

Preface

Different parts of the electronic communications market are subject to sector specific regulation in accordance with the EU regulatory framework. In certain markets national regulators have designated operators having SMP (significant market power). Regulators have also imposed obligations.

The Swedish Competition Authority has asked Copenhagen Economics to produce two reports related to the electronic communications market. The first report concerns a descriptive study focusing on the implementation process regarding the markets for local loop unbundling (LLU) and bitstream access respectively in eight European countries.

The second report concerns certain aspects of countervailing buyer power in the markets for mobile and fixed net voice call termination. Countervailing buyer power can, at least in theory, in some markets generate an outcome consistent with a competitive outcome, and in that case regulation is not justified.

The authors themselves are responsible for the analysis and the conclusions in the reports. Thus, any views expressed in the reports are those of the authors and need not necessarily reflect those of the Swedish Competition Authority.

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Director General

6001 Konkurrenceverket

Regulation of broadband

A descriptive study of the regulation in eight countries

Final report

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Preface

The Swedish Competition Authority has asked Copenhagen Economics to study the implementation of the EU regulatory framework for electronic communications in different Member States.

Copenhagen Economics has conducted a descriptive study based on existing literature and information on web pages in the following languages: Swedish, English, Danish, Norwegian, German and French. The study sheds light on the current status of the implementation process in the EU.

The report is written by Dr Henrik Ballebye Olesen (team leader), Mr Simen Karlsen, Mr Petter Berg and research analyst Tora Hammar.

Copenhagen, 6 December 2006



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Slutsatser

I den här rapporten studerar vi regleringen av tillträde till bredbandsmarknaderna i åtta Europeiska länder: Sverige, Danmark, Norge, Storbritannien, Irland, Tyskland, Frankrike och Nederländerna. Vi jämför implementeringen och tillämpningen av EU:s gemensamma regelverket för elektroniska kommunikationsnät och kommunikationstjänster i dessa länder. Vi studerar två bredbandsmarknader, LLUB¹ och bitströmsmarknaden². Implementeringen är införandet av direktiven i nationell lagstiftning. Tillämpningen är beslut om marknadsavgränsningar, SPM-status och om skyldigheter på EU Kommissionens rekommenderade marknader. Vi studerar både hur tillträdet till bredbandsmarknaderna är reglerat och vilka metoder de nationella regleringsmyndigheterna använder för att reglera marknaderna.

Post och Telestyrelsen har varit en av föregångarna i Europa vad gäller implementeringen av EU direktiven. Många länder har implementerat regelverken 1-2 år senare än Sverige. Post och Telestyrelsens beslut på bitströmsmarknaden är dock överklagat och har inte vunnit laga kraft eftersom den juridiska processen fortfarande pågår i domstol. Även i andra länder har regleringsmyndigheternas beslut överklagats.

De flesta nationella regleringsmyndigheter har definierat de relevanta marknaderna enligt EU Kommissionens rekommendationer. Kommissionen har dock i ett par fall accepterat avvikande marknadsavgränsningar. Även om EU Kommissionen principiellt inte var överens med den brittiska regleringsmyndigheten om att kabel-tv skulle inkluderas i marknaden för LLUB, motsatte sig inte Kommissionen det brittiska beslutet. EU Kommissionen förefaller fokusera mer på metoden än på själva marknadsavgränsningen när de kommenterar de nationella regleringsmyndigheternas marknadsavgränsningar. I de flesta länder har regleringsmyndigheterna endast använt förhållandevis enkla metoder för att avgränsa relevant marknad, dvs. kvalitativa metoder som produktkaraktäristika och användningsområde. Undantaget är Storbritannien där regleringsmyndigheten använt kvantitativa tekniker som SSNIP-test, critical loss-test och enkätundersökningar.

Med ett undantag så har det i alla undersökta länder identifierats en operatör med betydande marknadsinflytande (SMP). Undantaget gäller tillgång till bitström med låg kvalitet i Nederländerna. Där anses ingen operatör ha betydande marknadsinflytande. Anledningen till detta är att det finns konkurrens mellan koptarnätverk och nätverk för kabel-tv. De nationella regleringsmyndigheterna använder ett brett spektrum av indikationer av marknadsmakt. De

¹ LLUB står för local loop unbundling, dvs. tillträde till koptarnätet, möjlighet att hyra hela eller ett visst frekvensutrymme för telefoni eller bredband i "den sista biten" av telenäten som når in i huset hos abonnenten.

