

Annex 1

Analysis of the wholesale markets for leased lines

Revised and updated

19. February 2006

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Summary and conclusion

This is an updated version of the market analyses that the Norwegian Post and Telecommunications Authority (NPT) undertook of the two wholesale markets for leased lines (Markets 13 and 14) in the autumn of 2005.

The market analyses will provide the basis for employing sector-specific measures in the various markets in which an undertaking/undertakings with significant market power is/are identified.

For practical reasons NPT has found it expedient to combine the analyses of the two relevant wholesale markets in a single document in which the first three chapters are common to both analyses.

Chapter 1 contains a description of the background and legal framework for the analyses.

Chapter 2 contains a brief introduction to the wholesale leased lines markets, whilst the relevant markets are defined in Chapter 3. Demarcation of the relevant markets is based on the Recommendation's predefined wholesale markets for leased lines. On the basis of assessments of the competition situation and other specific national circumstances related to the Norwegian markets for wholesale segments of leased lines, NPT has concluded that there are two relevant wholesale markets leased lines in Norway:

13. Wholesale market for leased lines with capacities up to and including 8 Mbit/s

14. Wholesale market for leased lines with capacities above 8 Mbit/s

Chapters 4-7 contain an analysis of *Market 13, wholesale market for leased lines with capacities up to and including 8 Mbit/s*

The first part of the market analysis provides a description of the relevant product market followed by a geographic definition of the market. NPT has concluded that the market should be defined on the national level.

Telenor has a market share of approximately 85%, measured by revenue, while none of the other providers in Market 13 had over 10%. According to the Guidelines, paragraph 76, this provides a clear indication that Telenor has significant market power in this market. NPT furthermore points out the existence of major entry barriers in the market. In NPT's opinion, it is particularly Telenor's control of the nationwide access network that is an entry-detering factor.

The market analysis concludes that Telenor ASA has significant market power in the wholesale market for leased lines with capacities up to and including 8 Mbit/s (Market 13).

Chapters 8-11 contain an analysis of *Market 14, wholesale market for leased lines with capacities above 8 Mbit/s*.

The first part of the market analysis provides a description of the relevant product market followed by a geographic definition of the market. NPT has concluded that the market should be defined on the national level.

Telenor has a market share of approximately 65%, measured by revenue. According to the Guidelines, paragraph 76, this provides a clear indication that Telenor has significant market power in this market. NPT furthermore points out the existence of various forms of entry barriers in the market. These are primarily related to the effect of sunk costs and the established operators' opportunity to benefit from economies of scale and scope.

The market analysis concludes that Telenor ASA has significant market power in the wholesale market for leased lines with capacities above 8 Mbit/s (Market 14).

1 Background and legal framework for market analyses

1. This document contains the market analyses that the Norwegian Post and Telecommunications Authority (NPT) has carried out on what is considered to be the relevant wholesale leased lines markets in accordance with current regulations for electronic communications. Both the product markets and the geographical markets are defined, and the relevant markets analysed. The market analyses will provide the basis for employing sector-specific measures in the various markets in which an operator/operators with significant market power are identified.
2. Preliminary analyses of the markets were circulated for national consultation on 21 December 2005 together with the notification of decisions. The consultation closing date was 6 February 2006. NPT received responses to the consultation from BaneTele AS, the Norwegian Competition Authority, TDC Song AS, Telenor ASA and Tele2 Norge AS. The consultation round yielded conflicting input from Telenor, BaneTele, TDC Song and Tele2 with respect to the separation between the wholesale market for terminating segments of leased lines (Market 13) and the wholesale market for trunk segments of leased lines (Market 14). NPT found it expedient to follow up some of the comments in the form of limited consultation, published 14 March 2006 with a closing date of 3 April. On the basis of the responses to the consultation the amendments of the market definition of and specific obligations in Markets 13 and 14 was circulated on 22 June 2006. NPT received submissions from Telenor and BaneTele on this notification. The responses to the consultations are available on NPT's website, www.npt.no.
3. The responses to the consultations are summarised in a separate document, cf. Annex 2. The document contains both summaries of the responses to the consultation and NPT's assessment of the various comments. If the processing of the responses to the consultations has resulted in amendments of or additions to the market analysis, NPT's assessment in the result of the consultations will state how they have been incorporated into the final analysis. Figures and diagrams which are based on statistics collected by NPT from the operators in the market are updated so as to reflect recent developments.
4. As a basis, NPT has used the markets defined by the EFTA Surveillance Authority (ESA) as relevant for sector-specific regulation. In the context of the ESA's deliberations, NPT has not at this juncture found grounds to undertake a new assessment of whether the predefined markets should be regulated by means of ordinary competition law instead of sector-specific regulation.
5. However, the markets and the analyses of them are not fixed once and for all, but will be subject to regular review. Nevertheless in markets with frequent and comprehensive changes such reviews will of course have to be carried out within a reasonable time. The market analyses are therefore limited in the extent to which they are forward-looking, cf. the Guidelines, paragraph 20. See further details on the Guidelines below in section 1.2, Legal framework for market analysis. This analysis has a time horizon of two to three years.

1.1 Background

6. In March 2002 the European Union (EU) adopted four new directives that are to provide the regulatory framework for electronic communication networks and electronic communication services in future. A fifth directive was also adopted in October 2002. The directives, which are relevant to the EEA, came into force with effect for Norway from 1 November 2004, from which date they were incorporated into the EEA Agreement and made applicable to the EEA. The five directives are:

- The Framework Directive - Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services;
- The Access Directive - Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities;
- The Authorisation Directive - Directive 2002/20/EC on the authorisation of electronic communications networks and services;
- The Universal Service Directive - Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, and
- The Privacy and Electronic Communications Directive - Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector.

7. The new regulatory framework is to lay the foundations for harmonisation of regulations in the EU/EEA, limit entry barriers and create conditions for sustainable competition for the benefit of users.

8. As described in the document "Methodology for Market Analysis"¹ (the methodology document), the work on market analysis may be divided naturally into three phases:

1. Define relevant markets by defining relevant product markets and defining geographic markets.
2. Carry out market analyses of each of the relevant markets, with a view to revealing the extent to which any provider has significant market power in each of the relevant markets.
3. Impose obligations on those providers identified as having significant market power.

9. This document contains NPT's assessments in phases 1) and 2), and forms the basis for decisions in which NPT imposes obligations on the provider or providers assessed as having significant market power in the market in question.

¹ Methodology for market analysis, 24 March 2004 with updates of 6 January 2005, prepared by NPT

1.2 Legal framework for the market analyses

10. In the context *inter alia* of the EU's five directives mentioned above, the Norwegian Storting (parliament) has passed the Electronic Communications Act², which came into force on 25 July 2003. The Act's definition of significant market power is, in accordance with § 3-1, as follows:

“A provider has significant market power when the provider individually or jointly with others has economic strength in a relevant market affording the provider the power to behave to an appreciable extent independently of competitors, customers and consumers. Significant market power in one market may result in a provider having significant market power in a closely related market.”

11. The term “significant market power” in the Electronic Communications Act is very close to the competition law standard “dominance”. It follows from Norway's obligations under the EEA Agreement that identification of providers with significant market power is to be carried out in accordance with the guidelines and recommendations prepared by ESA under the new framework directive for electronic communication services:

- Guidelines on market analysis and the assessment of significant market power (hereinafter referred to as “the Guidelines”)³
- Recommendation on relevant markets (hereinafter referred to as “the Recommendation”)⁴

12. ESA's Guidelines and Recommendation have the same legal status for the EEA member states as the Commission's documents have for the EU countries. The documents form the basis for the work on market analyses and imposition of sector-specific obligations.

13. In accordance with the Guidelines a market analysis is to provide the basis for the assessment of relevant markets and of significant market power and the assessment is to accord with competition law methodology. The Guidelines and the Recommendation, together with the provisions of the Electronic Communications Act, particularly §§ 3-1 to 3-3, will therefore form the legal framework for the market analysis. However, the Guidelines are not exhaustive and therefore in its methodology document NPT has elaborated on the criteria for the market analysis on certain points. If the Guidelines and the Recommendation are amended, NPT will amend this document accordingly. It is the current version of the methodology document that provides the basis for the market analyses that NPT undertakes.

14. In accordance with the Electronic Communications Act *ex ante* regulation of providers with significant market power is only to be used where this is necessary in order to achieve sustainable competition in the relevant or adjacent market. In the Norwegian market regulatory obligations may only be imposed on operators with significant market power in those markets in which ESA or NPT has decided that

² The Electronic Communications Act (Ekomloven) is available at <http://www.lovdata.no/all/hl-20030704-083.html>

³ EFTA Surveillance Authority Guidelines 14 July 2004

⁴ EFTA Surveillance Authority Recommendation 14 July 2004 with Explanatory Memorandum (EU document prepared in conjunction with the Commission's Recommendation).

sector-specific regulation is necessary. In each of these relevant markets NPT must assess the extent to which sustainable competition exists. Sustainable competition in this context means that there is no operator in the relevant market who, individually or jointly with others, has significant market power. See more about this under “General – Market Definition”, section 1.3.

15. The document “Methodology for Market Analysis” prepared by NPT (the methodology document) is not legally binding, but expresses NPT’s understanding of the guidelines to which NPT is obliged to adhere. The market analyses will therefore be carried out in accordance with the perceptions and assessments that are expressed in the methodology document. Should there prove to be discrepancies between the methodology document and the Guidelines or the Recommendation, the methodology document will yield.

16. The document “Methodology for Market Analysis” in no sense regulates the Norwegian Competition Authority’s assessments in accordance with the Competition Act. Even if NPT’s assessments in accordance with the methodology document will largely be based on competition law methodology, and will thus be closely aligned with ordinary competition law, NPT’s assessments will be motivated by the requirement for general *ex ante* regulation, whilst the competition authorities’ assessments are as a rule *ex post* in connection with actual cases. The Competition Authority’s and NPT’s assessments in accordance with the two sets of rules may therefore differ even within the same or overlapping markets.

1.3 General – Market Definition

17. As stated above, in regard to the market analyses, NPT must assess whether the markets defined by ESA suit Norwegian circumstances. A description/definition of the product market is to be given and the geographic market defined. Subsequently an assessment has to be made as to whether the market conditions are of such a nature that there is a need for sector-specific regulation.

1.3.1 The product market

18. A relevant product market comprises products or services (the terms are used interchangeably below without difference in meaning) that are sufficiently substitutable. The starting point for the definition of a relevant product market is an assessment of demand-side substitutability. However substitutability may also exist on the supply side and may thus be relevant in definition of the relevant market⁵.

19. Demand-side substitutability exists when two or more products in the market are, in the perception of the end user, mutually exchangeable or substitutable on the basis of characteristics, price and area of utilisation.

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

⁵ See the Guidelines, paragraph 40, and Explanatory Memorandum to the Recommendation, section 3.1. The practice of the Norwegian Competition Authority is as a rule to postpone the assessment of supply-side substitution until the assessment of potential competition during the market power assessment.

1.3.2 The geographic market

21. Once the relevant product markets are determined, the geographic market is defined. The outer geographic borders for the relevant product market will as a rule be determined by the extent of the network and the jurisdiction of the legal regulation of the market. The extent to which a more detailed geographic definition of the market has to be carried out will rest on an assessment of the substitutability of the relevant products and services on the supply and the demand side, with a small but significant non-transitory price increase as described above.

22. The relevant geographic market is that area in which the relevant products and services are provided on sufficiently similar or homogeneous competitive terms. In assessment of substitutability on the demand side one should take account of preferences and geographic purchase patterns, if such information is available. With this as the basis the markets can be defined regionally within the national frontiers, nationally or trans-nationally. NPT can only define regional or national markets.

23. Assessment of the relevant geographic market will be somewhat different according to whether the assessment is made *ex post* or *ex ante*. A definition of geographic markets *ex ante* must inevitably have a wider basis and a more general approach than is taken with a definition *ex post*. An *ex post* definition is based on an actual event the extent of the effects of which one can chart, whilst the forward-looking assessment must be based on completely different circumstances. This will therefore also characterise the scope of the assessment of the relevant geographic market.

24. In accordance with Electronic Communications Act § 1-3, cf. Regulation of 4 July 2003 No. 882, the Electronic Communications Act applies to Svalbard, Jan Mayen, the dependencies and Antarctica. However in regard to Svalbard, exceptions have been made for Chapter 3 (significant market power), Chapter 4 (access) and § 9-3 (consultation procedure). However, electronic communications on Jan Mayen, the dependencies and Antarctica are assumed to have very little significance for the market analyses NPT carries out in accordance with the Electronic Communications Act.

1.3.3 Criteria for identifying divergent relevant product markets

25. It may become relevant to define markets that diverge from those markets that have previously been defined in the Recommendation. In that case the consultation procedure under § 9-3 of the Electronic Communications Act is to be followed. When the relevant product market is defined, the following additional criteria, in accordance with section 3.3 of the Explanatory Memorandum are to be present for the market to qualify for sector-specific *ex ante* regulation in the electronic communications area:

1. There are structural or regulatory entry barriers in the relevant product market.
2. The market has characteristics such that it will not sufficiently tend towards sustainable competition⁶.

⁶ Here the Recommendation uses the term “effective competition”, which may best be translated into Norwegian as “virksom konkurranse”. The Guidelines define this as a market in which operators with significant market power are absent, cf. paragraph 19. This cannot be interpreted in an antithetical manner, i.e. the presence of a provider with significant market power will prevent the market from becoming more competitive. Proposition No. 58 (2002-2003) to the Odelsting p. 99 states: “If none of

3. Ordinary competition law does not sufficiently address the objectives behind sector-specific regulation.

2 Introduction to the analyses of the wholesale leased lines markets

26. The Electronic Communications Act § 1-5 subsection 6 defines transmission capacity (leased lines) as an electronic communications service in the form of permanently established capacity for signal transmission as an input for service production or as transmission between different geographic addresses for end users.

27. The Norwegian term *overføringskapasitet* (*transmission capacity*) corresponds to the terms “dedicated capacity” and “leased lines” used in the Recommendation. Transmission capacity is a joint term for fixed dedicated connections. This implies that a guaranteed bandwidth is available at all times, regardless of other users. Transmission capacity is also bidirectionally symmetrical, and makes it possible to send and receive simultaneously with the same bandwidth. For most practical purposes the term corresponds to what is commonly referred to in the industry as “leased lines”, which in Telenor’s product portfolio are called *leide samband*.

28. The Recommendation defines two relevant wholesale markets for leased lines: *Wholesale terminating segments of leased lines (Market 13)* and *wholesale trunk segments of leased lines (Market 14)*. For practical reasons we have found it appropriate to combine the analyses of these two markets in a single document.

29. Wholesale leased lines markets border other predefined wholesale markets. This is particularly true of Markets 11, 12 and 18. Demarcation between these markets is specifically discussed in the analysis.

30. Leased line services can be realised using different technologies and via various transmission media such as fibre-optic cable, paired cables (copper), radio links, etc. Leased lines include analogue and digital leased lines, optical channels and dark fibre.⁷

31. The demand for leased lines comes both from end users and providers of electronic communication. In general, leased lines can be used for transmitting all types of signals, whether voice, other audio (such as music), text, images, video, audio and video broadcasting, data in and between companies, etc. End user customers of leased lines are companies, organisations and public institutions, which, for example, utilise leased lines to create internal company networks and to connect to the Internet. Providers of electronic communication (i.e. wholesale customers in Markets 13 and 14) require leased lines for use as an input in their provision of various electronic communication services in the retail market or in the wholesale market.

32. In paragraph 10 of the Recommendation, ESA states that the starting point for the identification and definition of relevant markets is a characterisation of retail markets over a given time horizon. When the markets involving supply to and

the providers has significant market power then there is assumed to be sustainable competition in the market.” While the meaning of the two terms is not exactly the same NPT still believes that they will coincide for this purpose.

⁷ This is discussed more specifically in section 3.6.

demand from end users have been identified, they will form the background for identification of the wholesale markets, which are markets for demand for and supply of products that third parties wish to make use of in their supply in the retail markets. This means that, in analysing the wholesale markets, NPT has also taken into account the related retail markets.

33. The further structure of the document is as follows: In Chapter 3 the product markets are defined in light of national conditions using the Recommendation's divisions as a basis. Market 13 is analysed in Chapters 4 - 7 while Market 14 is analysed in Chapters 8 -11.

3 Definition of the relevant product markets

3.1 Overview of the predefined product markets in the Recommendation

34. ⁸The Recommendation makes a general distinction between retail markets and wholesale markets. For leased lines the Recommendation defines two relevant wholesale markets:

13. Wholesale terminating segments of leased lines

14. Wholesale trunk segments of leased lines

35. According to the Recommendation, distinguishing between the terminating segments and trunk segments will depend on the network topology specific to each country and will therefore be decided upon by the relevant NRA.⁹

36. As stated in Chapter 1, NPT will use the Recommendation as a basis for the market analyses to be carried out, but will consider at the same time whether national conditions make it necessary to deviate from any of the predefined relevant markets.

37. On this basis, NPT has undertaken an assessment of various aspects of the two predefined product markets for leased lines at the wholesale level.

3.2 Description of the Norwegian leased lines market

3.2.1 Overview and history

38. The market for leased lines was liberalised in two stages. Starting 1 November 1996, the use of existing alternative infrastructure (such as cable TV systems) for competitive services was permitted. On 1 January 1998, the remainder of the telecommunications market was liberalised, a move that meant full liberalisation of the market for leased lines.

39. Since alternative infrastructure already existed, Telenor lost market share relatively quickly after liberalisation. According to NPT's official statistics for the

⁸ EFTA Surveillance Authority Recommendation 14 July 2004. Available via NPT's website under the menu selection SMP.

