special VoIP handset. IP services such as television, Internet and telephone are independent of each other and the household can choose to purchase each one from a separate service provider or choose to bundle them from one provider.

110. Míla has been converting its copper access network to what is called VDSL where fibre-optic is laid to the street cabinet and the company is also developing a local loop network with fibre-optic (FTTH). The Míla fibre-optic network is called a GPON network. In a recent Míla presentation on its GPON fibre-optic development it was stated that the intention was that the Míla fibre-optic endpoint equipment would only be offered with one network connection (ONT). The service provider from whom the household purchased its Internet service would provide IPTV service and VoIP fixed telephony service through its router. Queries and

submissions from electronic communications companies were received by the PTA and Míla where concern was expressed about this arrangement, as it meant that the owner of the router, the Internet service provider, needed to install settings in the router for a competitor if the household chose to purchase fixed telephony service from a party other than the provider. The Internet service provider could then refuse to provide this as the retail market for Internet service is not subject to any obligations.

111. A strong position on the retail market for Internet service could thus act as an access barrier on the retail market for fixed telephony services. Subsequent to queries on this issue, Míla amended its plans and now offers user endpoint equipment with a number of connectors where service providers can each receive access to a connector to offer their service.

112. Míla ADSL and VDSL service is provided in wholesale to service providers without Míla operating endpoint devices in the homes of the customers. As xDSL solutions were first and foremost developed for Internet service, they are arranged in such a manner that the Internet service provider installs his own endpoint devices at the place of use. IPTV service and VoIP fixed telephony service are later additions, unlike fibre-optic solutions which were designed from the outset as a connection option for a variety of services. A strong position on the retail market for Internet service will therefore strengthen the position of such parties when fixed telephony service is migrated to IP technology.

113. It would be technically possible for Míla to install its own equipment at the place of use of all xDSL connections in order to provide distribution channels for varying service parties, but there is no obligation on Míla to do this and there is no certainty that it would be possible to implement this in an economical manner. Fixed telephony services are on a steady decline with respect to number of customers and quantity of minutes. The service is also on a steady decline with respect to revenue proportion of the total electronic communications market. When households choose a service party one can assume it likely that Internet services, are the first concern and then possibly, TV service. It is likely that fixed telephony services will not decide the choice of service provider but rather that this will be included in the bundle when other services are purchased. It is relatively easy for a company operating Internet service to add VoIP service. Operation of a VoIP telephone exchange and its interconnection with the fixed network can be deemed to be within the scope of competence and knowledge of a party already operating other IP equipment and its interconnection with the public Internet.

6.0 The Three Criteria Test

6.1 General

114. According to Articles 16 and 17 of the Electronic Communications Act the definition and analysis of markets shall be made in accordance with obligations according to the EEA Agreement. In the Regulation on Market Analysis in the field of Electronic Communications no. 741/2009, the methodology is introduced that is described in the ESA Recommendation on the relevant market and in the ESA guidelines for market analysis. In Article 4 of the Regulation there is discussion on the conditions that markets need to fulfil in order to be susceptible to obligations pursuant to Chapter VII of the Electronic Communications Act.

115. The market for access and origination of telephone calls in the fixed telephony network has been removed from the list in the ESA Recommendation from 2016 for those markets that are specified in advance as lacking competition. Despite the fact that the markets are no longer in the ESA Recommendation, this does not automatically mean that possibilities for administrative intervention do not exist in Iceland. The markets need to be re-examined as the PTA has already imposed obligations on companies on that market, and it has to be decided whether they should continue to apply, in their current form or amend it, or whether they should be lifted, see Paragraph 4 of Article 4 of Regulation no. 741/2009. Circumstances may be such in this country that the markets fulfil the requirements for susceptibility to ex ante obligations, though in general terms this may not have been considered to apply in EEA states when the Recommendation was reviewed.

116. In Item 30 of the preamble to the ESA Recommendation from 2016 it is stated with respect to markets that were in the Recommendation from 2008 and not in the new Recommendation that an electronic communications regulatory institution can examine whether the markets still fulfil conditions for ex-ante obligations given the circumstances of the country in question.