² Bitström är tillträde till koptarnätet i anslutning till "den sista biten av" telenäten eller till transportnätet för att erbjuda bredband, t.ex. ADSL.

viktigaste indikatorerna är marknadsandel, kontroll av flaskhalsar, potentiell konkurrens och köpmakt.

De undersökta länderna använder en förhållandevis hård reglering av tillgång till bredband, normalt tillträdes- och prisreglering. Exempelvis går Storbritannien så långt att de använder konkurrensreglerna för att få till stånd en strukturell separation mellan nätverksaktiviteterna och andra aktiviteter hos operatören med betydande marknadsinflytande på marknaderna. Den direkta effekten av hård reglering är att den gör det mindre attraktivt att bygga egen infrastruktur och gynnar istället tjänstekonkurrens. Men regleringen kan också leda till en motsatt indirekt effekt eftersom operatörer får möjlighet att bygga upp en kundbas. Detta kan få tjänstelevererande operatörer till att klättra upp för investeringsstegen vilket ökar infrastrukturkonkurrensen i framtiden. När vi studerar den faktiska regleringen i de åtta länderna förefaller det inte desto mindre att regleringsmyndigheterna endast ger incitament att gå från bitströmstillträde till LLUB men inte från LLUB till egen infrastruktur. I alla länder finns det en hård reglering på LLUB.

Summary

In this report, we study the regulation of broadband access in eight countries: Sweden, Denmark, Norway, the UK, Ireland, France, Germany and the Netherlands. We compare the implementation and enforcement of the telecom regulation in these countries. Implementation is the incorporation of the framework on electronic communications into national legislation. The enforcement is the market delineation, designation of SMP and application of appropriate obligations of the European Commission's recommended markets. We study both the way broadband access is regulated as well as the methods used by national competition to reach the decisions on how to regulate. We focus on the market for local loop unbundling and on the market for bitstream access.

The Swedish Regulatory Authority has been one of the front runners in implementing the EU framework. Compared to Sweden, the EU framework has been implemented 1-2 years later in several countries. However, the Swedish Regulatory Authority's decision on is still not legally enforceable as the case is still handled in the court system in Sweden. Some of the other countries have also experienced that their decisions have been appealed.

Most national regulatory authorities have defined the relevant markets in the same way as the Commission. The Commission has accepted other market definitions made by national regulatory authorities. Even if the European Commission in principal did not agree with the UK Regulatory Authority on including networks for cable-TV in the market for local loop unbundling, the Commission did not object to the UK decision. The Commission seems to focus more on methodology than on the market definition when commenting on the market definitions made by national regulatory authorities. However, most countries have only used simple methods to delineate the relevant market, i.e. qualitative methods such as product characteristics and intended use. The exception is the UK which has applied quantitative techniques such as SSNIP test, critical loss and questionnaire

With one exception, all countries have identified a provider with significant market power. The exception is low quality bitstream access in the Netherlands, where no provider has significant market power. The reason is that there is competition between copper networks and networks for cable-TV. The national regulatory authorities use a broad variety of indicators of market power. The most important indicators are: market share, control of bottlenecks, potential competition and buyer power.

The countries use hard regulation of broadband access, normal access and price regulation. For instance, the UK goes so far that they use competition rules to impose a structural separation between the incumbent's network activities and other activities. The direct effect of hard regulation is that it makes it less attractive to build "own" infrastructure and instead promotes service competition. However, there may also be an opposite indirect effect which as

the service providers can build up a customer base and later climb up the ladder of investment and increase the infrastructure competition in the future. Nonetheless, when studying the actual regulation in the eight countries, it appears that the regulatory authorities only give incentives to go from bitstream access to local loop unbundling and not from local loop unbundling to own infrastructure. In all countries, there is a hard regulation of local loop unbundling.

Chapter 1 Introduction

Broadband access is an important product for many households. Although many households buy broadband access, the market is not a market where competition occurs naturally. Often broadband can only be supplied through one network, e.g. a copper net. Hence, without regulation the market will often be monopolised by one provider. The expected consequences to consumers of such a situation are well known: high prices and low innovation. Hence, the regulation of broadband is important for consumer welfare.