⁹ Explanatory Memorandum to the Recommendation page 28.

Norwegian telecommunications market, Telenor's share of the market¹⁰ for leased lines was 84 % in 1999. By the end of December 2005 this had sunk to 61 %. The post-liberalisation period has been characterised by shifts in demand, both from analogue to digital leased lines and from low- to higher-capacity digital leased lines.

40. Unlike many of the other relevant markets for electronic communication, this market is not characterised by technological innovation to any particular extent. Nor is the market characterised by a significant influx of new customers, and for this reason it must be regarded as mature.

41. The period after liberalisation has also been marked by falling prices in the retail market for leased lines, particularly for high-capacity digital lines. The prices of the leased lines included in the minimum set (up to and including 2 Mbit/s) have not fallen to a corresponding degree. Another development is that the prices of longer circuits have fallen relatively more than the prices of shorter circuits. In June 2002 Telenor carried out a price change that meant that the price elements connected with terminating and trunk segments were removed from the price lists for leased digital lines.

42. Unfortunately, NPT does not have a complete overview of price changes for leased lines in the past, but has received some information from Telenor in this regard. Figure 1, which is based on figures from Telenor, shows price changes for 2 Mbit/s leased circuits¹¹ that are 2, 50 and 200 km long. According to Telenor, two changes were made in the price structure in 1994-2002: 1 June 1996 (only for leased circuits longer than 3 km) and 1 June 2002.

43. The figure shows the monthly rent for a 2 Mbit/s leased line of 2, 50 and 200 km respectively. All price calculations are in nominal NOK, with no allowance for currency fluctuations. This means that the real price reductions are somewhat larger than the figure shows.

¹⁰ Both the wholesale and retail markets, but excluding intra-group revenue at Telenor.

¹¹ The price reduction for 2 Mbit/s leased circuits is not necessarily representative for price developments in general in the minimum set.

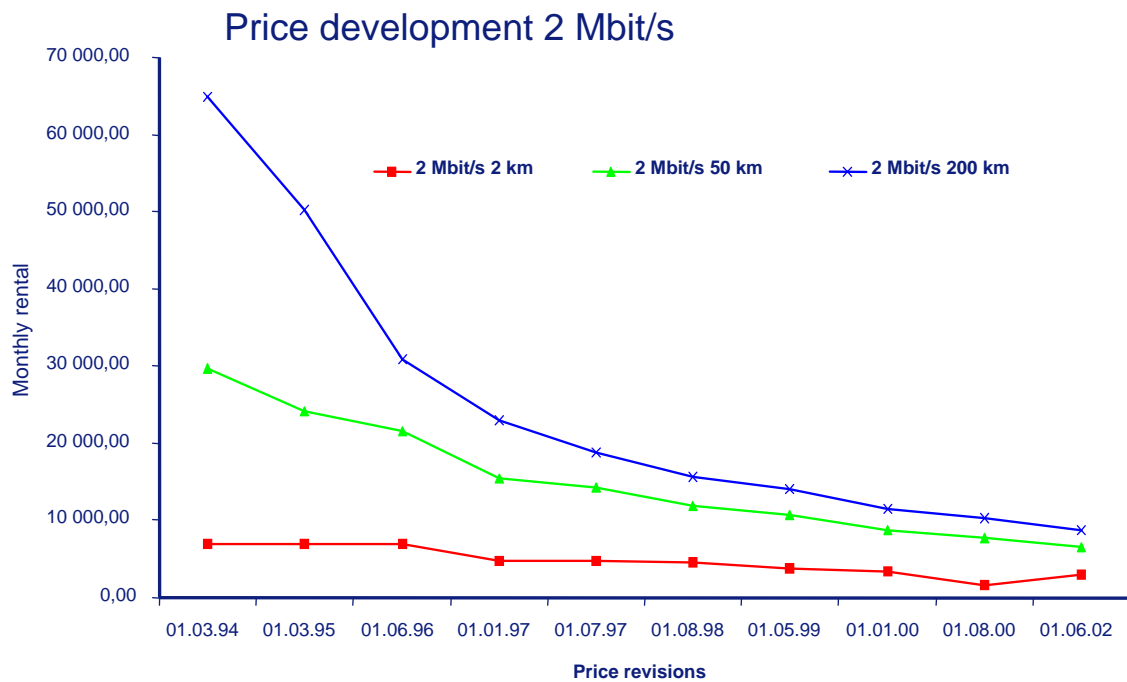


Figure 1: Price development, 2 Mbit/s leased circuits
(Source: Telenor)

44. The biggest operators on the supply side in the retail market for leased lines are Telenor and BaneTele. In addition, a number of smaller operators offer geographically limited services. The operators utilise their own or leased infrastructure. Operators who offer leased lines in the retail market are therefore often major operators on the demand side in related wholesale markets.

45. Leased lines in the retail market are purchased by companies, institutions or public agencies to establish communication between two or more geographically separated points. Examples of major customers in this market are large companies that wish to link geographically separated locations for internal telephony and/or data networks. Other major customers are public institutions such as local governments and state institutions.

46. Like its equivalent retail market, the wholesale markets for leased lines are relatively mature markets. Through its ownership of nationwide access and trunk networks, Telenor is by far the biggest supplier of leased lines in the wholesale markets.

47. Telenor's biggest challenger on the wholesale level is BaneTele AS (BaneTele). BaneTele has utilised existing fibre optic cables running alongside the rail network, as well as optical fibre strung along high voltage power lines (taken over from Enitel). Telenor's challengers have established only a limited amount of completely new physical infrastructure. In addition to BaneTele there are smaller operators with geographically limited access and trunk networks.

48. BaneTele has an extensive trunk network and offers trunk capacity to both end users and providers of electronic communication. In addition to being the largest competitor to Telenor in this market, BaneTele is also a customer of Telenor, particularly of leased lines in the access network. In many cases, BaneTele is

dependent on purchasing leased lines in Telenor's access network in order to be able to offer end-to-end connectivity to its customers.

49. Telenor's prices are basically the same in the wholesale and retail markets. However, in practice many customers in the wholesale markets will enjoy lower prices than most customers in the retail market because they generally purchase larger volumes providing a basis for higher discounts.

50. Purchasers of leased lines on the wholesale level consist of operators (providers of public electronic communications networks or services) who use leased lines as input in the supply of services to end users (or to other providers). Examples of major purchasers of leased lines on the wholesale level are mobile network operators, providers of fixed telephony and data networks and providers of leased lines.

3.3 Assessment of the distinction between retail and wholesale markets

51. The distinction between retail and wholesale market applies to all the predefined markets, i.e. all markets defined in the Recommendation are either a retail or a wholesale market. This differentiation is regarded as practical for the analyses of the relevant markets.

52. The term "end user" refers to anyone who uses services for their own use. Thus the term does not include users who utilise the service as an input in the production of electronic communications services offered to others, cf. Electronic Communications Act § 1-5 subsection 13.

53. Similarly, the term wholesaler will generally correspond to the term provider in the Act, cf. Electronic Communications Act § 1-5 subsection 14. The term "provider" covers all providers offering access to an electronic communications network or service.

54. In this analysis, NPT defines wholesale customers as providers of electronic communications networks and/or electronic communications service, where the purchase of leased lines is included as an input for the production of such networks and/or services. NPT defines other customers as end users.

55. In NPT's experience, providers of leased lines have a good overview of which customers are wholesale customers and which customers are end users, *inter alia* because providers often use their own sales channels, agreements and/or price plans for wholesale customers. This means that the distinction between end user and provider will be possible to implement in practice.

56. It is worth noting that a single legal entity (for example a limited company) can act both as an end user and a wholesaler, depending on the utilisation of the desired leased lines. NPT does not have an overview of the extent of this or to what degree this may constitute a problem since it is not taken into account in the reported data. Yet there is nothing to suggest that this is of an extent that creates uncertainty with respect to the conclusions reached on the basis of the market data.

57. On the basis of the above findings, NPT has concluded that the distinction between retail and wholesale, as proposed in the Recommendation, will also be practical for the analysis of the relevant wholesale leased lines markets.

3.4 Assessment of the separation between Markets 13 and 14

58. Section 4.2.3 of the Recommendation's Explanatory Memorandum refers to *overføringskapasitet* [transmission capacity] as "dedicated connections and capacity (leased lines)", and by way of introduction points out that there may be a certain degree of substitution between leased lines and LLU, as well as between (long distance) trunk segments of leased lines and national calls (call conveyance). Furthermore, the following key elements are identified:

"The key elements in the demand and supply for dedicated connections are bandwidth, distance and the location or locations to be served"

59. At the *retail level* the Recommendation refers to the Universal Service Directive, which covers the so-called minimum set of leased lines, and identifies this as a relevant market unless special circumstances indicate otherwise.

60. With respect to the discussion of the relevant market at the *wholesale level*, the Recommendation is relatively brief. NPT therefore finds it appropriate to quote the entire relevant paragraph:

"At the wholesale level, it is possible to distinguish separate markets, in particular between the terminating segments of a leased circuit (sometimes called local tails or local segments) and the trunk segments. What constitutes a terminating segment will depend on the network typology specific to particular Member States and will be decided upon by the relevant NRA. In addition while many trunk segments on major routes are likely to be effectively competitive in certain geographic areas in Member States, trunk segments may not support alternative suppliers. For this reason trunk segments are also identified. Additional market segmentation is possible between high and low capacity leased lines."

61. On this basis the Recommendation defines two relevant wholesale markets: *Wholesale terminating segments of leased lines (Market 13) and wholesale trunk segments of leased lines (Market 14)*. At the same time the Recommendation explicitly states that the boundary shall take national conditions in consideration. NPT is aware that regulatory authorities in different EEA countries have had a somewhat different approach in their analyses of the wholesale leased lines markets.

62. On the basis of the Recommendation NPT originally adopted a theoretical distinction between Markets 13 and 14, in which wholesale terminating segments of leased lines could be defined as the connection between the user and the point (on the network) where the user shares the connection with others, i.e. to the point where the user no longer has sole use of the entire physical connection. Using such an approach, wholesale trunk segments of leased lines could be defined as the connection from the point (on the network) where the connection is split (multiplexed) to the point where the user again has sole access to the entire physical connection.

63. All of the market operators who submitted responses to the consultation on the notification of decisions for these markets had considerable objections to NPT's original approach to the distinction between Markets 13 and 14. For this reason, NPT chose to undertake a new assessment of how the boundary between Markets 13 and 14 is to be defined.

64. The main objection of the market operators to a theoretical distinction between terminating and trunk segments of leased lines has been that such an approach does not provide a sufficiently clear boundary between the two wholesale leased lines markets, and is therefore apt to create doubt about which obligations apply to specific leased lines. This is connected with the fact that the products that are actually offered and requested in the Norwegian wholesale market for leased lines cannot be categorised as either access products or trunk products. This is also reflected in the pricing structure for leased lines. Telenor's prices for a leased line depend on three parameters: capacity, length of leased line (air distance) and a geographical zone division with four levels. The prices do not depend on whether the circuit is a terminating segment of a leased line or a trunk segment of a leased line in the physical sense.

65. An exception to the above is Telenor's Digital Aksess (Digital Access) product, which was launched following a mandate from NPT in 2004. However, the demand for Digital Aksess (Digital Access) has been very limited, and the product is used today solely by companies within Telenor. Telenor has told NPT that the reason this product has not been a commercial success is probably the disadvantages such a "near network" product involves, primarily in relation to changes in network structure. In other words, the experiences with the Digital Aksess (Digital Access) product indicate that a distinction between terminating and trunk segments based on a physical network structure entails considerable drawbacks.

66. Another objection from the market operators against a theoretical separation between terminating and trunk segments of leased lines has been that the boundary between terminating and trunk segments will change over time because the electronic communications networks are continually changing and evolving. This has apparently made it impractical for the operators to operate with a product-related division based on such a distinction. For example, the point for transmission equipment and multiplexing in Telenor's network is gradually being moved farther out in the network (i.e. closer to the customer), so that the average cable length in the access network is becoming increasingly shorter. A leased circuit that consists only of a terminating element at a given time might therefore consist of both a trunk element and a terminating element at a later stage. A node-based product division can therefore be problematic if differing obligations are imposed in the two wholesale leased lines markets. For example, a consequence of dissimilar price controls in Markets 13 and 14 may be that the regulated price for a given leased line must be changed due to changes in Telenor's network structure. Alternatively, wholesale customers who lease identical leased lines will have to accept paying different prices as a result of ordering the leased line at different times, because the distinction between the terminating and trunk element has changed in the mean time.

67. The existing product structure in the Norwegian wholesale market for leased lines has made it possible to prepare relatively simple and transparent price lists, which seems to be an advantage for the wholesale customers. In addition, it is

resource-conserving for wholesale providers, particularly Telenor, which before 2002 had to manually define the network point (so-called T-points) between terminating and trunk segments, to be able to state the correct price. In contrast to what the situation seems to be in a number of other European countries, the product structure in the Norwegian market is not such that a distinction is natural between terminating and trunk segments in the traditional sense. Nor can NPT see that it is appropriate to force through such a regulatory division if particularly compelling reasons warrant that such a change is necessary.

68. Due to the market operators' considerable objections to NPT's original demarcation between Markets 13 and 14, NPT found it appropriate to conduct a limited consultation where alternative approaches were proposed. In line with the first quote from the Recommendation, which was repeated in the beginning of this section, capacity and length of leased line were mainly mentioned as relevant demarcation criteria between Markets 13 and 14.

69. In its response to the consultation Telenor pointed out the challenges linked to a theoretical substitution analysis of the wholesale leased lines markets. Telenor pointed out that an assessment of the *substitution conditions on the demand side* according to competition law methodology must be based on the freedom of choice the customer has to meet its needs, and wrote *inter alia*:

“If an operator wishes to supply a service to end users requiring a leased line between point A and point B, it is only the availability of capacity between these points, or the available set of parts of the leg between points A and B – taking into consideration the parts of the leg the wholesale customer possesses – that meets the specific need.”

70. On this basis Telenor argued that a theoretical analysis of the substitution conditions on the demand side indicates that there is a separate product market for leased lines between each A and B point combination.

71. Furthermore, Telenor claimed that a similar assessment of the *substitution conditions on the supply side* gives the same result, and concluded as follows:

“In Telenor's opinion, this shows that a purely theoretical assessment of the substitution conditions on both the supply side and demand side must conclude that leased lines between two given points constitute a single market, and it is precisely the competition or available alternatives that constitute the market for leased lines between two given points. At the same time it will not be very feasible to use an analysis of the competitive situation for leased lines between each A and B point pair as the basis for any regulation, and that one is therefore obliged to use criteria other than pure substitution assessments.

72. In a situation where the substitution analysis does not provide a clear result, Telenor argued that a way of grouping leased lines characterised by reasonably identical competitive conditions must be found. On this basis Telenor was of the opinion that capacity was the most relevant criterion for a division of the wholesale leased lines markets.

73. NPT shares Telenor's opinion that a substitution analysis based on the actual market situation in the Norwegian wholesale market for leased lines does not necessarily lead to a market delineation between traditional terminating and trunk segments of leased lines. NPT interprets the discussion in the Recommendation as meaning that the starting point has been to find separate product markets where the

competitive conditions and available alternatives are relatively similar inside each market, and that this normally is the case for terminating segments and trunk segments of a leased line. However, the reference to national conditions, plus the fact that the Recommendation explicitly allows further market segmentation between high and low-capacity leased lines, is assumed to mean that ESA does not rule out that the substitution analysis may lead to somewhat different market definitions.

74. NPT shares the view of the market operators that it is very important to find the clearest possible boundary between Markets 13 and 14, especially since regulation in these two markets can be different. A clear demarcation between the two wholesale leased lines markets will both give the market operators the necessary predictability with respect to the regulations applying to the existing products in these markets, and simplify NPT's follow-up of any obligations that are imposed.

75. On this basis, NPT has concluded that a different approach than the one NPT originally notified must be adopted for the separation between Markets 13 and 14.

76. The respondents to the consultation have pointed out capacity and length of leased line as the two most relevant criteria for a clear demarcation between Markets 13 and 14. As previously mentioned, these two criteria are listed as key elements in the Recommendation, cf. the first quote cited in the beginning of this section. On this basis, NPT has assessed these two alternative definition criteria.

77. Even though the market definition underlying the original draft decisions in the wholesale leased lines markets was based neither on capacity nor length of leased line, capacity was used as an indicator in the assessment of market shares in Markets 13 and 14 in the original notification of decisions. A division based on capacity was regarded as being useful supplemental information, and, based on information from the market operators, market share based on capacity was used as one of several indicators in the calculation of market share.

78. NPT is aware that high-capacity fibre and radio access networks are being increasingly established up to the end users. Nevertheless, the Authority assumes that the vast majority of terminating segments of leased lines traded in the wholesale market are still capacities that can be realised via the copper access network. This suggests that capacity may be a criterion that will provide a demarcation between Markets 13 and 14 that to a large extent corresponds with a traditional distinction between terminating and trunk segments of leased lines. The market data NPT has obtained furthermore indicates that the competitive conditions for leased lines that can be realised through the copper access network are significantly different than the competitive conditions for leased lines of higher capacities (see otherwise Chapter 6 and 10 below).

79. With respect to length of leased line as a possible criterion for a boundary between Markets 13 and 14, there is in NPT's opinion reason to assume that most terminating segments of leased lines traded in the wholesale market are short-distance leased lines. Among other things, this is because in recent years Telenor has established nodes/points of interconnection ever closer to end users. On the other hand, NPT finds that a percentage of the shorter leased lines traded in the wholesale market are leased lines that link the networks of various operators together, i.e. what has been traditionally referred to as trunk segments of leased lines. This means that there cannot be said to be a clear connection between terminating segments of leased lines and short-distance leased lines.