117. This means that if the PTA considers that circumstances are such in this country that the position on some of those markets that have been removed from the Recommendation are different from the norm in the EEA area, such that barriers to entry are still high, competition not foreseeable in the near future and general competition rules do not suffice to resolve market problems, then the PTA can request endorsement from ESA to examine the relevant market with a view to making a decision on obligations. The PTA can provide as a single submission to the ESA an evaluation of whether the market fulfils the three criteria¹⁹, an analysis of the market and a description of planned obligations.

118. In evaluating whether the market still fulfils the conditions to be susceptible to ex-ante obligations on companies on the market²⁰, the same methodology shall be used as when the market was specified in the Recommendation. The three criteria that the relevant market needs to fulfil are the following:²¹

¹⁹ The Three Criteria Test. Three criteria test).

²⁰ See Article 6, 7 and 15 of the framework Directive, items 6 and 22 of the preamble to the ESA Recommendation on the relevant market from 2008, Chapters 2.2 and 2.3 in the Explanatory Note to the Recommendation of the EU on the relevant market from 2007 and Article 4 of the Regulation on market analysis in the field of electronic communications no. 741/2009.

²¹ ERG has issued a document where these conditions are discussed in more detail; ERG Report on Guidance on the Application of the Three Criteria Test - ERG (08) 21 ERG Report on 3 criteria test final 080604.

- 1) That there exist high and non-transitory barriers to entry, whether they result from organisational, legal or administrative causes. It should be taken into consideration whether it is possible to surmount such barriers during the period of reference, taking into account the flexibility of electronic communications markets.
 - a. Entry barriers related to organisation and structure of the market can for example be related to the scope of an electronic communications network, sunk costs and control of infrastructure that are difficult to duplicate.
 - b. Legal and administrative barriers can for example be related to the allocation of frequency ranges.
- 2) That active competition cannot be foreseen during the reference period. In connection with this, one must among other things examine the competition conditions that pertain within the entry barriers.
- 3) That the application of existing Competition Law would not on its own suffice to provide remedies where the market has failed. The following conditions could indicate the above:
 - a. if major action is required to redress a failure by the market;
 - b. if intervention is required relatively often and without delay;
 - c. if special action is required to create legal predictability.

119. The following is an examination by the PTA on whether these conditions apply to the market for access and origination of telephone calls in fixed telephony networks in the light of the circumstances in this country. In this examination, the PTA has among other things, made reference to the ERG report on the implementation of the Three Criteria Test.²²

6.2 On the implementation of the Three Criteria Test

120. In general, it was considered that when evaluating whether markets that were in the first ESA Recommendation from 2004, but that are not in the Recommendation from 2008, still fulfilled the conditions for the imposition of ex-ante obligations, then the burden of proof was less stringent than on markets that were never a part of the Recommendation, as localised circumstances could still be similar to those that pertained on the coming into force of the prior recommendations. The burden of proof that the market fulfils the three criteria is at least no more onerous than the burden of proof in analysing significant market power²³. The same applies to markets that were in the ESA Recommendation from 2008 and that are no longer in the Recommendation from 2016

121. In the following Chapters the conditions described in Chapter 6.1 will be examined and there will be discussion on how the above specified ESA Recommendation applies to Icelandic circumstances, taking into consideration market circumstances in this country as they are in the relevant market. The factor that carried most weight in the decision by the Commission and

²² ERG Report on Guidance on the Application of the Three Criteria Test, June 2008, ERG (08) 21.

²³ ERG Report on Guidance on the application of the Three Criteria Test, June 2008, ERG (08) 21 - page 5 and 17.

subsequently by ESA to remove Markets 1/2008 and 2/2008 from the Recommendation was that with the advent of new access networks, of access obligations on the underlying wholesale markets and with increased use of IP technology, barriers to entry to markets have significantly diminished. The Commission therefore considered that there were no longer high and non-transitory barriers to entry. The Commission furthermore deemed that the largest companies on fixed telephony markets could no longer operate without concern for competitors and consumer, because the ease with which one could switch service provider and the large supply of package offers and pressure from mobile phone services meant that the market tended towards active competition.²⁴

6.3 Criterion 1: High and non-transitory barriers to entry

6.3.1 General comments on barriers to entry

122. The first criterion that needs to be fulfilled for there to be a reason to intervene in a market with ex-ante obligations according to the Electronic Communications Act is that there are high and non-transitory barriers to entry to the relevant market.

