Appendix A

POST AND TELECOM
ADMINISTRATION
IN ICELAND

Analysis of wholesale market for terminating segments of leased lines (Market 6)

21 March 2014

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Summary and Conclusions

This document contains the Post and Telecom Administration in Iceland (PTA) analysis of the wholesale market for terminating segments of leased lines, which is Market 6 in the ESA Recommendation on the relevant market from 5 November 2008. The market analysis is the basis for decisions on whether to impose, maintain, amend or withdraw specific regulatory obligations on electronic communications undertakings that have been designated as having significant market power.

Analysis of this market was previously made in 2007 when the market was Market 13 according to the older ESA Recommendation from 2004. The conclusion of that analysis was that Síminn hf. and Míla hf. had significant market power and obligations were imposed on those companies for:

- Access
- Non-discrimination
- Transparency
- Accounting separation
- Price control
- Cost accounting

The PTA has now made a new analysis of this market. The conclusion of the analysis in this instance was that circumstances on the market had not changed much from the circumstances that pertained in 2007. All wholesale of leased lines within the Skipti Group have been transferred to Míla which means that Síminn therefore no longer operates on this market. The number of companies on the market is more or less the same as in 2007. The PTA considers that significant and non-transitory entry barriers exist to the market and that active competition cannot be expected within the next 2 to 3 years. Despite the fact that Gagnaveita Reykjavíkur (GR) has extended its network significantly since 2007 Míla still has a hugely dominant market share, whether by revenue of leased lines or by number of active connections.

The PTA intends to designate Míla again as having SMP on the market for terminating segments of leased lines. The designation of Síminn as an undertaking with significant market power on this market is on the other hand withdrawn as well as the obligations that were imposed on Síminn.

The obligations that the PTA intends to maintain on Míla ehf on the relevant market are the following:

- Access.
- Non-discrimination
- Transparency
- Accounting separation
- Price control
- Cost accounting

1.0 Introduction

1.1 General

1. This document contains the Post and Telecom Administration in Iceland (PTA) analysis of the wholesale market for terminating segments of leased lines (Market 6). The PTA published an analysis of this market[1], along with its Decision on obligations on undertakings with significant market power on 14 December 2007; see Decision no. 20/2007. It is assumed that market analyses will be repeated at regular intervals in order to monitor whether circumstances have changed on the market.

2. The analysis is divided into three main parts. First, there is a definition of the relevant service market and its geographical dimensions. The next step is that the market that has been geographically defined is analysed and it is determined whether competition is active or whether one or more undertakings on the market have significant market power. It is finally evaluated whether it is appropriate to impose, maintain, amend or withdraw obligations on undertakings on the market.

3. This document is based on a draft that was provided for consultation on the PTA website on 27 November 2013, were electronic communications undertakings and other stakeholders were afforded the opportunity of making comments on the market analysis and its conclusions, see Article 6 of Act no. 69/2003 on the Post and Telecom Administration. The consultation was closed on 20 January 2014. The following parties sent in comments on the draft: The Competition Authority and Fjarskipti hf. (Vodafone). The comments received and the position taken by the PTA to the comments are dealt with in a separate document (appendix B). The market analysis was revised in accordance with the comments taken into account. The market analysis and the draft decision on obligations on the relevant market will now be sent to the EFTA Surveillance Authority (ESA) for consultation pursuant to Paragraph 1 of Article 7 of Act no. 69/2003 on the Post and Telecom Administration. Should ESA make no comments on the analysis and on the PTA conclusions and draft decision, the decision will be notified to the companies in question.

4. Markets are in continuous development which means that they must be re-examined within a reasonable period of time. In making market analysis, attention is paid to projected development in the near future, to the extent that this is possible. The period that a market analysis is intended to cover depends to a certain extent on the characteristics of the relevant market, but as a rule of thumb one could expect conclusions of an analysis to apply for 2 to 3 years.

1.2 Electronic communications legislation

5. The Electronic Communications Act no. 81/2003 implements the European Union Directives on Electronic Communications.[2] EU electronic communications legislation is

[1] Market 13 in the ESA Recommendation on the relevant market then in force.

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

intended to create a homogenous working environment for electronic communications companies in Europe, to limit barriers and create conditions for sustainable competition for the benefit of consumers.

6. The Electronic Communications Act obliges the PTA to define certain electronic communications markets, both in terms of service and product types and in terms of geographical dimension in accordance with the fundamental principles of Competition Law and the obligations pursuant to the European Economic Area (EEA) Agreement. Furthermore, the PTA is required to analyse the status of the defined markets and determine whether they are characterised by effective competition. If the PTA comes to the conclusion that there is effective competition in the relevant market – that is that no operator has SMP – 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 competition is not active on the relevant market because one or more undertakings have SMP, then the institution is obliged to designate them as having SMP and to impose on them the appropriate obligations.

7. The European Commission has published Guidelines and a Recommendation for market analysis. On the one hand there are Guidelines on market analysis and assessment of SMP[3] and on the other hand there is a Recommendation on the relevant markets.[4] The EFTA Surveillance Authority (ESA) has issued analogous Guidelines[5] (hereinafter called "the Guidelines,") and a Recommendation[6] (hereinafter called "the Recommendation") and the PTA will take into account both the Guidelines and Recommendations from ESA and from the Commission when conducting its market analyses. In addition to this the report of the

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Directive of the European Parliament and Council no. 2002/20/EEC from 7 March 2002 on the provision of authorisation for electronic communications networks and service (Authorisation Directive).

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

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: Commission Recommendation of 17 December 2007 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 (notified under document no. C(2007) 5406) (2007/879/EC) and explanatory notes;

Commission Staff Working Document - Explanatory Note Accompanying document to the 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 (Second edition) {(C(2007) 5406)}

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 5 November 2008 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.

Association of European regulatory bodies for electronic communications (ERG[7]) on obligations that may be imposed on electronic communications undertakings with significant market power will be taken into account for the purpose of strengthening competition.[8] Finally the PTA will take into account the joint opinion of BEREC with respect to the imposition of obligations on the relevant market.[9]

8. In the existing Recommendation on the relevant market, seven 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 stipulates 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 those prescribed in the Recommendation.

1.3 The PTA implementation of market analysis

9. The implementation of market analysis is generally divided into 3 phases:[10]

1) Define the relevant service markets and geographical markets.

2) Analyse each of the defined markets, assess whether competition is active on the markets and make decision as to where there is one or more undertakings to be found with significant market power.

3) Make a decision on whether obligations on undertakings with significant market power shall be imposed, amended or withdrawn.

10. This document contains the conclusions of the PTA from all three phases. After the PTA received comments on the document, preparation commenced on a Decision on the market in question that was notified to ESA and to other surveillance authorities in the EEA and to the companies in question.

11. This market analysis is based among other things on replies from parties to the market to questionnaires that were distributed 18 June 2012 and 13 June 2013. The Administration has collected information, among other things regular statistical information, and has had informal communications with parties to the market. Statistics are collected from all parties to the market at 6 monthly intervals. In addition to this, the PTA collects and registers information on all changes to tariffs as they take place.

12. The preliminary draft of this market analysis was sent to the Competition Authority and to stakeholders on 27 November 2013 and they were invited to make observations. The

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[7] Abbreviation for "European Regulatory Group of National Regulatory Authorities". In 2010 the Body of European Regulators for Electronic Communications (BEREC) replaced ERG.

[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 at: http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

[9] BoR (12) 126 – BEREC´s Common Position on best practice in remedies on the market for wholesale leased lines.

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

PTA then processed the observations received and reports on them in a separate document. The market analysis was updated in accordance with the comments that were taken into account. The market analysis and draft Decisions with respect to obligations on the relevant markets are then 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 draft PTA Decision then the Decision will be notified to the companies in question.

1.4 On market analysis

13. According to Article 16 of the Electronic Communications Act no. 81/2003 as amended, the PTA shall define service or product and geographical markets in accordance with the main principles of Competition Law and with obligations pursuant to the EEA Agreement. It must be assessed whether markets as defined in the ESA Recommendations harmonise with Icelandic circumstances.

14. 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.

15. 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).[11] 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.

16. 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’ taste 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. The PTA does however not have the authority to define transnational markets on its own initiative. If a market is considered to extend to more than one country, European regulatory authorities collaborate on

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[11] See further Paragraph 39 in the Guidelines and the Explanatory Memorandum to the EU Commission Recommendation, Chapter 3.1.

the market definition together with the European Commission and ESA if appropriate.

17. Two factors are important in defining geographical markets: price and network coverage. 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.[12]

18. 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:

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

The above conditions, in the opinion of the EU Commission and of ESA, exist in the EEA on the service market here being examined.

2.0 Definition of the service markets for terminating segments of leased lines

2.1 Definition in the ESA Recommendation

The service market being examined here is equivalent to Market 6 in the ESA Recommendation from 2008. In the Annex to Regulation 741/2009 on market analysis in the field of electronic communications, markets are defined in accordance with the ESA Recommendation where the market is named: Terminating segments of leased lines. In the Recommendation itself one can find a more detailed definition in English which is as follows: *Wholesale terminating segments of leased lines, irrespective of the technology used to provide leased or dedicated capacity.*

19. In the European Commission Explanatory Note to its Recommendation from 2007, on which the above ESA Recommendation was based, it is stated that the market is the same as was defined in the Recommendation, i.e. Market 13 in the Commission's prior Recommendation from 2003 and the prior ESA Recommendation from 2004, and the definition is identical in all respects other than that text has been added saying that the definition is irrespective of technology used to provide transmission capacity.

[12] Definition of the geographical dimensional 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 ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008 ERG (08) 20 final CP Geog Aspects 081016.

2.2 The PTA definition of the relevant service markets

20. In its analysis of Market 13, which was published in its final form on 14 September 2007, the PTA defined the market for terminating segments of leased lines as an access market at wholesale level for dedicated capacity for transmission of signals on that part of the electronic communications network where the user has sole access to all connections.

21. The terminating segment of a leased line lies between the user and the node point/telephone exchange and connects users to one point where the trunk line takes over. These connections are leased to other electronic communications companies and enable them to provide service on various retail markets such as for example fixed line voice telephony, Internet service and other data transmission service, general and specialised, such as for example connections to and from GSM/UMTS transmitters. The market covers both digital and analogue lines and connections with all possible technology and transmission media.

22. The PTA definition of the relevant market in the analysis from 2007 is based on the definition in the ESA Recommendation from 2004, taking into consideration the Explanatory Note to the EU Commission Recommendation. As is stated in Section 2.1 here above the definition of this market is virtually unchanged in the new ESA Recommendation. The new ESA Recommendation therefore does not require that the prior PTA definition be reviewed as the PTA allowed for technical neutrality, in accordance with Article 8 of the Framework Directive, when making the previous market analysis.[13] The PTA thus considers that the prior definition still applies. It is however necessary to investigate whether there have been changes in the circumstances on the market in this country, including changes with respect to the service offer that could call for changes to the definition or whether new services have emerged based on new technology that fall within the scope of the market.

2.3 Boundaries between markets for terminating segments (M6) and trunk segments (older M14)

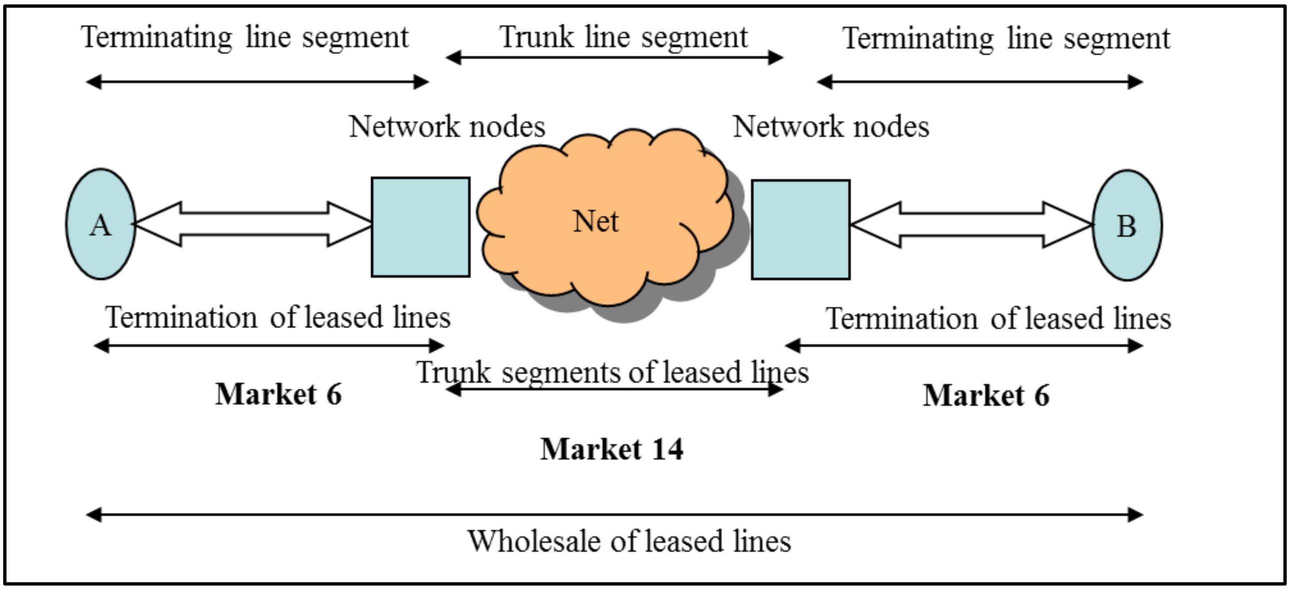
23. Market 6 covers wholesale of terminating segments of leased lines and these connections are used by companies to offer various services to end users. These services are for example data transmission and fixed line voice telephony.

24. Wholesale of trunk segments covered by the old Market 14, cover on the other hand connection routes between telephone exchanges and distribution locations. The function of a trunk line is to make connections between a network operator’s network and distribution locations. In general trunk lines have greater capacity and can be much longer, for example reaching between parts of the country and regions.

25. Segments of leased lines that belong on the one hand to termination on the relevant market and on the other hand to the trunk line system can be seen in figure 2.1

[13] See prior analysis, sea PTA decision no. 20/2007 dated 14 September 2007, Item 137.

Figure 2.1 terminating and trunk line segments of leased lines



Source: Post and Telecom Administration

26. User lines and connections are usually on copper or fibre-optic lines. Lines lie between the user and the node point/telephone exchange and connect users to one point where the trunk line system takes over. In the trunk line system data from many users is transmitted between node points/telephone exchanges where the trunk lines can normally carry a greater volume of information and more connections than user lines. Trunk lines are usually fibre-optic or radio connections while the terminating segment may also be copper, as usually the same electronic communications network is used as that which forms local loops to the public.

27. Despite this difference between the markets in question the fact of the matter is that they are closely related. The trunk line network requires the terminating segment to be able to connect to end users and the terminating segment needs the trunk segment to connect end users if they are not connected through the same node point, i.e. in the same telephone exchange locality. It is also the case in some instances of dedicated connections that it can be difficult to distinguish between where the trunk line ends and the termination begins and vice versa.

2.4 The boundaries between markets for the terminating segments of leased lines (M6), network infrastructure access (M4) and broadband access (M5)

28. In the Explanatory Note to the EU Commission Recommendation on the relevant market from 2007 it states that the leased line market is to some extent connected to markets for access to local loops and to bitstream on networks provided at a fixed location (M4 and M5). For example one can mention that in some instances a dedicated connection can be substituted by a local loop and vice versa. One can also assume that leased lines with less capacity can sometimes be substituted by another kind of network connection such as xDSL.

29. In short one can say that those companies that wish to provide network access have 3 options; lease or set up a local loop (M4), lease or set up broadband access (M5) or use a leased line. The option chosen depends on the kind of service the service provider in question wishes to provide and on the degree of investment he is prepared to make.

30. The main difference in leased lines and local loops is that when a local loop is leased then this is only a simple cable (copper or fibre-optic) between the end user and the next network connection point, which requires significant investment in equipment to be able to provide service through this cable. In the case of broadband access then the customer has received access to broadband (for example xDSL form) on the local loop where the difference between broadband access and leased line is that leased lines ensure first and foremost a fixed and specified transmission capacity in both directions and connects only fixed locations that are specified when the lease commences.

2.5 Varying forms of leased line

2.5.1 Transmission media

31. Leased lines are electronic communications infrastructures which provide for transparent transmission capacity between network termination points and which do not include on-demand switching. Leased lines are in most instances symmetric lines. In the Explanatory Note to the EU Recommendation on leased lines (Paragraph 4.2.3) reference is made to dedicated connections and capacity which is a definition of the traditional leased lines. Capacity between points that is not specifically dedicated to one user can be managed in such a manner that it is comparable to what is provided with traditional leased lines. Transmission media for leased lines can variously be copper, fibre-optic or radio connections in access networks or channels in multichannel systems in trunk lines. Leased lines can variously be analogue or digital.

32. A leased line on copper generally has two copper pairs often called 4 wire lines. Today such lines are almost exclusively used in the terminating segments of leased lines, from the telephone exchange to the place of use. The line is usually supplied with endpoint devices, i.e. a modem which defines its capacity for data transfer. Without such an endpoint device the user could send frequencies of signals on the line that might have a damaging or disruptive impact on other customers of the telephone system. With the increase in fibre-optic to the building (FTTB), the use of copper local loops in leased lines has diminished and capacity defined in IP networks has replaced this.

33. Fibre-optic connections have increased rapidly in recent years. With fibre-optic local loops and switching at the connection point of a building an electronic communications company can provide many customers in the same building with defined connections on an IP network which all have the characteristics of leased lines. The lease of fibre-optic threads without endpoint devices, i.e. dark fibre, is also possible. Fibre roll-out in Reykjavik and surrounding areas is considerable and wholesale rental of dark fibre termination segments is rather common in the relevant market. As such a rental does not carry a pre-determined protocol or capacity it is not included in the tables listing common protocols and their capacity. As the buyer uses own end-equipment to provision services over the line, this is often preferable to a telecom operator, over a dedicated line provisioned by the wholesaler, as the buyer can then provision the protocols and capacity needed for that connection and alter these as needed. The functionality of a dark fibre is then greater than a the dedicated provisioned connection. The wholesaler on the other hand has rented out capacity in form a whole fiber thread that could otherwise serve multiple connections for multiple customers.

34. Radio connections connect to locations with antenna that are directed at each other. The connection is defined in such a manner that only these two locations can achieve contact

with each other. Radio connections are now used mostly in sparsely populated area where there is no option of other connections or whether they are not financially feasible because of distance or other reasons. Such connections can however be found in urban areas because such solutions can often be more economic than leased lines in the ground. The capacity can be from tens of Kb/s to hundreds of Mb/s. Dedicated point-to-point wireless connections are priced only by the incumbent Mila on offer for each use case, and mainly provides this service as a solution where fixed line connections are not generally available. The PTA deems it prudent to include the technology in the market definition since the connections are comparable and substitutable to fixed line connections.