80. Furthermore, NPT considers it to be more difficult, based on a substitution analysis or assessment of joint competitive intensity, to set a certain length of leased line rather than a certain capacity of leased line as a criterion for the boundary between Markets 13 and 14. This is because a substitution assessment on the supply side warrants a boundary between capacities that can be realised via copper cables and capacities requiring a different underlying infrastructure. NPT cannot see that there is a corresponding natural boundary with respect to length of leased line on the basis of a substitution analysis. Following an overall assessment, NPT has concluded that capacity should be assumed as the main criterion for the separation between Markets 13 and 14.

81. NPT has assessed which capacities shall be included in Markets 13 and 14. In its response to the consultation, Telenor argued that 8 Mbit/s, which is produced as $n \times 2$ Mbit/s and therefore can naturally be classified together with 2 Mbit/s, is defined as the highest capacity in Market 13. All leased lines that can be produced on copper will then be included in this market. However, instead of establishing a boundary at $n \times 2$ Mbit/s (where n for instance is equal to 4 as Telenor proposes), NPT finds it more appropriate to establish a clear capacity limit. All leased lines with capacities under this capacity limit are thus included in Market 13, regardless of the way the capacity is realised. Such a demarcation will be easier to relate to and increase predictability, particularly for the demand side in the market.

82. Figures that NPT has obtained from Telenor show that less than 2 % of Telenor's external wholesale revenue from leased lines comes from capacities between 2 Mbit/s and 34 Mbit/s. This indicates that the capacity between 2 Mbit/s and 34 Mbit/s that represents the boundary between Markets 13 and 14 has no major competitive significance. Even though NPT wishes to establish a technology-neutral definition separating the two wholesale markets, an assessment of the competitive conditions indicates that it makes sense to emphasise the capacities that can be produced over copper when the boundary between Markets 13 and 14 is to be defined. On the basis of Telenor's consultative input on a new limited consultation, NPT has concluded that Market 13 should be defined as wholesale leased lines with capacities up to and including 8 Mbit/s. Since technological development has shown that increasingly higher capacities can be supplied via copper, NPT would emphasise at the same time that the capacity limit making up the boundary between terminating and trunk segments may be reassessed at a later time.

83. On this basis Market 13 is defined as all leased lines traded in the wholesale market up to and including 8 Mbit/s. All other leased lines in the wholesale market are included in Market 14. NPT does not deem this to be in conflict with ESA's recommendation on relevant markets.

3.5 Assessment of whether dark fibre and optical channels belong to the leased lines markets

84. Electronic Communications Act §1-5 defines leased lines as:

“(...) electronic communications service in the form of permanently established capacity for signal transmission as an input for service production or as transmission between different geographic addresses for end users.”

In principle, leased lines are consequently limited to transmission service with “permanently established capacity”. On this basis NPT has assessed whether dark fibre and optical channels shall be included in the leased lines markets at the wholesale level.

85. In NPT’s opinion, it is inherently improbable that by defining leased lines in this manner the Legislator has explicitly meant to exclude dark fibre and optical channels from the leased lines markets. Reference is made in this connection to the preparatory works (Proposition no. 58 (2002-2003) to the Odelsting) p. 58, which reads as follows (our emphasis) regarding the definition of leased lines:

“(…) The capacity is normally limited upwards to a fixed transmission capacity included in the agreement between user and service provider”.

86. Consequently, the main rule will be that leased lines have a fixed agreed capacity, although the Legislator allows exceptions.

87. NPT furthermore refers to p. 107 of the preparatory works, the comments on § 4-12:

“There are two main types of leased lines; structured and unstructured leased lines. Structured capacity means that the leased line contains a small amount of capacity reserved for lessors of leased lines, used for internal administrative matters, inter alia to ensure that the line is operational. When leasing unstructured capacity, the lessee may have the use of the entire capacity. Unstructured leased lines often go by the term dark fibre and raw copper. Raw copper is otherwise closely connected with access to the fixed access network. The provision includes an obligation for undertakings with significant market power in relevant markets to offer combinations of differently structured and unstructured leased lines, in the scope providers actually have significant market power in the involved leased lines categories and within the relevant geographic area.”¹²

88. On this basis, NPT has concluded that there is a legal basis for including dark fibre and optical channels in Market 14, cf. the market boundary between Markets 13 and 14 that is dealt with specifically in section 3.4 above.

89. In addition, NPT has assessed whether the market situation, including the degree of substitutability between leased lines with high fixed capacities and dark fibre, nevertheless dictates that dark fibre and optical channels should not be included in Market 14.

90. NPT believes that a price change for leased lines with very high fixed capacity in the wholesale market will be able to affect demand for dark fibre and optical channels, and that there is thus a sufficient degree of substitutability between for example 10 Gbit/s and dark fibre for it to be said that these products are part of the same relevant product market.

91. NPT has held meetings with individual operators on the use of dark fibre and optical channels. At these meetings NPT received information indicating that dark fibre and optical channels in the wholesale market largely have the same area of use as traditional digital leased lines. For example, this applies when broadband

¹² Even though the term unstructured capacity is not usually used to refer to dark fibre, the preparatory works give a clear indication that the intention of the legislator has been to include dark fibre in the act’s definition of leased lines.

providers are to connect their own network nodes and rolled-out DSLAMs on Telenor's network. In such cases both dark fibre and traditional digital lines could be used, and what is used is largely a question of price. This suggests that dark fibre/optical channels and traditional digital leased lines belong to the same market and are substitutable on the demand side.

92. In NPT's opinion there will also be substitutability on the supply side between traditional digital leased lines and dark fibre/optical channels. A provider of high-capacity digital lines will often have unused fibre pairs on a relevant leased line leg and can thus easily change the service from digital leased lines to dark fibre.

93. Moreover, NPT has registered that Telenor presents dark fibre and digital leased lines in joint price and product descriptions on its website and obviously regards these products as being part of the same product family.¹³

94. Figures that NPT has obtained from Telenor also show that Telenor's largest external customers of dark fibre at the wholesale level are some of Telenor's largest and most important competitors in the retail broadband market. This indicates that access to dark fibre is important for competition in the related retail markets. An assessment of the size of sales of dark fibre in the current market points in the same direction. For example, Telenor's external sales of dark fibre were nearly 10 times bigger than the company's external sales of Gbit/s capacities in 2005. In the first half of 2006 the sale of dark fibre amounted to just under 13 % of the total external sales of leased lines in Norway. The corresponding figure for the first half of 2005 was 6 %, while for the first half of 2004 it was 5 %. This shows that the use of dark fibre in the Norwegian market constitutes a substantial share and is increasing.

95. On this basis, NPT cannot see that there are market-related reasons dictating that dark fibre and optical channels should be excluded from Market 14.

96. NPT has furthermore obtained information from selected comparable countries regarding their handling of dark fibre in the market analyses for leased lines. In general it does not seem to be the case that national legislation in these countries has hindered the inclusion of dark fibre. Several countries have nevertheless concluded that dark fibre should be kept outside the definition of leased lines in the wholesale market and should rather be included in the assessment of potential competition in the market analysis.

97. In summary, NPT, on the basis of an overall assessment, has found it right to include dark fibre and optical channels in the relevant market. NPT cannot see that this violates the Electronic Communications Act and its preparatory works. In this connection, NPT has chosen to place greater emphasis on market and competitive conditions in Norway than on assessments of dark fibre in other countries. The market definition means that all trading of optical channels and dark fibre in the wholesale market will be included in Market 14 since Market 13 is in principle limited to leased lines realisable via copper cables.

¹³ See for example the document "Digitale Leide Samband og Mørk Fiber – priser og rabattordninger" (Digital Leased Lines and Dark Fibre - prices and discount schemes), on www.jara.no

3.6 Definition of Market 13 compared to Markets 11 and 12

98. In principle, providers who want to supply access products to end users and lack their own access network, face a choice between building their own access networks (for example laying fibre all the way to the customer) or purchasing one of several access products in the wholesale market. In practice the choice of access products is between LLU (leasing of paired cables in the fixed access network), broadband access (bit-stream service) or leased lines. These three product areas entail different degrees of additional processing. The choice of wholesale product will naturally depend on which retail product the provider wishes to offer. In addition, this choice will determine the other investments the provider must make to be able to offer an adequate end product. LLU can be said to be a “stripped down” version of broadband access, where the wholesale customer only receives access to the paired cable between a subscriber exchange and the end user. LLU therefore requires a major investment by the wholesale customer. Broadband access implies that in addition to the paired cable, the wholesale customer gains access to xDSL equipment and in some cases transmission all the way up to a broadband access point (BAP). Unlike broadband access, leased lines provide guaranteed bandwidth in both directions and a generally higher quality of service.

99. On the basis of the above, NPT has assessed the separation between Market 13 (wholesale segments of leased lines with capacities up to and including 8 Mbit/s) and Market 11 (wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services (LLU)) and Market 12 (wholesale broadband access including bit-stream access), respectively. In this connection NPT has also assessed whether it will be appropriate to combine Market 13 with all or parts of Markets 11 and 12 to form a single relevant market.

3.6.1 Definition of Market 13 compared to Market 11

100. End users wanting connection to the Internet can in practice choose between using ISDN/analogue telephony (mostly the residential market), xDSL products (residential and business markets) or leased lines (exclusively the business market). For business customers the choice between leased lines and an xDSL product will be a question of price and functionality. There is reason to believe that a small, non-transitory price increase for leased lines will cause some end users (business market) to want to connect to the Internet using an xDSL product instead of via a leased line. At the retail level there is therefore reason to believe that leased lines and xDSL are regarded as substitutes, and are thus in the same relevant market.

101. It can be derived from the above that there will also be a certain degree of demand-side substitutability in the wholesale market between digital leased lines and those wholesale products used as an input for offering xDSL products in the retail market, namely broadband access and LLU. However, it is NPT’s view that other factors weigh against such substitutability in the wholesale market and thus oppose the idea that wholesale terminating segments of leased lines on the one hand and broadband access and LLU on the other can belong to the same relevant market.

102. For providers who use leased lines, a switch to purchasing LLU would be associated with considerable investment should they wish to offer an equivalent access product to end users. The choice between purchasing LLU or wholesale terminating segments of leased lines is primarily a decision that depends on the

operator's business models and strategy and, to a lesser extent, on price. It is unlikely that a small, non-transitory price increase for digital leased lines would by itself cause a significant number of customers to switch to LLU. It is also unlikely that a small, non-transitory price increase for LLU would by itself cause customers to switch to terminating segments of leased lines. In most cases, customers who purchase LLU will have already made considerable irreversible investments related to their retail services based on the LLU product.

103. In principle, LLU is an access product that Telenor is under an obligation to deliver. NPT's assessment is that it is not likely that any providers of leased lines will voluntarily begin offering an LLU product. Furthermore, there are in practice no other providers than Telenor that are capable of offering such a product to any significant extent, because no other operators are close to having an access network with a degree of coverage comparable to Telenor. Consequently, there is minimal possibility of supply-side substitution between LLU and wholesale segments of leased lines with capacities up to and including 8 Mbit/s.

104. Based on these findings, NPT has concluded that neither the demand nor the supply side has sufficient substitution possibilities for LLU and wholesale segments of leased lines with capacities up to and including 8 Mbit/s to belong to the same relevant market.

3.6.2 Definition of Market 13 compared to Market 12

105. In the same manner as wholesale terminating segments of leased lines, broadband access is a product that is used as an input in the production of broadband services for end users. However, wholesale terminating segments of leased lines are also widely used by providers to build networks; for example, mobile operators primarily use digital leased lines instead of broadband access to connect base stations with exchanges. Furthermore, operators with their own trunk network (for example BaneTele) use leased lines in Telenor's access network to provide end-to-end connectivity in the retail market. The most important distinction between broadband access and leased lines is that leased lines provide guaranteed bandwidth and generally a higher quality of service than broadband access. Furthermore, unlike leased lines, broadband access is usually an asymmetrical connection. In addition, broadband access currently does not have the same geographic coverage as wholesale terminating segments of leased lines. In NPT's opinion, these relatively large differences between broadband access and wholesale segments of leased lines with capacities up to and including 8 Mbit/s indicate that it is quite unlikely that customers who purchase one product will switch to demanding the other product in the event of a small but significant non-transitory change in the prices of these products.

106. Furthermore, the relatively large difference between broadband access and leased lines indicates that it is also unlikely that providers of one product will restructure their production to any great extent and begin offering the other product in the event of a small but significant non-transitory change in the prices of these two products. In NPT's view, the decision to offer broadband access and/or leased lines is largely determined by the provider's strategy and business model.

107. Based on these findings, NPT has concluded that neither the demand nor the supply side has sufficient substitution possibilities for broadband access and

wholesale terminating segments of leased lines to belong to the same relevant market.

3.7 Definition of the markets for leased lines (Markets 7, 13 and 14) compared to the wholesale market for broadcasting transmission services (Market 18)

108. In general, transmission capacity (leased lines) can be used for transmitting all types of signals, whether voice, other audio (such as music), text, images, video, audio and video broadcasting, data in and between companies etc. The predefined wholesale market for broadcasting transmission services (Market 18) hence borders on the markets for leased lines at the wholesale and retail level (Markets 7, 13 and 14).

109. Traditional broadcasting transmission may be roughly divided into four main types: contribution networks, feeder networks, trunk networks and access networks.¹⁴ Contribution, feeder and trunk are all service types which in principle can be, and to a certain degree actually is, supplied on the same physical network.

110. In the following, NPT will undertake substitutability evaluations, thereby determining which markets the aforementioned main types of broadcasting transmission fall under.

3.7.1 Contribution networks – Market 18 or the leased lines markets?

111. Lines used for transmitting signals between production sites (contribution) are primarily two-way digital lines. Telenor is by far the largest provider of this kind of lines through its subsidiary Norkring.

112. Norkring's contribution networks have largely been reserved for broadcasting services. Traditionally lines of this type were analogue broadband connections via radio relay link. In the past, this type of transmission was not regarded as dedicated capacity in the sense of 'leased lines'.

113. In recent years, Norkring has constructed a digital trunk network (DTN), with two-way connections for transmission between production sites. This transmission network is based on SDH/ATM technology¹⁵. It is possible to differentiate between terminating and trunk segments on this network. Technically, these lines can be compared to other types of dedicated lines. However, traditionally such broadcasting transmission services were not considered to be like standard products provided by Telenor, because the transmission capacity in this network was reserved for broadcasting.

114. There are a number of competitors in the markets for leased lines. Also for conveyance of broadcasting content there are several active providers, including BaneTele, Breddbandsalliansen, and others.

115. On the basis of an assessment of substitutability on the demand side, transmission capacity (leased lines) and the conveyance of broadcasting content on the contribution network will, in NPT's view, belong to the same market. Leased lines and the contribution network largely have identical areas of application. A broadcaster

¹⁴ See NPT's analysis of Market 18, available on www.npt.no, for a thorough description of the various types of broadcasting transmission.

¹⁵ ATM is an abbreviation for Asynchronous Transfer Mode

who demands capacity on the contribution network can just as well demand the same capacity in the form of leased lines. Contribution lines and leased lines are therefore to be regarded as substitutes from the customer's side and therefore belong to the same market.

116. This conclusion is further supported by looking at supply-side substitution. There is no essential technical or physical distinction between contribution lines and leased lines, even though historically they have been used for two different types of service. These lines are therefore, in NPT's view, substitutable. Consequently, a provider who only supplies leased lines can easily restructure its production to start offering contribution lines – without incurring considerable cost or risk. Therefore, on the basis of an assessment of supply-side substitution, contribution lines and leased lines belong to the same relevant market.

117. Assuming that substitution exists between contribution lines and leased lines, it must also be assessed which leased line market revenues are to be attributed to. Broadcasters utilise this service for their own use, as a conveyance service for their broadcasting content. The transmission capacity is not used as an input factor in the production of own electronic communication services, since broadcast content is not an electronic communications service pursuant to the Electronic Communications Act. Thus, broadcasters act as end users when purchasing contribution lines. For this reason, NPT concludes that contribution lines purchased for the broadcaster's own use are attributable to Market 7, leased lines in the retail market. It is only capacities of up to and including 2 Mbit/s that will be included in this market and thus be subject to special regulation.

118. Any capacity in the contribution network that is not utilised for own use, but is utilised as an input factor in the production of electronic communications services, will belong to Market 13 or 14, depending on speed.

3.7.2 Feeder networks – Market 18 or the leased lines markets?

119. Lines for feeding signals from broadcasters to transmitter stations are ideally used for one-way transmission, and such lines are usually called feeder networks. Feeder networks may be based on inter alia fibre and radio relay links and may be both digital and analogue.

120. NRK largely uses capacity on an analogue radio relay link for its broadcast feeds, whilst TV2 bases its feeds on fibre. Several local TV stations use to a large extent digital transport network (DTN) as transmission service for feeding the transmitter network. Norkring is the only provider of feeder networks based on radio relay links, whereas for fibre there are a number of providers. Norkring's feeder network has been reserved for broadcasting services, and this type of transmission has previously not been considered to be dedicated capacity in the 'leased line' sense. It must be assumed that NRK will switch to demanding more digital transmission capacity for feeding broadcast signals when the digital terrestrial network is rolled out. It must moreover be assumed that larger degree of digitalisation will increase the substitutability with other digital platforms for transmission services.

121. Customers of feeder networks can just as easily demand ordinary leased lines. No special method is required for transmitting broadcasting services on the feeder network. A small but non-transitory increase in the price of feeder network capacity may result in customers of feeder network capacity turning instead to ordinary leased lines. Thus, NPT believes that there is a high degree of demand-side substitutability.