123. Entry barriers is a collective name for various factors that can influence companies' market power and the entry of new companies into a market. If there are few barriers then potential profitability is an attraction for new companies to gain market share from the incumbents. Potential competition from new parties can influence the behaviour of a company with significant market power and can lessen its harmful impact on competition. Entry barriers on the other hand weaken or prevent competition.

124. In Item 17 of the preamble to the ESA Recommendation on the relevant market from 2016 the following is stated about entry barriers:

As far as the first criterion is concerned, two types of barriers to entry are relevant for the purpose of this Recommendation: structural barriers and legal or regulatory barriers. Structural barriers to entry result from original cost or demand conditions that create asymmetric conditions between incumbents and new entrants impeding or preventing market entry of the latter. For instance, high structural barriers may be found to exist when the market is characterised by absolute cost advantages, substantial economies of scale and/or economies of scope, capacity constraints and high sunk costs.

125. Here in this country there are no significant legal barriers to entry for new electronic communications companies. In the case of electronic communications on a fixed network, one does not need to apply for special authorisation for the operations, it suffices to follow a simple registration process. The number of service providers on fixed networks is in no way limited by electronic communications legislation. The law authorises the laying of electronic communications cables were required both in public land and through the property of third parties. This means that legal barriers hardly exist on markets for telephony services on fixed networks.

²⁴ See; SWD(2014) 298 COMMISSION STAFF WORKING DOCUMENT, EXPLANATORY NOTE Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, pages 19-27.

126. Possible barriers to entry that the PTA considers should be examined specifically are those that were considered to be in place when analyses were made on the relevant markets in 2012 and 2013 and they are: control of infrastructure not easily duplicated, sunk costs, economies of scale and scope, access to capital, developed distribution and sales systems and barriers to growth.

6.3.2 Control of infrastructure that is difficult to duplicate

6.3.2.1 General

127. Where a service provider controls infrastructure that is difficult to acquire and where such infrastructure is an important factor in entering the market in question, then this could represent significant entry barriers to potential competitors.

128. It has been generally accepted that it is not financially feasible to establish for the purposes of competition, a core network for public telephone services provided at a fixed location, for example, because of substantial costs and very significant sunk costs. Various options however have become available during recent years that facilitate entry to the market.

129. In its analyses of the fixed telephony markets in 2012 and 2013, the PTA considered control of infrastructure that is difficult to duplicate not to be a significant entry barrier on Markets 1/2008 and 2/2008. Today this factor is even less of a barrier, see the following discussion.

6.3.2.2 Technical development

130. As was discussed in Section 5.5, VoIP technology is replacing PSTN service. Subscriptions to VoIP telephone service are steadily increasing, while PSTN users are on the decline. Síminn has notified that the PSTN system will be decommissioned in the coming years.

131. With the advent of VoIP, it is easier to provide required facilities than when PSTN service dominated the market. It is not necessary to install many local telephone exchanges, as companies had to do in order to achieve distribution of PSTN service. The equipment that the VoIP service party needs to establish is composed of a system to manage users and equipment to interconnect with other networks.

132. It is not necessary to build a local loop system or to lease local loops to be able to provide VoIP service. The service is transmitted over bitstream and can be independent of the party that controls the user's local loop. VoIP service can be transmitted both over DSL connection over copper local loop or over fibre-optic local loop. In some areas there are therefore more options than one to transmit the service to the user.

133. Close to 100% of residential and non-residential parties in the country today have access to connections with fixed or mobile networks capable of carrying VoIP service which means that possible transit routes are available for VoIP to almost all users of fixed telephony service. It is furthermore already the case that more than 90% of residential and non-residential parties have access to high-speed connections over a fixed network. Work is systematically in progress across the whole country on developing fixed networks which can carry broadband service, among other things with public support in part.

6.3.2.3 Wholesale access to underlying service components

134. Access to wholesale transit routes has a significant impact on the possibility of offering access to fixed telephony services and to call origination. The PTA has prescribed wholesale access to various kinds of service which can be used for offering fixed telephony services.