2.5.2 Types of service and communication protocols

35. The conclusion of the previous analysis was that many communications protocols and steered services were on the same market as traditional leased lines. The PTA considered there to be no reason to divide the market by capacity of connections or by whether they were analogue or digital. In this connection reference is among other things made to the main principle in the ESA Recommendation on technical neutrality and the PTA still believes that the market should not be divided by transmission capacity and that analogue and digital leased lines belong to the same market.

36. In the prior analysis of the termination market of leased lines from 2007 the PTA discussed the transmission options available at that time. The same transmission options are still available on the market today but the weight of specific methodologies has however changed significantly. The main transmission possibilities are the following and they will be explained here below:

(a) Asynchronous transfer mode (ATM)[14]
(b) Pre-specified quality transmission with Internet protocol (for example IP-MPLS)[15]
(c) Frame Relay
(d) Ethernet and Ethernet VLAN[16]
(e) Symmetric digital subscriber lines (e.g. G.SHDSL)[17]
(f) Asymmetric digital subscriber lines (ADSL/VDSL)[18]
(g) Wavelength division multiplexing (WDM)[19]
(h) SDH/PDH

(a) Asynchronous transfer mode (ATM)

37. ATM is a communications protocol which is suitable when varying bandwidth is required. ATM gives the possibility of competing on access to the service according to those solutions specified by network variables or by priority of data and can provide the same level of service as dedicated transmission capacity. In recent years connections using the ATM standard have decreased significantly as many companies have migrated to the IP-MPLS

[14] Asynchronous Transfer Mode.
[15] Internet Protocol. – Multiprotocol Label Switching.
[16] Virtual Local Area Networks.
[17] Symmetric Digital Subscriber Line.
[18] Asymmetric Digital Subscriber Line.
[19] Dense Wavelength Division Multiplexing.

standard. There are however many old connections still active and asynchronous transfer mode is still common.

38. ATM provides service which from the user's point of view is the equivalent to a traditional leased line. This transmission mode is however first and foremost used in the trunk segment of leased lines and is thus generally not part of the market for terminating segments of leased lines though all this technology was widespread some years ago.

(b) Internet protocol - multiprotocol label switching

39. In IP networks the destination of a package is normally not defined at the point of origin or when allocating capacity when it reaches the access connection points but rather the destination is decided by the IP address put on the package by the user. IP networks can be used for packages to one user or to many. There are several types of IP networks but the most common system in this country is MPLS. In recent years there has been major growth in MPLS systems and now the largest part of the leased line market uses this standard.

40. IP networks can be set up with MPLS in such a way that a kind of tunnel is formed through the network which offers the possibility of a permanent virtual route between two network connection points. The virtual route is a simulation of capacity between network connection points. In this instance one can consider that IP MPLS provides a service equivalent to traditional leased lines and one can conclude that IP MPLS can be the functional equivalent of a leased line where other conditions are fulfilled such as that the user has access to specified bandwidth. Where this is the case it is immaterial if the service is provided over an IP network.

41. IP solutions that allow the user to send data and to have the option of sending data to various destinations with a command to that effect, e.g. in the form of transmission capacity from one location to another, do not have functional characteristics equivalent to those of traditional leased lines. One can assume that IP provides additional flexibility in that customers do not need to specify, when installing, that connection possibilities should only be between 2 points and in that they can easily and with great flexibility change the setup to reach many locations.

42. Should the arrangement be removed in IP networks for line switching which facilitates the setup of transmission capacity to many network connection points, possibilities for use of the line will simply be limited to transmission capacity between network connection points. This could thus be either a private channel between operational bases or between an operational base and the access point of the service provider, for example for access to the Internet.

43. The PTA considers that an IP service that allows line switching controlled by user commands which can enable connections to many destinations, is not the equivalent of a traditional leased line. However when an Internet protocol connection, for example MPLS, is solely used to enable connections between 2 network connection points then this is seen as the equivalent of a traditional leased line.

(c) Virtual network using Frame Relay standard

44. Frame Relay is packet switching technology that uses bridges, routers or Frame Relay Access Device (FRAD). Such equipment collects data which it converts to Frame Relay packets which are sent at varying bit speeds. A common use of Frame Relay is for

transmission of small amounts of data between network connection points as is the case with ATM.

45. Frame Relay is similar to ATM in that it provides an analogous service and dedicated capacity. Frame Relay is normally used to offer shared capacity which provides end-users with the option of receiving information as it was sent without suffering data loss or corruption. For this reason Frame Relay is considered to have analogous characteristics to those of traditional leased lines. There is diminishing use of frame Relay technology and a steady reduction in users.

(d) Ethernet and Ethernet VLAN

46. Varying types of connections are offered in Iceland. Some types are very similar to leased lines but there are also Ethernet connections that differ from leased lines. Lines with Ethernet connection interfaces (i.e. bandwidth that is dedicated and not shared with other traffic) clearly fit the definition of leased lines. Ethernet VLAN service is operated on a shared network. Although VLAN connections are shared, this service can provide comparable characteristics to those of lines with Ethernet connection interfaces.

47. In general Ethernet is not used for voice services (although Ethernet connections can support VoIP), ISDN, VPN or data on other communication protocols. In other countries there is increasing use of Ethernet connections, particularly over shorter routes. In this country there has not been growth to the same extent.

48. In order to provide an Ethernet connection the user needs to have special connection equipment at the endpoint. The same kind of equipment is required at the other end of a leased line, which usually means a telephone exchange or a node point. Ethernet can be provided both over copper and fibre-optic. Ethernet VLAN or lines with Ethernet connection interfaces provide service which is equivalent to traditional leased lines but Ethernet connections are not common in this country in the terminating segments of leased lines.

(e) Symmetric digital subscriber lines (G.SHDSL)

49. G.SHDSL is digital subscriber line technology used on copper local loops which establishes a digital connection. DSLAM set up in exchanges passes on high-speed DSL data traffic. G.SHDSL technology offers symmetric transmission capacity because it allows sending with the same bit speed in both directions.

50. G.SHDSL is analogous with other technology used to offer leased lines with relatively limited bandwidth. G.SHDSL creates symmetric transmission capacity between network connection points. The characteristics of G.SHDSL mean that G.SHDSL could possibly be substituted for the use of a leased line which is carried in a transmission system operating according to SDH/PDH standards, because G.SHDSL offers symmetric transmission capacity which can be used for a variety of purposes and is flexible with respect to the service being transmitted. From the point of view of usage G.SHDSL has analogous characteristics to those of the traditional leased line.

(f) Internet access through Asymmetric digital subscriber lines (ADSL & VDSL)

51. Asymmetric digital subscriber lines such as ADSL and VDSL can be used for the broadband data transfer, for example in the Internet or in company computer networks. Such service enables users to have a continuous connection for a fixed fee. ADSL is the most

common broadband service in this country while VDSL is rapidly gaining ground because of Míla's development of the system in the capital city area and elsewhere.

52. Leased lines can be used to connect to the Internet. In this connection the question arises as to whether ADSL/VDSL gives the option of being used as an equivalent to a traditional leased line. Symmetric transmission capacity of leased lines refers to the ability to send and receive data at the same bit speed. In ADSL/VDSL the user cannot on the other hand send data with the same bit speed as he can receive services which mean that it is not symmetric.

53. ADSL/VDSL thus differs from traditional leased lines in that it does not have symmetric transmission speed which means that such a service cannot provide substitutability for leased lines.

(g) Wavelength division multiplexing (WDM)

54. Wavelength division multiplexing (both CWDM and DWDM[20]) is a technology which multiplexes a number of optical carrier signals, each with its own wavelength onto a single optical fibre where the number of optical fibres would be normally 4-40 or even more. Each pair of optical fibres is carried with bidirectional communication as is required for a leased line according to its definition. The transmission capacity of each optical fibre is from 2.5 Gb/s to 40 Gb/s which can increase as the transmission capacity of each optical fibre increases as technology develops. The capacity of each optical fibre is symmetric.

55. WDM is usually sold and used as a carrier layer to network operators who then divide it into smaller units for selling on. When WDM has been divided into smaller units then it is often used as a backbone network for general network connections and is located between network operator telephone exchanges. WDM is a high-speed network protocol that electronic communications companies employ to make better use of fibre-optic ground cables by making many parallel connections on one optical fibre. WDM is a technical solution which gives the option of symmetric transmission capacity comparable with SDH, IP and ATM.

56. DWDM has a very high capacity but at the same time it is rather expensive. WDM is thus mostly used in trunk connections and is not uncommon in the terminating segments of leased lines.

(h) SDH/PDH

57. SDH/PDH are methods to interlace many channels with little bandwidth in fewer channels with higher bandwidth and vice versa. SDH stands for Synchronus Digital Hierarchy and PDH for Plesiochronous Digital Hierarchy. PDH is the original technology for interlacing which is used in 2 Mb/s and 34 Mb/s systems and SDH is the technology for data transfer in synchronous fibre-optic networks with bandwidth in excess of 34 Mb/s. SDH uses the following units (synchronous transport modules STM) and capacity: STM-1 (155 Mb/s), STM-4 (622 Mb/s), STM-16 (2.5 Gb/s), STM-64 (10 Gb/s), STM-256 (40 Gb/s)). The use of these standards is common in the terminating segments of leased lines. Mila is currently developing a new system based on MPLS-TP transport profile which is based on the same fundamental technology as SDH which gives the possibility for various kinds of quality control analogous to that available to IP-MPLS on IP networks.

[20] Coarse Wavelength Division Multiplexing & Dense Wavelength Division Multiplexing.

2.5.3 The capacity of leased lines

58. The capacity of leased lines depends very much on the protocols being used on them and the kind of carrier technology being used. Table 2.1 shows the main capacity on offer for each type of protocol.

Table 2.1 The most common transmission capacity on the termination market of leased lines[21]

Protocols	Most common transmission capacity
IP-MPLS	256 Kb/s, 512 Kb/s, 2 Mb/s, 4 Mb/s, 6Mb/s, 10 Mb/s and 100Mb/s
Frame Relay	64 Kb/s, 128 Kb/s, 256 Kb/s, 512 Kb/s, 1 Mb/s and 2 Mb/s
Ethernet	2 Mb/s, 4 Mb/s, 6 Mb/s, 8 Mb/s, 10 Mb/s, 20 Mb/s, 48 Mb/s and 100 Mb/s
Symmetric subscriber lines (G.SHDSL)	2 Mb/s
SDH/PDH	64 Kb/s, 128 Kb/s, 256 Kb/s, 512 Kb/s, 2 Mb/s, 45 Mb/s, 155 Mb/s and 622 Mb/s

Source: Post and Telecom Administration

2.5.4 Predefined connection points

59. Line switching is not included in the definition of leased line which means that the user cannot direct the transmission of signals to other network connection points than those that were specified when the leased line was ordered. The arrangement where the user can send data which should be directed at a destination that was not defined when the line was ordered, as can be the case with IP VPN service, is not included in leased lines. Leased line thus corresponds to capacity between fixed locations that are decided when the line is ordered, either the subscriber's operational locations or between a subscriber and a service provider. In both instances the line is dedicated to the subscriber in question.

60. It is possible to set up leased lines in multiple equipment on trunk line networks and such equipment is also possible to use in access networks if this is required. The PTA considers that when leased lines are connected from one network termination point to many, they can be considered to be in accordance with the definition as long as the user cannot switch destination for each individual line. Capacity on ATM virtual channels is also considered to be within the definition of leased lines if the virtual channels are decided when the leased lines are set up. It is somewhat different with IP networks as the destination is decided in each instance by an IP address selected by the user. Such use is not compatible with the definition of leased line. An exception to this is a connection on a line according to IP standard when two network termination points are connected together as is done with traditional leased lines.

[21] This is not an exhaustive list of communication protocols and transmission capacity.

2.6 The PTA conclusion with respect to definition of the relevant service markets

61. The PTA considers that the definition of the market for terminating segments of leased lines should basically be the same today as it was in 2007. This is an access market at wholesale level for stable capacity of signals between predefined points in that part of the electronic communications network where the subscriber has sole access to the whole connection.

62. The terminating segment of a leased line lies between the user and the node point/telephone exchange and connects users to one point where the trunk line system takes over. These connections are leased to other electronic communications companies and enable them to provide service on various retail markets such as for example fixed line voice telephony, Internet service and other data transmission service (general and specialised) such as for example connections to and from GSM/UMTS transmitters. The market covers both digital and analogue lines and connections with all possible technology and transmission media.

63. Leased line markets do not cover switching of lines, i.e. service which allows the user to decide varying destinations for the transmission of signals in each instance that they are sent. A service which connects one network connection point with many could on the other hand be considered a leased line if all points were predefined when the service was set up.

64. Some changes have taken place on the market since the previous analysis with respect to use of specific communication protocols and transmission media. Some technical solutions are currently used less than in 2007 while others have increased. The same transmission media and communications protocols do however exist on the market today as in 2007. With respect to communications protocols the development has tended towards an increasing use of MPLS solutions to the exclusion of others such as Frame Relay. A change that has taken place in transmission media is that the use of fibre-optic in termination has increased significantly. Significant factor here is probably the GR system and in addition to this one should note that only fibre-optic cables are laid today.

65. The traditional definition of a leased line is that it is a permanently connected line for the dedicated use of the renting party with symmetric capacity. Such a definition of a leased line originates in the traditional telephone system and the concept has been used for decades for such lines, though variations of such lines have increased with the development of telephone technology and the advent of optical fiber and new communications protocols which enable increased capacity in data transmission.

66. To be deemed a leased line, a service needs to fulfil the conditions of being a permanent connection between two fixed points, to be for the dedicated use of the renting party and to offer symmetric capacity. Though capacity can vary such lines must be considered to belong to the market, as the difference between them is quantitative rather than qualitative and protocols providing similar capacity to be substitutable products. It must however be considered that it is likely that substitutability will be unidirectional with respect to switching from connections with less capacity to connections with greater capacity and also with respect to upgrades from connections provided over copper to connections provided through optical fiber. Such substitutability however occurs first and foremost on the retail market where the end user drives demand while the wholesaler reacts to customer requirements. When it is considered that traditional leased lines that use the SDH protocol

over copper local loops are the focal product on the market when examining substitutability with new solutions which among others are Ethernet connections over copper or various connections over optical fiber, it can be seen that prices are virtually identical for comparable capacity. The new technology however enables increased capacity. Where substitutability is from a focal product to an alternative product, both products are considered to belong to the same market though substitutability may possibly not be the same in the other direction.[22] In the same way the company which has increased needs can upgrade its leased line a number of times which can lead to a kind of chain of substitution.[23]

67. As connections through xDSL solutions are generally asymmetric, such connections do not belong to the definition of the relevant market but rather belong to Market 5 and the Administration discusses them in that context. The exception to this is the special solution G.SHDSL, which provides 2Mb/s symmetric connection which is a substitute product for traditional 2Mb/s leased lines.

68. After discussion on the possible options on the termination market it is the conclusion of the PTA that the communications protocols and transmission media in use today, and that belong to the relevant market - terminating segments of leased lines - are the following:

Protocols

- Pre-specified quality transmission with Internet protocol (for example IP-MPLS)
- Frame Relay
- Ethernet and Ethernet VLAN
- Symmetrical digital subscription lines (e.g. G.SHDSL)
- SDH/PDH and MPLS-TP
- Various wavelength division multiplexing (WDM, CWDM, DWDM)

Transmission media

- Black fibre (without endpoint devices)
- Copper (or other metal threads)
- Wireless connection

[22] BoR (12) 52, BEREC report on fixed-mobile substitution in market definition, May 2012
[23] BoR (10) 46, BEREC report on relevant market definition for business services, February 2011

3.0 In general about current status on the termination market of leased lines in Iceland

69. The market here under discussion, terminating segments of leased lines, is a wholesale market. Electronic communications undertakings lease access to termination from network operators and set up services on the line which they sell on or use the line within their own company.

70. Since the prior market analysis was published on 14 September 2007 there has been a significant change in the market. This applies particularly to the technology being used to provide termination service on leased lines and less to the size and market share of companies. There has been a large increase in the use of fibre-optic technology in this country and in addition to this increasing numbers are using solutions on the IP standards. With respect to the size and market shares of the companies operating on the market, Míla is still by far the largest operating here.

71. Quite a number of companies offer leased lines for termination and they vary greatly in size, structure and in their policies. One could mention in this respect that smaller companies are often connected to local utility companies that are not planning serious expansion while Míla has a network that covers the whole country and almost 100% coverage of all of the country's urban areas.

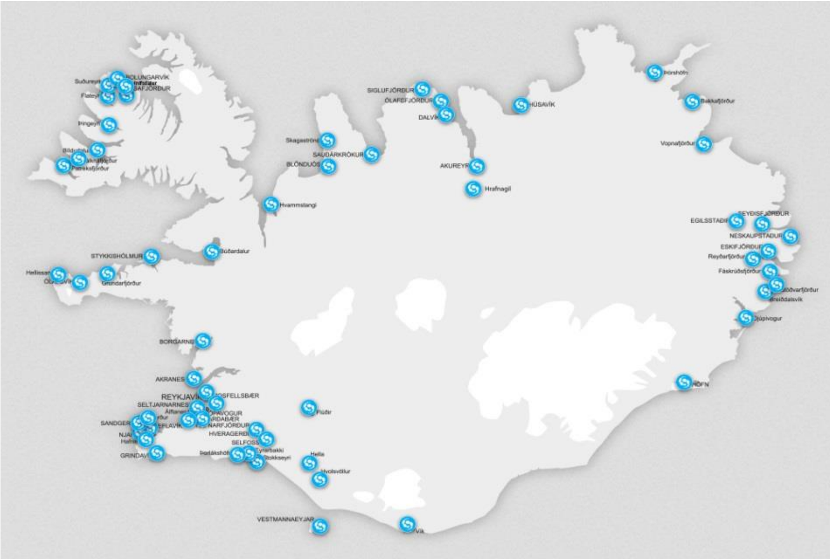
72. Míla is by far the largest company on the market and is Síminn's sister company. Prior to that it was part of Síminn and before that part of the State owned Post and Telephone Administration while that institution existed and had a monopoly on telecommunications. In 2007 Míla was separated from other Síminn operations. Today both companies are operated as subsidiaries of Skipti hf. Míla handles the operation of the network system and sells wholesale access to the system while other services to individuals and to companies are handled by Síminn. The PTA has considered that these companies, Míla and Síminn, should be considered one economic unit in relation to the Competition Law where the strong position of one of them on the market is transferred to the other.