122. For feeder networks based on fibre, supply-side substitution must also be assumed to exist. A number of operators offer capacity for transmitting broadcast signals from broadcasters up to the transmitter network/earth station/head end of a cable TV network. No large investments are assumed to be involved for operators that offer (one-way) capacity on fibre-based feeder networks instead of offering this transmission capacity for two-way conveyance. For providers of feeder capacity via radio relay link, however, this substitutability may be somewhat less. In this connection it must be pointed out that Norkring has already constructed a digital trunk network, which is used inter alia for feeding broadcast signals.

123. Assuming that substitution exists between capacity in the feeder network and leased lines, it must also be assessed which leased line market the revenues are to be attributed to. Broadcasters utilise this service for their own use and not as an input factor in the production of electronic communication services offered to others, since broadcast content is not an electronic communications service pursuant to the Electronic Communications Act. Thus, broadcasters act as end users when purchasing capacity for feeding broadcast signals. For this reason, NPT concludes that capacity in the feeder network purchased for the broadcaster's own use are attributable to Market 7, leased lines in the retail market. It is only capacities of up to and including 2 Mbit/s that will be included in this market and thus be subject to special regulation.

124. Any capacity in the feeder network that is not utilised for own use, but is utilised as an input factor in the production of electronic communications services, will belong to Market 13 or 14, depending on speed.

3.7.3 Trunk networks – Market 18 or the leased lines markets?

125. For the trunk network, i.e. the portion of the network with an interface with the access network, substitution assessments will be analogous with those for lines for the feeder network, both on the supply and the demand side, and reference is made to the discussion above.

126. The demand side for purchasing capacity on trunk networks consists of broadcasters (terrestrial networks and satellite) and distributors (satellite). On cable TV networks, the broadcasters do not pay for being carried. Nor are there any distributors that purchase capacity on cable TV networks, since the distributors themselves own these networks.

127. NPT assumes that the capacity that broadcasters buy for transmitting their programming is utilised for their own use, and that it is therefore to be regarded as end-to-end circuits. For this reason, NPT concludes that capacity on trunk networks that broadcasters purchase are attributable to Market 7, leased lines in the retail market. The same applies to distributors' purchases of trunk capacity on satellite. It is only capacities of up to and including 2 Mbit/s that will be included in this market and thus be subject to special regulation.

128. Any capacity in the trunk network that is not utilised for own use, but is utilised as an input factor in the production of electronic communications services, will belong to Market 13 or 14, depending on speed.

3.7.4 Access networks – Market 18 or the leased lines markets?

129. The access network (distribution network) is the portion of the network that goes out to the end users. The distribution of broadcast signals takes place as of today

mainly on three different platforms (terrestrial networks, cable and satellite), and it is particularly the access to the end user that constitutes the difference between these platforms.

130. Distribution networks are largely one-way, and NPT therefore assumes that the access capacity offered over these three platforms will not be demanded by parties other than broadcasters and broadcasting distributors. Nor are end users largely assumed to demand services other than broadcasting over these platforms.

131. In light of this, it is NPT's view that transmission capacity in the access networks for cable TV, satellite and terrestrial networks must be attributed to Market 18.

3.7.5 Conclusion

132. The sale of transmission capacity on feeder networks, contribution networks and trunk networks is not to be included in Market 18, but is attributable to Market 7, the minimum set of leased lines. Only capacities up to and including 2 Mbit/s. will be included in the market.

133. Any capacity in contribution networks, feeder networks and trunk networks that is not utilised by broadcasters for own use, but is utilised as an input factor in the production of electronic communications services, will belong to Market 13 or 14, depending on speed.

134. Capacity in the access network on cable TV networks, satellite networks and terrestrial networks is included in Market 18.

3.8 Summary - Definition of the relevant product markets

135. Based on the above assessment of various aspects of the two predefined product markets for leased lines at the wholesale level, NPT has determined that it is unnecessary to undertake other demarcations of the relevant product markets than those ensuing from the Recommendation.

136. Based on the Recommendation, NPT has concluded that the relevant wholesale leased lines markets that can be subject to ex-ante regulation in Norway consist of

Wholesale segments of leased lines with capacities up to and including 8 Mbit/s (Market 13)

Wholesale segments of leased lines with capacities above 8 Mbit/s (Market 14)

137. All leased lines traded in the wholesale market up to and including 8 Mbit/s belong to Market 13. All other leased lines in the wholesale market are included in Market 14. Dark fibre and optical channels are part of Market 14.

138. Any capacity for contribution, feeder network and transport network that is not utilised by broadcasters for own use, but is utilised as an input factor in the production of electronic communications services, will belong to Market 13 or 14, depending on speed.

139. As mentioned above, NPT considers these definitions of Market 13 and 14 as consistent with ESA's recommendation on relevant markets. In the further chapters of this document, as well as in the decision document, NPT will refer to Market 13 as the wholesale market of leased lines with capacities up to and including 8 Mbit/s, and Market 14 as the wholesale market of leased lines with capacities above 8 Mbit/s.

I Market 13 - Wholesale market of leased lines with capacities up to and including 8 Mbit/s

4 Description of the relevant product market

140. This product market covers all supply of leased lines up to and including 8 Mbit/s to wholesale customers, cf. Chapter 3.4 above. Leased line capacity refers to the permanently established capacity for signal transmission, cf. Electronic Communications Act § 1-5 subsection 6. Wholesale customers refers to providers of electronic communications networks and/or electronic communications service where the purchase of leased lines is included as an input for the production of such networks and/or services.

141. See Chapter 3 for other demarcations of this relevant product market.

142. Below is a description of selected wholesale products from Telenor and BaneTele offered in the market for leased lines up to and including 8 Mbit/s.

- Digital Punkt til Punkt [Digital Point-to-Point] (Telenor): Digital connection with dedicated bandwidth. This product is supplied with several different interfaces, and with capacities from 64 kbit/s to 10 Gbit/s. Capacities up to and including 8 Mbit/s will come under Market 13 according to the chosen market definition. Typical areas of use are:
 - Building data and telecommunications networks
 - Connecting data networks
 - Network solutions combining voice and data transfer
 - Terminating segments of leased lines for the Internet
- Digital Ethernet (Telenor): Digital point-to-point connection with dedicated bandwidth supplied with Ethernet interface. Supplied in capacities from 64 kbit/s to 1 Gbit/s. Capacities up to and including 8 Mbit/s will come under Market 13 according to the chosen market definition. Typical areas of use:
 - Accesses for IP-network
 - Connection of Local Area Networks (LAN)
 - Data transfer, e.g. typically “heavy” traffic such as high-capacity file transfer
- Digital Aksess [Digital Access] (Telenor): Fixed and dedicated digital connection between an end user address and closest access termination point on Telenor’s network where co-location can be offered. The product is supplied with a variety of interfaces, and with 64 kbit/s, n*64 kbit/s and 2 Mbit/s capacities. Typical areas of use:
 - Terminating segments for own infrastructure
 - Terminating segments for the Internet
- Samband for samtrafikk/Emulert Samband for Samtrafikk [Leased Lines for Interconnection/Emulated Leased Lines for Interconnection] (Telenor): Leased Lines for Interconnection are leased lines with fixed and dedicated connection between Telenor’s “Point of Interconnect” (POI) and the customer’s own access point. Supplied in capacities of 2

Mbit/s and is based on ordinary SDH/PDH technology. Emulated Leased Lines for Interconnection is a fixed connection between two of Telenor's interconnection areas. The only capacity available is 2 Mbit/s. Both ordinary and emulated interconnection lines are offered solely to customers who have signed an interconnection agreement with Telenor.

- Analog Telefontype Samband [Analogue Telephone Type Leased Line] (Telenor): Analogue leased line designed for transferring voice and small amounts of data.
- Leid Linje [Leased Line] (BaneTele): Equivalent product to Telenor's Digital Point-to-Point, but with capacities from 64 kbit/s to 2.5 Gbit/s. Capacities up to and including 8 Mbit/s will come under Market 13 according to the chosen market definition.

5 Definition of the relevant geographic market

143. In accordance with the Guidelines, paragraph 57, the geographic market may be defined as that area in which the relevant product is offered on approximately similar and sufficiently homogeneous conditions of competition. The degree of substitutability on both the supply and demand sides may be taken into consideration in the assessment of the geographic market and, as a part of such a substitutability assessment on the demand side, preferences and geographic purchase patterns should be taken into account. However, the Guidelines, paragraph 60, point out that geographic markets in the electronic communication sector have traditionally been determined by reference to the relevant network's area of coverage as well as the effective boundaries (jurisdiction) of the legal regulation of the market.

144. Further reference to Norway as a jurisdiction should therefore be taken to mean mainland Norway/Norwegian land territory, cf. the description of the applicability of the Electronic Communications Act in section 1.3.

145. Based on the above, a geographically relevant market can be defined as the area where substitution takes place. This means that a hypothetical monopolist in such an area will be able to increase the price above the level resulting from "effective competition". There is little doubt that it would be theoretically possible to define a very large number of geographic markets in Norway. With such a point of departure it would actually be possible to define each leased line as a separate relevant market. For example, a customer requiring a leased line to a certain address in Oslo cannot substitute such a connection with a leased line to any other address. However, it is obvious that such an approach would produce a very unclear picture and in practice a highly impractical number of relevant markets.

146. To NPT's knowledge, Telenor faces generally little competition in the wholesale market of leased lines with capacities up to and including 8 Mbit/s. While there is probably a certain element of competition in some of the largest cities, there is little or no competition in more outlying areas. NPT has not found it possible or appropriate to define one or more clearly defined areas where the competition in this market is uniform and noticeably different from the rest of the country, because even within those parts of the country where there seems to be some competition (as for example in some of the largest cities) there will be areas lacking competition.

147. Telenor is already required by previous regulation to offer nationwide leased line capacity up to and including 2 Mbit/s in all places with permanent year-round residents or businesses. For reasons including its universal service obligation, Telenor has rolled out a nationwide access network and is in practice capable of supplying wholesale segments of leased lines with capacities up to and including 8 Mbit/s to the entire country.

148. Based on the above, NPT has assessed that the most practical feasible solution will be to define one national market for wholesale segments of leased lines with capacities up to and including 8 Mbit/s, i.e. all of Norway.

149. Regarding international leased lines, NPT considers that the Norwegian part of such leased lines, i.e. from the border to the customers' Norwegian address, are included in the national market for wholesale segments of leased lines with capacities up to and including 8 Mbit/s.

6 Analysis of the market

6.1 Market share and profitability

6.1.1 Revenues and market share¹⁶

150. Assessment of market share is a natural starting point for analyses of significant market power (dominance), cf. the Guidelines, paragraph 76. A provider's market share should exceed 40 % before this factor indicates significant market power. If the market share is over 50 %, it would be exceptional were the provider not to be considered to have significant market power. As a rule providers with less than 25 % market share are not considered to have significant market power.

151. Market share in this market can be measured using several different criteria, such as revenue, volume (number of leased lines) or total capacity. NPT considers revenue to be the most appropriate criterion, *inter alia* because neither volume nor total capacity takes the length of the leased circuits into account. Revenue is also the criterion recommended by ESA (the Guidelines, paragraph 78).

152. The basis of calculation of market shares in this market includes both external and intra-group sales¹⁷. Following an overall assessment, NPT has concluded that so-called production lines for fixed telephony shall not be included in this wholesale market.

153. By the end of 2005, Telenor had a market share of about 85 % in this market, cf. figure 2. BaneTele had a market share of about 8 %, while other operators had a market share of around 7 %. This gives a clear indication that Telenor has significant market power in the market for wholesale segments of leased lines with

¹⁶ Cf. the Guidelines, paragraphs 76 and 77.

¹⁷ The intra-group sales only apply to parts of Telenor's internal deliveries of leased lines between business units. In principle, one could argue that also *internal use* of circuits (in addition to *internal sales*), both in Telenor and other suppliers in this market, should be included in the total market revenue, but since none of the operators have revenue figures for *internal use*, this has not been possible to obtain. However, in NPT's view, there is no reason to believe that the inclusion of internal use of leased circuits would affect the conclusions of this analysis. .

capacities up to and including 8 Mbit/s, cf. the Guidelines paragraph 78.

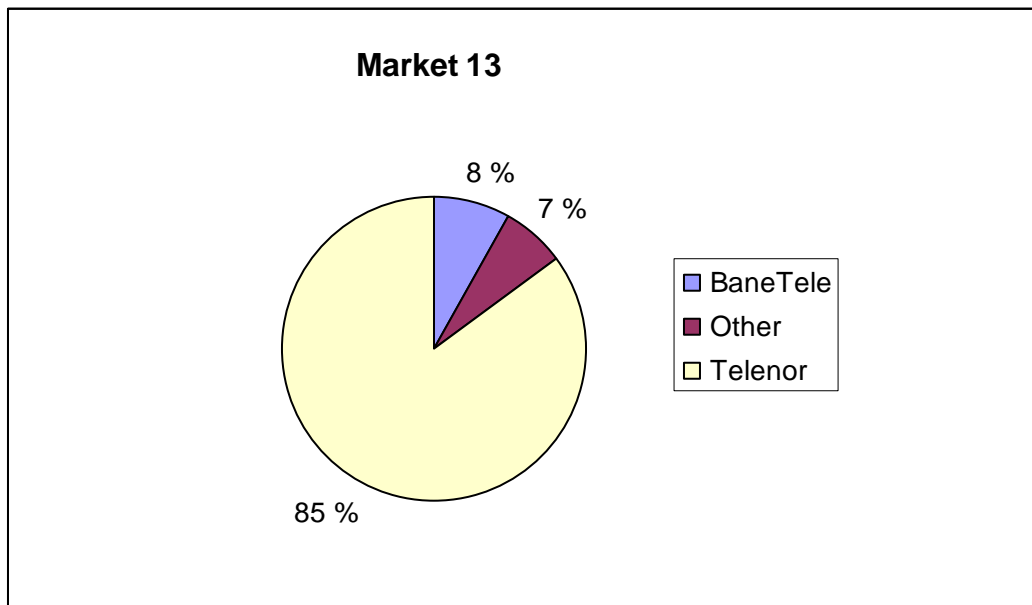


Figure 2: Market share (revenue) in the wholesale market for leased lines up to and including 8 Mbit/s in 2005. (Source: Telecom Statistics for 2005)

154. In connection with the Telecom Statistics for 2004, NPT obtained figures for wholesale revenue from leased lines, broken down by capacities. Before then wholesale and retail sales were reported together for each capacity. A change from 82 % to 85 % in Telenor's market share for wholesale leased lines up to and including 8 Mbit/s from 2004 to 2005 indicates that Telenor's market share in this wholesale market has been relatively stable in the last couple of years.

155. However, market share alone is insufficient to determine whether a provider has significant market power, but must be viewed in context with the other relevant assessment criteria, cf. the Guidelines, paragraph 79.

6.1.2 Profitability

156. If over a period of time an operator operates with a price that is substantially higher than the underlying costs and thereby achieves high profitability (compared with alternative investments), this may be an indicator of significant market power.

157. However, allowance must be made for the possibility that high profitability over a given period of time may be the result of other factors than market power, for example the benefits of efficiencies, innovation or accounting write-offs that do not necessarily correspond to the actual value reduction in invested capital.

158. Similarly, low profitability is not necessarily an argument against the operator being assessed as having significant market power, but may be a result of inefficient production.

159. To NPT's knowledge, none of the operators in this market publishes profitability figures specifically for this relevant market. In Telenor's case, profitability is reported per business area instead of per product in the financial accounts. Telenor's regulatory accounts (the ONP report) give profitability figures

for leased lines per capacity on the aggregate level, i.e. the sum total of retail and wholesale revenue.

160. Figures from Telenor's regulatory account for digital leased lines up to and including 2 Mbit/s show a 30 % return on capital employed in 2005. The corresponding figure for 2004 was 21 %. The report includes revenues for the total of the retail level and the wholesale level and indicates that Telenor has relatively high profitability for leased lines up to and including 2 Mbit/s in general. In addition, in the annex to the ONP report, Telenor has given figures for the retail and wholesale levels listed separately. These figures show high profitability also for the wholesale level isolated. The profitability figures for the wholesale level is, however, somewhat more uncertain than the figures for the profitability for the total of retail and wholesale, and these figures have not been audited.

161. The products in this relevant market are established products that have been marketed for a long time and must therefore be regarded as being in a mature phase of the product life-cycle. Such products will often show relatively better profitability than products that are in an earlier phase.

162. In a regulated market a dominant operator has fewer opportunities to set excessive prices. However, it is possible that the manner in which the cost orientation principle has been practiced has in practice given Telenor an opportunity to enjoy high profitability in certain areas of the leased lines market and lower profits in others. Even if the above capital return figures from Telenor's regulatory accounts cannot be used directly in a profitability assessment in this market since the return figures apply to overall retail and wholesale revenues, it gives an indication that Telenor has relatively good profits from leased lines up to and including 8 Mbit/s in the wholesale market. Seen in connection with Telenor's considerable market share in this market, NPT deems that profitability is a factor that suggests that Telenor has significant market power in this market.

6.2 Entry barriers¹⁸

163. Potential competition from new operators will normally affect a dominant operator's behaviour in the market, including pricing. Various forms of entry barriers may, however, weaken or remove the basis for potential competition. Possible entry barriers related to this relevant market are discussed below.¹⁹

6.2.1 Control of infrastructure not easily duplicated²⁰

164. If an operator controls infrastructure that is difficult to duplicate, and this infrastructure represents an important input in the relevant market, this could represent a substantial entry barrier to potential competitors.