135. There are obligations in force on access to local loops on market 4/2008 for wholesale network infrastructure access at a fixed location. Obligations were imposed on Míla in 2014 and they apply both to copper and fibre-optic local loops. Parties which lease local loops can among other things use them to offer fixed telephony services but the local loop lease requires that the leasing party must himself install a significant amount of equipment. Local loop lease has facilitated competition on the retail markets for Internet access and for fixed telephony services, but may not be a feasible option for many, particularly for small companies entering the market. Vodafone which is the second largest electronic communications company in the country, has however used this option to a significant degree.

136. Obligations apply on wholesale bitstream access on Market 5/2008 for wholesale broadband access. Míla shall provide to those who so request, access to bitstream over copper or fibre-optic local loops and shall send bitstream through its trunk line network to a location where the electronic communications company in question has a connection with the Míla network. Access Options are divided into 3 main categories, but this is not an exhaustive list:

- first, there is access that uses significant bandwidth but without any quality definition (best effort) for general Internet service;
- second, access that uses little bandwidth but makes high-quality requirements for fixed telephony services over IP (VoIP);
- third, access that uses significant bandwidth and makes high-quality requirements for TV distribution and video over IP (IPTV, VoD) where among other things multicast technology is used and the appropriate communication protocols.

137. Míla should also, if this is requested, handle the sending of bitstream through its backbone network to a location where the electronic communications company in question has a connection with the Míla network. Electronic communication companies shall have the possibility of delivering bitstream at various places in the network:

- In DSLAM or equivalent equipment at the place where the copper local loops connect to the telephone exchange distribution frame and/or telephone exchange fibre-optic distribution frame, street cabinet or other equipment space. (Access Option 1)
- By ATM/IP transit in the Míla trunk line network, i.e. where Míla handles transit of signals from DSLAM and/or fibre-optic distribution frame to the connection point of another electronic communications company to the ATM/IP trunk line network. (Access Option 2)
- After transmission with ATM/IP on the Míla trunk line network to the connection point of another electronic communications company with the previously mentioned network. (Access Option 3)

138. With the advent of these obligations it is possible to provide VoIP service at any location in the country based on leased bitstream connections which means that the investment requirement of a new service provider on the fixed telephony market is even less than before.

139. Other obligations on Markets 4/2008 and 5/2008 support the obligation for access to local loops and bitstream and these are obligations for non-discrimination, transparency, accounting separation, price control and cost accounting.

140. In the Capital City Area and at a number of other locations, service providers have an option other than Míla for wholesale bitstream connections. The Gagnaveita Reykjavíkur fibre-optic network now comprises more than 68,000 local loops and provides wholesale bitstream access to this network which service providers currently use among other things to sell VoIP service.

141. Pursuant to the terms of the Settlement between Síminn and the Competition Authority, see Decision no. 6/2015 which was a revision of the prior Settlement, see Decision no. 6/2013, Síminn is obliged to maintain various wholesale access services including access to fixed telephony services. Those terms specifically note that Síminn shall offer pre-selection, single billing carrier pre-selection and resale of fixed telephony services. The Settlement between the Competition Authority and Síminn does not have a specified period of validity, but after 1 January 2017 Síminn may request the rescinding of any condition of the Settlement whatsoever. The Competition Authority shall process such a request within 115 working days. When evaluating such a request, the Competition Authority shall take a position on whether significant changes have taken place on the relevant electronic communications markets in this country and shall seek the opinion of the PTA before deciding on the request.

142. From the above one can conclude that, access to wholesale service which can be used for fixed telephony services has improved significantly in recent years. One must deem that such a development has significantly reduced access barriers to fixed telephony markets.

6.3.3 Sunk costs

143. Fixed sunk costs are fixed costs that can be related to irretrievable investments. As an example, one could mention a case where a service provider cannot expect to recover the investment that he has made, for example by selling the investment should the service provider decide to leave the market. Sunk costs mean that a new service provider needs to bear higher costs than the service providers that have already established themselves on this market. This difference in cost is in reality an entry barrier for a potential new competitor on the market.

144. As described in Section 6.3.2, the need for investment by new service providers on the fixed telephony market has diminished significantly and they can base their operations largely on leased access. There will however always be some sunk costs such as marketing costs and possibly costs for equipment if it cannot be sold when operations are discontinued. One cannot however, consider that sunk costs on the fixed telephony market are greater today than is normal in other business sectors.