73. In the PTA analysis of this market from 2007 it was stated that after the incorporation of the Míla ehf. sister company, both Míla and Síminn had offered wholesale service that belong to the relevant market. Míla and Síminn had both subsequently been designated as having significant market power. When collecting data for the new analysis it came to light that during the past years Síminn has not had operations on the wholesale market for terminating segments of leased lines despite the fact that the reference offer is in place and has been published on the company's website. It is on the other hand proper to note that Síminn took over most of the management of leased lines from Míla in September 2012, including those that belong to the termination market. This arrangement was reversed in 2013 subsequent to a settlement between the Competition Authority and Skipti from 26 March 2013[24]. This means that today Síminn has no revenue from the wholesale market for leased lines as all sales in the Skipti Group of wholesale leased lines are now conducted by Míla. For this reason the PTA considers that Síminn is no longer operating on the wholesale market for leased lines as they are totally within the Míla operations.

[24] The decision of the Competition Surveillance Authority number 6/2013 "Alterations to structure of the Skipti Group and other measures to strengthen competition on the electronic communications market", dated 26 March 2013.

74. Míla has, as previously stated, national coverage with its copper lines. Míla and Síminn have in recent years concentrated on development of the VDSL system for Míla copper lines. Síminn DSL and GPON systems have now been moved to Míla in accordance with the above specified settlement between Skipti and the Competition Authority. VDSL and optical connections are now offered by Míla under the trade name “Ljósveitan“ (optic utility service) and the company estimates that about 100,000 households will be able to connect by the middle of 2014 (see figure 3.1). As has previously been stated, VDSL connections are not part of the relevant market but they strengthen the position of the Míla access network.

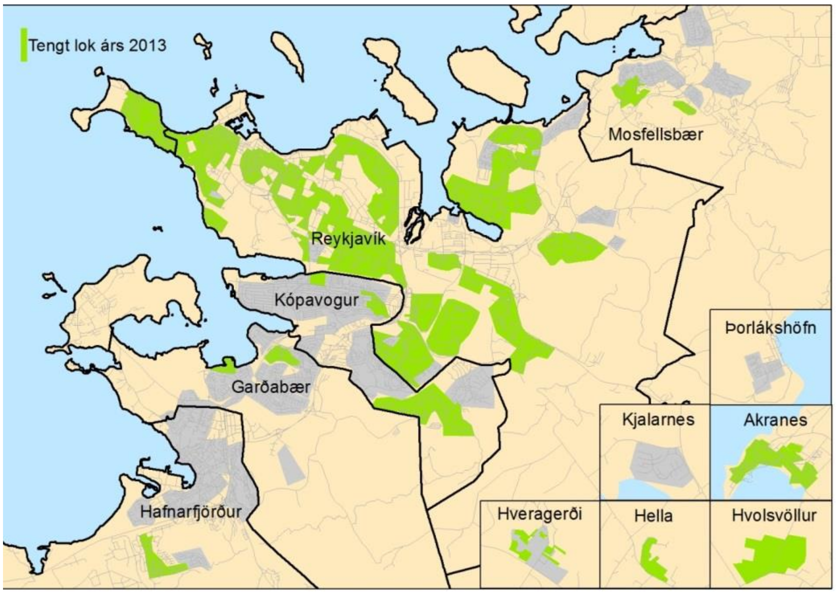
Figure 3.1 Estimated distribution of the Míla VDSL system to the year 2014



Source: Síminn/Míla

75. Gagnaveita Reykjavíkur (GR), which is fully owned by Orkuveita Reykjavíkur (OR), is a growing company which in recent years has developed a fibre-optic network in the region served by OR, i.e. in the capital city area and neighbourhood. The GR network is still being rolled-out and the plan is to conclude the introduction of fibre-optic in the areas that GR has undertaken to supply by 2014. The GR roll-out plans in question only however address in a small way the large municipalities in the capital city area, such as Hafnarfjörður, Garðabær, Kópavogur and Mosfellsbær. There are no plans for the development of the network outside South West Iceland. The following figure shows on the one hand the GR network within the capital city area and on the other hand the urban areas where local loops have been installed.

Figure 3.2 GR fibre-optic connections 2013



Source: Gagnaveita Reykjavíkur

76. Tengir is a company that was founded in Akureyri in 2002 by Norðurorka hf., Línu-net hf., Fjarski ehf and Íslandssími hf. The purpose of the company was and is to handle electronic communications in the Eyjafjörður area. The largest Tengir project has been to connect all homes in Akureyri with fibre-optic. Tengir has also installed fibre-optic between Dalvík, Ólafsfjörður and Siglufjörður, a task that was completed in December 2011 and the connection to Grenivík was completed towards the end of 2012.

Figure 3.3 Tengir network system in Akureyri

Source: Connections

77. Vodafone came into existence in 2003 with the merging of a number of companies that had operated on the electronic communications market for a number of years. These companies were Íslandssími, Tal, Lína.Net, Halló and Margmiðlun. For a long time Vodafone was part of the company group known as Teymi hf. but that company has been split. Vodafone leases one of three NATO fibre-optic threads that are connected around the country but has not operated on the wholesale market for terminating segments of leased lines up to

this point in time and mainly operates on the trunk segment of the market and in retail.

78. Gagnaveita Skagafjarðar (GS) is a company that was established in 2006 and its owners are the municipality of Skagafjörður, Kaupfélag Skagfirðinga, Fjölnet and the Institute for Regional Development, along with a number of smaller parties. The GS aim is to develop a high-speed data transfer network in Skagafjörður. Connecting Sauðárkrókur to fibre-optic is the first objective. Because of difficulties in operations and problematic access to patient capital, the company does not see that it will be able to complete the distribution of the fibre-optic network in Sauðárkrókur or in the neighbouring areas in the near future. In November 2013 a declaration of intent on the Míla purchase of GS was signed and the GS networking will then become part of the Míla electronic communications network should this come to fruition.

79. Orkufjarskipti is a company jointly and equally owned by Landsvirkjun and Landsnet. The company was founded on 12 December 2011 but was previously operated under the name Fjarski. The role of Orkufjarskipti is to operate an electronic communications system for electricity systems in the country with an emphasis on security issues. The company does not offer general electronic communications service but can lease its unused capacity (black fibre) if this does not upset the balance of competition. Their systems are mainly constructed around the Landsvirkjun power stations and are based on trunk line connections where Orkufjarskipti also offers termination to a limited degree, inter alia to the Landsvirkjun premises.

80. The main companies on the market are thus Míla, GR, Tengir and GS. When one views the wholesale market for the terminating segments of leased lines in Iceland it can be seen that the Míla network system is the only company that operates an access network with national coverage. Míla (previously Síminn) is still considered to be by far the largest on the wholesale market for terminating segments of leased lines, whether by number of connections or by revenue, despite the fact that new parties like a GR have increasingly established themselves on the market in recent years.

4.0 Definition of geographical market

4.1 General

81. 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.[25]

82. In accordance with the ESA Guidelines 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 homogenous 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.

83. 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.

84. ERG (now BEREC) has issued Guidelines that constitute a joint position on various aspects relating to the geographical division of markets.[26] 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.

4.2 The geographical market for terminating segments of leased lines

85. In this country there are a number of networks being operated that vary in size and type. Míla operates by far the largest network in the country where the Míla copper network reaches all inhabited areas in the country and is connected to the Síminn telephone exchanges

[25] See Chapter 2.2.2 in the Guidelines.

[26] ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies) - October 2008 ERG (08) 20 final CP Geog Aspects 081016.

throughout the country. Rules on universal services also require that such connections be on offer for all citizens. The same laws and rules apply across the whole country and in addition to this, tariffs of telecommunications companies are the same regardless of where the services are being offered.

86. In Iceland, 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 rolled-out. 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.

87. Even within individual municipalities the boundaries are often unclear. For example one could mention that in Garðabær, Kópavogur and Hafnarfjörður, new access networks have only been installed to a very small degree and in Reykjavik there are still many districts and individual streets within districts that remain to be connected to fibre-optic. It is for this reason extremely difficult to identify clear borders between areas on the basis of varying competition environments.

88. If one needed to analyse on the basis of varying competition environments then the areas to be defined would need to be very numerous and small and in addition to this would be constantly changing. This would inevitably lead to an excessive burden on the regulatory authority and on electronic communications companies during the collection of data, processing and research of market circumstances. It would also be likely that the conclusions of such analysis would tend to be the same because of the very large market share enjoyed by Míla across the country.

89. On the basis of the decision of the PTA number 20/2007 (old Market 13) the obligation rests on Míla to provide access to the company's copper network with national coverage and for this reason Míla offers wholesale access across the whole country pursuant to this obligation.

90. At the same time obligations were also imposed for price control and Míla now offers the same price across the whole country. There is nothing to indicate that other network operators offer prices that vary by region and nor that they vary significantly from the Míla prices.

91. 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.

92. On the basis of the above specified preliminary investigation[27], the PTA considers there to be no need to make a more detailed analysis of geographical circumstances on the wholesale market for terminating segments of leased lines. 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 access networks to network infrastructure provided at a fixed location are still unclear. With the above in mind it

[27] See above specified ERG Common Position on Geographic Aspects of Market Analysis (definition and remedies).

is the opinion of the PTA that the wholesale market for terminating segments of leased lines embraces the whole country.

5.0 Analysis of wholesale market for terminating segments of leased lines

5.1 Introduction

93. The main objective of the market analysis is to investigate whether competition is active on electronic communications markets and to react to this with appropriate measures should it prove not to be the case. In the following analysis of the market for terminating segments of leased lines the factors that influence competition that the PTA considers could mainly impact this market, are examined. These factors are mostly the same as those used as a basis for the prior PTA analysis of the market.

5.2 Market share

94. A company's market share is an important factor in market analysis. It is however not the only factor that decides whether a company is designated as having SMP, but it can give strong indications about whether such a situation exists or not. A very significant market share, i.e. over 50%, is on its own sufficient according to accepted case law, to designate a company as having a dominant position, except in exceptional circumstances. According to the Guidelines, a suspicion that single dominance exists with one company does not arise until market share has reached at least 40%. This depends, however, on the size of the company in comparison with its competitors. In some instances a company with a market share of less than 40% can have single dominance. A company with market share of less than 25% would in all likelihood not be considered to have dominance, except in the case where it had joint dominance with another undertaking.

95. Development of market share over a given period of time is also significant in the assessment of whether the company has a dominant market position. Should a company have a non-transitory high market share then this indicates a dominant market position, while on the other hand a fluctuating or falling market share will indicate the contrary. In new and growing markets a high market share is less of an indication of market strength than on a mature market with slow growth.

96. Market share can be measured in a number of ways but the most common practice is to measure by revenue or number of units on an electronic communications market. The PTA considers that revenue is an appropriate metric on this market but numbers for quantity do not take into account the fact that the form of leased lines on the terminating sector market varies greatly. Various communications protocols and steered services have increased significantly in recent years at the cost of traditional leased lines. Revenue is recommended as a reference in the ESA Recommendation[28] and revenue was also used in the prior PTA market analysis of the relevant market. When market share is assessed by revenue then internal and external revenue of the company in question on the market are taken into account. Despite the above the PTA has also assessed market share by number of connections to provide further support for its conclusion.

97. In the previous PTA analysis which was published in 2007 the market for terminating segments of leased lines was characterised by many years of a strong Síminn position. Shortly before the PTA decision on the relevant market was published there was a structural change in

[28] See Chapter 78 in the ESA Guidelines

the Skipti Group to the effect that the Síminn sister company, Míla, was founded and a large part of leased line wholesale was moved to that company from Síminn. Both companies were thus designated as having significant market power on the leased line markets as they both belong to the same group. The operation of leased lines was partly transferred back to Síminn from Míla in the year 2012 but subsequent to the settlement between Skipti and the Competition Authority in March 2013, Míla today manages all leased lines on the wholesale market within the Skipti Group.

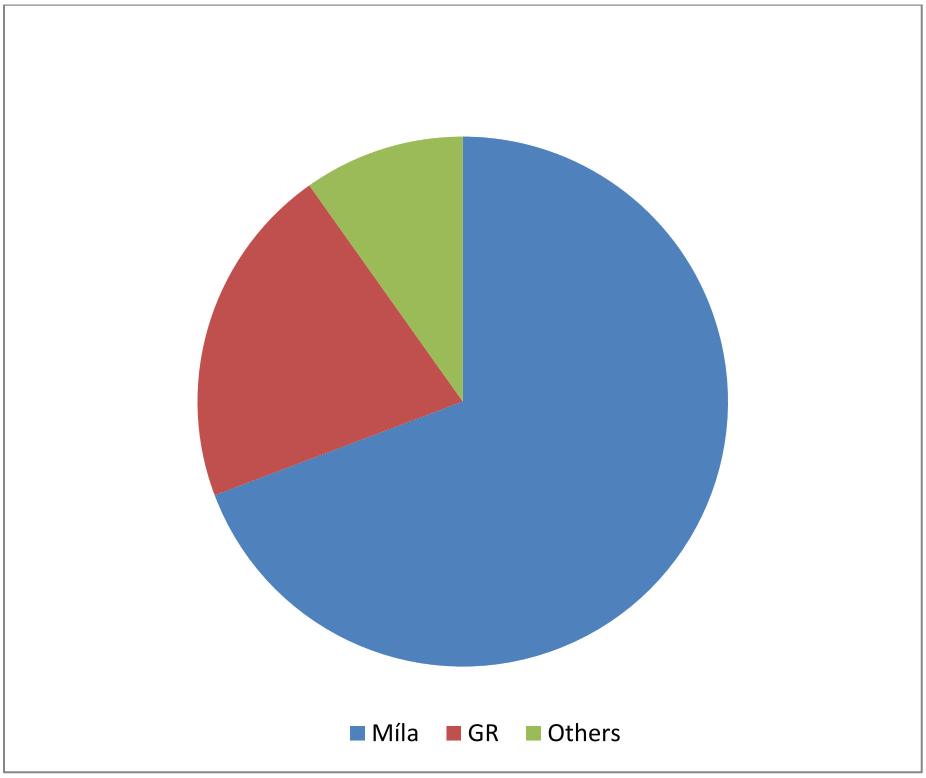
98. Since the previous analysis there has furthermore been the change on the market that Gagnaveita Reykjavíkur (GR) has invested in major fibre-optic infrastructure in the capital city area and in other parts of its operational area and in addition to this, smaller companies such as Tengir and Gagnaveita Skagafjarðar (GS) have entered the market as regional network companies in the provinces.

99. When market share is assessed on the basis of revenue one has to among other things keep in mind that the two companies that are by far the largest on the market, Míla and GR, base their service offer, pricing and business relationship with subscribers on differing criteria. For example GR has until this point in time not sold individual leased lines but connections between two endpoints, or users, and has not split them according to whether they are trunk line or termination connections. In individual instances one has to assess the division of revenue between these two parts of operations and it is the opinion of the PTA that the deviation in this approach is insignificant with respect to total revenue on the market and thus does not affect the conclusion on market share in the relevant market.

100. In figure 5.1 one can see that at the end of 2012 Míla had about [65-70%][29] market share by revenue on the wholesale market for terminating segments of leased lines. GR comes next with about [20-25%][30] market share while others have about [5-10%][31] share.

[29] Margins for confidentiality.
[30] Margins for confidentiality.
[31] Margins for confidentiality.

Figure 5.1 market share of companies by revenue 2012



Source: Post and Telecom Administration

101. Even though the PTA considers that revenue gives a better picture of the leased line market than the number of connections, the PTA nevertheless considers it appropriate to also examine these numbers as stated previously and to assess whether such a comparison strengthens the above-specified conclusion on the status of the market. In the year 2012 Míla had more than 80% market share measured by leased line connections. Available statistics on development of the number of connections shows that the Míla market share has not changed much in recent years. Míla connections over copper local loops have however diminished somewhat but at the same time there has been an increase in connections over fibre-optic local loops.

102. The development in the coming years on the termination market for leased lines will probably be such that GR will continue its development in the capital city area and that local fibre-optic access networks will increase. Despite the fact that there will be a reduction in the number of connections at Míla it is clear that there are no indications other than that the company's market share will still be very high in the coming years given the development of the most recent years and the predictable development for the coming years. There is every indication that the Míla market share will far exceed the reference limits during the period of validity of this analysis, which in general is considered to indicate significant market power.

103. In addition to this there is significant concentration on the market and when examining market share it is also important to have concentration of the market in mind. A common method to measure concentration on a market is the HHI index.[32] The HHI index for market

[32] Herfindahl-Hirschman Index. The value of the index lies between 0-1. The higher the value the greater the concentration on the market. If the result is less than 0.1 then action is considered unnecessary. If the result is in the range of 0.1-0.18 then there is average concentration and over 0.18 there is significant concentration.

share in this country with respect to revenue in the year 2012 is about 0.53, which indicates very high concentration.

104. According to well-documented case law, a share of over 50% on its own is sufficient for a company to be considered to have a dominant position, except in exceptional cases. There is also a very significant difference between the Míla market share and those of its competitors on this market whether by revenue or by number of connections. The PTA believes that the Míla high market share indicates unequivocally that Míla has significant market power on the wholesale market for terminating segments of leased lines.

5.3 Overall size of a company

105. The size of the company for example on the basis of turnover or of some other metric, can be important when assessing SMP. If the company is significantly larger than its main competitors, then this can mean competitive dominance. Dominance can be inherent in better production methods, cheaper procurement, economic strength, access to capital, distribution and marketing.

106. A company with longer specialised experience on the market than that of its competitors has analogous dominance, for example in specialised knowledge in technical matters, knowledge of markets and of the legal environment.

107. Míla is part of the Skipti Group and thus belongs to the largest electronic communications company in this country and has long and extensive experience of electronic communications. Organisational changes in the Skipti Group to which Míla belongs have not brought any changes with respect to the overall size of the company or to its experience on the electronic communications market as the same electronic communications operations are within the Group as before. The company is as before, by far the largest electronic communications company in the country. The total turnover of the Skipti Group, i.e. of Míla and Síminn on the Icelandic electronic communications market was ISK […][33] billion in 2012 or about […%][34] of total turnover on the market.

108. The PTA concludes that the greater size of Míla and the Skipti Group in comparison with competitors strengthens the Míla position on the relevant market.

5.4 Entry barriers

5.4.1 General comments on barriers to entry

109. ‘Entry barriers’ is a collective name for various factors that can influence companies' market power. If there are few barriers to a market 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 SMP and can diminish its harmful influence on competition. Entry barriers on the other hand weaken or prevent competition.

110. There is a strong relationship between entry barriers and profitability. The more entry barriers that exist, the greater the profitability that can be expected from incumbent companies, which can often be attributed to a lack of competition rather than to efficiency. An

[33] Removed for reasons of confidentiality.
[34] Removed for reasons of confidentiality.

ideal situation for an incumbent is one where there are many entry barriers and few exit barriers. In such circumstances incumbent companies deter new companies from establishing themselves and companies lacking profitability will easily give up.