The purpose of regulation is to promote competition, consumer interest and consolidate the internal market. Consequently, any regulation obligations shall be proportionate to the competition problems and shall be based on the principle of minimum regulation. This means that one shall only regulate when there are market failures which require intervention, i.e. significant market power on the relevant market. The obligations used shall not go any further than what is necessary to obtain the objectives.

In this report we study the regulation of broadband access in eight countries. We compare the implementation and enforcement of the telecom regulation in these countries. Implementation is the incorporation of the framework on electronic communications into national legislation. The enforcement is the market delineation, designation of SMP and application of appropriate obligations of the Commission's recommended markets.³ We study both the way broadband access is regulated as well as the methods used by national competition authorities to reach the decisions on how to regulate.

1.1. The markets

We have studied the two relevant broadband markets that the Commission has defined as market 11 and market 12.

Market 11 is local loop unbundling while the second is bitstream access. In the Recommendation, the Commission defines market 11 as "*Wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services*".⁴ This means access to the twisted copper line between the homes and the local exchange. Traditionally, the line has been used for ordinary telephony. Full access means that an external operator rents the whole line, which can be used for both broadband Internet and telephony. Shared access means that the external operator only rents the broadband part of the line, while the owner of the line is in charge of the telephony.

Market 12 covers "*Bitstream access that permits the transmission of broadband data in both directions and other wholesale access provided over other infrastructures, if and when they*

³ This is accordance with the steps outlined in the EU framework on electronic communications.

⁴ European Commission (2003)

offer facilities equivalent to bit-stream access." In practical terms, bitstream access refers to the situation where the incumbent installs a high-speed access link to the customer premises and then makes this access link available to third parties, to enable them to provide high-speed services to customers. Bitstream depends in part on the PSTN and may include other networks such as the ATM network. Bitstream access is a wholesale product that consists of the provision of transmission capacity in such a way as to allow new entrants to offer their own, value-added services to their clients.⁵

1.2. Benchmark countries

In order to describe the regulation of the broadband markets in Sweden; we compare the regulation with seven other EEA countries: Denmark, Norway, the United Kingdom, Ireland, France, Germany and the Netherlands.

We have chosen Denmark and Norway as these countries are quite similar to Sweden as regards legislation and market structure. We have chosen the United Kingdom as the regulatory authority in this country has the largest resources of the European Regulatory Authorities and has the most elaborated market analyses. We look at Germany as this is the largest Member State and has experienced problems in implementing the EU electronic communications regulation. We include France as a country with a central European legal system. We include Ireland as this is an example of a country with very low broadband penetration. Finally, we include the Netherlands as this country has a high penetration rate of alternative networks such as Cable-TV.

⁵ ERG (2005)

Chapter 2 Implementation

In December 2001, a new EU regulatory framework for the electronic communications sector was agreed by EU Member States. The Member States then had to implement the regulatory framework. In this chapter we describe the implementation of the regulatory framework. One legal issue is that some countries have used a short amount of time on implementation while other countries have used longer time on implementation.

In the eight countries we have studied, the implementation period varies by two years. Sweden has been one of the front runners in both market 11 (local loop unbundled) and market 12 (bitstream access), while Norway – in both markets – has been one of the last countries to implement the EU framework.

The implementation of the EU framework on electronic communications involves five steps. First, the framework must be implemented into national legislation. Second, the national regulatory authority must conduct a market analysis and reach a conclusion on how the markets should be regulated. Third, the Commission must be notified about how the national regulatory authority intends to regulate the market, and the Commission will then give its response to the national regulatory authority. Fourth, the national regulatory authority must then consider how to respond to criticism raised by the Commission and by market participants and reach a decision. Fifth and final, this decision may be appealed and go to court or to an administrative body.

The time used on implementing the framework into national legislation varies considerably between Member States for three reasons:

First, some Member States notified the Commission late 2003 or early 2004, while other Member States did not notify the Commission until 2006. In fact, Germany still has not even notified the Commission about the decision on the market for bitstream access using ATM technology. The difference can either be due to differences in the time spent on legal implementation or due to differences in the time spent on market analysis.