165. Without taking a position on whether the relevant infrastructure in this market may be seen as an "essential facility" in relation to competition law, NPT has

¹⁸ Cf. the Guidelines, paragraph 81.

¹⁹ Among other places, entry barriers are discussed in the Guidelines, paragraph 81: "*In fact, the absence of barriers to entry deters, in principle, independent anti-competitive behaviour by an undertaking with a significant market share.*"

²⁰ The criterion corresponds to "*control of infrastructure not easily duplicated*" in the Guidelines, paragraph 79.

assessed whether control of infrastructure not easily duplicated can be seen as an entry barrier in this relevant market.

166. In many cases will a leased lines offered in this market consist of at least one customer access. An access network will therefore usually be a prerequisite to be able to supply the lines that are demanded in this market. Operators who wish to offer leased lines up to and including 8 Mbit/s in the wholesale market have in practice a choice between basing their services on Operatøraksess (LLU) from Telenor (possibly dark fibre) or building their own access network. It is therefore not the case that potential operators must necessarily build a separate complete physical network to compete with Telenor.

167. Operators who choose to base their services on Operatøraksess (LLU) must (in the same way as Telenor) invest in line equipment to be able to offer leased lines. This is largely standard “off the shelf” equipment and is thus (in a technical sense) not difficult to duplicate.

168. Technically, it is also probably fully possible to establish a physical infrastructure parallel to Telenor’s cable infrastructure for terminating segments, in order to offer whole leased lines up to and including 8 Mbit/s. In other words, Telenor does not have control over infrastructure that is impossible to duplicate in technical terms. In practice, however, establishment of an adequate alternative to Telenor’s nationwide access network would require such an investment of resources and time that there are grounds to assume that Telenor’s nationwide access network is difficult, if not impossible, to duplicate. New access technologies may change this situation, cf. the assessment of potential competition in section 6.3. Telenor’s control of the nationwide access network is still deemed to constitute a significant entry barrier in this relevant market in the near future, a fact that consolidates Telenor’s position in this relevant market.

6.2.2 Sunk costs

169. Unrecoverable fixed costs (“sunk costs”) are fixed costs attributable to an irreversible investment, i.e. a provider cannot expect to recover the investment once it is made, for example through the sale of the investment item, if the provider wishes to exit the market. Unrecoverable fixed costs mean that a potential new entrant faces higher decision-relevant costs than the (or those) operator(s) already established. This cost difference comprises an entry barrier to the potential entrant.

170. If a market requires high sunk costs, the established operator may have an incentive to make a more extensive investment than it otherwise would have done. This can send a signal to potential new entrant that it would not be profitable to attempt to enter the market. Sunk costs can therefore give rise to strategic behaviour among the established operators, further raising the entry barrier.

171. Telenor is the only operator to own a nationwide access network, which has taken decades to construct. As mentioned above, an access network is usually a prerequisite to be able to supply the leased lines that are demanded in this market. There is little doubt that it would be extremely resource and cost-intensive for a potential competitor to establish a competing access network on an equally large scale. There is furthermore little doubt that such an investment would largely have to be viewed as irreversible and thereby represents an entry barrier as described above. To compete with Telenor or other established operators on leased lines up to and including 8 Mbit/s, the potential new entrant does not strictly have to establish

its own physical network – since Telenor is obliged to offer access to the fixed access network, i.e. LLU. Even so, a potential new entrant would have to invest in equipment to be able to offer leased lines. Such investments would also have to be largely regarded as irreversible, because to NPT's knowledge, the second-hand market for such equipment is modest. Telenor's obligation to provide access to the fixed access network (LLU) will thus reduce the size of the irreversible investments.

172. It is further worth noting that a new entrant is free to choose newer and more cost effective technology than Telenor's copper-based access network²¹, and undertake investments in areas where the profit potential is greatest. This is an advantage that potential new entrants have over Telenor and can thus be viewed as reducing some of the asymmetry they face in relation to Telenor.

173. Intangible investments can also be unrecoverable and represent an entry barrier. Investment in brandbuilding (for example through advertising and other marketing) is an example of such investments. Another example is costs relating to research and development (R&D).

174. In NPT's view, costs relating to advertising and brandbuilding in the wholesale leased lines markets do not represent an entry barrier. This is because customers in the wholesale market are largely competitors of Telenor, and experience shows that they would basically prefer to choose a supplier other than Telenor if possible. A potential competitor in the wholesale markets for leased lines will therefore expect to devote far fewer resources on advertising and marketing than would be the case in the retail market.

175. With respect to R&D-related costs, NPT is of the opinion that development of new services in this relevant market does not constitute any appreciable entry barrier because the products in this market are largely standardised and relatively homogeneous.

176. After an overall assessment of the above factors, NPT finds that sunk costs constitute a significant entry barrier in this relevant market, and that it is particularly the costs relating to building access networks that represent the entry barrier in this regard.

6.2.3 Economies of scale²² and scope²³

177. Economies of scale exist when an increase in production brings a fall in average unit cost. This is characteristic of production based on technology with relatively high fixed costs and low variable costs.

178. Economies of scope are reductions in average unit cost when more than one service is produced using common means of production, for example common infrastructure or common administrative systems.

179. Economies of scale and scope can both work as entry barriers in relation to new potential operators and as a competitive advantage in regard to established competitors in the market.

²¹ See section 6.3 on potential competition and innovation.

²² The criterion corresponds to "economies of scale" in the Guidelines, paragraph 79.

²³ The criterion corresponds to "economies of scope" in the Guidelines, paragraph 79.

180. There are undoubtedly significant economies of scale associated with establishing leased lines up to and including 8 Mbit/s, in particular in access networks. For example, in a ground-based access network, it is possible to utilise conveyance routes in a far better manner if many end users are connected to the network in a given geographic area.

181. Up to now Telenor has been under an obligation to provide universal service throughout the country and thus has nationwide leased lines services up to and including 2 Mbit/s circuits. NPT finds that Telenor has significant economies of scale in this relevant market as a result of its nationwide services. None of the potential new entrants in this market is expected to achieve sufficient “critical mass” to exploit economies of scale in a comparable manner.

182. Furthermore, it is assumed that given its broad portfolio of products, Telenor enjoys greater economies of scope than its competitors. For example, there is reason to believe that Telenor enjoys certain economies of scope related to its nationwide telephony and leased line services.

183. Based on the above, NPT finds that economies of scale and scope constitute a significant entry barrier in this relevant market.

6.2.4 Access to financial resources²⁴

184. Access to financial resources is important to an operator’s capacity to enter a market. This is of particular significance in markets that require major initial investment (high entry costs). Differences between operators relating to access to financial resources may comprise an entry barrier. In addition, everything else being equal, it will be expected that an operator with market power and good financial standing will be less exposed to competition than an operator with market power without good access to financial resources. Besides, an operator with market power and good access to financial resources will be better able to defend its market share if new competitors enter the market than an operator with market power without good access to financial resources.

185. It would require extensive capital to establish an adequate alternative to Telenor’s physical infrastructure in order to establish nationwide services for leased lines up to and including 8 Mbit/s. However, there are generally no grounds for claiming that Telenor has better access to financial resources than potential competitors in this relevant market. Telenor has a better financial position than most existing competitors in the relevant market. On the other hand, highly capitalised potential challengers to Telenor do exist.

186. On this basis, it is in NPT’s view that access to financial resources at the present time does not constitute any entry barrier in the market for leased lines up to and including 8 Mbit/s.

6.2.5 Access to distribution and sales channels²⁵

187. In markets in which the established operators have a well-developed distribution and sales network this may function as an entry barrier to potential new

²⁴ The criterion corresponds to “easy or privileged access to capital markets/financial resources” in the Guidelines, paragraph 79.

²⁵ The criterion corresponds to “a highly developed distribution and sales network” in the Guidelines, paragraph 79.

operators. This applies in particular in markets in which there are major costs associated with establishing distribution and sales channels, or where the established operators have concluded exclusive agreements with the largest/most important distribution channels in the market.

188. It is NPT's assessment that a lack of access to distribution and sales channels will primarily be a problem in markets where the demand side consists of households (residential market), where in certain cases it can be difficult to gain access to important sales channels such as large nationwide chain stores. The customers in this relevant market consist of operators who themselves are providers of electronic networks and services. Such operators presumably have a good overview of the market and will make choices based on their knowledge of it. In NPT's opinion, it is consequently highly unlikely that potential new entrants in this relevant market will not set up operations because they consider it difficult to establish sales channels.

189. Based on the above, NPT concludes that access to distribution and sales channels does not represent an entry barrier in this relevant market.

6.2.6 Barriers to expansion²⁶

190. A market with large growth potential is as a rule more attractive to potential new operators than markets in which the total units sold and/or the number of customers has stagnated or is on the way down (known as "mature" markets). Operators considering entry into a "mature" market must generally aim to capture customers from the established operators. If there are barriers to growth in a market, these may therefore be looked upon as a possible entry barrier.

191. The market for leased lines up to and including 8 Mbit/s can be viewed as a mature market, where the number of lines or revenue cannot be expected to grow to any great extent in the near future. The main reason for this is the growth of DSL-based products. This implies that any new providers in this market must largely base their operations on capturing customers from existing providers, which, overall, makes it more difficult for new providers to enter the market.

192. Based on the above, NPT finds that barriers to expansion constitute a slight entry barrier in this relevant market.

6.2.7 Regulatory entry barriers

193. Regulatory entry barriers exist when market access is limited by regulatory conditions, for example official licences, resource restrictions or restrictions in regard to health, environment or safety (direct regulatory restrictions). Furthermore, various forms of price control may also have entry-detering effects, cf. recital 15 of the Recommendation.

194. Uncertainty regarding future regulation can function as an entry barrier because uncertainty in itself can yield lower expected profitability at market entry and can thereby lead to potential challengers either dropping or delaying plans to enter the market. This aspect will naturally be particularly important during a period of new regulations. Regulatory uncertainty can, however, be reduced if the regulatory authority clearly informs the market operators about how the regulations

²⁶ The criterion corresponds to "barriers to expansion" in the Guidelines, paragraph 79.

will be practised and is consistent at the same time in the actual implementation of these rules.

195. The most important regulatory entry barrier in this market, namely Telenor's exclusive right to offer leased lines, was removed as part of the liberalisation of the telecoms market.

196. As the sole operator, Telenor is under an obligation to supply the minimum set of leased lines. This means that Telenor has had to establish a nationwide infrastructure for leased line services. The certainty that Telenor has a nationwide infrastructure, and in principle is capable of supplying leased lines according to the specified minimum set to practically all addresses in the entire country, may in itself represent an entry barrier to potential new entrants in this market. The reason for this is that Telenor's universal service obligation can function as a signal to the rest of the market – and to potential operators – that Telenor will be in the market regardless. Due to this obligation Telenor cannot simply allow commercial considerations to dictate with respect to the decision to operate in a certain area. This means that a potential new entrant could conceivably drop plans to enter an area due to Telenor's universal service obligation.

197. Price controls, or expectations of future price controls, can function as an entry barrier in the market for electronic communication in general, including this relevant market. Furthermore, price controls, or expectations of future price controls, can affect the behaviour of operators already in the market.

198. If it is the case that a potential new operator in the market for leased lines up to and including 8 Mbit/s believes it is possible that it will be subject to price controls, if, for example, this operator is designated by the regulatory authorities as having significant market power in this market (or in a limited geographic area), this will affect expected future earnings and will thus act as a potential entry barrier. Such an expectation, or fear of, being subject to obligations as an undertaking with significant market power can affect the degree to which existing operators plan to expand in the market. However, NPT believes that there are few potential new operators in this market that attach much weight to this factor. This is due to the fact that it would be difficult for a new operator to gain status as an undertaking with significant market power in a market like this one, with high entry barriers due to infrastructure that is not easily duplicated.

199. Expectations of price controls being imposed on the dominant provider(s) can also act as an entry barrier if potential new entrants regard the regulated price as being, or potentially being, so low that it would be impossible to compete in the market. In this relevant market, expectations of strict controls being imposed on Telenor's prices may cause competitors to refuse to enter the market at all or particular sectors of it.

200. Other forms of regulation (than price controls) may also affect the possibilities of entering the relevant market. Obligations regarding co-location and access to networks or network elements in other markets could have a positive effect on the entry possibilities in this relevant market. For example, the obligation regarding access to Telenor's paired cable network (i.e. LLU) may encourage potential competitors to enter the market.

201. Based on the above, NPT finds that uncertainty about future regulation may represent a certain entry barrier in the market.

6.3 Potential competition and innovation

202. As a rule, in markets with a high degree of innovation the opportunity to exercise market power will be more limited than in markets with little innovation. Technological development may therefore be of significance for potential competition in the market. Innovation resulting from technological development can therefore contribute to weakening an operator's position in the market in relation to potential competitors.

203. There is reason to believe that innovation resulting from technological and product development can serve to weaken Telenor's position in this relevant market. For example, in the future new products based on xDSL technology will still be a potential competitor to digital leased lines for connection to the Internet and realisation of VPN solutions. The same applies to the development of products based on radio solutions, for example WLAN or wireless radio connections.

204. However, there is one fundamental and important input that probably will not be subject to any significant degree of innovation, namely activities relating to the establishment of the physical infrastructure, such as the construction of conveyance routes. For the foreseeable future, the construction of alternative physical networks will, with the exception of radio solutions, entail physical trenching of fibre and ducts, building of cable paths, etc.

205. Based on the above, NPT finds that innovation and technological development will contribute only a limited amount of potential competition in this relevant market.

6.4 Provider behaviour

6.4.1 Bundling of products/product differentiation²⁷

206. A high degree of product differentiation, or heterogeneous products, can create customer loyalty, and make it difficult for competitors to enter the market, as opposed to where products are more homogeneous. Strong brand names will have a corresponding effect.

207. Telenor has nationwide leased line services in the majority of interfaces, different capacities, multi-access, etc. This means that Telenor has a broader product spectrum than its competitors and potential competitors, and has the opportunity to be a total supplier in the wholesalemekets for leased lines in the same way as in the retail leased lines market. In NPT's view, this can serve to strengthen Telenor's market power to a certain extent in this relevant market.

208. Bundling of products is a variation of product differentiation. An operator with market power in a relevant market can bundle (link) services or products in this market with services or products in another market, so that the operator can provide a package of services/products that are differentiated from the competitors' offering and that the competitors have a limited opportunity to copy. In this way bundling of services/products can contribute to market power in one market creating competitive

²⁷ The criterion corresponds to "product/services diversification (e.g. bundled products or services)" in the Guidelines, paragraph 79.

advantage in another market. Such competitive advantage may be relevant to the assessment of significant market power in the latter market.

209. An example of product bundling which involves wholesale leased lines up to and including 8 Mbit/s is Telenor's offer of Emulated Leased Lines for Interconnection, which are only offered to wholesale customers that have entered into an interconnection agreement. To NPT's knowledge there is little other product bundling taking place between Telenor's offer of leased lines up to and including 8 Mbit/s and products in other markets that is serving to strengthen Telenor's market power in this market.

210. On the basis of the above NPT has concluded that bundling of products has limited effect on strengthening Telenor's market power in this relevant market.

6.4.2 Leverage of significant market power into closely related markets²⁸

211. Significant market power in one market may help to strengthen a provider's market power in a closely related market. Such leverage of market power may be vertical, i.e. between a wholesale market and a retail market, or horizontal, i.e. between various product markets at the same level in the value chain.

6.4.2.1 Vertical integration²⁹

212. A vertically integrated provider is characterised by the provider's activities comprising more than one link in the relevant value chain. Typically a vertically integrated provider will be present both in infrastructure markets ("upstream markets") and end user markets ("downstream markets"). Through a strong position in the "upstream market" vertically integrated providers can try to keep competitors in the "downstream market" out of this market, for example through the pricing of products in the "upstream market" or by not offering products in the "upstream market" to competing providers in the "downstream market" at all. In this way a vertically integrated provider with a strong position in the "upstream market" can strengthen its position in the "downstream market".

213. Telenor is vertically integrated in the leased lines markets. The company owns both an extensive nationwide trunk network and an access network reaching practically all permanent addresses throughout the country, which comprise the basis of its wholesale services. In addition, the company has a service provider division that supplies communications solutions to *inter alia* the business market where leased lines are part of a broad product spectrum.

214. In general, vertical integration can in many ways have a streamlining effect when the integrated provider internalises several levels in the value chain in the same company or group, thereby realising different efficiency gains such as better use of support systems, more coordinated planning of production and lower transaction costs.

215. As mentioned above, a vertically integrated company will have the opportunity to exclude competitors from the retail market if the company has a strong position in the wholesale market. However, since the relevant market analysed here is a

²⁸ Cf. the Guidelines, paragraph 84.

²⁹ The criterion corresponds to "vertical integration" in the Guidelines, paragraph 79.

wholesale market, the fact that Telenor is vertically integrated cannot by itself serve to strengthen Telenor's position in this relevant market.

6.4.2.2 Horizontal integration

216. A provider is horizontally integrated when through ownership it has control of different parallel infrastructures that may be used to supply competing products to the end user. In this case the provider can strengthen its market power in a market by preventing competition from an alternative infrastructure over which it has control.

217. In addition to owning and operating the traditional telephone network, Telenor is a major operator in alternative electronic communication networks, including cable TV systems, other broadcasting networks and wireless access networks (for example WLANs). There is reason to believe that Telenor's ownership of cable TV systems in particular (through the company Canal Digital Norge AS) and a future digital terrestrial broadcasting network (through Norkring AS) may serve to weaken competition from alternative infrastructures in this relevant market, thus strengthening to a certain extent Telenor's market power in the leased lines markets, including the market for leased lines up to and including 8 Mbit/s at the wholesale level.