111. Various factors can impact the access of new parties to the market. Where there are significant entry barriers, entry to the specified market is limited (small possibility of competition) and the market position of incumbents is strengthened. The objective of the PTA, market analysis and possible subsequent measures is to strengthen competition on markets. It is conducted for the purpose of encouraging innovation and development, of enhancing companies' competitiveness and the interests of consumers. One way to achieve this is to mitigate entry barriers to markets.

5.4.2 Control of infrastructure that is difficult to duplicate

112. When a company has control over infrastructure that is difficult or expensive for others to duplicate, this can be a significant barrier for competitors. An example of such infrastructure is a fixed line telephone network.

113. Companies that wish to offer termination of leased lines can base their offer on backbone lines from Míla, GR or other wholesale companies. It is thus possible to enter part of the market without developing one's own electronic communications network in all respects. It is however necessary to invest in certain equipment required to interface with the connections. This equipment is however mostly standard and it is not considered difficult to acquire.

114. It is more difficult to develop a network of backbone lines. This involves major costs and the space in cities and towns for the necessary buildings is in short supply and there is uncertainty as to whether permits will be granted for the construction in question. It is only Gagnaveita Reykjavíkur that has embarked on a major development of backbone lines for termination in the capital city area in recent years. This development has been costly and time-consuming. It is more than 10 years since Orkuveita Reykjavíkur began developing an access network in the capital city area and local loops now number about 50,000 which is much fewer than those controlled by Míla. In addition to this, local parties have laid backbone lines in a number of municipalities. It is therefore clear that new companies cannot enter the market at short notice and compete with the Míla backbone network system.

115. Despite the fact that it is possible to lease lines to offer termination, the cost of building new networks and network systems that cover the whole country is such that it must be considered that control of infrastructure that is difficult to duplicate is a significant entry barrier in this country.

5.4.3 Sunk costs

116. When a company commences operations on a new market this normally involves initial costs for investment, advertising and development. If the operations are not successful then it may sometimes be possible to recover part of the start-up cost with e.g. the sale of the basic investment and equipment. The costs that the company is left with when entry into the market does not work are called sunk costs. The risk of significant sunk costs resulting from high start-up costs means that new companies face greater risk in their decision-making than companies incumbent on the market. This difference in cost can thus act as an entry barrier against new companies getting a foothold on the market.

117. If entry to the market can entail major sunk costs then companies incumbent on the market could tend to make even greater investments in order to discourage possible competitors from entering the market. Incumbent companies can thus use sunk costs as a defence against potential competition from new parties by increasing entry barriers to the market.

118. Míla is the only electronic communications company that controls an access network with national coverage which has taken decades to develop. It would be extremely costly for a potential competitor to duplicate this or to develop a competitive access network with the same scope. In addition to this such an investment would largely constitute sunk costs.

119. It is possible to lease lines from network operators. This is much less expensive than installing new lines but nevertheless requires significant costs, for example in the trunk network, in switches at termination points, control systems, services systems and related facilities. It is clear that such costs would only to a very limited degree be recovered by the company were it to cease operations in this area.

120. Other costs are lower and there is no certainty that they involve sunk costs. There is no allowance made for significant marketing costs as the service is first and foremost aimed at the corporate market where companies often look for the best offers with calls for tenders or by contacting all the parties. Nor is development cost considered to be significant as equipment is standard and widely available.

121. It is clear that new parties will face very significant sunk costs if they plan to enter the market. The PTA considers that sunk costs are an entry barrier to the relevant market.

5.4.4 Technical superiority

122. A company's superiority in technology and knowledge can create barriers for new companies that wish to enter a market and thus provide incumbents with a competitive advantage. The funding of research and development is sunk cost and many years often pass before results see the light of day in the form of saleable products. The importance of technological advantage is much greater on markets where there is little innovation and technological development.

123. As was stated in Section 5.4.2 it is technically difficult to duplicate those systems that are most used in this country. One can safely say that this is a case of off-the-shelf products and the PTA therefore considers that entry barriers resulting from technical superiority are not in place in this country.

5.4.5 Access to capital

124. Access to capital can have a deciding influence on the possibilities for a company on a competitive market. This is particularly the case where substantial initial investments are required. 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.

125. The difference between companies, with respect to access to capital could constitute an entry barrier. Good access to capital can both constitute an entry barrier and can indicate market power.

126. Circumstances on financial markets are in many ways special at this point in time. There has been an international financial crisis for quite some time and the financial crisis in this country has been particularly difficult and has impinged on all domestic economic activity. One must consider it certain that access to capital has become more difficult for all companies. Capital for new investments is more difficult than before, which impacts all development. Against this there is the fact that the advantages that some companies had over others with respect to access to capital has also diminished during the same period. One can however note that in the autumn of 2013 the Skipti Group, which operates both Míla and Síminn, went through major financial restructuring which means that the Group now has a much more manageable debt position than it had for some time subsequent to the bank crash of 2008. This strengthens Míla’s position on the market here under discussion.

127. It is a very expensive measure to develop a network as extensive as Míla, and to a certain extent GR, operate today. The Míla network was built to a large extent during the period of monopoly and state control. The development of the GR network is still incomplete and in reality it is not certain how extensive it will be but it is very likely that it will not reach further than the south-west corner of the country. Tengir in Akureyri, Gagnaveita Skagafjarðar and Orkufjarskipti still have their systems in the development phase and with the two first mentioned companies this development is much slower than in the capital city area and there is probably a shortage of capital, while Orkufjarskipti aims its systems at the needs of Landsvirkjun which means that Orkufjarskipti does not have a significant presence on the competition market. It is thus clear that it significantly restricts competition if new companies do not have access to capital for development.

128. An important issue with respect to financing a terminating segment network is that such finance needs to be long-term. Electronic communications systems take a long time to pay for themselves and given current circumstances there is a lack of patient capital in most places, not only in this country but also widely abroad.

129. For the above reasons it is the opinion of the PTA that access to capital is problematic at the present time and is thus considered to be a significant barrier to entry for new electronic communications companies to the relevant market.

5.4.6 Economy of scale

130. Economy of scale is said to exist in company operations where increased production means a lower total cost for a product or service unit. This is characteristic for technical companies which have relatively high fixed costs and low variable costs. Economy of scale can act both as an entry barrier and as a market advantage. Network operators already on the market endeavour to operate their own networks with maximum efficiency. New network operators need time to develop their operations, gain a customer base and traffic and can thus not expect to enjoy the same economy of scale as those that have operated their electronic communications networks for years.

131. Míla is part of the Skipti Group to which the largest electronic communications companies in the country belong. Of the companies that operate backbone networks, Míla is by far the largest as that company has the largest turnover, the largest electronic communications network and most customers. Míla's economy of scale is manifested among other things in lower unit costs resulting from a large number of sold units. There can also be economy of scale in operations, for example with a better use of human resources and other resources required to provide satisfactory services. This factor can in some instances be a

barrier to entry into the market.

132. The PTA considers that Míla enjoys significant economy of scale on the market here under discussion, because Míla offers services across the whole country and has the largest number of customers. The size of other companies, particularly GR, has increased from the time that the last analysis was made and the possibilities for more efficient operations have increased proportionately. These companies are all however considerably smaller than the Skipti Group and in addition to this they have much smaller operations on the relevant market. For this reason the PTA considers that there is still a considerable difference in potential economy of scale for Míla and the Skipti Group on the one hand and for other companies on this market on the other.

133. The PTA considers that Míla enjoys greater economy of scale on this market than any of its competitors because of a very diverse product offer and because of its large number of customers on various electronic communications markets. Economy of scale and synergies contribute to the strengthening of Míla's position on the market. The PTA considers that Míla on its own and as a part of the Skipti Group enjoys economy of scale, which contributes to the strengthening of its position on the market and that this creates an entry barrier to the market in question.

5.4.7 Economy of scope

134. Economy of scope is the economy where it is less expensive to manufacture two or more goods together rather than each separately. A lower cost is achieved by jointly using resources in the production. A good example of this is the use of an electronic communications network where a variety of services are offered to consumers. Economy of scope can act both as an entry barrier for new parties and as an advantage in the market over competitors.

135. Míla benefits from having a very wide product offer and within the Skipti Group one can find the most varied offer an electronic communications companies in this country. Companies do not need to deal with other suppliers if they need services other than termination of leased lines (which is common). In addition to this the networks within the Skipti Group have the greatest scope of any in this country.

136. The PTA considers that economy of scope exists with Míla in the case of termination of leased lines which other companies on the market do not enjoy.

5.4.8 Service systems[35]

137. Well-developed service systems can act as an entry barrier for new parties and as a competitive advantage. This particularly applies on markets where substantial costs are tied up in the development of distribution and sales systems or where all the companies have made sole agreements with the largest and/or most important distribution parties on the market.

138. Service systems can represent a large investment for new companies that would like to

[35] Service systems is a collective name for the following systems:
- Sales system
- Order entry system
- Line bookkeeping
- Service information
- Invoicing

establish themselves on a given market. When there are incumbent operators on the market that have perhaps written off their expenses, an entry barrier is experienced by the new operators. Companies that have efficient service systems at their disposal can therefore have a competitive advantage over new market participants.

139. Investment in a service system is not directly proportional to its number of customers or its total sales. In fact, in smaller companies, this investment expense is proportionally higher per customer. Therefore, an investment in an efficient service system represents economy of scale. The development of such systems can also be time-consuming and Síminn has for example developed its service systems over a period of several decades, which Míla inherited on its foundation, while new companies must develop such systems from scratch.

140. Efficient service systems are the foundation on which customers services rest, as customers normally communicate with the company through its service systems. It is through the service systems that sales are registered, ordered, activated and the charges collected through invoicing. It is difficult to see how a company can maintain reliable operations and a sufficiently high level of service to build up a convincing position on a service market without such systems.

141. During the past decades service systems and line bookkeeping have been developed within the Skipti Group which benefits Míla. One must also assume that Míla can make use of the joint order entry system and invoicing within the Skipti Group.

142. One must consider that GR, which has been operating for a number of years, also has a strong position with respect to service systems. The GR position is however probably not as strong as that of Míla.

143. The PTA considers that investment in service systems can be an entry barrier for new companies.

5.4.9 Barriers to expansion

144. 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 incumbents. Where there are limits to a market's potential to grow and to offer more extensive services than those existing on the market, entry barriers may exist.

145. Traditional termination of leased lines has throughout the years been provided through copper local loops. As the copper local loops are connected into all buildings and homes in the country and as fibre-optic local loops have significantly increased, it is possible to say that the number of installed lines has not been a limiting factor on the market. In the traditional understanding of the concept, the market is stagnant with respect to the number of installed connections.

146. Technical changes in past years have also resulted in a reduction in scope of the relevant market. Many of the needs that were previously resolved with leased lines can now be met with connections to the public internet using IP standards and protocols that do not have symmetric transmission capacity. Instead of connecting branches, such as sales systems, POS solutions and other interconnections in information systems with traditional leased lines from each location to the headquarters, the practice is now common to connect each location

to the public Internet, often with xDSL solutions of consumer grade which is a much more economical solution. Such connections then belong to Markets 4 and 5 and the Administration will discuss them in that context. The PTA assesses the situation such that neither small but significant price increase (5-10%) in xDSL connections, nor such a reduction in price of leased lines would change this purchasing behaviour. As the result of a SSNIP test is evident in the view of the PTA, the PTA considers it unnecessary to embark on detailed research on the impact of such price changes by applying the SSNIP test as it is time consuming and costly and would not be a sensible use of PTA's limited resources. In this manner many buyers have met their needs in another manner, usually with xDSL connections instead of purchasing a special leased line. This development has been growing in recent years and no end to this trend can be seen at present.

147. It is thus the PTA conclusion that growth possibilities in the field of installation and operation of terminating segments of leased lines are limited and that the lack of growth possibilities is likely to act as a barrier for new companies on the relevant market.

5.4.10 Conclusion concerning entry barriers in the relevant market

148. It is also clear that though it is possible to develop a service offer on leased lines from Míla, GR or from other companies, substantial cost lies in the development of such a system which can be difficult to develop. The cost and difficulty of developing a network system means that control of infrastructure that is difficult to duplicate is in the opinion of the PTA a significant entry barrier.

149. Despite the fact that it is possible to develop termination service on leased lines from other companies, the cost of developing the service is significant. The PTA considers that sunk costs are an entry barrier to the relevant market.

150. The PTA considers that Míla's technical dominance is not such that it represents an entry barrier. With respect to termination service on leased lines, most required equipment is easily and widely obtainable.

151. The PTA considers that access to capital is limited today and because of how costly it is to enter and become a viable participant on the market for termination of leased lines, then this is considered to be a significant entry barrier to the relevant market.

152. Míla, both on its own and as part of the Skipti Group, enjoys economies of scale and scope that competitors cannot foreseeably match during the life cycle of the analysis. It is inevitable that new companies on the market would find it difficult to compete under such circumstances and this creates a significant barrier to entry.

153. Míla's extensive service systems can give the company an advantage over new companies and they call for analogous systems being in place with these companies.

154. The wide distribution enjoyed by existing parties to the market and the new technology that some customers can use instead of termination of leased lines, mean that the opportunities for growth on the market are limited. The PTA therefore concludes that a lack of possibilities for growth is likely to act as a barrier to new companies.

155. With the above discussion in mind the PTA concludes that barriers exist which make it difficult for new companies to enter the relevant wholesale market, which strengthen Míla's

position on the market.

5.5 Potential competition and innovation

156. This criterion is decided by the opportunities new companies have to enter the market. Should they have opportunities to enter the market this can impact tariffs and price structure of incumbent companies and can also limit their possibilities to maintain higher prices. If new competitors can be expected to enter then this will lessen the tendency of incumbents to abuse their market power. It is necessary to examine this criterion from the point of view of entry barriers. There is normally a correlation between entry barriers and a lack of potential competition.

157. When new companies enter a market, the reason is often that they aim to acquire incumbents' market share and profits. This risk exercises restraint on incumbents and competition to which they try to react in some way or another. One example of this is their endeavours to increase economy of scale and reduce unit costs. Product diversification in the form of quality or trademarks is also a measure to counter competition. High investment costs provide resistance, particularly where they involve reinvestment in existing assets (switching cost). In addition to this, limited access to the distribution channels can be problematic for competitors. Companies that are first to enter the market can often use their experience and knowledge as an advantage over competitors that come later. Access to resources, for example frequencies, government action and technical changes can also impact the ability and interest of new companies to commence operations.

158. On the relevant market in this country Míla enjoys the fact that the size and density of the company's local loop network is much greater than that of others and the network covers the whole country, residential and non-residential. There is little likelihood that a new company can enter the market with new technology or a solution that Míla could not introduce. It is also likely that Míla could even introduce such solutions and innovations earlier and in a more economic manner thanks to its size and position on the market.

159. A new party on the market is always dependent on Míla's access network to some degree unless he builds his own local loop network with national coverage, which is simply not realistic. New parties to the market will thus always need to make an agreement on access with Míla to some degree.

160. The PTA conclusion is that there is little likelihood of innovation on the relevant market and that the difference in position between Míla and other parties is so great that conditions for competition will be disadvantageous during the period of validity of the analysis.

5.6 Behaviour of parties to the market

5.6.1 Product diversification / bundling

161. Product diversification refers to how the consumer defines products and distinguishes between similar products. Clear product diversification in a company's offer can create trust in customers and can equally complicate entry for new parties into the market, contrary to what happens when the product offer is more homogenous. Strong brand names have a comparable effect.

162. A company that is dominant on one market can leverage its position to bundle products on that market with products on another market with offers that competitors have difficulty emulating. If competitors do not have the possibility of making comparable offers, then this strengthens the dominant position of the company on the former market and creates a competitive advantage on the latter. An advantage of this kind may need to be examined when market strength on the latter market is assessed.

163. Míla has the special position on this market of being related to Síminn, which is ubiquitous on the market in this country and has a trademark developed over decades. It also had a monopoly in most areas of the electronic communications for a long time. In this instance Míla has a good position but one has to keep in mind that the relevant market is first and foremost at wholesale level where one can assume that the strength of a trademark is not as important as on the general consumer market.

5.6.2 Vertical integration

164. Vertical integration exists where the same party operates on more than one production and/or sales level, for example he manufactures goods, sells them to another party in wholesale and also sells the goods himself at retail level. A company that integrates varying operations in this manner in the value added chain can by virtue of its position on the wholesale or retail markets, erect barriers to competition on the market in order to strengthen its position against competitors.

165. Vertical integration from the point of view of an electronic communications company has certain advantages as the company can combine all the services in question under one umbrella and for example use the same service systems for the wholesale and retail parts. In addition to this, a company with vertical integration can relatively easily discriminate against competitors on the retail market because of its position on the wholesale market.

166. Despite the fact that Míla only handles wholesale services and Síminn both wholesale and retail this does not alter the fact that these two companies together form a vertically integrated company group and that they form one economic entity in the relation to the Competition Law. Síminn is Míla’s largest customer. It is clear that as both companies are part of the Skipti Group, ownership, management and financial connections between the companies are undisputed.

167. The PTA considers that vertical integration on this market is likely to be an entry barrier for new companies to the market, despite some kind of self-imposed separation of wholesale and retail between Míla and Síminn, as the two companies are part of the Skipti Group.

5.7 Circumstances on the demand-side

5.7.1 Countervailing buying power

168. Buyers with a strong negotiating position can influence competition and can limit seller’s possibilities to operate without taking into consideration competitors and customers. A strong negotiating position exists primarily when a customer buys a large portion of an operator’s production, is well informed of other offerings, can switch to another operator without significant expense, and even has the potential to commence production of a comparable product/service.

169. Síminn is still by far the largest party on the retail market for termination services. Síminn is therefore in reality by far the largest purchaser of Míla services for terminating segments of leased lines. Other purchasers of leased line termination have low market share and thus they have limited possibilities to influence their terms of business in agreements with Míla.

170. The service on offer with Míla on the relevant market resulted from obligations that were imposed on the company and not because of pressure from purchasers of the service.

171. The PTA conclusion is that countervailing buying power is generally negligible on this market and thus does not have a significant impact on Míla market strength.

5.7.2 Constraints from substitute products

172. One can assume that on markets characterised by significant innovation, it is more difficult for companies to maintain and leverage their market power than on markets where there is little innovation. Technical developments that result in substitute products on the market can thus function as potential competition with incumbent companies and can weaken their dominant market position.

173. In this country there is a widely distributed copper local loop network and significant development has taken place in development of fibre-optic networks. For this reason one can consider the relevant market to be mature in the understanding that a significant increase is not expected in the total number of leased lines currently in use. Communications protocols and possibilities in data transfer services will continue to develop and no new technology or communications protocols are foreseeable during the lifetime of the analysis that will impact its conclusions.