145. In its analyses 2012-2013, the PTA deemed that sunk costs did not constitute a significant entry barrier and this is even less the case today.

6.3.4 Economies of scale and scope

146. Economy of scale exists when an increase in production results in a reduction of the average unit price of a product. This is a characteristic of production based on technology with rather high fixed costs and low variable costs.

147. Economy of scope exists when the average unit price drops as a result of more than one aspect of production; for example, the joint use of infrastructure or administrative systems.

148. Both economy of scale and economy of scope can represent entry barriers for new service providers in the market and can give incumbent operators a competitive advantage.

149. Síminn offers service across the whole country and has by far the largest number of customers which means that the company enjoys substantial economy of scale. It has not been deemed that any other service provider in this fixed telephony market has achieved the critical mass necessary to enjoy economy of scale to a comparable degree.

150. The advent of VoIP service and the substantial increase in its distribution at the cost of PSTN means that economy of scale is not such an important factor as before. As VoIP service is not restricted to having control of local loops, there is a substantial reduction in costs for companies which use this technology to offer fixed telephony service. This means that the economy of scale is not as significant in operations.

151. The same applies to economy of scope. Many new parties on the electronic communications market decide to offer varied services and thus enjoy economy of scope to a certain degree. Should they however decide to offer fixed telephony service, then they can do this with VoIP technology without major investment. As the service offer of new parties on the fixed telephony markets is based on access in proportion to their needs, they do not bear the cost of those parts of the network and base services which may not be efficiently used. They can also enjoy the benefits of economy of scope in the operations of network operators which should be reflected in lower wholesale prices.

152. The PTA believes that despite the fact that Síminn to some degree enjoys economies of scale and scope, they no longer represent high entry barriers to the relevant markets.

6.3.5 Access to capital

153. Access to capital can have a deciding influence on the possibilities for a company on a competitive market. This particularly applies to markets that demand high initial investment. The difference between companies, with respect to access to capital could constitute an entry barrier. Financially strong companies with good access to capital, other things being equal, are in a better position and can more easily protect themselves from competition than comparable companies that do not have as good access to capital. Good access to capital can both constitute an entry barrier and can indicate market power.

154. In prior PTA analyses of the relevant markets, the Administration came to the conclusion that a lack of capital for new investment constituted an access barrier to the markets. Access to capital had in general been difficult since 2008. The PTA did however note that the need for investment on these markets had decreased which meant that access to capital did not carry as much weight as before.

155. The situation on financial markets in this country has improved greatly in recent years and the supply of capital has increased. The need for investment has decreased on fixed telephony markets as a result of development from PSTN over to VoIP and because of better access to wholesale services. With the above in mind the PTA considers that access to capital is no longer a high entry barrier on the relevant markets.

6.3.6 Access to sales and distribution systems

156. If established service providers in the market have built up well-developed sales and distribution systems, these systems could function as an entry barrier for potential market entrants. This is especially the case in markets where the development of sales and distribution systems requires substantial outlay of capital or where established undertakings have concluded exclusive agreements with the largest/most important distributors in the market.

157. The sale of subscriptions to individuals in the fixed-line market takes place largely through telephone sales, Internet sales, direct sales, etc. Therefore, these sales are not dependent on access to sales systems that established operators have developed. Thus it is not possible to say that access to sales and distribution systems constitutes an entry barrier to the market under discussion here.

6.3.7 Barriers to expansion

158. A market with significant potential for growth is much more attractive to new operators than is a stagnant (mature) market. It is probable that undertakings contemplating entry into a stagnant market must lure customers away from established operators. If there are limits to a market's potential to grow and its capacity to be able to offer more extensive services than those existing on the market, entry barriers may exist.

159. Given that local loops have been laid to every commercial and residential property in Iceland, it can hardly be said that there is significant growth potential in this area. Demand for fixed-line telephone service has peaked and is now on the wane, due in part to increased mobile phone use. New operators entering the market must concentrate on luring customers from incumbents, as there is little reason to anticipate any sizeable increase in the number of new users. It has however been the case that new companies have entered the fixed telephony market in recent years and that they have gained some of Síminn customers, even though the Síminn market share is still by far the largest.