6.4.3 Price development

218. The development of prices over time may indicate something about the degree of competition, possibly the degree of potential competition, and can thereby provide an indication of whether a provider has market power.

219. NPT does not have a separate overview of the price developments in recent years for wholesale leased lines up to and including 8 Mbit/s. However, overall prices of leased lines have been trending downwards over the past five years.

220. NPT received complaints from BaneTele AS (BaneTele), TDC Norge AS (TDC Norge), Tele2 AS (Tele 2) and NetCom AS (NetCom) after Telenor introduced a new price structure for leased lines in the summer of 2002. At that time, Telenor stopped distinguishing between terminating and trunk elements in the price structure. A common theme of the complaints was that they claimed the introduction of a new price structure meant that Telenor's competitors in the wholesale market encountered higher prices for terminating segments of leased lines, while prices of trunk segments – which presumably are more exposed to competition – had fallen.

221. In general, Telenor's prices for leased lines have been subject to the obligation of cost orientation as well as a price ceiling set by the Ministry of Transport and Communications. This makes it less interesting to look at price developments as an indicator of competition and market power.

222. In summary, NPT does not have sufficient information on price developments in this relevant market to be able to conclude that price developments in the market indicate that Telenor has significant market power. Furthermore, it is NPT's view that since prices have been regulated, price development per se is less suitable as an indicator of market power.

6.5 Conditions on the demand side

6.5.1 Market power/countervailing buying power³⁰

223. The presence of customers with bargaining power can restrict a provider's opportunity to behave independently in the market. Such market power on the demand side may be the result of a customer's size, purchasing volume or the customer having something to offer, for example better market access to other markets.

224. Customers in the wholesale market are themselves providers of electronic networks and/or services. Several of these customers purchase considerable volumes, and in general the demand side in the wholesale leased lines markets is more concentrated than the case is in the equivalent retail market. However, to NPT's knowledge, there is no single customer or group of individual customers in this market who purchase a sufficiently large volume for the customer or group of customers to achieve negotiating power in a manner that will curb possible significant market power on the supply side. Furthermore, there is no single customer or group of individual customers in the market who can offer market access in other markets in a way that can reduce market power on the supply side in this relevant market. However, it is not inconceivable that a potential new entrant can offer market access outside Norway and thus have a certain amount of negotiating strength vis-à-vis Telenor in the market for leased lines up to and including 8 Mbit/s in Norway.

225. Based on the above, NPT has concluded that it is unlikely that countervailing buying power in this market could appreciably reduce Telenor's possible significant market power.

6.5.2 Customers' freedom of choice and possible costs of switching/lock-in effects

226. Restrictions or costs associated with the end user switching providers increase the opportunity for a provider with market power to behave independently in the market. Such restrictions may be of a practical, technical or financial nature, or may be a result of the end user having greater confidence in existing and well-established operators in preference to new operators and being unwilling to take the risk that a switch could involve.

227. The price lists for Telenor's digital leased lines³¹ regulate prices, lock-in periods and discounts for leased lines. The minimum lease period for lines with capacities up to and including 2 Mbit/s is 3 months. For lines above 2 Mbit/s the minimum lease is one year. The notice period for leased lines with capacities up to and including 2 Mbit/s is 1 month. For capacities above 2 Mbit/s the notice period is three months. If the leased lines are cancelled before the minimum lease has expired, an amount equivalent to the remainder of the minimum lease will be charged.

228. The price list also contains discounts related to the lock-in period for purchasing leased lines, the so-called Contract Period Discount, which is conditional

³⁰ The criterion corresponds to "absence of or low countervailing buying power" in the Guidelines, paragraph 79.

³¹ See Telenor's price list on the Web at <http://www.jara.no>

on a two, three or five-year lock-in period for each circuit. The contract period discount increases in proportion to how long (two years - 5 % discount, three years - 10 % discount or five years - 15 % discount) the purchaser contracts to lease leased lines. Compensation must be paid to Telenor in the event of breach of contract. Breach of contract includes termination of subscription and all subscription-related changes, with the exception of moving an end point, provided the customer covers Telenor's costs in excess of the standard relocation price, or capacity changes. With two-year contracts, the compensation due Telenor is half of the remaining lease amount. With three or five-year contracts, the compensation due Telenor is one-third of the remaining lease amount.

229. With a minimum annual purchase of NOK 5 million worth of leased lines (before contract period discounts), it is also possible to obtain so-called volume discounts. The discount for NOK 5 to 10 million per year is 5 %. The discounts are set on a sliding scale. The maximum volume discount is 16 % for purchases exceeding NOK 60 million per year. Discounts are calculated only on current rental.

230. The above rates apply to Telenor's Standard Contract³². Customers with annual purchases exceeding NOK 1 million have the alternative of choosing the discount structures in Telenor's Distributor Contract³³. The distributor discount in this contract applies instead of the Standard Contract's volume discounts. The distributor discount is 4 % on annual purchases between NOK 1 and 2 million, increasing to 5 % between NOK 2 and 5 million and 7 % between NOK 5 and 10 million. The maximum discount of 10 % is achieved when annual purchases exceed NOK 10 million.

231. The final discount option on purchases of leased lines is available under Telenor's Capacity Contract. To qualify for this contract, it is necessary to purchase capacity for a minimum of NOK 15 million per year (calculated before the contract discount). The discount will then be 15 % for up to NOK 15 million, 19 % for NOK 15 to 20 million, 21 % for NOK 20 to 40 million, 25 % for NOK 40 to 60 million and 26 % for purchases in excess of NOK 60 million per 12-month period. A prerequisite for achieving such contract discounts is that as long as the agreement runs (including the notice period) the customer must purchase services from Telenor every 12-month period equal to a minimum of 80 % of the customer's purchases of discounted services in the previous 12-month period. When the contract is signed, the so-called Sales Requirement is calculated on the basis of the customer's purchases of discounted services in the past 12 months. If the customer purchases discounted services from Telenor for less than the Sales Requirement, the customer is obliged to pay Telenor compensation of 30 % of the difference between actual purchases and the Sales Requirement for the relevant 12-month period.

232. Minimum contract terms and discount structures combined with relatively high prices for establishing such leased circuits imply that there is a certain lock-in effect that can hinder competition, since the alternative of connecting to another provider after establishing connections from Telenor would have to be significantly cheaper to make it worthwhile for customers to switch.

233. On the basis of the above, it is NPT's assessment that Telenor's lock-in periods and discount schemes for leased lines can have a certain lock-in effect, and can

³² <http://www.jara.no>

³³ <http://www.jara.no>

therefore serve to consolidate Telenor's possible significant market power in this market.

6.5.3 Customers' access to information

234. For customers to be able to make effective choices between providers in a market they must have access to information that makes it possible to compare the various offers. Complicated price structures and various bonus and discount schemes can restrict the opportunities for effective end user choice and may contribute to strengthening an already dominant operator's position in the market.

235. Since Telenor has been obliged to draw up public price lists for leased line services, cf. Public Telecommunications Networks and Services Regulations § 3-5, it has historically not been a problem for customers to gain access to information from Telenor.

236. NPT deems it unlikely that customers in the market for leased lines up to and including 8 Mbit/s lack information on prices and services to an extent that can strengthen Telenor's position in the market.

7 Assessment of significant market power and designation of provider(s) with significant market power

237. The assessment of significant market power builds on the Guidelines, section 3.1, and is based on the different criteria discussed in the market analysis in Chapter 6 above. In accordance with the Guidelines, paragraph 76, and with a starting point in the existing market conditions, NPT has based the assessment of significant market power on a forward-looking market analysis.

238. The Electronic Communications Act § 3-1, cf. the Framework Directive, Article 14 (2), states that:

“A provider has significant market power when the provider individually or jointly with others has economic strength in a relevant market affording the provider the power to behave an appreciable extent independently of competitors, customers and consumers.”

239. This is an important starting point for the assessment of significant market power. The same is true of the amplification in the Guidelines, paragraph 74, that in *ex ante* assessments of market power it must be assessed in particular whether a provider's strength in the market makes it possible to implement price increases without this causing a significant sales/revenue reduction for this provider.

240. For the sake of clarity NPT wishes to emphasise that it is significant market power that is the relevant assessment subject and not anti-competitive misuse of significant market power. In assessing whether a provider has significant market power the fact whether any market power/dominance is actually misused or not is not decisive. This does not however mean that a provider's behaviour in the market is irrelevant to the assessment of significant market power. Even if structural factors carry the most weight in the SMP assessment, behaviour that contributes to creating

or maintaining competitive advantage for a provider who already has a dominant position in the market may imply a strengthening of this provider's market power.

241. In this relevant market Telenor has a market share of about 85 %, measured by revenues. At the same time, none of Telenor's competitors has a market share of over 8 %. According to the Guidelines, paragraph 76, this provides a clear indication that Telenor has significant market power in this market.

242. Various forms of entry barriers exist in this market. In NPT's opinion, it is particularly Telenor's control of a nationwide access network, as well as considerable sunk fixed costs and economies of scale and scope that are serving to strengthen the conclusion that Telenor has significant market power.

243. Even though technological advances and development of new products may eventually cause changes in the competitive situation, it is NPT's assessment that such developments at the present time indicate that there will be only limited changes in the competitive situation in this market.

244. Based on the discussions concerning provider behaviour and above demand-side conditions, NPT has concluded that these criteria taken together do not provide grounds to affect a possible conclusion that Telenor has significant market power.

245. Following an overall assessment, NPT has determined that Telenor ASA has significant market power (single dominance) in the wholesale market for leased lines up to and including 8 Mbit/s.

II. Market 14 - The wholesale market for leased lines with capacities above 8 Mbit/s

8 Description of the relevant product market

246. This productmarket covers all supply of leased lines above 8 Mbit/s to wholesale customers, cf. section 3.4 above. Dark fibre and optical channels are included in the market, cf. section 3.5 above. Leased line capacity refers to the permanently established capacity for signal transmission, cf. Electronic Communications Act § 1-5 subsection 6. Wholesale customers refers to providers of electronic communications networks and/or electronic communications service where the purchase of leased lines is included as an input for the production of such networks and/or services.

247. The market covers leased lines produced on all available technologies and transmission media.

248. See Chapter 3 for other definitions of this relevant product market.

249. Below is a description of selected wholesale products from Telenor and BaneTele offered in the market for leased lines above 8 Mbit/s.

- Digital Punkt til Punkt [Digital Point-to-Point] (Telenor): Digital connection with dedicated bandwidth. This product is supplied with several different interfaces, and with capacities from 64 kbit/s to 10 Gbit/s. Capacities above 8 Mbit/s will come under this relevant wholesale market according to the chosen market definition. Typical areas of use are:
 - Building data and telecommunications networks
 - Connecting data networks
 - Network solutions combining voice and data transfer
 - Terminating segments of leased lines for the Internet
- Digital Ethernet (Telenor): Digital point-to-point connection with dedicated bandwidth supplied with Ethernet interface. This product is supplied in capacities from 64 kbit/s to 1 Gbit/s. Capacities above 8 Mbit/s will come under this relevant wholesale market according to the chosen market definition. Typical areas of use:
 - Accesses for IP-network
 - Connection of Local Area Networks (LAN)
 - Data transfer, e.g. typically “heavy” traffic such as high-capacity file transfer
- Optisk kanal [Optical Channel] (Telenor): Leased optical channel in a WDM system (wave division multiplexing) on a fibre connection without switching through Telenor’s transmission systems. Supplied between Telenor’s largest central offices, and any type of transport protocol for transmission can be used within the product’s capacity range (140 Mbit/s until 2.5 Gbit/s), dependent of product class. Typical areas of use:

- Connecting internal networks where the customer's own network equipment carries out the transmission and control
 - Data transmission where the transport protocols are not included in the traditional transmission hierarchy
- Mørk fiber [Dark Fibre] (Telenor): Fibre optical connection between two points without any form of service or switching through Telenor's optical transmission systems. The wholesale customer must himself own the equipment in each end of the cable, and may freely choose transport protocol and transmission capacity. Typical areas of use:
 - Dedicated circuit for connecting customers to broadband networks
 - Connecting internal networks where the customer's own network equipment carries out the transmission and control
 - Data transmission where the transport protocols are not included in the traditional transmission hierarchy
 - Leid Linje [Leased Line] (BaneTele): Equivalent product to Telenor's Digital Point-to-Point, but with capacities from 64 kbit/s to 2.5 Gbit/s. Capacities above 8 Mbit/s will come under this relevant wholesale market according to the chosen market definition.
 - Ehternet Transport SDH (BaneTele): Fixed dedicated connection with an Ethernet interface. Capacities from 50 Mbit/s to 1 Gbit/s. Comparable to Telenor's product Digital Ethernet.
 - Bølgelengde [Wave Length] (BaneTele): Comparable to Telenor's product Optical channel, but with the capacity alternatives 2.5 Gbit/s and 10 Gbit/s.
 - Mørk fiber [Dark Fibre] (BaneTele); Comparable to Telenor's product Dark Fibre.

9 Definition of the relevant geographic market

250. In accordance with the Guidelines, paragraph 57, the geographic market may be defined as that area in which the relevant product is offered on approximately similar and sufficiently homogeneous conditions of competition. The degree of substitutability on both the supply and demand sides may be taken into consideration in the assessment of the geographic market and, as a part of such a substitutability assessment on the demand side, preferences and geographic purchase patterns should be taken into account. However, the Guidelines, paragraph 60, point out that geographic markets in the electronic communication sector have traditionally been determined by reference to the relevant network's area of coverage as well as the effective boundaries (jurisdiction) of the legal regulation of the market.

251. Further reference to Norway as a jurisdiction should therefore be taken to mean mainland Norway/Norwegian land territory, cf. the description of the applicability of the Electronic Communications Act in section 1.3.

252. Based on the above, a geographically relevant market can be defined as the area where substitution takes place. This means that a hypothetical monopolist in such an area will be able to increase the price above the level resulting from “effective competition”. There is little doubt that it would be theoretically possible to define a very large number of geographic markets in Norway. With such a point of departure it would actually be possible to define each physical connection as a separate relevant market. A customer requiring a connection between for instance Oslo and Bergen cannot substitute such a circuit with a connection between Oslo and Stavanger. However, it is obvious that such an approach would produce a very unclear picture and in practice a highly impractical number of relevant markets.

253. The wholesale market for leased lines with capacities above 8 Mbit/s is more exposed to competition than is the case with the wholesale market for leased lines with capacities up to and including 8 Mbit/s. In NPT’s opinion, there is a relatively high degree of competition in the delivery of high capacity leased lines in and between several of the largest cities in the country. However, in other parts of the country competition in this market is more limited. NPT has not found it possible or appropriate to define one or more clearly demarcated areas where competition is uniform and noticeably different than in the rest of the country.

254. NPT has consequently assessed that the most practical feasible solution will be to define one national market for leased lines above 8 Mbit/s on the wholesale level, i.e. all of Norway.

255. In the case of international leased lines, it is NPT’s assessment that the Norwegian portion of international leased lines above 8 Mbit/s, i.e. from the border to the customer’s Norwegian address, is covered by the national market for leased lines above 8 Mbit/s.

10 Analysis of the market

10.1 Market share and profitability

10.1.1 Revenues and market share³⁴

256. Assessment of market share is a natural starting point for analyses of significant market power (dominance), cf. the Guidelines, paragraph 76. A provider’s market share should exceed 40 % before this factor indicates significant market power. If the market share is over 50 %, it would be exceptional were the provider not to be considered to have significant market power. As a rule providers with less than 25 % market share are not considered to have significant market power.

257. Market share in this market can be measured using several different criteria, such as revenue, volume (number of leased lines) or total capacity. NPT considers revenue to be the most appropriate criterion, *inter alia* because neither volume nor

³⁴ Cf. the Guidelines, paragraphs 76 and 77.

total capacity takes the length of the leased circuits into account. Revenue is also the criterion recommended by ESA (the Guidelines, paragraph 78).

258. The basis of calculation of market shares in this market includes both external and intra-group sales³⁵. Following an overall assessment, NPT has concluded that so-called production lines for fixed telephony shall not be included in this wholesale market.

259. By the end of 2005, Telenor had a market share of about 66 % in this market, cf. figure 3. BaneTele had a market share of about 29 %. All other providers in this market each accounted for less than 2 % of the market. This gives an indication that Telenor has significant market power in the market for leased lines above 8 Mbit/s on the wholesale level, cf. the Guidelines paragraph 78.