174. Nor is there any indication that there are other solutions on the market that fulfil the requirements made by the market for leased lines, other than those that currently exist in the form of leased lines.

175. The PTA believes that there is no constraints on the market from potential substitute products and that it is unlikely that this will change significantly during the life cycle of the analysis.

5.7.3 Customer freedom of choice and switching costs

176. Where a service provider has a dominant market position, limitations or costs of switching providers can enhance that provider’s opportunities to behave without concern for the market. Such limitations can be commercial, technical or financial in nature, but they can also be a consequence of the user trusting established service providers more than new ones and being unwilling to take the risk of switching providers.

177. One has to take into account the fact that in large areas of the country Míla is the only network operator that service providers can deal with. It is also a fact that despite the development of new systems, Míla has had its system in use since the inception of Internet use and it is thus inevitable that service providers have taken this into account and tried to adapt their systems to access Míla’s copper network.

178. To replace systems in order to be able to transfer to another network, such as

connecting to fibre-optic local loops, can be costly and time-consuming. Some parties to the market have avoided this by doing business with GR which sells among other things IP-MPLS service through its fibre-optic network. One must however keep in mind that with this, the companies descend in the value chain, and control they have over the service they provide can diminish.

5.7.4 Customer access to information

179. If customers are to be able to choose from among service providers in the market, they must have access to information that enables them to compare the various offers that are available. Complex tariffs and manifold bonus and discount offers can complicate customer choices and can further strengthen a dominant undertaking's position in the market.

180. Míla publishes a tariff in accordance with the obligation for transparency that was imposed on the company on the relevant market. Other companies are not subject to the same kind of obligation and one cannot see wholesale tariffs published on their websites. Access to information on conditions and prices on the market is thus not as good as it could be and it is not possible to compare the terms on offer by examining published data.

181. It is the opinion of the PTA that if it were not for obligations pursuant to the Electronic Communications Act then access to information would not be easy and there would be little transparency on the market. Such a situation would inhibit competition on the market.

5.8 Conclusion and designation of undertakings with significant market power

182. Assessment of SMP (Significant Market Power) is based on ESA Guidelines and on various other references. The PTA takes current market conditions into account when making its assessment. Developments over recent years are also scrutined and projected developments are taken into account to the extent possible.

183. In Paragraph 1 of Article 18 of the Electronic Communications Act no. 81/20030, the following is stated: *An undertaking shall be deemed to have SMP if it, either individually or jointly with others, holds a position of economic strength on a certain market which enables it to prevent effective competition and to operate to a substantial extent without concern for competitors, customers and consumers."*

184. This is an important point of departure in the market analysis and PTA wishes to emphasise that SMP is the appropriate measure, not abuse of a dominant position. Therefore, the core of the market analysis is not whether an undertaking has misused its dominant market position. This does not mean, however, that an undertaking's behaviour in the market does not make any difference in the assessment of SMP. Even though the formal aspects of the market are most important, conduct that enhances a dominant position or maintains the competitive advantage enjoyed by a dominant undertaking can strengthen that undertaking still further.

185. As the market analysis shows there have not been great changes on the termination market since the previous analysis was made of the market in 2007. It is true that GR has embarked on the development of its network and has achieved [20-25%][36] market share by revenue but Míla still has a dominant market share of approximately [65-70%][37] of all

[36] Margins for confidentiality.
[37] Margins for confidentiality.

termination revenue. The Míla market share has thus not declined significantly during the period in question.

186. In the opinion of the PTA there are still significant entry barriers on the market. Despite the fact that new companies have entered the market, such as for example Gagnaveita Skagafjarðar, it is clear that their operations are very small and local. It is difficult and time-consuming to establish oneself on the market in such a manner that operations will be healthy on a long-term basis.

187. In addition to this the PTA concluded that the possibility of some kind of innovation or potential competition was hardly realistic as the market was largely saturated and as there was a great difference between the position held by Míla and that of other companies.

188. The PTA considers that vertical integration of the Skipti Group significantly strengthens the position of Míla on the relevant markets. As purchasers of wholesale services on the market are very small in comparison with Síminn, countervailing buying power does not exist, and there is nothing that indicates that competitors, customers or consumers can influence Míla's tariff with respect to terminating segments of leased lines.

189. The PTA considers that the reduction of Míla market share, the entry of new parties to the market and pressure from other types of services is not yet at the level that can impact on Míla's significant market power. Míla’s share by revenue is in the range of [65-70%][38], but over 80% market share by connections. The company's high market share indicates that it has significant market power. According to the European Court case law, market share over 50% is on its own an indication of significant market power except in the case of unusual mitigating circumstances. The PTA considers in the light of Míla's high market share and taking into account the previously mentioned factors that are such that they would inhibit competition, that is, above all reasonable doubt that Míla enjoys significant market power on the relevant market. The PTA considers there to be no indications that changes in the criteria will be such in the next 2 to 3 years, that there will be a significant reduction in the Míla market power.

190. With the above in mind the PTA intends to designate Míla as having significant market power on the wholesale market for terminating segments of leased lines (market 6).

[38] Margins for confidentiality.

6.0 Imposition of regulatory obligations

6.1 In general on obligations

191. According to Paragraph 2 of Article 17 of the Electronic Communications Act, market analysis shall be the basis for decisions on whether the PTA shall impose, maintain, amend or withdraw obligations on undertakings with SMP. If a market analysis reveals that there is no effective competition in the relevant market and that one or more electronic communications undertakings in that market possess SMP, the PTA is authorised to impose one or more obligations on the company that is designated as having SMP, in accordance with Article 18 of the Electronic Communications Act. If the PTA has previously imposed specific obligations on operators pursuant to the previous Electronic Communications Act, these shall be reviewed and either maintained, amended, or withdrawn in accordance with the results of the market analysis.

192. Article 27 of the Electronic Communications Act states that when an electronic communications undertaking is designated with SMP, the PTA may impose on it obligations concerning transparency, non-discrimination, accounting separation, open access to specific network facilities, price control and cost accounting, as necessary for the purpose of promoting effective competition[39] These obligations are described more fully in Articles 28 – 32 of the Electronic Communications Act.

193. When selecting obligations to be imposed in order to solve specific competition problems, it is necessary to use several fundamental principles as guidelines.[40] All obligations imposed shall take into account the nature of the specified competition problem and shall be designed to solve it. They shall be transparent, justifiable, reasoned, and in line with the objectives they are designed to achieve – that is, to promote competition – as well as contributing to the development of the internal market and safeguarding users' interests. Obligations must be proportionate and may not impose heavier burdens on operators than is deemed necessary.

194. In the above specified report from the European Regulators Group (ERG) on ex-ante obligations emphasis is placed on developing competition in the construction of electronic infrastructure and networks where this is considered desirable. In such instances the imposed obligations should support such development. When infrastructure-based competition is not considered desirable due to significant and persistent economies of scale and scope or other barriers to entry, it is necessary to guarantee sufficient access to electronic communications networks and equipment at the wholesale level. In this context, it is necessary to ensure two things: first, to encourage service-based competition; and second, to guarantee a sufficient fee for access to existing electronic communications networks, thus providing an incentive for further investment in such networks, as well as for their renovation and maintenance.

195. For the long term, service-based competition that has its foundation in steered access to a cost-analysed price can be a tool for generating competition in the regeneration of electronic communications networks. This refers to what is called "the investment ladder," and its objective is to create conditions that make it possible for new operators to build up their electronic communications networks in incremental steps.

[39] See also Articles 9-14 of the Access Directive.
[40] See Article 8 of the Framework Directive.

196. In selecting the obligations that are best designed to promote competition in a given market, it is often beneficial to consider the position that would exist if obligations were not imposed on undertakings in the relevant market and whether it would be sufficient to use competition legislation alone to guarantee effective competition.

6.2 Competition problems

6.2.1 In general on problems in the field of competition

197. Obligations are imposed on companies with SMP with the aim of combating real and/or potential problems in the field of competition in the markets in question. Problems in the field of competition refers to any kind of behaviour accompanied with SMP, which is intended or leads to competitors being forced out of markets, which prevents potential competitors from entering the market and or damages consumers' interests. When obligations are applied pursuant to the Electronic Communications Act, the reason for doing this is not in fact that the party is misusing market dominance. It is sufficient that competition problems could possibly arise under given circumstances.

6.2.2 Problems with respect to competition on the wholesale market for termination of leased lines.

198. As was stated in Section 5, the conclusions of the market analysis indicate that competition on the wholesale market for terminating segments of leased lines is not sufficiently active as Míla has an overwhelmingly dominant market share of the relevant market.

199. The market analysis shows that the relevant market is characterised by Míla´s strong dominance which can be attributed to the fact that Míla (previously Síminn) was previously a sole licence holder which enjoyed a monopoly on the electronic communications market in this country for a considerable number of years, up to the year 1998.

200. Development by other electronic communications companies, first and foremost GR, has been appreciable in recent years but its market share and network distribution is still such that it offer no threat to Míla which has operations across the whole country and can offer termination to almost every single household and company.

201. Barriers on the relevant market are still substantial and there is a lack of possible competition. The market is characterised by vertical and horizontal integration of Míla which can offer virtually all products to all customers from wholesale to retail level.

202. The PTA believes that because of its long history and extensive access network, Míla has a definite competitive advantage. Míla also controls infrastructure that other companies cannot duplicate without very substantial funding and time that is hardly available.

203. The wholesale market for terminating segments of leased lines also shows evidence that a certain stagnation and decline exists in specific parts of the market, such as in Frame Relay and ATM standards. This has the effect that growth possibilities are on the decline on the relevant market.

204. The market has not undergone fundamental changes since the previous analysis. Despite the fact that there has been certain technological development and that there are more

service providers than before, Míla still has an overwhelmingly dominant market position. Companies that wish to provide electronic communications services are still dependent on access to Míla network systems for it to be possible to them to provide homogenous service throughout the whole country. Development of the market has thus not given reason to assume otherwise than that the need to maintain obligations on the relevant market is as great as it was after the previous analysis.

205. With the circumstances pertaining on the market today, where one company has a decidedly dominant position and were countervailing buying power is very small, there is a risk that the dominant company will leverage its position to demand abnormally high fees for its service. Such pricing is detrimental to competition on related markets and results in the end in higher prices to end users.

206. A company that is vertically integrated like the Skipti Group can have the tendency to discriminate between its customers in such a way that its own departments and related companies enjoy better terms than competitors. There can also be a tendency to have too small difference between wholesale and retail prices and thus make competition with the retail arm of a dominant company difficult.

6.3 Obligations in force

6.3.1 Obligations imposed in the prior analysis

207. With the PTA Decision no. 20/2007, dated 14 September 2007, on the imposition of obligations subsequent to analysis of former Market 13, which was the wholesale market for terminating segments of leased lines, the PTA imposed the following obligations on Síminn and Míla.

Obligation to provide access to termination of leased lines

208. The obligation was imposed on Síminn and Míla to meet normal and reasonable requests for access for terminating segments of leased lines and for service at wholesale level. Síminn hf and Míla ehf were to meet normal and reasonable requests for sharing or co-location, access to resale and access to technical interfaces, communication protocols and other technology, and the interconnection of networks. Agreements on access and interconnection with the Síminn hf and Míla ehf leased line network was to be completed within a reasonable timescale and without unnecessary delays. Access that had been provided by Síminn hf and Míla ehf to others, whether through supply of leased lines or with access to facilities, could not be withdrawn without the agreement of the PTA. Síminn hf and Míla ehf were to ensure that the service that had been on offer would remain on offer for a reasonable period of time and it was only authorised to withdraw service after consultation with the relevant users and with the endorsement of the PTA. If a service was discontinued then the planned changes should be notified to the electronic communications undertakings involved as soon as possible and no later than 6 months prior to the planned changes.

Obligation for non-discrimination

209. The PTA imposed an obligation on Síminn and Míla for non-discrimination on the wholesale market for terminating segments of leased lines, both with respect to price and other conditions. Síminn and Míla were to provide all purchasers of leased lines, including their own departments, with analogous terms of service, price and quality of supply of fast data handling and communications protocols. Síminn was to send the PTA a tariff for all

speeds and all communications protocols and was to confirm that there was no difference in the supply process to internal departments and related companies on the one hand and to external parties on the other. In addition to this, Síminn and Míla were to conduct their operations in such a manner that the treatment of information was in accordance with Article 26 of the Electronic Communications Act. They were unauthorised to provide other parties with information on transactions with other companies with respect to potential purchase, including other departments in Síminn, subsidiaries and partners.

Obligation for transparency

The PTA imposed an obligation on Síminn and Míla for transparency. Síminn and Míla were required to prepare a reference offer for wholesale access to terminating segments of leased lines. The reference offer was to contain a detailed description of interconnection and was to contain terms and conditions. In addition to imposing obligations for the publication of a reference offer, the PTA considered it necessary for Síminn and Míla to publish bookkeeping information on termination of leased lines in cooperation with the PTA and the PTA imposed an obligation to this effect.

Obligation for accounting separation

210. The PTA imposed an obligation on Síminn and Míla for accounting separation. Such separation should constitute as a minimum that on the one hand wholesale and on the other hand retail leased lines should have their accounts separated from other operations. Síminn and Míla wholesale prices, prices between companies and prices within the companies, should be transparent inter alia to prevent unjustified subsidies. Síminn and Míla were obliged to provide to the PTA on an annual basis a breakdown of the operational accounts and balance sheet for wholesale and retail for the relevant market along with a statement of the division of indirect costs that were not possible to allocate through comparison with other cost items. In addition to this Síminn and Míla were to provide the PTA with an annual opinion of an autonomous party on the implementation of accounting separation. The opinion was to be published on the Síminn and Míla websites as soon as possible after the completion of the financial year. The above specified statements should reach the Administration no later than 1 April each year for the preceding year. Should Síminn and Míla accounting separation prove unsatisfactory, the PTA reserved the right to submit demands at a later date for further accounting separation.

Obligation for price control

211. The PTA imposed the obligation on Síminn on Míla for price control of terminating segments of leased lines. Further to this the companies should maintain cost accounting and should make a cost model for the calculation of prices for leased lines in wholesale, according to historical costs. The cost model was to be submitted within one year from the publishing of the decision. Cost accounting should capture, recognise, evaluate and distribute the relevant costs of services or goods in accordance with recognised rules, that is causal relationship. In order to monitor changes in prices for leased lines, the PTA considered it proper to apply the condition that all changes to the company's tariffs of Síminn and Míla should be notified to the PTA and that they would not come into force, without prior endorsement by the PTA.

6.3.2 The impact of existing obligations

212. Existing obligations have by the nature of things had a direct impact on access for electronic communications companies to Míla systems and on the prices offered. With the decision of the PTA from 2007 the mandatory service offer to competitors was extended. The PTA has practised price control on the Míla tariff on the relevant market and it must be

considered certain that prices would have been higher during the period had such surveillance not been in place.[41]

213. One must consider that the obligations imposed at wholesale level had an impact on prices at retail level as the price of terminating segments of leased lines is a significant factor in the retail price in corporate services, for example in the connection of company branches and connections for Internet service and also for voice telephony in the connection of private telephone exchanges with the public telephone system. There has also been considerable development in technical solutions and in products carried by leased lines since the last analysis. The main change has been the transfer of large parts of operations from copper to fibre-optic.

214. Obligations for access to leased lines support the entry of new companies to the electronic communications market. It is however not yet possible to identify a direct connection between access obligations and the development of new leased line networks by competitors.

6.3.3 The necessity of maintaining obligations

215. As has been previously stated Míla is by far the largest company on the wholesale market for terminating segments of leased lines. New network operators have started operations, GR being the largest, but they have a long way to go to achieve Míla’s scale and distribution, as Míla still has an overwhelmingly dominant market share whether by revenue or number of connections. Despite the arrival of new companies in recent years there is no prospect of them seriously encroaching on Míla’s advantage during the lifetime of the analysis. GR has no major plans for further expansion after 2014 and other companies are much smaller and localised. For this reason one must consider that during the period of validity of this analysis Míla will maintain its position of having by far the most extensive and largest network system in the country. In addition to this, new technology (such as for example IP-MPLS and S-SHDSL) has not changed the status of the relationship between companies on the market even though it has had an impact on the overall status of terminating segments of leased lines.

216. The development in recent years does not give reason to conclude that the market has tended towards active competition to the extent that the conditions exist to withdraw obligations from the market. The same can be said about prospects for the near future.

6.4 The Decision of the Icelandic Competition Authority no. 6/2013

217. On 26 March 2013 the Icelandic Competition Authority (ICA) Decision no. 6/2013 was published. The Decision is based on a settlement between Skipti hf., Síminn hf. and Míla ehf on the one hand and ICA on the other hand with respect to seven cases involving Síminn´s market conduct which were being investigated by ICA. With the settlement a clear separation was made between the Skipti Group core systems and Síminn retail operations.

218. The Decision was intended to prevent the Skipti position in core electronic communications being leveraged to create a competitive advantage over competitors. For this purpose it was inter alia prescribed that Síminn´s competitors should enjoy the same access to the Míla electronic communications infrastructure and electronic communications services

[41] See PTA Decision 14/2011 regarding the Mila ehf. cost analysis of tariff for leased lines.

with the same terms, conditions and quality as Síminn itself at any given time. The same applies to non-discrimination with respect to all provision of information.

219. Míla’s independence was strengthened with decrees on company business policy and scope of operations, with an autonomous Chairman of the Board and managerial autonomy, separate premises, obligations for confidentiality and a ban on sharing of specific services. Further to this, a number of wholesale sectors that had been transferred to Síminn were transferred back to Míla.

220. In the settlement one can find general provisions on access to Míla services and systems. Míla is obliged to practise non-discrimination, impartiality and transparency towards the electronic communications companies that request access to electronic communications networks and other company facilities. It is specifically prescribed that Míla shall provide Síminn and its competitors with bitstream access.

221. Míla shall inform all its customers about new or planned products or services, changes or plans related to existing or planned services, at the same time and in the same manner. Furthermore Míla shall ensure with necessary measures that confidential information to which its employees are privy about individual company customers shall not be disclosed to Skipti, to Míla sister companies or other Míla customers, with the exception of those departments that are authorised to provide Míla with support services, see Article 5, should this be necessary in direct connection with the support service in question.

222. In the settlement it is specifically stated that it has no effect on the jurisdiction of the Post and Telecom Administration pursuant to Act no. 69/2003 on those issues covered by the Electronic Communications Act no. 81/2003 and derived rules and decisions on the basis of electronic communications legislation.

223. The settlement does not prescribe the offer of specified wholesale services by Míla, with the exception of bitstream access. There are no specific statements on the offer of leased lines in the settlement and no provisions on price control of the tariff for leased lines.