160. The PTA conclusion is therefore that one may view the market as mature and that it creates an access barrier to the market to some extent. These barriers are however not high as developments on the market have shown.

6.3.8 Conclusion with respect to entry barriers

161. It is the PTA conclusion that entry barriers have decreased significantly in recent years on markets 1/2008 and 2/2008 and that they are no longer high. It is easier now than before to develop facilities to provide access to a fixed telephony network with the advent of VoIP telephone technology and with the steadily increasing distribution of fibre-optic connections.

162. The large and growing distribution of IP networks such as fibre-optic and VDSL over copper have meant that most homes and workplaces in the country have access to high speed connections which means in turn the existence of potential transit routes for VoIP to almost all users of fixed telephony services.

163. It is possible to provide VoIP service at any location in the country based on leased bit stream connections which means that the investment requirement of a new service provider on the fixed telephony market is less than before.

164. The difference between the position held by Síminn and that of other companies resulting from the distribution of Síminn PSTN telephone exchanges, is having a steadily decreasing impact as new parties will in future emphasise VoIP and PSTN service, is on the decline. Increased and improved access to wholesale service resulting from obligations on the Síminn subsidiary, Míla, on Markets 4 and 5 and the development of fibre-optic systems of Gagnaveita Reykjavíkur in the Capital City Area and in many regions in the country will further mitigate entry barriers to fixed telephony markets.

165. The Settlement between the Competition Authority and Síminn obliges Síminn to provide wholesale access to fixed telephony services, including single billing carrier pre-selection.

166. The PTA considers that sunk costs, access to distribution and sales systems, economies of scale and scope and limitations to expansion do not constitute high entry barriers. On the whole the PTA does not consider there to be high and non-transitory barriers to entry on the relevant markets.

167. As all three criteria discussed in Chapter 6.1 need to be fulfilled in order to be able to impose obligations, and as the relevant markets no longer fulfil criterion no.1 in the opinion of the PTA, it is not necessary to examine criteria 2 and 3 with respect to active competition and to the application of general Competition Law and also it is unnecessary to perform further analysis of the state of competition on the relevant markets. The following Sections will therefore solely discuss the obligations that are in force on the markets and the manner in which the PTA plans to lift them.

168. The PTA nevertheless considers there to be a need to continue to closely monitor the markets and is prepared to examine whether a new analysis needs to be made should circumstances change significantly for the worse because of a change in structure of the markets or in conduct of network operators.

7.0 Lifting of obligations

7.1 General

169. As the conclusion of the PTA, after assessing circumstances on the relevant markets, is that high and non-transitory entry barriers no longer exist on the market then the conditions are no longer in place for imposition of ex-ante obligations pursuant to the Electronic Communications Act on companies on the market. The next step is clearly to cancel the designation of Síminn as a company with significant market power on markets 1/2008 and 2/2008 and the obligations that were imposed on Síminn with PTA Decision no. 36/2012 from 14 December 2012 and Decision no. 8/2013 from 18 June 2013. The PTA intends to lift the obligations in force on the relevant markets as further detailed in the following chapters.

7.2 Obligations currently in force

7.2.1 Market 1:

170. With the Decision published subsequent to market analysis of 18 June 2013, the following obligations were imposed on Síminn on the retail market for access to public telephone services provided at a fixed location.

a) Carrier selection and pre-selection

171. Obligation to offer both carrier selection and pre-selection Síminn is obliged to enable its subscribers to gain access to the services of all interconnected companies that provide public fixed telephony services. The structure of this access can either be such that the user selects a prefix prior to each phone call or uses pre-selection which can be by-passed in certain phone calls by selecting a prefix.²⁵

b) Obligation of access: Wholesale leasing of fixed telephone lines

172. Obligation to accede to normal and fair requests for wholesale access to fixed telephony lines in the public telephone network provided at a fixed location, with appropriate service. Síminn shall offer a solution where service providers with pre-selection can provide their customers with single billing for both access and telephone usage.

c) Obligation of non-discrimination

173. Obligation of non-discrimination, both with respect to price and other factors that have been mentioned. The non-discrimination obligations apply to all types of access and resale of lines related to the relevant market. The dissemination of information from the Síminn wholesale department should be in a comparable manner whether to third parties or to other departments within the company. The treatment of information gained by Síminn in making agreements for access shall be in accordance with Article 26 of the Electronic Communications Act.