Second, in Germany it took more than one year from the Commission was notified until the national regulatory authority reached its decision, whereas this process only took a couple of weeks in other Member States. The difference in the date of notice can be caused by complex issues being raised in the review process, differences in priorities or differences in effectiveness.

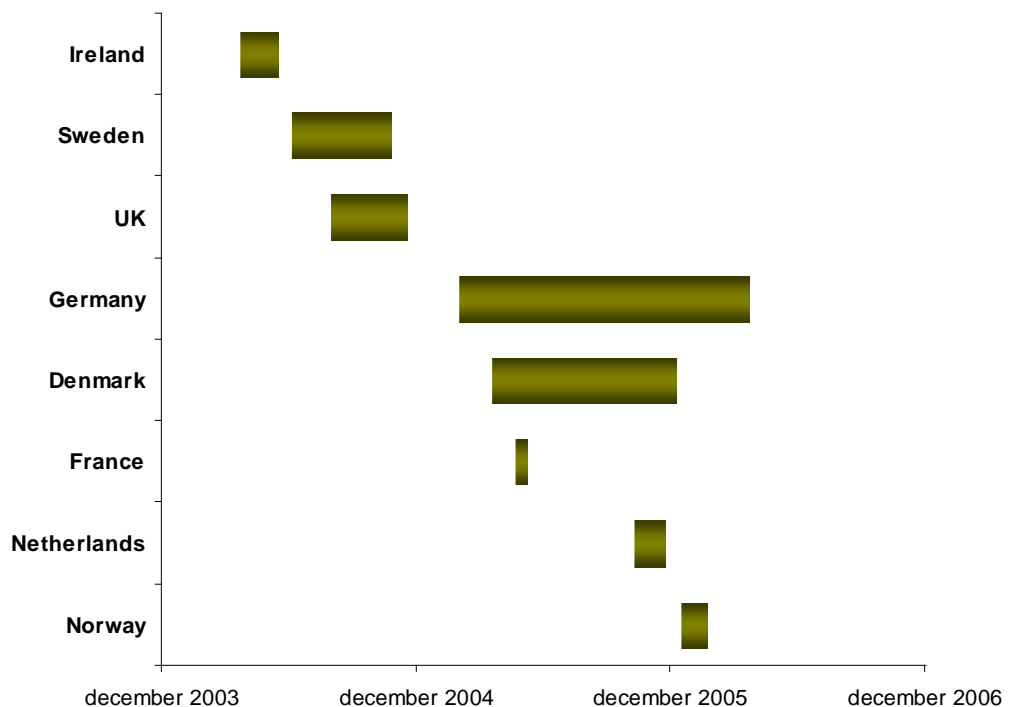
Third, the decisions made by the national regulatory authorities may be appealed. Both national appeal bodies and the European Commission may overturn National Regulatory Authorities' (draft) decision. The decisions made by national authorities have been appealed in

Sweden (market 11), Germany (market 11 and 12), Denmark (market 11 and 12) and Norway (market 11), but not in the four other countries in our study.

2.1. Market 11, local loop unbundling

In market 11, Ireland, Sweden and the UK have been the front runners. These countries notified the Commission in 2004 and their national regulatory authorities made a decision in 2004. The process of clarifying the issues raised by the Commission has been very long in Germany and Denmark, cf. Figure 1.

Figure 1: Time from notice to Commission to decision from national regulatory authority



Note: The exact dates are shown in Appendix.

Source: The National regulatory authorities' and appeal bodies' decisions

The decisions made by the national regulatory authorities have been appealed in Germany, Denmark and Norway, cf. Table 1.

Table 1: Appeal of decisions made by national regulatory authority

Country	NRA decision appealed	NRA decision overruled	Suspensive effect
Sweden	No		
Denmark	Yes	Pending	Yes**
Norway	Yes	No*	No
UK	No		
Ireland	No		
France	No		
Germany	Yes	Pending	No

Note: For Netherlands, there is only relevant information on appeal procedures in Dutch. * Only a minor part of the decision was overturned. **only a minor part of the decision is appealed.

Source: The National Regulatory Authorities' and appeal bodies' decisions

In Germany, Deutsche Telecom has appealed more or less the whole decision of the National Regulatory Authority. However, the obligations are in force. The appeal case is still pending.