224. The PTA has examined whether the above specified Decision by the Competition Surveillance Authority in any way diminishes the need for obligations on the relevant market. When assessing whether general competition rules suffice to correct market failure then one must keep in mind whether substantial measures are required, whether frequent and immediate intervention is required and whether special measures are needed to create legal predictability on the market.

225. Major measures would mainly be necessary when a company that controlled critical facilities refused to provide access to other parties and where the authorities needed to establish access with decrees to the company in question or perhaps by organising the nature of access through intervention in pricing and with other conditions.

226. As stated here above there are non-transitory entry barriers to this market which inter alia are manifested in the difficulty of duplicating facilities comparable to those controlled by the largest company on the market. Smaller electronic communications companies need to rely on having access to the Míla network to be able to serve their customers across the whole country. No other network covers all inhabited areas of the country.

227. On the market for terminating segments of leased lines, quite substantial measures were required to ensure access at fair terms. It has been necessary to establish extensive price control with the accompanying cost analyses to ensure that all purchasers on the market can rely on getting access on a level playing field and at a price that is not far in excess of cost.

228. Experience has shown that not all problems on the market can be solved with one decision but rather that regular intervention is required. The PTA has in recent years intervened on many occasions and has made decisions in matters concerning leased lines. In this respect one can cite the following PTA decisions:

- 20/2007 on designating undertakings with significant market power and the imposition of obligations on the retail market for minimum set of leased lines (former market 7), the wholesale market for terminating segments of leased lines (former market 13) and the wholesale market for trunk line segments of leased lines (former market 14).
- 23/2009 on complaint by GR on charges for Mila´s co-location services.
- 2/2011 on Míla´s reference offer for leased lines.
- 3/2011 on changes to the Síminn´s reference offer for leased lines.
- 14/2011 regarding the Míla cost analysis of tariff for leased lines.
- 34/2011 regarding the Síminn cost analysis of tariffs for leased lines.
- 2/2013 on amendments to the Míla reference offer.
- 16/2013 on amendments to the Míla tariff for terminating segments of leased lines.

229. This listing demonstrates that measures by the PTA are often required. It can hardly be expected that the ICA have the capacity for such frequent measures on one sub-market in the electronic communications sector. Furthermore the measures to which it has been necessary to resort have been particularly specialised, based on specific legal rules and on specialised knowledge of the PTA.

230. There are often very substantial interests tied to gaining access to leased lines without delay. It can prove impossible for electronic communications companies to commence operations in new areas if access to leased lines in the area is not available. If new companies are denied access or if access is made uneconomic with excessive pricing or unfair terms and conditions it is possible that significant damage could result both for the company in question and for the market as a whole and as a result for consumers.

231. The risk of denial of access or of unfair conditions for access calls for permanent measures being in place to ensure that it is always possible to gain access and that it is possible to react without delay in order to prevent new companies being repelled from the market with delaying tactics. It should be assumed that the decisions of a specialised authority that operates according to special rules of electronic communications legislation will, all things being equal, be a quicker way to assure access on reasonable terms, rather than decisions based on general rules governing competition.

232. When a company plans to attempt an entry into an electronic communications market where there is a need to invest and significant sunk costs will arise, it is necessary to be able to foresee the type of access it will be possible to gain to incumbents' networks and on what terms. Uncertainty about such issues would deter companies and investors from entering the market. Mitigating measures provided by the Electronic Communications Act which are *ex-ante* obligations on access and related issues, are much more conducive to increasing predictability on a market like this rather than general rules of competition which allow for

intervention subsequent to instances of misuse of a dominant market position coming to light. In such cases where intervention is subsequent to the event it is often extremely difficult to predict the conclusion and the length of time the case might take. Obligations imposed by the PTA on companies with significant market power apply until a new decision has been made subsequent to a new market analysis where consultation has been made with parties to the market and with ESA. Transparency and predictability of such an arrangement is much greater than is generally the case with decisions made on the basis of the general Competition Law. Obligations that were imposed with the said Decision of the ICA do not specifically address the needs of purchasers on the leased line market which means that there is a risk that damaging delays could occur.

233. The conclusion of the PTA is that the aforementioned ICA´s Decision no. 6/2013 does not lessen the need for special obligations on the market for terminating segments of leased lines. Experience has shown that there is a need for frequent and substantial intervention in the market and that predictability needs to be created with respect to access for competitors of the Skipti Group to the Míla networks. The decision is general in nature and does not specifically address issues on the relevant market. In addition to this, insufficient experience has yet been gained on the implementation of the settlement. For this reason the PTA considers it necessary to maintain obligations on the market pursuant to the Electronic Communications Act.

6.5 Proposals for obligations

234. On the basis of the market analysis the PTA has come to the conclusion that it is appropriate to maintain obligations on the wholesale market for terminating segments of leased lines. The obligations imposed in 2007, and that the PTA intends to maintain, have not been altered to any significant degree as circumstances on the market have changed little. Several changes have however been made to the description of the obligations in the light of experience gathered from their implementation since the last analysis and in addition to this an obligation for cost accounting has been added which in the previous analysis was mostly included in the obligation for price control. In this Section the content of these obligations will be presented in more detail.

235. As Síminn no longer operates on the wholesale market for leased lines there is no reason to maintain obligations on Síminn. The PTA however emphasises that the Skipti Group is considered to be one economic entity in relation to the Competition Law and if the sale of leased lines is moved to another part of the Group then the obligation will be transferred to the company in question.

6.5.1 Obligation to provide access

236. According to Paragraph 1 of Article 28 of the Electronic Communications Act the PTA may instruct undertakings with SMP to meet normal and reasonable requests for open access to public electronic communications networks, network elements and associated facilities under certain conditions prescribed by the Administration. Paragraph 2, Item g of the same Article states that it is permissible to require that electronic communications undertakings interconnect networks or network elements.

237. When imposing an obligation to grant access, it is necessary to consider whether the access in question encourages investments in the network and promotes innovation, efficiency and sustainable competition. In Paragraph 3 of Article 28 of the Electronic Communications

Act it is stated that when making a decision to impose obligations pursuant to Paragraph 1, the PTA shall take into account whether it is:

a. technically and economically realistic to use or install competing facilities, taking into account market development and the nature and type of interconnections and access in question;
b. feasible to provide the access proposed;
c. justifiable, in view of the original investment by the owner of the facility and the risk taken in making the investment;
d. to the advantage of competition in the longer term;
e. inappropriate, in view of intellectual property rights;
f. conducive to increasing the supply of services.

238. In Article 33 of the Electronic Communications Act it states that where effective competition does not exist on the market for leased lines or specific types of leased lines, the PTA shall ensure that at least one electronic communications undertaking with significant market power offer leased lines, of the type which the PTA regards are needed on the electronic communications market, on a wholesale or retail basis.

239. The PTA has assessed whether the access requirement is technologically and financially realistic and whether it would be realistic for a competitor to set up his own infrastructure in competition with Síminn, considering market developments and the nature of the access on which a proposal is provided here below, and whether this is justifiable in the light of the initial investment. The PTA considers obligations to be in the interests of competition in the long-term and that they will encourage an increase in service offers.

240. Given the strong Míla market position it is difficult for new parties to enter the leased line market. The development of the terminating segment of a leased line system requires major investment costs and it is the opinion of the PTA that it would be difficult to embark on the development and operation of a new terminating segment of a leased line system with national coverage, given current circumstances on the Icelandic market.

241. In Paragraph 2 of Article 28 of the Electronic Communications Act, a number of types of access are listed which can be demanded from electronic communications undertakings with significant market power. These types of access are not exhaustive and new types can appear, for example as a result of technical development or because of the entry of new services. With this in mind the PTA does not consider it appropriate to limit access obligations to one or a number of specific forms of access. In the opinion of the PTA this could diminish the impact of the obligation. The PTA considers that all kinds of wholesale access to terminating segments of leased lines provided by Míla to departments within the Skipti Group, and that should normally be provided to other electronic communications companies along with all forms of wholesale access that it is normal and reasonable to provide, and that can strengthen competition on the market for terminating segments of leased lines, are covered by the access obligation imposed on Míla on the relevant market. In order to provide the Míla and other parties with a general reference then a more detailed description will be given of the most common access forms here below. It should be noted that this is not an exhaustive listing.

Service provider with resale

242. According to Item b of Paragraph 2 of Article 28 of the Electronic Communications Act, an electronic communications undertaking with significant market power can be required

to offer specified services on a wholesale basis for resale by third parties.

243. This type of access affords service providers the opportunity of resale of leased lines. In the case of pure resale under an independent trademark, the service provider does not have any independent system infrastructure, but purchases almost all service at wholesale level. The Míla offer to service parties shall be based on service analogous to that which Míla offers departments within the Skipti Group.

244. The possibility of purchasing a leased line service in wholesale for resale is a necessary capability to strengthen service and price competition. It gives the service providers the opportunity to purchase lines with wide bandwidth which they can split to provide service to many parties without developing their own network. In the opinion of the PTA the duty to provide access for resale is reasonable and provides Míla with the opportunity to use surplus capacity.

Open access to technical interfaces, communications protocols and other technology

245. With reference to Item c of Paragraph 2 of Article 28 of the Electronic Communications Act, one may require that an electronic communications undertaking with significant market power provide open access to technical interfaces, protocols or other technologies which are necessary to ensure interoperability of services (connections with other networks).

246. In the opinion of the PTA it is important to impose the obligation on Míla to offer open access to technical interfaces, protocols and other technologies necessary to ensure interoperability of services between the Míla leased line system and other electronic communications networks. In this way smaller networks can connect in an adequate manner to the Míla network.

247. With respect to customer premises equipment, the PTA considers it appropriate that Míla cannot set conditions for connecting endpoint devices to a leased line other than the conditions that apply to its connection with a termination point of the appropriate leased line pursuant to the R&TTE EU Directive no. 99/5/EC, see Regulation no. 90/2007 on wireless equipment and telecommunication equipment and mutual recognition on its conformity. If customer premises equipment does not fulfil this condition then Míla is authorised to disconnect the leased line until the customer premises equipment has been disconnected.

248. The PTA considers it normal that Míla should only be authorised to limit access to and use of leased lines on the basis of fundamental demands that relate to operational security of electronic communications networks in emergencies, of its systems and in proven instances of the operational capability of service systems and protection of data, see the Decision of the PTA from 15 April 2005 where Síminn was obliged to process transfer requests from Vodafone for ADSL service. Mila shall notify the PTA when a request for access is denied the above reasons

Co-location or sharing

249. According to Item d Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that electronic communications undertakings with SMP offer co-location or joint utilisation, including joint utilisation of cable ducts, buildings and masts.

250. In addition to this there is a general provision on the obligation to make agreements

on co-location or other kinds of joint utilisation of facilities or of land in Article 25 of the Electronic Communications Act.

251. It can be very costly for new network operators on the leased line market to develop the extensive facilities necessary to be able to offer an adequate network. Such costs are in many instances sunk costs. In order to distribute such development costs between the companies in question the cost of excavation and laying of ducts is often shared (Duct Sharing). It is thus important that parties can gain access to Míla ducts that are not fully used, for the installation of new connections (copper or fibre-optic).

252. The EU Commission has also emphasised that parties to the market provide regulatory authorities with information on where it would be possible to utilise ducts and other structures for the distribution of next generation access networks (NGA).[42] For this purpose the regulatory authorities shall emphasise that where the above specified facilities exist, they should be open to all.[43]

253. Should the situation arise where a new party requested permission to install a new cable in a Míla duct that is not fully used then Míla shall meet this request. The pricing of access shall be cost-oriented and based on Mila's historical costs (HCA), where costs are allocated to the relevant service (FAC).

254. Síminn and later Míla have provided facilities, for example in buildings, on the basis of Article 25 of the Electronic Communications Act. Despite this the PTA considers it necessary to impose this obligation on Míla on the basis of Paragraph 2 of Article 28 of the same Act as an incentive can be created for companies not to give new parties access to their facilities. A reasonable request for co-location is considered to be a request for free space in Míla buildings and such a definition can also include a request that requires enlargement or rebuilding of the premises.

255. Míla shall provide a list of planned excavation and duct activities (Civil Works) with one year's notice. Other electronic communications companies shall be offered to participate in the projects with equal division of costs between parties to the projects.

256. The PTA believes that the duty to offer joint utilisation or co-location is reasonable and should not create significant financial burdens for Míla but rather provides the company with the opportunity to use excess capacity and in addition to this the payments received for such access provide Míla with the opportunity to receive partial repayment of its investment. Where the duty for joint utilisation or co-location requires changes or extensions then Míla shall accede to normal and reasonable requests. Míla shall accede to all reasonable requests for co-location of the necessary equipment related to leased line services provided through fibre-optic and copper local loops.

257. The PTA plans to maintain the obligation on Míla to offer joint utilisation or co-location for any kind of infrastructure controlled by the company in connection with terminating segments of leased lines. This could for example relate to access to buildings,

[42] Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) – page 4.
[43] Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) – page 12.

cable ducts or pipes. The obligation covers reasonable requests but does not entail a significantly increased financial burden on Míla. Should agreement not be reached between the parties on access to joint utilisation or co-location the PTA can decide a cost-oriented price and reasonable conditions for access.

Interconnection of networks or network infrastructure, access to other vital infrastructure and technical migration

258. According to Item g of Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that an electronic communications undertaking with SMP interconnect networks or network infrastructure. The PTA considers it essential that it be possible to connect varying leased line networks of electronic communications companies. The obligation to offer interconnection is imposed on Míla with respect to those leased line networks controlled by Míla. The obligation covers interconnection of black fibre and on communications protocols such as IP-MPLS, Ethernet, Frame Relay and SDH/PDH.

259. According to Item i of Paragraph 2 of Article 28 of the Electronic Communications Act it can be required that an electronic communications undertaking with SMP provide access to other essential facilities. With reference to Item c of Paragraph 2 of the same Article, the PTA demands that Míla authorise other electronic communications companies open access to technical interfaces, protocols and other key technologies which are necessary to ensure interoperability of services (connections with other networks). Míla shall provide access to support systems and information necessary for the leased lines to be utilised for the purpose for which they were leased. Such access can be in the form of operational support, database to gather information prior to orders being made, delivery, orders, maintenance, handling of faults and invoicing.

260. Applications sent electronically for access to local loops and related facilities such as buildings shall be processed by Míla as quickly as possible. Míla is unauthorised to give its departments and related companies priority in handling at the cost of other electronic communications companies. Denial of access shall be sent electronically and shall contain grounds for the decision. The grounds must contain all information required to enable assessment of the justification of the denial. Applications for access shall have access equal to that of companies within the Skipti Group to the Míla/Síminn service systems for the purpose of tracking their applications and also for information on maintenance and repair of leased lines and on invoicing.

261. Those obligations that now rest on Míla for access to terminating segments of leased lines shall not be discontinued even where Míla converts the structure of its systems to the next generation of networks, for example should fibre-optic cables replace copper local loops (migration) as the transportation media of a leased line, unless an agreement for the procedure of the migration has been reached when the migration takes place. Should such an agreement not be reached then Míla shall inform parties to the market of all changes to the arrangements of leased line access that are likely to alter companies' competitiveness on the market with five years notice. Deviation may be made from the above period of notice on receipt of advance endorsement by the PTA.

262. Should Míla make changes to its leased line systems it is important that:

- System downtime should be at a minimum for those wholesale customers operating on the relevant market segment.

- Costs resulting from the migration should not be so great as to act as an entry barrier to what results from the migration.
- An integrated process for transferring all parties should be in place with care taken to ensure non-discrimination between all parties on the market.
- The time taken for migration should be at a minimum given the type and scope of the application.

There should be a service agreement and a list of key performance indicators to ensure the efficiency of the migration procedure, unless there are indications that such is unnecessary or is not cost-effective.

Summary

263. With the authority in Articles 28 and 33 of the Electronic Communications Act the PTA intends to impose on Míla obligations to meet normal and reasonable requests for wholesale access to its terminating segments of leased lines and related services. Míla inter alia accede to normal and fair requests for access to resale, joint utilisation or co-location, open access and technical interfaces, communications protocols and other technology that assures interactive service and interconnection of networks, access to support systems and appropriate information and in addition to this Míla shall announce all technical migration with a specific period of notice. Agreements on access and interconnection with the Míla leased line network shall be completed within a reasonable timescale and without unnecessary delays. Denial of access shall be justified in an adequate manner. Access that Míla has already provided for another party, whether through supply of leased lines or with access to facilities, may not be withdrawn without the agreement of the PTA. Míla ehf shall ensure that the service that is on offer will remain on offer for a reasonable period of time and it is only authorised to withdraw service after consultation with the relevant users and with the endorsement of the PTA. If a service is discontinued then the planned changes shall be notified to the electronic communications companies involved as soon as possible and no later than 6 months prior to the planned changes.

6.5.2 Obligation for non-discrimination

264. According to Article 30 of the Electronic Communications Act, the PTA can impose obligations on electronic communications undertakings designated with SMP to practise non-discrimination when agreeing to interconnection or access. Such obligations should particularly ensure that electronic communications undertakings make the same conditions to other companies that provide electronic communications services for the same kind of transactions and should provide service and information with the same conditions and the same quality as it provides to its own service department, subsidiaries or collaborators.

265. The provision on non-discrimination in Article 30 of the Electronic Communications Act is in two parts. On the one hand the PTA can impose obligations on an undertaking with SMP for non-discrimination when agreeing to interconnection and access, i.e. practise non-discrimination between unrelated electronic communications undertakings. On the other hand the obligations shall ensure that the company make the same conditions to unrelated electronic communications companies in analogous transactions as it makes to its own service providers or other related parties.

266. In order for this to be successful, the obligation to grant access must be imposed together with an obligation for non-discrimination. The non-discrimination obligation is

intended to prevent a vertically integrated undertaking with SMP from engaging in practices that have a negative impact on competition. It is intended to prevent such an undertaking from discriminating, for example with regard to price and quality of service, i.e. selling less expensive and better services to its own retail departments than to other parties. Fair, moderate and justifiable conditions for access, including price are basic issues when striving to strengthen competition. The obligation for non-discrimination does not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria.

267. Significant market power on the market for terminating segments of leased lines can lead to a company discriminating against parties that require the service, should the obligation for non-discrimination not be imposed. It could have the incentive to sell to unrelated parties at a higher price than to its own departments and to other related parties. In order for the non-discrimination obligation in pricing to have the desired effect, it is often necessary to impose an obligation to practise accounting separation as well.

268. Even though companies have been assured access to terminating segments of leased lines at the same price, Míla can try to discriminate in other manners and in this way increase costs for Skipti Group competitors in order to cause them problems and even push them out of the market. Such practices could for example be in the form of varying quality of service, differing service offers between related and unrelated parties, varying processing of applications, inadequate information to unrelated parties unreasonable conditions for agreements and demands that other unrelated service is purchased at the same time.