²⁵ Pursuant to Article 53 of the Electronic Communications Act, companies that have significant market power in connections to the public telephone network provided at a fixed location shall offer carrier selection and pre-selection. According to the wording of the provision, it is not restricted to an obligation of this nature being imposed with a specific PTA Decision. In the opinion of the PTA, the planned lifting of the designation of Síminn as a company with significant market power on Market 1/2008 would result in the legal provision being no longer active with respect to Síminn for the time being. On the other hand, the conditions regarding carrier selection and single billing carrier pre-selection (SB-CPS) apply pursuant to the Settlement between the Competition Authority and Síminn, see the provisions of 6/2013 as amended, see provisions of 6/2015.

d) Obligation of transparency

174. The obligation of transparency and to publish a reference offer for carrier selection and pre-selection and for wholesale access to fixed telephony lines which shall contain terms and conditions for supply and use, price lists and other information necessary for counterparties. The offer shall contain a sufficiently detailed description of terms so that the party requesting access can easily determine his position.

e) Obligation of accounting separation

175. Obligation of accounting separation. Such separation should constitute as a minimum that on the one hand wholesale and on the other hand the retail fixed line telephone divisions should have their accounts separated from other operations. The Síminn wholesale prices and internal prices within the company shall be transparent, among other things to prevent unjustified subsidies. In its accounting, Síminn should separate income, expenditure, assets and capital for its fixed line phone network. Síminn shall provide to the PTA on an annual basis a breakdown of the operational accounts and balance sheet for wholesale and retail along with a statement of the division of indirect costs that were not possible to assign through comparison with other cost items.

f) Obligation of price control

176. With the authority of Article 32 of the Act on Electronic Communications the PTA decided to maintain the obligations on Síminn for price control of the tariff for wholesale access to public telephone networks provided at fixed location for residential and non-residential customers. Síminn shall submit a tariff for wholesale access to its fixed line network to the PTA for endorsement which includes carrier selection and single billing carrier pre-selection (SB-CPS). Pursuant to Paragraph 4 of Article 32 of the Act on Electronic Communications, the tariff for the wholesale access in question shall be cost related, where costs are allocated to the services in question (FAC). The PTA is authorised to take into account analogous services that are considered to be operated in an efficient manner, where prices are adjusted should it be considered necessary in the opinion of the Administration on the basis of such comparison. Furthermore the PTA is authorised to make price comparison on the basis of cost analysis of tariffs in the EEA.

g) Obligation of cost accounting

177. Obligation for cost accounting for access to the public telephone network provided at a fixed location (among other things, for wholesale of lines and other solutions in connection with single billing) and for carrier pre-selection.

7.2.2 Market 2:

178. With the Decision published subsequent to market analysis on 14 December 2012 the following obligations were imposed on Síminn on the wholesale Market for call origination in public telephone networks provided at a fixed location.

a) Obligation to provide access

179. This includes among other things, the obligation to accede to normal and reasonable requests for access to the network and to service for call origination in fixed networks at wholesale level. The access obligation also covers resale access, should there be a demand for such a form of access.

b) Obligation of non-discrimination

180. This is an obligation to practise non-discrimination both with respect to price and other factors, both for external operations and between internal operations and external operations. The obligation for non-discrimination applies to interconnection, and also to resale access to the Síminn fixed line telephone system. The dissemination of information from the relevant department should be in a comparable manner whether to third parties or to other departments within the company related parties. The treatment of information gained by Síminn in making agreements for origination shall be in accordance with Article 26 of the Electronic Communications Act.

c) Obligation of transparency

181. With the authorisation in Article 29 of the Electronic Communications Act the PTA imposed the obligation on Síminn for transparency and the publication of a reference offer for interconnection of fixed line networks, terms and conditions for delivery and use, along with tariffs for wholesale fixed telephony services. Síminn is further obliged to notify the PTA of all changes to relevant contracts or to the reference offer.