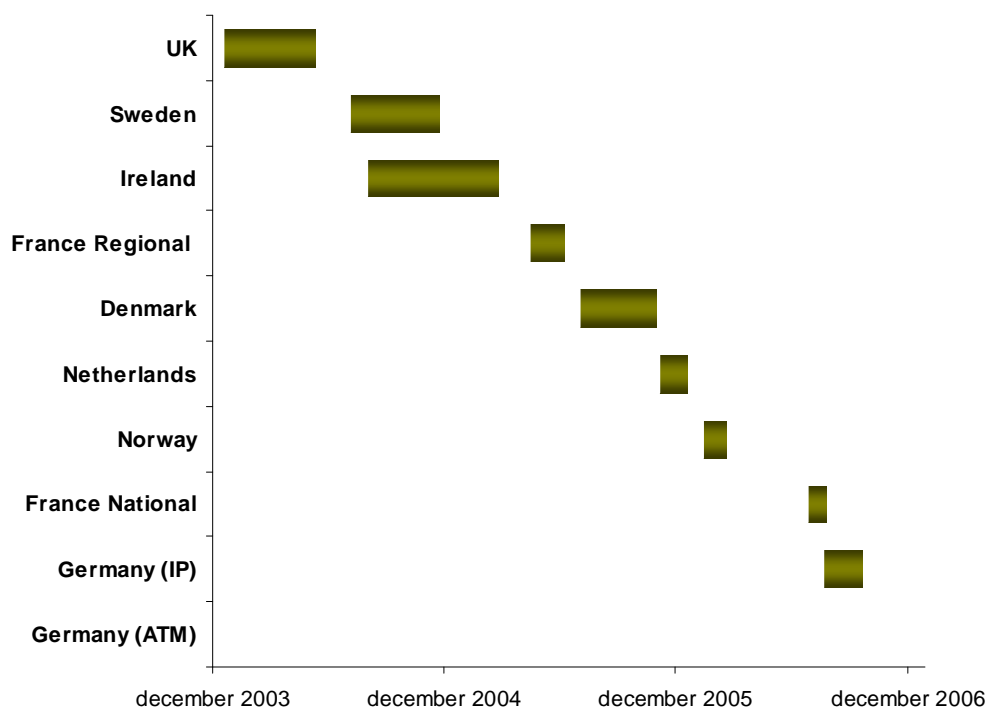
In Denmark, the decision regarding collocation is appealed. The appeal has had suspensive effect regarding the question of co-location. The rest of the obligations are in force. The appeal case is still pending.

In Norway, the price regulation was appealed. The result of the appeal was that most of the Norwegian Regulatory Authority's decision was upheld. Only the decision on a reduced price cap from 2007 was overturned.

2.2. Market 12, bitstream access

The UK and Sweden have been the front runners in market 12. These two countries were the only countries where the national regulatory authority made its decision in 2004. Germany is the slowest implementer of the regulation on market 12. In fact, Germany has not even notified the Commission about the regulation on the ATM market yet. The time between the notice and the decision made by the national regulatory authority varies from one month to five months, cf. Figure 2.

Figure 2: Time from notice to Commission to decision from national regulatory authority



Note: Germany has not yet notified a decision on bit-stream access using ATM technology. The exact dates are shown in Appendix.

Source: The National Regulatory Authorities' and appeal bodies' decisions

The decisions made by the national regulatory authorities have been appealed in Germany, Sweden and Denmark, cf. Table 2.

Table 2: Appeal of decisions made by national regulatory authority

Country	NRA decision appealed	NRA decision overruled	Suspensive effect
Sweden	Yes	Pending	Yes
Denmark	Yes	Pending	Yes*
Norway	No		
UK Conveyance	No		
UK Origination	No		
Ireland	No		
France Regional	No		
France National	No		
Germany	Yes	Pending	No

Note: For Netherlands, there is only relevant information on appeal procedures in Dutch.

Source: The National Regulatory Authorities' and appeal bodies' decisions

In Sweden, the whole decision is appealed. TeliaSonera, which is the complainant, considered that the Swedish Regulatory Authority had not conducted appropriate analyses. The Swedish Authority won in the first court instance. However, TeliaSonera has again appealed the decision to a higher court. For the moment, the decision is suspended and has not entered into force.

In Germany, Deutsche Telecom has appealed the National Regulatory Authority's decision on relevant market. However, the obligations are in force. The appeal case is still pending.