269. The PTA believes that the obligation for non-discrimination is admirably suited to tackle the problems that arise in connection with discrimination with respect to price, transmission media protocols, access conditions, etc. As an example of varying quality one could mention variations between the Skipti Group service departments and other electronic communications companies with respect to speed of connection of leased lines. Discrimination can also manifest itself in varying prices and/or conditions for access to information systems and in parties being provided access to systems of varying ages and capacity. The PTA believes that the demand for non-discrimination is both reasonable and normal.

270. The information gained by Míla from other companies when making agreements for leased line access, or on completion of agreements, shall solely be used for the purpose provided for and shall at all stages be treated as confidential. It is unauthorised to supply information from related or unrelated parties, see inter alia Article 26 of the Electronic Communications Act no. 81/2003.

271. The PTA considers it normal that Míla wholesale provide its customers with service comparable to that received by internal departments in the Skipti Group. The PTA intends to impose the obligation on Míla that all electronic communications companies that purchase access to leased lines, taking circumstances into consideration, enjoy the same conditions (including price) that apply to related parties or to those cooperating with Míla. The PTA intends furthermore to make the requirements that quality of access provided to unrelated parties be no less than that of services provided by Míla to related parties.

272. Information on access to leased lines and related service shall be equally accessible to other electronic communications companies as to related parties. The PTA considers it

particularly important that Míla does not have the opportunity to discriminate in an abnormal manner between related and unrelated parties with respect to innovations on the market.[44] As related retail markets are in continuous development, unrelated parties need to be certain that the appropriate wholesale products are available with adequate notice in order that they can offer new, improved and less expensive retail service at the same time as parties related to Míla. The PTA plans to impose the obligation on Míla that unrelated parties be notified on roll-out, construction or other development of Míla leased line services in the terminating segments with the same notice as parties related to Míla receive. This notice shall under no circumstances be shorter than six months. Information shall inter alia contain planned prices, conditions, technical specifications, scheduled roll-out plans, updated position on roll-out and planned connection points. Related parties may thus not receive the information in question before unrelated parties. Míla shall give related and unrelated parties the opportunity to influence development of new wholesale products and planned interfaces. Míla may not refuse to develop new service at the request of an unrelated party simply because a related party has not requested such service. Such a request by an unrelated party shall however be reasonable and normal.

273. In order to ensure that Míla fulfils the obligation in question the PTA can perform a technical and/or economic investigation as to whether unrelated parties can replicate the product offer of related parties in a sustainable manner (technical and/or economic replicability test). Should there be a real possibility that the measures in question might be applied the PTA will initiate consultation on such an investigation and on its conclusion both with parties to the market and with ESA. Should the PTA conclusion be that unrelated parties cannot replicate the product offer of related parties for technical or economic reasons, it can instruct Míla to alter its product offer and/or offer new wholesale products to enable unrelated parties to replicate the product offer of related parties on normal commercial grounds.

274. Míla shall take care that applications from unrelated electronic communications companies for access to terminating segments of leased lines or related services be processed in as timely a manner as those of related parties. Should there be a problem in processing an application, this shall immediately be notified to the applicant in writing or in an electronic manner and reasons provided for the delay. Míla is not authorised to make abnormal demands on the applicant as a condition for processing the application.

275. The PTA plans to make the reservation that Míla make service agreements with all purchasers of terminating segments of leased lines where inter alia the quality of service shall be prescribed and issues relating to non-discrimination as itemised in the obligations that the PTA plans to impose on Míla on the relevant market. This is a service level agreement (SLA). Such agreements shall cover the various service issues that relate to leased lines in question, including orders, delivery, service access, transfer of service and repairs. The service agreements shall also among other things prescribe how mutual interference of signals will be avoided between parties on Míla leased lines. They shall furthermore prescribe efficient and economic procedures with respect to service switching at wholesale, i.e. when Míla´s counterparty decides to transfer from one service to another at Míla. In order to ensure non-discrimination and transparency with respect to quality in Míla leased line services, the PTA plans to prescribe that all service level agreements shall be published on the Míla website. Such agreements can inter alia be part of a reference offer. Parties can consult with the PTA on the making of such agreements and the PTA can rule on matters of contention when

[44] Unjustified first mover advantage.

making these agreements. Service level agreements can vary between parties, depending on the wishes of Míla counterparties. Míla shall however respect the non-discrimination obligation and for this reason it is important that all such agreements are published. Míla shall complete service level agreements with all of its counterparties no later than three months after the publication of the decision on the relevant market.

276. In addition to the obligation to make service level agreements the PTA intends to impose the obligation on Míla to issue a specific declaration on quality guarantees (Service Level Guarantees (SLG)). Such service level guarantees shall cover all necessary service issues that relate to the terminating segments in leased lines including orders, delivery, service access, service switching and maintenance. Such service level guarantees shall among other things prescribe specific fines which Míla must pay to its counterparties should the service level guarantee not to be honoured. In this instance it could be that a specific amount is paid for each day that for example delivery or repair exceeds the time-limit prescribed by the service level guarantee. Such provisions for fines should be objective, simple and unequivocal such the parties should not need to resort to the PTA or to the courts for interpretation. The PTA shall monitor the implementation of the Míla service level guarantee which shall be completed three months from the time that the decision on the relevant market is published. Míla shall ensure that interested electronic communications companies be informed of the content of the service level guarantee.

277. In order to ensure that Míla respects the obligation for non-discrimination that is intended to be imposed on the company and the making of service level guarantees, the PTA intends to impose the obligation on Míla that it should collect and publish regularly certain key performance indicators (KPI´s). There is discussion on the necessity for publishing such information in the BEREC document on the relevant market from December 2012[45] and in the ERG document on obligations.[46] The key issues mentioned are in this instance delivery of orders, delivery of service, service availability, switching of service and maintenance. In this way Míla's counterparties can compare the service they receive with the service received by companies related to Míla on the one hand and with the average in the sector on the other. In this way Míla counterparties can determine whether they are being discriminated against. The publication of conclusions of measurements of KPI´s will as shown above help in casting light on whether the non-discrimination obligation is complied with, particularly with respect to those factors related to pricing and whether Míla has fulfilled its duty to make adequate service level agreements with its counterparties.

278. As a minimum Míla shall publish the following KPI´s as part of key performance assessment.

1) Delivery of orders
   a. Number of orders delivered
   b. Proportion of orders rejected after having been accepted in the ordering system

2) Delivery of products/services
   a. Average delivery time
   b. Proportion of deliveries at or before time limit

[45] BEREC Common Position on best practice in remedies imposed as a consequence of a position of significant market power in the relevant markets for wholesale leased lines – page 12, BoR (12) 126.
[46] Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework.

c. Precision of delivery

3) Maintenance
   a. Proportion of faults in equipment for which company with SMP is responsible, measured in lines per year
   b. Average duration of repair of fault
   c. Proportion of fault repairs at or before time limit

4) Service switching
   a. Average time for switching from one wholesale service to another
   b. Proportion of deliveries at or before time limit
   c. Precision of delivery

279. The PTA shall monitor whether Míla collects and regularly publishes the above specified KPI´s for internal transactions on the one hand and external on the other. It is planned that Míla should publish the information in question in the first instance within three months from the publication of the decision on the relevant market and subsequently at monthly intervals.

280. The PTA considers that the publication of KPI´s is appropriate as the means to monitor compliance with the non-discrimination obligation and with Míla's duty to make service level agreements. For this reason and on the basis of minimum criteria in the BEREC and ERG documents, the PTA intends to impose the obligations on Míla to gather and publish on its website figures for KPI´s at monthly intervals.

281. The PTA understands that the obligation in question for collection of data can be onerous for Míla. On the other hand the PTA considers that measuring these criteria is extremely important for the market and further more important for Míla in its own operations. Publishing the above specified information is important for a competition on the relevant market and supports compliance with the demand for non-discrimination and that all parties can rely on this compliance.

282. Fair, moderate and justifiable conditions for access, including price are basic issues when striving to strengthen competition. The obligation for non-discrimination does not mean that all companies are subject to exactly the same conditions but rather that all difference in conditions is based on objective criteria. Míla is authorised to offer other types of leased line on the relevant market than have been mentioned but it may not limit that offer to the internal departments of the Skipti Group.

283. With the authority of Article 30 of the Electronic Communications Act the PTA intends to impose an obligation on Míla for non-discrimination on the wholesale market for terminating segments of leased lines, both with respect to price and other conditions. Míla shall provide all purchasers of leased lines, including their own departments, with analogous terms of service, price and quality of supply of fast data handling and communications protocols. Míla shall provide the PTA with a tariff for all speeds and all protocols and confirm that there is no difference in treatment of internal departments and of external parties in this respect. In order to ensure that Míla fulfils the obligation in question the PTA can perform a technical and/or economic investigation as to whether unrelated parties can replicate the product offer of related parties in a sustainable manner. Should the PTA conclusion be that unrelated parties cannot replicate the product offer of related parties for technical or economic

reasons, the PTA can instruct Míla to alter its product offer and/or offer new wholesale products to enable unrelated parties to replicate the product offer of related parties on normal commercial grounds. The PTA plans to make the reservation that Míla make service agreements with all purchasers of terminating segments of leased lines where inter alia the quality of service shall be prescribed and issues relating to non-discrimination as itemised in the obligations that the PTA plans to impose on Míla on the relevant market. In addition to the obligation to make service level agreements the PTA intends to impose the obligation on Míla to issue a specific declaration on quality guarantees (Service Level Guarantees - SLG). In order to ensure that Míla respects the obligation for non-discrimination that is intended to be imposed on the company the PTA intends to impose the obligation on Míla that it should collect and publish regularly certain key performance indicators (KPI´s). Míla shall arrange its operations in such a manner that the treatment of information is in accordance with Article 26 of the Electronic Communications Act. It is unauthorised to provide other parties with information on transactions with other companies with respect to potential purchase, including other departments in Síminn, subsidiaries or partners.

6.5.3 Obligation for transparency

284. Provisions on transparency can be found in Article 29 of the Electronic Communications Act no. 81/2003. There it is stated in Paragraph 1 that in order to increase transparency of interconnection or access to the facilities of an electronic communications undertaking the PTA can oblige an electronic communications undertaking with SMP to publish specific information, for example bookkeeping information, technical information, information on the characteristics of networks, terms and conditions for delivery and for use and tariffs. It is authorised to make an exemption to the publication of information if an electronic communications company can show that it concerns important financial or business interests that it is normal and reasonable to keep confidential.

285. In Paragraph 2 of Article 29 of the same Act it states that when an electronic communications undertaking is obliged to practise non-discrimination then the PTA can demand that it publishes a reference offer that contains a breakdown description of interconnection or access, along with terms and conditions, including tariffs. The Administration can prescribe changes to the reference offer. PTA is authorised to set rules on the content of interconnection agreements and reference offers.

286. Transparency of terms and conditions for interconnection and access to facilities, including price, serves the purpose of expediting agreement negotiations, prevents disputes and supports belief among parties to the market that there is no discrimination in provision of services. It is necessary that technical provisions that applies to access to leased lines are clear and transparent which can be particularly important in ensuring operational compatibility.

287. Conditions that apply to access to networks and services are of extreme importance to new parties and can have a decisive impact on their possibilities to gain market share. It is clear that the competitive position of such parties is at risk if they must endure discriminatory conditions. Furthermore, it facilitates the entry of companies into the market if the conditions on offer for access and service that they must purchase are foreseeable and the same applies to the basis for pricing and other conditions.

288. The publication of a reference offer gives all parties to the market the opportunity to see what is on offer and it ensures that companies will not be required to pay for service and facilities for which they have no need. The PTA considers that the existence of a reference

offer for wholesale termination of leased lines is necessary for the entry of independent service providers. In this way interested parties can for example see how it would be possible to operate such service and on what terms.

289. The PTA considers it proper to use the provisions of the Electronic Communications Act on transparency to assure to the extent possible that the obligations for access non-discrimination achieve results. It is the opinion of the Administration that transparency in information can facilitate and shorten negotiations between parties, which includes terms and conditions being clear at the outset.

290. The PTA intends to maintain the obligation on Míla to publish a reference offer for terminating segments of leased lines and related facilities and services that will be itemised to the extent that ensures that other electronic communications companies do not buy facilities and service that they do not need. Further to this the reference offer should be broken down in accordance with the needs of the market and should contain a description of Míla terms and conditions along with the relevant tariff.

291. At least the following items shall be specified in the Míla reference offer:

- Basic items pertinent to the agreement
  - Type of service
  - Fees, invoices, and accounting
  - Price
  - Quality of service
- Technological implementation
  - Interconnection points
  - Distribution system and communication between systems
  - Other services
  - Testing
- Delivery time; the time from when a request for connection is received by the company in question until the delivery should be completed
- Customer maintenance
- Confidentiality between parties
- Guarantees and payment
- Unforeseen events and special circumstances
- Term of agreement and termination of agreement
- Treatment of disputes

292. The PTA also considers it necessary that Míla publish the following information on access to terminating segments in wholesale leased lines:

- Tariff
- Technical characteristics and minimum requirement limitations
- Conditions for delivery and use
- Connection of user equipment
- Delivery conditions, inter alia:
  - Information regarding method of ordering;
  - Delivery notice, which is counted from the day that the user submitted a formal request for a leased line until the time when 95% of all leased lines of the type in question have been installed with users;

- Duration of agreement, i.e. the period of time defined in the agreement and the minimum agreement duration that the user is obliged to agree to;
- Repair time which is the period of time from the time that notification of fault has been received by the company in question until the time when 90% of all leased lines of the same type had been repaired and users, as appropriate, have received a notification to this effect. When an offer is made for repairs in varying quality categories for the same types of leased lines, information shall be published on a variety of typical repair times;
- Rules on repayment. Míla is instructed to maintain and update the existing reference offer as required.[47]

293. Míla shall publish a reference offer in accordance with the description here above and shall update it as required, such as for changes in needs of parties to the market or as a result of changes in technology. Should the Síminn reference offer not be considered adequate for the market, the PTA could prescribe amendments to the offer pursuant to Paragraph 2 of Article 29 of the Electronic Communications Act. All changes to the reference offer shall be submitted to the PTA for endorsement with reasonable notice and they will not come into force without the endorsement of the PTA.

294. Míla shall send all agreements made on termination of leased lines in wholesale to the PTA.

295. With the authority of Article 29 the PTA intends to maintain the obligation on Míla for the publication of an itemised reference offer for leased line termination access related facilities and service. Publication on the Míla website is deemed adequate.

296. The PTA considers it unnecessary to maintain the obligation for publishing of bookkeeping information, but Míla is obliged to deliver all such information to the PTA to the extent that this is needed to verify compliance with the obligations that are in force on this market.

6.5.4 Obligation for accounting separation

297. Pursuant to Article 31 of the Electronic Communications Act no. 81/2003 the PTA can impose obligations on an electronic communications undertaking with significant market power for accounting separation between operations that relate to interconnection or access and other operations in such a manner that it will be possible to allocate all revenue and costs to operational units that can be connected to differing services. In addition to this the Administration can demand of a company that operates both an electronic communications network and electronic communications services that its wholesale prices and prices within the company are transparent, inter alia to prevent unjustified subsidies. The PTA can decide which bookkeeping methods are to be used. To ensure transparency and non-discrimination the PTA can demand bookkeeping information, including information on income from third parties.

298. In Regulation number 564/2011 on bookkeeping and cost analysis in the operations of electronic communications undertakings, there is an explanation of the purpose of accounting separation and instructions on how it should be implemented. The purposes among other

[47] Míla; reference offer for leased lines" dated 1. March 2011, as amended and appendices 1-6 to the reference offer.

things is to make it possible to see income, costs and bound capital for varying operational units and to be able to show that the same conditions apply to services provided to other companies and to services supplied to other departments of the electronic communications company in question.

299. It is the view of the PTS that it is necessary to impose an obligation on Míla for accounting separation on the relevant market, inter alia to ensure non-discrimination and transparency and to enable light to be shed on real costs where appropriate.

300. The purpose of accounting separation is among other things to be able to identify information from bookkeeping, to show as exactly as possible the results from various parts of operations as though from separate companies. Separation of costs also limits Míla's possibilities to charge for costs that are not related to a specific service. It is important that the operation of leased lines is separated to be able to assess its performance with respect to whether pricing of the wholesale service harmonises with cost, whether cross subsidies are taking place between different services and to ensure that all parties are treated equally with respect to price and other conditions. Separation is a prerequisite for being able to determine costs for leased lines.

301. With respect to implementation of accounting separation it says in Chapter II of Regulation no. 564/2011 that electronic communications undertakings shall record their bookkeeping in such a manner that it is possible to allocate all revenue and costs to operational units which can then be linked to various services. Electronic communications companies that operate general electronic communications networks shall separate costs in networks such that it will be possible to equally distribute network costs to varying services, including access to networks. This shall apply equally to access by service departments of the company and by other electronic communications companies to the network. The cost of operating networks and/or services shall be distributed to operational units with activity based accounting pursuant to Article 7 of the previously referenced regulation and to more detailed rules set by the PTA.

302. With the authority in Article 31 of the Electronic Communications Act the PTA maintains obligations on Míla for accounting separation. Such separation shall constitute as a minimum that the operation of local loops is separated in the accounts from other operations. The Míla wholesale prices and internal prices within the company shall be transparent, inter alia to prevent unjustified subsidies. In its accounts Míla shall separate revenue, costs, assets and liabilities for access to terminating segments of its leased lines. Míla is required to submit annually to the PTA, separate profit and loss accounts and balance sheet for the operations of leased lines along with a statement of the division of indirect costs that cannot be allocated with comparison with other cost items.

303. Pursuant to Article 25 of Regulation no. 564/2011 Míla shall send the PTA the company's annual financial statements along with an itemised profit and loss account for the company's service components that relate to obligations for accounting separation. The accounts shall contain the following:

- The endorsement of a chartered accountant
- The board's report
- Separated profit and loss accounts
- Settlement and reconciliation of internal sales
- Reconciliation against the company's annual financial statements

304. Pursuant to Article 24 of Regulation no. 564/2011 Míla shall annually prepare a report on bookkeeping arrangements. The report shall contain inter alia the following:

- Accountancy rules
- Rules for the division of costs and revenue
- Rules on internal trading
- Description of calculation methodology
- Information on sizes and quantity figures, other than financial
- A list of products, services, activities and network components
- Rules on assessment of assets and depreciation

305. The above specified statement should have reached the Administration no later than five months after the end of the financial year. Should Míla accounting separation not be satisfactory, the PTA reserves the right to submit demands at a later date for further accounting separation.

306. Míla shall furthermore deliver a report from an independent auditor to the PTA to show that there is correspondence between the Míla description to the PTA on how costs had been divided and the implementation of accounting separation by Míla.