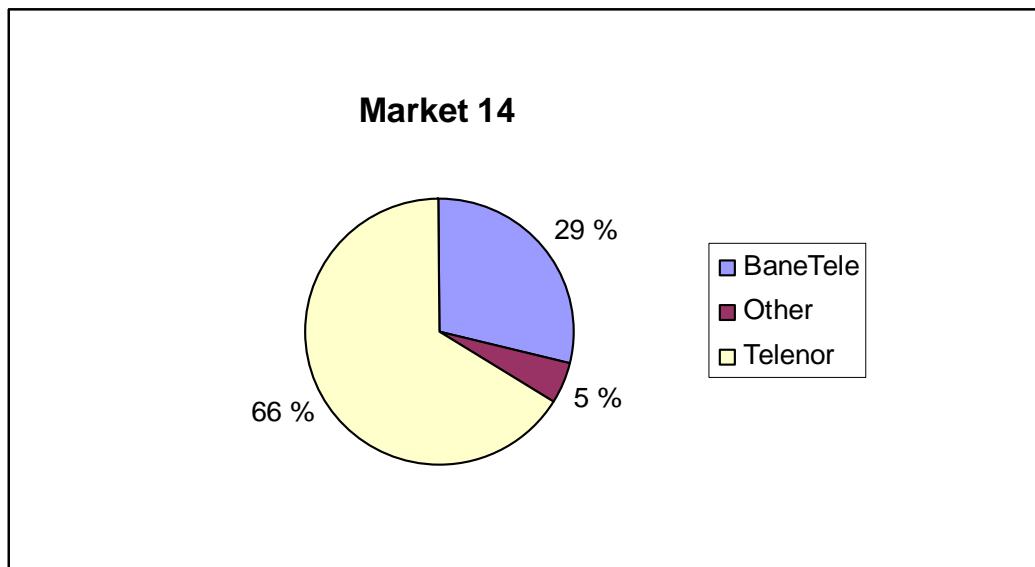


Figure 3: Market share (revenue) in the wholesale market for leased lines above 8 Mbit/s (Source: Telecom Statistics for 2005)

260. In connection with the Telecom Statistics for 2004, NPT obtained figures for wholesale revenue from leased lines, broken down by capacities. Before then wholesale and retail sales were reported together for each capacity. A change from 56 % to 66 % in Telenor's market share for wholesale leased lines above 8 Mbit/s from 2004 to 2005 indicates that Telenor has strengthened its position in this wholesale market in the last couple of years.

261. The competitive situation in the wholesale market for leased lines above 8 Mbit/s is furthermore somewhat different for short and long-distance leased lines. Figures that NPT has obtained from the market operators show for example that Telenor's market share for such leased lines under 10 km are about 84 %, while the corresponding market share over 10 km is about 60 %. This indicates that it is especially on the long distance circuits that this market has developed towards

The intra-group sales only apply to parts of Telenor's internal deliveries of leased lines between business units. In principle, one could argue that also *internal use* of circuits (in addition to *internal sales*), both in Telenor and other suppliers in this market, should be included in the total market revenue, but since none of the operators have revenue figures for *internal use*, this has not been possible to obtain. However, in NPT's view, there is no reason to believe that the inclusion of *internal use* of leased circuits would affect the conclusions of this analysis.

competition. Telenor's market shares do not, on the other hand, indicate that the company doesn't have significant market power also for the long distance circuits

262. However, market share alone is insufficient to determine whether a provider has significant market power, but must be viewed in context with the other relevant assessment criteria, cf. the Guidelines, paragraph 79.

10.1.2 Profitability

263. If over a period of time an operator operates with a price that is substantially higher than the underlying costs and thereby achieves high profitability (compared with alternative investments), this may be an indicator of significant market power.

264. However, allowance must be made for the possibility that high profitability over a given period of time may be the result of other factors than market power, for example the benefits of efficiencies, innovation or accounting write-offs that do not necessarily correspond to the actual value reduction in invested capital.

265. Similarly, low profitability is not necessarily an argument against the operator being assessed as having significant market power, but may be a result of inefficient production.

266. To NPT's knowledge, none of the operators in this market publishes profitability figures specifically for this relevant market. In Telenor's case, profitability is reported per business area instead of per product in the financial accounts. Telenor's regulatory accounts (the ONP report) give profitability figures for leased lines per capacity on the aggregate level, i.e. the sum total of retail and wholesale revenue.

267. Telenor's total regulatory account figures for leased lines above 2 Mbit/s show a 7.7 % return on capital employed in 2005. The corresponding figure for 2004 was 7.1 %.

268. The regulatory account figures for 2005 show that Telenor has low profitability on leased lines above 2 Mbit/s, while the return is relatively high for the capacity classes below 2 Mbit/s. This may be because competition is more efficient for leased lines above 2 Mbit/s. However, the difference in returns can also be a result of cross-subsidisation between low-capacity and high-capacity leased lines, which in that case may have potential anti-competitive effects. The manner in which the cost orientation principle has been practiced in recent years has in practice given Telenor an opportunity to enjoy high profitability in certain areas of the leased lines market and lower profits in others. With respect to significant market power, it is difficult for this reason to draw clear conclusions on the basis of the returns in Telenor's regulatory accounts for leased lines above 2 Mbit/s.

10.2 Entry barriers³⁶

269. Potential competition from new operators will normally affect a dominant operator's behaviour in the market, including pricing. Various forms of entry

³⁶ Cf. the Guidelines, paragraph 81.

barriers may, however, weaken or remove the basis for potential competition. Possible entry barriers related to this relevant market are discussed below.³⁷

10.2.1 Control of infrastructure not easily duplicated³⁸

270. If an operator controls infrastructure that is difficult to duplicate, and this infrastructure represents an important input in the relevant market, this could represent a substantial entry barrier to potential competitors.

271. Without taking a position on whether the relevant infrastructure in this market may be seen as an “essential facility” in relation to competition law, NPT has assessed whether control of infrastructure not easily duplicated can be seen as an entry barrier in this relevant market.

272. Leased lines offered in this market are mainly produced with fibre optical cables. A fibre based network will therefore usually be a prerequisite to be able to offer the leased lines that are demanded in this market. Operators who want to offer leased lines above 8 Mbit/s in the wholesale market can either base their services on leasing dark fibre, optical channels or very high-capacity leased lines from owners of fibre based networks (for example Telenor or BaneTele). Alternatively, such operators can lease space in existing conveyance routes from Telenor, i.e. space in ducts and cable paths. It is therefore not the case that potential operators must necessarily build a complete physical network with their own conveyance routes to compete with Telenor in this market.

273. Operators who choose to base their services on dark fibre, optical channels or high-capacity connections must (in the same way as Telenor) invest in line equipment and/or multiplex equipment to be able to offer leased lines. This is largely standard “off the shelf” equipment and is thus (in a technical sense) not difficult to duplicate.

274. However, the above possibilities can largely be said to be forms of access that are to be regarded as the outcome of regulation. Given the absence of regulation it is in NPT’s opinion doubtful whether a potential provider would, for example, have access to dark fibre or co-location with Telenor.

275. However, it has been shown to be possible to establish a physical infrastructure parallel with Telenor’s physical infrastructure for conveyance, based on alternative existing infrastructure. BaneTele’s establishment of a trunk network covering most of the largest cities in the country is an example of this. As noted in section 14.1.1, BaneTele largely relies on existing alternative infrastructure with respect to conveyance routes (i.e. power lines and the railway). It would require far more resources and time to build a competing trunk network based on completely new conveyance routes (i.e. trenching³⁹). However, technically even this is fully possible and will require less resources and time than building an alternative access network from the bottom up.

³⁷ Among other places, entry barriers are discussed in the Guidelines, paragraph 81: “In fact, the absence of barriers to entry deters, in principle, independent anti-competitive behaviour by an undertaking with a significant market share.”

³⁸ The criterion corresponds to “control of infrastructure not easily duplicated” in the Guidelines, paragraph 79.

³⁹ To the extent a new provider gains access to frequency resources, the building of radio link systems will also be a possibility.

276. The capacity to offer leased lines above 8 Mbit/s based on alternative existing infrastructure is somewhat more limited for short-distance lines than for long-distance lines. This is because *inter alia* the availability of alternative existing infrastructure is greater for long-distance lines than for short-distance lines. For example, while there are alternative conveyance routes in the form of power lines or railway lines *between* most towns and villages, there will not necessarily be alternative existing conveyance routes that can be used for leased lines services between two specific locations *within* a town.

277. Based on the above NPT has concluded that control of infrastructure that is not easily duplicated still constitutes a slight entry barrier in Market 14, especially for short-distance leased lines.

10.2.2 Sunk costs

278. Unrecoverable fixed costs (“sunk costs”) are fixed costs attributable to an irreversible investment, i.e. a provider cannot expect to recover the investment once it is made, for example through the sale of the investment item, if the provider wishes to exit the market. Unrecoverable fixed costs mean that a potential new entrant faces higher decision-relevant costs than the (or those) operator(s) already established. This cost difference comprises an entry barrier to the potential entrant.

279. If a market requires high sunk costs, the established operator may have an incentive to make a more extensive investment than it otherwise would have done. This can send a signal to potential new entrants that it would not be profitable to attempt to enter the market. Sunk costs can therefore give rise to strategic behaviour among the established operators, further raising the entry barrier.

280. As mentioned above, a fibre based network will usually be a prerequisite to be able to offer the leased lines that are demanded in this market. There is little doubt that establishing a nationwide fibre network will be associated with considerable irreversible investments, (i.e. building conveyance routes, laying fibre optic cables, investing in and installing transmission equipment) and on this basis offer leased lines above 8 Mbit/s. However, as pointed out earlier in the analysis, it is possible to establish a competing service based on various access forms that are the outcome of regulation. For example, a potential new entrant in the market can base its operations on dark fibre or access to space in conveyance routes (co-location). In the absence of regulation a potential new entrant will nevertheless either have to base its operations on existing alternative conveyance routes and network elements (as BaneTele has done), or build them itself. To the degree that it is possible to base operations on existing infrastructure, this will make the new entrant less dependent on bearing sunk costs, and the resulting entry barrier can be reduced.

281. Intangible investments can also be unrecoverable and represent an entry barrier. Investment in brandbuilding (for example through advertising and other marketing) is an example of such intangible investments. Another example is costs relating to research and development (R&D).

282. In NPT’s view, investment in brandbuilding in the wholesale leased lines markets does not represent an entry barrier. This is because customers in the wholesale market are largely competitors of Telenor, and experience shows that they would basically prefer to choose a supplier other than Telenor if possible. A potential competitor in the wholesale markets for leased lines will therefore expect

to devote far fewer resources on advertising and marketing than would be the case in the retail market.

283. With respect to R&D-related costs, NPT is of the opinion that development of new services in this relevant market does not constitute any appreciable entry barrier because the products in this market are largely standardised and relatively homogeneous.

284. After an overall assessment of the above factors NPT finds that sunk costs related to the establishment of infrastructure constitute a significant entry barrier in the market for leased lines above 8 Mbit/s, yet not as large as for leased lines up to and including 8 Mbit/s.

10.2.3 Economies of scale⁴⁰ and scope⁴¹

285. Economies of scale exist when an increase in production brings a fall in average unit cost. This is characteristic of production based on technology with relatively high fixed costs and low variable costs.

286. Economies of scope are reductions in average unit cost when more than one service is produced using common means of production, for example common infrastructure or common administrative systems.

287. Economies of scale and scope can both work as entry barriers in relation to new potential operators and as a competitive advantage in regard to established competitors in the market.

288. There are undoubtedly significant economies of scale associated with establishing high capacity leased line services. Here, the economies of scale are *inter alia* linked to the fact that unit costs fall sharply the higher the capacity a provider has in its trunk network. For example, the cost per 2 Mbit/s will be lower in a 2.5 Gbit/s system than in a 32 Mbit/s system.

289. Until now Telenor has been obliged to provide universal service throughout the country for leased line services up to and including 2 Mbit/s and thereby provides nationwide services for these capacities. Since the company is present, the universal service obligation also means that it should be easier for Telenor to supply leased lines with capacities higher than 2 Mbit/s. None of the potential new entrants in this market is expected to achieve sufficient “critical mass” to exploit economies of scale in a comparable manner.

290. Furthermore, it is assumed that given its broad portfolio of products, Telenor enjoys greater economies of scope than its competitors. For example, there is reason to believe that Telenor enjoys certain economies of scope related to its nationwide telephony and leased line services.

291. Based on the above, NPT finds that economies of scale and scope constitute a not insignificant entry barrier in this relevant market.

⁴⁰ The criterion corresponds to “economies of scale” in the Guidelines, paragraph 79.

⁴¹ The criterion corresponds to “economies of scope” in the Guidelines, paragraph 79.

10.2.4 Access to financial resources⁴²

292. Access to financial resources is important to an operator's capacity to enter a market. This is of particular significance in markets that require major initial investment (high entry costs). Differences between operators relating to access to financial resources may comprise an entry barrier. In addition, everything else being equal, it will be expected that an operator with market power and good financial standing will be less exposed to competition than an operator with market power without good access to financial resources. Besides, an operator with market power and good access to financial resources will be better able to defend its market share if new competitors enter the market than an operator with market power without good access to financial resources.

293. Establishing a competitive alternative to Telenor's provision of wholesale leased lines above 8 Mbit/s will be associated with relatively high entry costs. Telenor has a better financial position than most existing competitors in the relevant market. On the other hand, highly capitalised potential challengers to Telenor do exist. There are no grounds for claiming that Telenor has better access to financial resources than potential competitors.

294. On this basis NPT believes that access to financial resources does not currently constitute any entry barrier in this relevant market.

10.2.5 Access to distribution and sales channels⁴³

295. In markets in which the established operators have a well-developed distribution and sales network this may function as an entry barrier to potential new operators. This applies in particular in markets in which there are major costs associated with establishing distribution and sales channels, or where the established operators have concluded exclusive agreements with the largest/most important distribution channels in the market.

296. It is NPT's assessment that a lack of access to distribution and sales channels will primarily be a problem in markets where the demand side consists of households (residential market), where in certain cases it can be difficult to gain access to important sales channels such as large nationwide chain stores. The customers in the market analyses here consist of operators who themselves are providers of electronic networks and services. Such operators usually have a good overview of the market and will make choices based on their knowledge of it. In NPT's opinion, it is consequently highly unlikely that potential new entrants in this relevant market will not set up operations because they consider it difficult to establish sales channels.

297. Based on the above, NPT concludes that access to distribution and sales channels does not represent an entry barrier in this relevant market.

⁴² The criterion corresponds to "easy or privileged access to capital markets/financial resources" in the Guidelines, paragraph 79.

⁴³ The criterion corresponds to "a highly developed distribution and sales network" in the Guidelines, paragraph 79.

10.2.6 Barriers to expansion⁴⁴

298. A market with large growth potential is as a rule more attractive to potential new operators than markets in which the total units sold and/or the number of customers has stagnated or is on the way down (known as “mature” markets). Operators considering entry into a “mature” market must generally aim to capture customers from the established operators. If there are barriers to growth in a market, these may therefore be looked upon as a possible entry barrier.

299. The market for wholesale leased lines above 8 Mbit/s can be viewed as a relatively mature market, but where a certain amount of volume and capacity growth can nevertheless be expected. Among others factors, there is reason to believe that the growth of broadband services will drive demand for high capacity trunk circuits. However, there is little to suggest that the market’s total revenue will increase significantly in coming years. This means that potential new entrants will largely base their operations on capturing customers and revenue from the existing operators, which in NPT’s opinion will constitute a slight entry barrier in this relevant market.

300. Based on the above, NPT finds that barriers to expansion constitute a slight entry barrier in this relevant market.

10.2.7 Regulatory entry barriers

301. Regulatory entry barriers exist when market access is limited by regulatory conditions, for example official licences, resource restrictions or restrictions in regard to health, environment or safety (direct regulatory restrictions). Furthermore, various forms of price control may also have entry-detering effects, cf. recital 15 of the Recommendation.

302. Uncertainty regarding future regulation can function as an entry barrier because uncertainty in itself can yield lower expected profitability at market entry and can thereby lead to potential challengers either dropping or delaying plans to enter the market. This aspect will naturally be particularly important during a period of new regulations. Regulatory uncertainty can, however, be reduced if the regulatory authority clearly informs the market operators about how the regulations will be practised and is consistent at the same time in its implementation of these rules.

303. The most important regulatory entry barrier in this market, namely Telenor’s exclusive right to offer leased lines, was removed as part of the liberalisation of the telecoms market.

304. Price controls, or expectations of future price controls, can function as an entry barrier in the market for electronic communication in general, including this relevant market. Furthermore, price controls, or expectations of future price controls, can affect the behaviour of operators already in the market.

305. If it is the case that a potential new operator in the market for leased lines above 8 Mbit/s believes it is possible that it will be subject to price controls, if, for example, this operator is designated by the regulatory authorities as having significant market power in this market (or in a limited geographic area), this will

⁴⁴ The criterion corresponds to “barriers to expansion” in the Guidelines, paragraph 79.

affect expected future earnings and will thus act as an entry barrier. Such an expectation, or fear of, being subject to obligations as an undertaking with significant market power can also affect the degree to which existing operators wish or plan to expand in the market.

306. Expectations of price controls being imposed on the dominant provider can also act as an entry barrier if potential operators regard the regulated price as being, or potentially being, so low that it would be impossible to compete in the market. In this relevant market, uncertainty about possible future price controls being imposed on Telenor may cause competitors to refuse to enter the market at all or particular sectors of it.

307. On the other hand, expectations of future regulation of another relevant market can also encourage market entry in the market in question if potential new operators expect that the existing dominant operator(s) in the other market will be (or remain) subject to obligations that make it easier for the new operator to enter the market in question. For example, possible expectations of strict price controls in the market for leased lines up to and including 8 Mbit/s will probably make it more attractive to enter the corresponding market above 8 Mbit/s.

308. Other forms of regulation (than price controls) may also affect the possibilities of entering the relevant market. Obligations regarding co-location and access to networks or network elements in other markets could have a positive effect on the entry possibilities in this relevant market. For example, the possible imposition of an obligation on Telenor to provide access to its cable conveyance routes will probably improve opportunities for potential new entrants.

309. Based on the above, NPT finds that uncertainty about future regulation may represent a certain entry barrier in the market.

10.3 Potential competition and innovation

310. As a rule, in markets with a high degree of innovation the opportunity to exercise market power will be more limited than in markets with little innovation. Technological development may therefore be of significance for potential competition in the market. Innovation resulting from technological development can therefore contribute to weakening an operator's position in the market in relation to potential competitors.