In Denmark the decision regarding co-location is appealed. The appeal has suspensive effect for the collocation, the rest of the obligations are in force.

Chapter 3 Relevant market

The European Commission has outlined 18 markets which are candidates for regulation. The National Regulatory Authority has to analyse these eighteen markets. However, the market delineation shall be conducted in accordance with the principles on market delineation under European competition law. These analyses must be based on the competition conditions in the individual Member States. Consequently, the market delineation may vary between different Member States.

In this chapter we study how the countries have defined the relevant markets, and what methods the countries have used to define the relevant markets.

We have studied the products that the Commission has defined as market 11 and market 12. Market 11 is local loop unbundled. This means access to the twisted copper line between homes and the local exchange *or the purpose of providing broadband and voice services*. Market 12 is bitstream access. This refers to the situation where the incumbent installs a high-speed access link to the customer premises and then makes this access link available to third parties, to enable them to provide high-speed services to customers, e.g. broadband internet.

As regards the methods used to delineate the relevant market they can vary depending on the uncertainty of the market delineation. The purpose is to point out all products which are close substitutes. The simplest methods are used when there is little doubt about the relevant market. In these cases one typically uses qualitative methods which assess the product characteristics, the intended use and the prices of the product. In cases where the market delineation is more uncertain, it may be necessary to apply quantitative methods. The main method is the SSNIP test which is used to measure the fall in demand for a product when the price of the product rises permanently by 5-10 percent. If the price rise is not profitable, the relevant market is broader than the product we study. The test may be combined with critical loss, which measures the profitable limit of a demand fall when prices rise by 5-10 %. In addition, one may use correlation analysis and cointegration analyses to check whether different products are in the same relevant market.

3.1. Market 11

Delineation of the relevant market

The general impression is that the eight countries define the relevant market according to the Recommendation of the European Commission. Six of the countries have no deviation from the Recommendation. The national regulatory authorities define business and private customers to be in the same market. They also consider the relevant geographic markets to be national, cf. Table 3.

Table 3: Delineation of Commission's recommended market 11, local loop unbundling

Country	Product market = 'Wholesale unbundled access'	Geographic market = Country	Separation, Business and private	Deviation from recommendation	Relevant market changed
Sweden	Yes	Yes	No	No	No
Denmark	Yes	Yes	No	No*	No
Norway	Yes	Yes	No	No	No
UK ¹⁾	Yes	Yes	No	Yes	No
Ireland	Yes	Yes	No	No	No
France ²⁾	Yes	Yes	No	No	No
Germany	Yes	Yes	No	Yes	No
Netherlands	Yes	Yes	No	No	-

Note: 1) United Kingdom except Hull, 2) France includes overseas territories.* The Danish NRA has included "administrative full unbundled access" in the relevant market, which is shared access where the end-user no longer has a narrow-band service, e.g. ordinary phone service. "Deviation from the Commission Recommendation" means that there is a difference between the Commission's recommended market and the market definition in the final decision means "Relevant market changed" that there is a difference between the market definition in the notice to the Commission and in the final decision. The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities' decisions and notices to the European Commission.

The UK has defined that cable used to transmit TV is included in the relevant market even if cable operators do not provide equivalent wholesale services to local loop unbundling. The reason is that the competition pressure from cable at the retail level restricts the leeway of British Telecom's local loop unbundling. However, the Commission is of the opinion that cable should not be included in the relevant market. Instead it should be taken into account as a potential competition when assessing significant market power. However, as the Commission ascertains that the market delineation has no bearing on the outcome, they leave the market definition open.

Germany left out glass fibre connection to end-users from the relevant market without conducting analyses. However, the Commission requested the German Authority to conduct the analyses of this product.

Finally, none of the countries have changed their market delineation from the notice to the Commission to the final decision. As most countries proposed a market definition in accordance with the Commission Recommendation this is perhaps not surprising. However, OFCOM's deviation was not halted by the Commission.

Applied methods

Most countries only use the qualitative methods when delineating the relevant market. That means they look into the product characteristics, prices and intended use, when applying the SSNIP framework.