In the report the following shall be shown as a minimum:

- The conclusions of the party that conducted the audit
- Statement of all instances of inconsistency
- Proposals by the party conducting the audit for remedies and their impact
- Detailed description of how the audit was performed
- Consolidated financial and bookkeeping information (e.g. an opinion with respect to the distribution of common costs and changes to assessment of assets to value in use)

6.5.5 Obligation for price control

307. In Article 32 of the Electronic Communications Act no. 81/2003 it states that when market analysis indicates that lack of active competition leads to an undertaking with SMP demanding excessively high fees or where there is an abnormally small difference in wholesale and retail prices, the PTA may impose obligations on an electronic communications undertaking for a cost related tariff and obligations for cost accounting for certain types of interconnection or access. Investment by electronic communications companies shall be taken into account and reasonable rate of return on bound capital, while also taking into account the risk of the investment. When an obligation for a cost related price tariff with reasonable profit is imposed on an electronic communications company, the burden of proof rests on the company. As was stated in the discussion on competition problems, the PTA considers that Míla could have an incentive to demand excessively high prices if there is no price control on the company's tariff.

308. In the same provision it states furthermore that the PTA can require that an electronic communications company make a cost model for the calculation of prices. When calculating costs the PTA can use as a reference the operation of analogous service that is considered efficiently run and can also take into account tariffs in analogous competition markets and it may use cost analysis methodologies that are not related to methodologies employed by an electronic communications company.

309. It is the conclusion of the above specified market analysis for terminating segments of leased lines that competition is not sufficiently active and that Míla has SMP on the relevant market. Taking into account Paragraph 1 of Article 18 of the Electronic Communications Act, the conclusion indicates that Míla can hinder competition and can behave to an appreciable extent independently of competitors, customers and consumers. Míla thus has the possibility of maintaining abnormally high prices and/or of exerting margin squeeze.

310. Price is in many instances the main cause of competition problems and one must therefore consider that an obligation for price control is the most effective method to deal with such matters. In the opinion of PTA, obligations concerning transparency and non-discrimination alone are not sufficient to solve competition problems such as cross-subsidy, price discrimination and excessive pricing. The PTA is of the opinion that an obligation concerning price control is necessary to establish competition in the relevant market and to strengthen competition at retail level. The PTA considers it necessary to facilitate entry for independent service providers to the relevant market and that to ensure that price for access is reasonable and normal and based on costs it is necessary to impose the obligation for price control on Míla.

311. There are various possible methodologies for control and for a decision on price for access. According to Article 32 of the Electronic Communications Act the PTA can demand that an electronic communications undertaking make a cost model for the calculation of prices. As stated previously the PTA can take into account the operations of analogous service that is considered to be efficiently operated and can take into account tariffs in analogous competition markets and it may use cost analysis methodologies that are not related to methodologies employed by an electronic communications company. When choosing the methodology the PTA considers it proper to emphasise that the methodology can provide a conclusion that is normal and reasonable in both directions and can provide pricing that is not greatly in excess of real costs while at the same time assuring a normal return on investment.

312. The main methodologies applied when deciding wholesale prices are the following:

- *Cost orientation*

  The prices of services are based on historical costs of the company in question (HCA)[48] or on assessed costs of an efficient network operator on the relevant market. Two methods have generally been used for cost analysis on the electronic communications market, i.e. based on the relevant company's bookkeeping where costs are allocated to the relevant service (FAC)[49] or on the analysis of long run incremental costs (LRIC)[50] on the basis of costs incurred in and efficiently operated electronic communications network (bottom-up model)[51].

[48] Historical Cost Accounting.

[49] All costs are allocated to the appropriate operations and services (Fully Allocated Costs; FAC).

[50] Long-Run Average Incremental Cost Long Run Incremental Cost is the cost that is added or is saved when a specific service or operation is added or discontinued, on the assumption that all costs are variable.

[51] One speaks of a "bottom-up" LRIC model (BU-LRIC) in the case of a cost model for calculating the price of service on the basis of costs incurred in an efficiently designed electronic communications network in the relevant electronic communications market. (LRIC+ means that share in fixed joint costs is taking into account, for example premises).

- *Benchmarking*

  Prices on comparable competitive markets are compared and the price is decided on the basis of this comparison. Prices related to a specific sample of the comparison group.

- *Retail minus*

  The retail minus methodology is used to find the wholesale price by subtracting a specific proportion from the retail price. The difference subtracted from the retail price is for the costs that would otherwise have been borne by the company at retail level.

313. When choosing the best methodology for deciding wholesale prices, it is important to keep in mind on the one hand that the methodology is efficient and not too onerous and on the other hand to create acceptable conditions for companies that may request wholesale access on the relevant market.

314. It can be assumed that cost analysis is an onerous obligation that should only be imposed if other methods are unsuccessful. In cost analysis prices are based on cost information from a cost model and/or bookkeeping. To allocate costs to specific aspects of operations and services is a complicated and difficult task that can be carried out in various ways. The PTA can employ the BU-LRIC method for cost analysis, pursuant to Regulation no. 564/2011 on bookkeeping and cost analysis in the operations of the electronic communications undertakings, which is a recognised methodology, among others, by the European Commission and by ESA. The methodology ensures transparency and the regulators are not dependent on information from the bookkeeping of an electronic communications company. The methodology can, on the other hand be extremely costly and time-consuming.

315. The PTA considers that because of the high cost of implementing the BU-LRIC cost model it is not appropriate at this point in time to adopt such a methodology on this market in this country. This could entail unnecessarily high costs for the PTA and for the relevant electronic communications companies. The Administration is very small in a European context and for this reason its budget is much more limited than is normally the case. Experience in the EEA had shown that the cost in making a BU-LRIC model was in the order of ISK tens of millions for each model and for each update. It was not considered right at this stage to make this requirement as the increase in cost would in all likelihood be eventually borne by consumers in the form of higher rates. The PTA therefore considers it proper to find another more efficient manner to achieve the objective of having tariffs that reflect the operations of an efficiently operated electronic communications network on the relevant market. Cost analysis will be based on the work that has already been done in recent years in cost analysis in order to minimise costs and time spent in reaching a decision on new cost-oriented access prices for the coming 2-3 years.

316. In the Decision of the PTA no. 20/2007, dated 14 September 2007, it was specified in the obligation for price control that Míla should keep cost accounting and make a cost model according to historical costs for the calculation of prices for wholesale terminating segments of leased lines. The construction of the cost model was to be completed within one year from the publication of the decision on the relevant market. In order for Míla to be able to demonstrate that the tariff for a specific kind of service or product was cost-oriented, it was necessary to practise cost accounting that captured, identified, assessed and allocated the relevant costs to the services or products in accordance with recognised rules, i.e. a causal relationship. Míla was to submit to the PTA a description of the cost accounting bookkeeping

for terminating segments of leased lines and publish the main cost categories and the rules used to allocate costs. In order to monitor changes in prices, the PTA considered it proper to make the condition that all changes to the Míla tariffs should be notified to the PTA and that they would not come into force without prior endorsement by the PTA.

317. Míla has based its wholesale tariff for terminating segments of leased lines on the above specified obligation for price control. In accordance with the above obligation for cost analysis and for cooperation with the PTA on a review of methodology, Míla submitted cost analysis for terminating segments of leased lines on 28 November 2011. The above specified cost model from Míla was based on historical costs which were allocated to the relevant service (FAC), which is based to a large extent on an existing cost analysis for copper local loops. With the PTA Decision no. 34/2011, dated 22 December 2011, the Administration endorsed the Míla cost analysis with amendments prescribed by the Administration in the Decision and the tariff came into force as of 1 March 2012.

318. With the PTA Decision no. 16/2013, dated last 30 July, the Administration endorsed an increase in the monthly fee for terminating segments of leased lines over Míla copper local loops, subsequent to national consultation and consultation with ESA. The Míla request for an increase in the monthly leased line fee was solely based on the PTA Decision no. 15/2013, dated last 20 July, which constituted an increase in lease of copper local loops by 8.6% on last 1 August. The increase of monthly leased line fee is in the range of 1.9-8.6% and this increase came into force last 1 August. In other respects the current Míla tariff is based on the above specified cost analysis from 2011. The draft of the PTA Decision no. 16/2013 was submitted for national consultation last 5 June and no objections were received. The PTA formally notified the draft Decision to ESA last 26 June. The ESA opinion was received by letter dated last 26 July. ESA authorised the PTA to make the planned Decision and encouraged the PTA to clearly outline, in the market analysis now being conducted on the leased line market in question, how the cost analysis methodology that would be chosen would continue to serve the objectives of the electronic communications regulatory framework. The ESA further challenged the PTA to explain clearly in this market analysis the main principles that should apply to price review for the leased lines in question in order to create predictability with respect to such wholesale prices for the purpose of introducing a clear framework for investments and to achieve advances in competition.

319. With the authority of Article 32 of the Electronic Communications Act the PTA intends to impose the obligation on Míla for a cost oriented wholesale tariff for terminating segments of the company’s leased lines. When deciding prices for terminating segments of leased lines the costs analysis methodology shall be applied that is based on historical costs allocated to the services in question (HCA FAC) and the cost of endpoint devices shall be based on the replacement cost. Furthermore the PTA considers it proper that a review of tariffs for terminating segments of leased lines (Market 6) should take place in parallel with review of local loop lease (Market 4) in each instance as the cost of the access network is to a large degree common to both of the above specified markets. Such an implementation is not very time-consuming and/or onerous for Míla, or for the PTA surveillance.

320. When implementing its cost analysis Míla shall base its methodology on Chapter IV of Regulation no. 564/2011 on bookkeeping and cost analysis in the operations of the electronic communications undertakings, such as on evaluation of operating assets, lifetime and rate of return. Furthermore the PTA position shall be taken into account that was made known on criteria and calculations in the Administration’s Decision no. 34/2011 with respect to cost

analysis for terminating segments of leased lines. When assessing the conclusion of the Míla cost analysis the administration will keep in mind the price of analogous products within the EEA and in particular where a recognised methodology is applied, such as BU LRIC+ methodology, to decide price. The PTA will also have in mind that the tariff should relate logically to Míla's local loop unbundling prices, because of the possible over or under pricing by the Skipti Group of the above specified services. PTA may reject to include costs if the PTA considers the cost to result from inefficient operation.

321. If the Míla cost analysis for terminating segments of leased lines returns a conclusion that the PTA considers unacceptable with respect to the above criterion, the PTA will reject such a conclusion. The Administration will then review the assumptions applied in the Mila cost analysis, for the purpose of returning a conclusion that harmonises with the above criterion as well as the objectives of the EU Commission with respect to supporting competition and to improving the investment environment on the electronic communications market.[52]

322. The Míla cost analysis for wholesale tariff for terminating segments of leased lines shall be based on the following main criteria:

- Allocation of costs is based on accounting separation for the access network, Míla´s asset bookkeeping and on costs from Míla's bookkeeping system where operational costs are entered under bookkeeping accounts.
- Costs for local loops unbundling are according to the Míla wholesale tariff for local loops in each instance.[53]
- When specifically evaluating investments in equipment for terminating segments of leased lines, the price of equipment shall be based on the replacement cost of modern equivalent equipment and a reasonable[54] re-use of the equpment.
- A depreciation methodology shall be used that reflects the use value of an asset.
- The annuity depreciation method shall be used to calculate annual investment costs.
- The number of line shall be calculated taking into account line equivalents.
- The cost of the local loop network shall be captured, including share of joint costs, management, IT and senior management in accordance with accounting separation.
- Real return on investment shall be used as a reference, based on WACC real[55] from capital bound in assets used in connection with providing service where the risk weighting reflects the risk related to operations on the relevant market.
- Average unit cost for the whole country is calculated from allocated operational and investment costs divided by number of lines or line equivalents.

[52] Commission Recommendation from 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment - C(2013) 5761.
[53] When deciding the price for the access to the local loop PTA intends to take into account the Commission Recommendation of 11.9.2013 on Consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment. In a proposed PTA decision on market analysis of market 4 it is stated that the price for the copper local loop will be decided on the basis of a cost analysis or with a benchmark if the results of the cost analysis are not in line with the Recommendation.
[54] In PTA decision no. 34/2011 the re-use of equipment was decided 50%.
[55] In accordance with Article 16 of Regulation no. 564/2011 the PTA decides on an annual basis the rated return on capital (WACC) which electronic communications companies should use as a reference in their calculations.

323. When deciding the tariff Míla shall base its decisions on the above specified main criteria in its cost analysis and shall submit this to the PTA no later than 6 months after the publication of this decision. The tariff shall then be reviewed annually in accordance with annual updating of the cost analysis. New wholesale tariff for terminating segments of leased lines will not come into force prior to endorsement by the PTA, subsequent to national consultation and consultation with ESA in each instance. The existing Míla wholesale tariff for terminating segments of leased lines[56] shall remain in force until the review tariff is available and has been endorsed by the PTA.

6.5.6 Cost accounting

324. Pursuant to Article 32 of the Act on Electronic Communications the PTA can impose obligations for cost accounting for specific types of interconnection or for access, in accordance with a cost related tariff. According to Chapter IV of Regulation no. 564/2011, on bookkeeping and cost analysis in the operations of an electronic communications undertakings, an electronic communications undertaking with SMP on whom special obligations have been imposed pursuant to the Act on Electronic Communications shall inform the PTA on the structure of separation in bookkeeping, with respect to income and expenses, inter alia for the user network and the backbone network.

325. Cost accounting is necessary when the obligation for price control has been imposed on an electronic communications undertaking with SMP. Subsequent to the intention of the PTA to impose an obligation for price control on Míla, the PTA also intends to impose an obligation for cost accounting. The obligation for cost accounting supports the obligation that the tariff is cost related and it is necessary for the implementation of accounting separation and can support surveillance of non-discrimination.

326. In order for Míla to demonstrate that the tariff for a specific kind of service or product is cost-oriented, it is necessary to practise cost accounting that captures, identifies, assesses and allocates the relevant costs to the services or products in accordance with recognised rules, i.e. a causal relationship.

327. The PTA considers that without the obligation for cost accounting, Míla could price its services on the relevant market above cost and the Skipti Group could have an abnormally small difference between wholesale and retail prices which would have negative consequences for users. Without the obligation for cost bookkeeping the PTA could not ensure that pricing took costs into account that is preventing problems of this kind.

328. The PTA plans to impose an obligation on Míla for cost accounting of those parts of the electronic communications operations necessary for giving access to terminating segments of leased lines. Míla shall submit to the PTA a description of the cost accounting for terminating segments of leased lines which shall show among other things cost categories, cost items and their connection with the cost driver.

329. Míla shall, no later than six months after the publication of the Decision on the relevant market, submit to the PTA a description of cost accounting for terminating segments of leased lines and related facilities and shall publish cost categories and rules used to allocate costs. Míla shall at the same time submit a report to the PTA from an independent auditor

[56] Míla; reference offer for leased lines; Appendix 2b - tariff for access segments of leased lines. See the Decision of the PTA no. 16/2013.

showing that there is correspondence between the Míla description to the PTA of how costs are split and the implementation in the Míla cost bookkeeping system.

6.6 Assessment of impact of imposed obligations

330. In accordance with the principle of proportionality, it is necessary to assess whether the burdensome impact of the obligations that the PTA plans to impose are proportionate in the light of the objectives. The PTA considers that the obligations are conducive to achieving the objectives of the Electronic Communications Act number 81/2003 on active competition and efficient electronic communications. The need for each individual obligation is discussed in the relevant sections here above, and reference is made to this discussion.

331. The obligations that the PTA intends to maintain on Míla are as a whole quite burdensome for the company. On the other hand the PTA considers that they are in accordance with proportionality and that they are not a greater burden than is necessary. The obligations are to a large extent similar to the obligations that have been in force on the relevant markets since the last market analysis in 2007.

332. The obligation of access is somewhat of a burden on Míla but it is a pre-requisite for active competition being able to thrive on the market for terminating segments of leased lines. It is not possible to solve the competition problems described here above in any other way than by imposing the obligation for access. One must keep in mind that Míla receives normal recompense for the access and the obligation can lead to more efficient use of the equipment in which Míla has invested. Míla has installed the necessary facilities and service systems to be able to provide the service prescribed. It is thus not significantly onerous to continue to provide the service as before.

333. The PTA considers the obligation for non-discrimination to be not particularly onerous as it is a reasonable demand on a company like Míla which is part of the Skipti Group, which has significant market power in a great number of the sub-markets in the electronic communications sector. The PTA intends to add obligations on Míla to those imposed after the previous analysis, for service level agreements, for a declaration of quality assurance and to publish measurements of key performance indicators. This involves management and costs for Míla but in the opinion of the PTA these items are necessary to ensure effectiveness of the non-discrimination obligation and they are also fully in accord with developments in Europe.

334. The obligation for transparency, inter alia the publishing of reference offers, represents a certain inconvenience for Míla. One must however keep in mind that Míla has already published such an offer and now only needs to update it in accordance with the requirements presented here. The burden that Míla has to bear from the obligations is not excessive if one takes into account how necessary the obligations are to strengthen competition. The PTA tends to withdraw the obligation on Míla to publish information from its bookkeeping which will reduce the scope of the transparency obligation prescribed in 2007.

335. The PTA considers it necessary to prescribe accounting separation for companies that have very varied operations and a large market share. Accounting separation is also necessary to be able to adequately determine costs for operation of terminating segments of leased lines and associated facilities. Accounting separation is already in place at Míla in accordance with obligations imposed in 2007 which means that it is not particularly burdensome to organise bookkeeping in the same or in a similar manner for the coming years.

336. The obligation for price control is onerous to the extent that Míla cannot charge any price it pleases for access to its networks. The obligation however ensures that recompense is normal, given that the service is operated in an efficient manner. The PTA proposes the continued use of a similar methodology for deciding prices and it should not be a burden for the company to maintain the methodology that has been used in past years.

337. The obligation for cost accounting was included in the obligation for price control according to the PTA decision on the relevant market from 2007. The PTA description of cost accounting and related submission of information is rather more detailed in this instance and calls to some extent for increased work by Míla. The arrangement now proposed is in accordance with regulation number 564/2011 on bookkeeping and cost analysis in operations of electronic communications undertakings and is necessary to achieve full results from price control.

338. The obligations will not inhibit the development of the fixed line network as the pricing of terminating segments of leased lines will be based on the costs of companies that are operated in an efficient manner and normal return on investment is assumed. Price control should thus not inhibit willingness to invest in the long-term.

339. In the opinion of the PTA the above specified obligations are reasonable and necessary to support active competition and should not be considered unnecessarily onerous. The PTA considers the obligations to be in the interests of competition in the long-term and that they will encourage and increase the service offers on the market for terminating segments of leased lines.