311. There is reason to believe that innovation resulting from technological development and product development can serve to a certain extent to weaken Telenor's position in this market. In general it can be said that compared to the carrier services on which leased digital lines are currently based, new and/or other digital transmission carrier services will represent potential or real competition in this relevant market in the future. Examples of this are leased circuits based on ATM or IP technology, which can render the traditional dedicated circuits less competitive.

312. However, there is one fundamental and important input that probably will not be subject to any significant degree of innovation, namely activities relating to the establishment of the physical infrastructure, such as the construction of conveyance routes. For the foreseeable future, the construction of alternative physical networks will, with the exception of radio solutions, entail physical trenching of fibre and ducts, building of cable paths, etc.⁴⁵

313. Based on the above, NPT finds that innovation and technological development will contribute only a limited amount of potential competition in this relevant market.

10.4 Provider behaviour

10.4.1 Bundling of products/product differentiation⁴⁶

314. A high degree of product differentiation, or heterogeneous products, can create customer loyalty, and make it difficult for competitors to enter the market, as opposed to where products are more homogeneous. Strong brand names will have a corresponding effect.

315. Telenor has nationwide leased line services in the majority of interfaces, different capacities, multi-access, etc. This means that Telenor has a broader product spectrum than its competitors and potential competitors, and has the opportunity to be a total supplier in the wholesale markets for leased lines. In NPT's view, this can serve to strengthen Telenor's market power to a certain extent in this relevant market.

⁴⁵ Since techniques are available for blowing fibre into existing ducts, a regulatory intervention such as making it mandatory for the operator to provide access to the cable routing paths (for example existing ducts), will naturally reduce the need for digging.

⁴⁶ The criterion corresponds to "product/services diversification (e.g. bundled products or services)" in the Guidelines, paragraph 79.

316. Bundling of products is a variation of product differentiation. An operator with market power in a relevant market can bundle (link) services or products in this market with services or products in another market, so that the operator can provide a package of services/products that are differentiated from the competitors' offering and that the competitors have a limited opportunity to copy. In this way bundling of services/products can contribute to market power in one market creating competitive advantage in another market. Such competitive advantage may be relevant to the assessment of significant market power in the latter market.

317. To NPT's knowledge there is little product bundling taking place between high capacity leased lines and products in other markets that is serving to strengthen Telenor's market power in the market for leased lines above 8 Mbit/s.

10.4.2 Leverage of significant market power to closely related market⁴⁷

318. Significant market power in one market may help to strengthen a provider's market power in a closely related market. Such leverage of market power may be vertical, i.e. between a wholesale market and a retail market, or horizontal, i.e. between various product markets at the same level in the value chain.

10.4.2.1 Vertical integration⁴⁸

319. A vertically integrated provider is characterised by the provider's activities comprising more than one link in the relevant value chain. Typically a vertically integrated provider will be present both in infrastructure markets ("upstream markets") and end user markets ("downstream markets"). Through a strong position in the "upstream market" vertically integrated providers can try to keep competitors in the "downstream market" out of this market, for example through the pricing of products in the "upstream market" or by not offering products in the "upstream market" to competing providers in the "downstream market" at all. In this way a vertically integrated provider with a strong position in the "upstream market" can strengthen its position in the "downstream market".

320. Telenor is vertically integrated in the leased lines markets. The company owns both an extensive nationwide trunk network and an access network reaching practically all permanent addresses throughout the country, which comprise the basis of its wholesale services. In addition, the company has a service provider division that supplies communications solutions to the business market where leased lines are part of a broad product spectrum.

321. In general, vertical integration can in many ways have a streamlining effect when the integrated provider internalises several levels in the value chain in the same company or group, thereby realising different efficiency gains such as better use of support systems, more coordinated planning of production and lower transaction costs.

322. As mentioned above, a vertically integrated company will have the opportunity to exclude competitors from the retail market if the company has a strong position in the wholesale market. However, since the relevant market analysed here is a wholesale market, the fact that Telenor is vertically integrated cannot by itself serve to strengthen Telenor's position in this relevant market.

⁴⁷ Cf. the Guidelines, paragraph 84.

⁴⁸ The criterion corresponds to "vertical integration" in the Guidelines, paragraph 79.

10.4.2.2 Horizontal integration

323. A provider is horizontally integrated when through ownership it has control of different parallel infrastructures that may be used to supply competing products to the end user. In this case the provider can strengthen its market power in a market by preventing competition from an alternative infrastructure over which it has control.

324. In addition to owning and operating the traditional telephone network, Telenor is a major operator in alternative electronic communication networks, including cable TV systems, other broadcasting networks and wireless access networks (for example WLANs). There is reason to believe that Telenor's ownership of cable TV systems in particular (through the company Canal Digital Norge AS) and a future digital terrestrial broadcasting network (through Norkring AS) may serve to weaken competition from alternative infrastructures in this relevant market, thus strengthening to a certain extent Telenor's market power in the leased lines markets, including the market for wholesale leased lines above 8 Mbit/s.

10.4.3 Price development

325. The development of prices over time may indicate something about the degree of competition, possibly the degree of potential competition, and can thereby provide an indication of whether a provider has market power.

326. NPT does not have a separate overview of the price developments in recent years for wholesale leased lines above 8 Mbit/s. However, overall prices of leased lines have been trending downwards over the past five years.

327. NPT received complaints from BaneTele AS (BaneTele), TDC Norge AS (TDC Norge), Tele2 AS (Tele 2) and NetCom AS (NetCom) after Telenor introduced a new price structure for leased lines in the summer of 2002. At that time, Telenor stopped distinguishing between terminating and trunk elements in the price structure. A common theme of the complaints was that they claimed the introduction of a new price structure meant that Telenor's competitors in the wholesale market encountered higher prices for terminating segments of leased lines, while prices of trunk segments of leased lines – which presumably are more exposed to competition – had fallen.

328. Falling prices do not of course only have to be a result of competition in the market, but can also be due to technological development, for example line systems with increasingly higher capacity that produce falling unit costs.

329. In general, Telenor's prices for leased lines have been subject to the obligation of cost orientation as well as a price ceiling set by the Ministry of Transport and Communications. This makes it less interesting to look at price developments as an indicator of market power.

330. In summary, NPT does not have sufficient information on price developments in this relevant market to be able to conclude that price developments in the market indicate that Telenor has significant market power. Furthermore, it is NPT's view that since prices have been subject to regulation, price development per se is less suitable as an indicator of market power.

10.5 Conditions on the demand side

10.5.1 Market power/countervailing buying power⁴⁹

331. The presence of customers with bargaining power can restrict a provider's opportunity to behave independently in the market. Such market power on the demand side may be the result of a customer's size, purchasing volume or the customer having something to offer, for example better market access to other markets.

332. Customers in the wholesale market are themselves providers of electronic networks and/or services. Several of these customers purchase considerable volumes, and in general the demand side in the wholesale leased lines markets is more concentrated than the case is in the equivalent retail market. However, to NPT's knowledge, there is no single customer or group of individual customers in this market who purchase a sufficiently large volume for the customer or group of customers to achieve negotiating power in a manner that will curb possible significant market power on the supply side. Furthermore, there is no single customer or group of individual customers in the market who can offer market access in other markets in a way that can reduce market power on the supply side in this relevant market. However, it is not inconceivable that a potential new entrant can offer market access outside Norway and thus have a certain amount of negotiating strength vis-à-vis Telenor in the market for wholesale leased lines with capacities above 8 Mbit/s in Norway.

333. Based on the above, NPT has concluded that it is unlikely that countervailing buying power in this market could appreciably reduce Telenor's possible significant market power.

10.5.2 Customers' freedom of choice and possible costs of switching/lock-in effects

334. Restrictions or costs associated with the end user switching providers increase the opportunity for a provider with market power to behave independently in the market. Such restrictions may be of a practical, technical or financial nature, or may be a result of the end user having greater confidence in existing and well-established operators in preference to new operators and being unwilling to take the risk that a switch could involve.

335. Telenor offers a number of discounts in its various agreements, cf. description in section 6.5.2. Many of the discounts are linked to the lock-in period.

336. Minimum contract terms and discount structures combined with relatively high prices for establishing such leased circuits imply that there is a certain lock-in effect that can hinder competition, since the alternative of connecting to another provider after establishing connections from Telenor would have to be significantly cheaper to make it worthwhile for customers to switch.

337. On the basis of the above, it is NPT's assessment that Telenor's lock-in periods, switching costs and discount schemes for leased lines can have a certain lock-in effect, and can therefore serve to consolidate Telenor's possible significant market power in this relevant market.

⁴⁹ The criterion corresponds to "absence of or low countervailing buying power" in the Guidelines, paragraph 79.

10.5.3 Customers' access to information

338. For customers to be able to make effective choices between providers in a market they must have access to information that makes it possible to compare the various offers. Complicated price structures and various bonus and discount schemes can restrict the opportunities for effective end user choice and may contribute to strengthening an already dominant operator's position in the market.

339. Since Telenor has been obliged to draw up public price lists for leased line services, cf. Public Telecommunications Networks and Services Regulations, § 3-5, it has historically not been a problem for customers to gain access to information from Telenor.

340. NPT deems it unlikely that customers in the market for wholesale leased lines above 8 Mbit/s lack information on prices and services to an extent that can strengthen Telenor's position in the market.

11 Assessment of significant market power and designation of provider(s) with significant market power

11.1 General - Significant Market Power

341. The assessment of significant market power builds on the Guidelines, section 3.1, and is based on the different criteria discussed in the market analysis in Chapter 10 above. In accordance with the Guidelines, paragraph 76, and with a starting point in the existing market conditions, NPT has based the assessment of significant market power on a forward-looking market analysis.

342. The Electronic Communications Act § 3-1, cf. the Framework Directive, Article 14 (2), states that:

“A provider has significant market power when the provider individually or jointly with others has economic strength in a relevant market affording the provider the power to behave an appreciable extent independently of competitors, customers and consumers.”

343. This is an important starting point for the assessment of significant market power. The same is true of the amplification in the Guidelines, paragraph 74, that in *ex ante* assessments of market power it must be assessed in particular whether a provider's strength in the market makes it possible to implement price increases by limiting services without this causing a significant sales/revenue reduction for this provider.

344. For the sake of clarity NPT wishes to emphasise that it is significant market power that is the relevant assessment subject and not anti-competitive misuse of significant market power. In assessing whether a provider has significant market power the fact whether any market power/dominance is actually misused or not is not decisive. This does not however mean that a provider's behaviour in the market is irrelevant to the assessment of significant market power. Even if structural factors carry the most weight in the assessment, behaviour that contributes to creating or

maintaining competitive advantage for a provider who already has a dominant position in the market may imply a strengthening of this provider's market power.

345. As stipulated in laws and directives a single operator may not have significant market power both alone (single dominance) or together with others (collective dominance) in the same market. In the vast majority of cases it will be natural to first assess whether single dominance exists. This is especially true in cases where high market share would indicate this. If the analysis concludes that no operator has single dominance in the market, the question of collective dominance will then be assessed. According to established European Court of Justice case law, significantly high market share, i.e. more than 50 %, is per se an indication of a dominant position, unless there are very special reasons to depart from this.⁵⁰ Furthermore there is a legal presumption that an undertaking has significant market power if there are high market shares and they have been stable over time.⁵¹

11.2 Assessment of single dominance

346. In this relevant market Telenor has a market share of about 66 %, measured by revenues. Telenor's biggest competitor, BaneTele, has a market share of about 29 %.

347. In NPT's opinion, Telenor's market share in this market provides, cf. the Guidelines, an indication of significant market power. Furthermore, certain entry barriers exist in the market. In NPT's opinion, the sunk costs that a potential new entrant will have to bear on start-up, along with Telenor's presumed opportunity to benefit from economies of scale and scope, are factors that serve to strengthen the conclusion that Telenor has significant market power.

348. Even though technological advances and development of new products may eventually cause changes in the competitive situation, it is NPT's assessment that such developments at the present time indicate that there will be only limited changes in the competitive situation in this market.

349. Based on the discussions concerning provider behaviour and above demand-side conditions, NPT has concluded that these criteria taken together do not provide grounds to affect a possible conclusion that Telenor has significant market power.

350. Based on the above assessments, NPT has concluded that there is a clear indication that Telenor ASA has significant market power (single dominance) in the wholesale market leased lines above 8 Mbit/s.

11.3 Assessment of collective dominance

351. Although NPT has found a clear indication above that Telenor alone has significant market power, NPT will nevertheless briefly assess altogether to what extent the Norwegian market for wholesale leased lines above 8 MBit/s can be said to have collective dominance. For example, the question can be asked whether the

⁵⁰See the Guidelines, paragraph 76.

⁵¹See the Guidelines, paragraph 76.

analysis would have produced a different result if collective dominance had been assessed before single dominance.

352. In principle, NPT has no indications of the existence of collective dominance in the market. The reason why NPT is still assessing this is that BaneTele and Telenor together are very dominant in this market. In combination, BaneTele's and Telenor's market share, based on 2005 data, is 95 % measured by revenues.

353. In addition, NPT would point out that there are considerable imbalances in the market share between Telenor and BaneTele, and that both companies are providers in both the wholesale market and in the retail market for leased lines. In NPT's opinion, Telenor Mobil and NetCom probably have greater incentive to compete against each other on price and position themselves in the market than to engage in tacit collusion.

354. Three prerequisites can be derived from ECJ case-law⁵² and the Guidelines, paragraph 98, all of which should be present for two or more operators to be deemed collectively dominant in a market with few operators.

355. First of all, the operators must be capable of collecting information and keeping themselves updated on the behaviour of the other operators in order to engage in tacit collusion. If the market is sufficiently transparent, the undertakings can with a sufficient degree of precision and speed adopt a competitor's behaviour. They can also track whether the partners are loyal to the common course of conduct.

356. Secondly, the tacit collusion must be sustainable over time. This will be ensured *inter alia* through adequate retaliatory mechanisms between the undertakings. They can make it unprofitable for individual operators to break away or depart from a common course of conduct. Each participant will be aware that contravention of the coordination could entail similar behaviour by the other parties, and thus not be very profitable in the long term.

357. Finally, the outcomes of tacit collusion must not be capable of being undermined by competitors or customers. By definition, the term significant market power, whether individually or jointly with others, requires that providers are capable of behaving independently of competitors and customers. When it is a question of collective dominance, it is particularly the market power of competitors and customers outside the tacit collusion that is relevant, along with potential competition. High entry barriers and degree of power on the demand side will be key in assessing this condition.

358. With respect to the first criteria, it is NPT's opinion that the wholesale market for leased lines above 8 Mbit/s is not particularly transparent. The degree to which the agreements signed in the market are public is limited. Indeed, while Telenor is under obligation to publish reference offers, the individually negotiated agreements are not public, and NPT has learned that Telenor makes extensive use of so-called contract jobs, i.e. agreements that depart from standard conditions and terms. Furthermore, the agreements in the market are largely agreements entered into for a prolonged period, usually with a duration of several years, making quick adoption of a common strategy by the undertakings unlikely.

359. Although NPT has little information with respect to the possibilities of retaliatory mechanisms, it has no grounds to believe that they are present either. In

⁵² Case T-342/99: *Airtours v Commission*, particularly paragraph 62.

general, the long-term aspect of most of the contracts signed in this market makes it difficult for one operator to “punish” the other, should it break out of the common course of conduct.

360. Apart from Telenor and BaneTele, services in this market are limited. Nevertheless, NPT would point out that there are several regional operators competing with Telenor and BaneTele. NPT’s believes that the competition from these operators could undermine to some extent any tacit collusion between Telenor and BaneTele in Market 14.

361. In summary, it is NPT’s view that the three criteria for collective dominance derived from European Court of Justice case law and the Guidelines have not been met in the market for wholesale leased lines above 8 Mbit/s.

362. On the basis of the above assessments, NPT, in conjunction with European Community law regulations and the Guidelines, has not found concrete facts supporting a finding that tacit collusion is supposedly taking place between Telenor and BaneTele in the wholesale market for leased lines above 8 Mbit/s.

363. Provided that Telenor had not had a dominant position by itself, NPT has therefore concluded that no tacit collusion would have taken place in the market. No operators together have collective dominance in the wholesale market for leased lines above 8 Mbit/s.

11.4 Conclusion

364. Based on the above it is NPT’s assessment that Telenor ASA alone has significant market power in the wholesale market leased lines above 8 Mbit/s (single dominance).

Annex 1. Glossary

ADSL	(Asymmetric Digital Subscriber Line) is a method for broadband transmission over existing telephone lines (copper wire) to subscribers. An asymmetric data line has different transmission speeds for sending and receiving.
BAP	Broadband access point
Electronic communication	Transmission of sound, text, images or other data via electromagnetic signals in open space or cable in a signal transmission system.
Electronic communications network	System for electronic communication where radio equipment, switches, other connection and routing equipment, related equipment or functions are included
Electronic communications service	Service that completely or basically includes conveyance of electronic communication and is provided for a charge
LLU	(Local Loop UnBundling) occurs when a provider with significant market power on the fixed network is required to allow competitors lease the fixed access lines (local loops) from the subscriber side of the local exchange out to the subscriber.
Leased line	Electronic communications service in the form of permanently established capacity for signal transmission as an input for service production or as transmission between different geographic addresses for end users.
End user	Any physical person or body corporate entering into an agreement for access to an electronic communications network or communications service for their own use or to rent out.
Provider	Any physical person or body corporate that provides others with access to an electronic communications network or service.
WLAN	A Wireless Local Access Network provides wireless access to a network from a PC or other communication device via an access point. Often based on the 802.11 standard.
xDSL	(DSL, Digital Subscriber Line) is a term for various standards for broadband transmission over existing telephone lines (copper wire) to subscribers. The letter x stands for the different variations, including ADSL, SDSL and VDSL.