d) Obligation of accounting separation

182. Separation shall constitute as a minimum that on the one hand the wholesale and on the other hand the retail fixed line telephone divisions should have their accounts separated from other operations. The Síminn wholesale prices and internal prices within the company should be transparent, among other things to prevent unjustified subsidies. Should Síminn's accounting separation not be satisfactory, the PTA reserves the right to submit demands at a later date for further separation. In its accounting, Síminn should separate income, expenditure, assets and capital for its Fixed line phone network. Síminn shall provide to the PTA on an annual basis a breakdown of the operational accounts and balance sheet for wholesale and retail along with a statement of the division of indirect costs that were not possible to assign through comparison with other cost items.

e) Obligation of price control

183. Obligation for cost oriented tariff. The maximum price for call origination will be decided with benchmarking pursuant to authorisation in Paragraph 4 Article 32 of the Electronic Communications Act. When selecting analogous competition markets the PTA will use the electronic communications market in the EEA as the reference market.

7.3 The impact of existing obligations

184. The obligations that have been in force on the markets in recent years have facilitated entry into markets for fixed telephony services by establishing a fixed framework for wholesale access where there are reference offers for access that new entrants can examine without much effort. New companies have entered the market since obligations were imposed in 2008. There are 10 companies today that offer telephony services on a network at a fixed location, while the corresponding number was 6 in 2012 and 3 in 2008.

185. Previously, smaller parties to the market placed emphasis on gaining wholesale access to fixed telephony lines so that companies that used pre-selection could offer their customers both access and telephone calls in one package. This wholesale service is called “pre-selection single billing” or SB-CPS. Such an access obligation was prescribed in 2008, but it took some time to implement the service. When SP-CPS had become part of Síminn wholesale offer, interest in this service option seemed to wane and it was not used much initially. Interest in this

service has however reawakened and subscribers with Síminn counterparties in this service now amount to several thousand.

186. It is the opinion of the PTA that the obligations that were imposed in 2008 have facilitated entry of new parties to the market. Despite easier access to the market, Síminn market share is still very high, and it is hardly possible to say that there is active competition on the market for fixed telephony services.

187. As there are no longer high and non-transitory access barriers to the market, the PTA feels that one must conclude that obligations on the market have served their purpose for the time being. On the other hand, there could be a need to re-examine the markets at short notice if parties on the market become fewer or if network operators close access or if problems arise in connection with wholesale access to bitstream which could serve VoIP service providers.

7.4 Planned decision on lifting of obligations and on glidepath

188. As previously stated, the PTA plans to make a decision subsequent to this analysis, to the effect that obligations that were imposed on Síminn on the retail Market for access to the public telephone network provided at a fixed location on 18 June 2013, and on the wholesale Market for call origination in the public telephone network provided at a fixed location on 14 December 2012, be lifted.

189. In Paragraph 3 of Article 16 of the Framework Directive, 2002/21/EC, and in the Explanatory Note to the EU Recommendation from 2007²⁶ it is stated that when obligations are lifted, those parties that are affected by the decision are given an adequate glidepath to adapt. The same kind of provision can be found in Paragraph 6 of Article 9 of the Regulation on market analysis no. 741/2009, where it says: *Should the Post and Telecom Administration decide to lift obligations that have been in force, then this shall be notified to the parties affected by the decision with adequate notice before the decision in question is implemented.* The PTA considers it appropriate and proper to follow this rule.

190. Those parties first and foremost affected by the decision to lift obligations are those companies that have transactions with Síminn on the basis of obligations in force. The lifting of obligations can also have an indirect effect on other parties operating on the markets or that are related to them.

191. The companies today that have access agreements with Síminn on the relevant markets are 365 miðlar, Nova, Hringdu, Símafélagið, IMC, Tismi and Vodafone.

192. The lifting of obligations could result in the need to review agreements in force to some extent, or to make new agreements. Some service providers on the retail market could need or wish to change service providers on the wholesale market because of change of circumstances. Some parties to the market may possibly consider it appropriate to add to their networks at this point in time. It is not certain that any of these actions may need to be taken but if this is the case to some extent, there could be a need for a considerable glidepath for adaptation.

193. The PTA considers it most important that access is assured over a period that should suffice for adaptation. The PTA therefore plans to prescribe that the obligations on Markets 1/2008 and 2/2008 be lifted at the end of 2017, or by 31.12.2017.

²⁶ See page 50 in the Explanatory Note.