However, Great Britain is a country which uses quantitative methods. In order to decide whether broadband and narrowband services at the retail level are in the same market, they conduct a SSNIP based on questionnaire to end-users. They compare the SSNIP results with the critical loss and find that broadband and narrowband services are in separate markets. Also Ireland has conducted a survey, but not in connection with a SSNIP-test, cf. Table 4.

Table 4: Methods used delineating the relevant market 11

Country	Qualitative Methods				Quantitative Methods		
	Product characteristics	Intended use	Price	SSNIP framework	SSNIP test	Survey	Critical Loss
Sweden	√	√					
Denmark	√	√		√			
Norway	√	√		√			
UK	√	√	√	√	√	√	√
Ireland	√	√	√	√		√	
France	√	√	√	√			
Germany	√	√	√	√			

Note: There is no reply for the Netherlands as there is no available information on applied methods in English.
Source: The National Regulatory Authorities' decisions.

3.2. Market 12

There are several deviations from the Commission's recommended markets. In fact, half of the countries have split the Commission's market 12 into two markets. All of these market deviations have been accepted by the Commission. This may indicate that deviating market definition may be approved by the European Commission as long as the national regulatory authorities have conducted appropriate market analyses.⁶

There is only one change in market definition from notice to the Commission to final decision. This concerns the fact that the German Authorities proposed to leave out VDSL from the relevant markets. VDSL is an xDSL technology providing faster data transmission over a single twisted pair of wires than for instance ADSL. As the Commission could not find sufficient arguments in the German analyses leaving out VDSL, the German authority was asked to reconsider its position. Accordingly, the German authority incorporated the VDSL in the relevant markets.

Otherwise, there is no delineation of separate markets for business and private customers. All the markets are also defined to be national, cf. Table 5.

⁶ From market 11 we remember that the Commission did not accept that German authorities left out glass fibre connections from the relevant market without appropriate market analyses.

Table 5: Delineation of Commission’s recommended market 12, bitstream

Country	Product market = ‘Wholesale broadband access’	Geographic market = Country	Separation, Business and private	Deviation from recommendation	Relevant market changed
Sweden	Yes	Yes	No	No	No
Denmark	Yes	Yes	No	No	No
Norway	Yes	Yes	No	No	No
UK ¹⁾	Conveyance	Yes	No	Yes	No
UK ¹⁾	Origination	Yes	No	Yes	No
Ireland	Yes	Yes	No	Yes	No
France ²⁾	Regional	Yes	No	No	No
France ²⁾	National	Yes	No	Yes	No
Germany	IP	Yes	No	Yes	Yes
Germany	ATM	Yes	No	Yes	Yes
Netherlands	High quality	Yes	No	Yes	-
Netherlands	Low quality	Yes	No	Yes	-

Note: ¹⁾ United Kingdom except Hull, ²⁾ France includes overseas territories. Definitions of relevant product markets, UK: Broadband conveyance and asymmetric broadband origination, Germany: IP wholesale bitstream access and ATM wholesale bitstream access, Netherlands: Low quality wholesale broadband access and High quality wholesale broadband access. “Deviation from the Commission Recommendation” means that there is a difference between the Commission’s recommended market and the market definition in the final decision means “Relevant market changed” that there is a difference between the market definition in the notice to the Commission and in the final decision. The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities’ decision and notices to the Commission.

There are four countries that have defined two markets for the Commission recommended market 11:

In the UK, OFCOM distinguishes between two markets within ‘*wholesale broadband access*’. Asymmetric broadband origination and broadband conveyance are considered to be complementary goods rather than demand or supply side substitutes. This was accepted by the Commission.

Germany defined separate markets for two different transmission technologies: Asynchronous Transfer Mode (ATM) and the Internet Protocol (IP). The Commission accepted this separation as it reflected the competition conditions in Germany.

The Dutch Authority defined there to be separate markets for low and high quality of bitstream. The Commission accepted this separation as it reflected the different competition conditions for high and low bitstream quality in the Netherlands.

Finally, France found there to be a separate market for national broadband, which in contrast to regional broadband only requires one access point. The Commission did not have any objections to this market delineation.

Moreover, Ireland included Fixed Wireless Access (FWA) and cable, which is traditionally used to transmit TV, in the relevant market even if cable and FWA operators do not provide equivalent wholesale services to LLU. The European Commission is of the opinion that cable and FWA should not be included in the relevant market. Instead it should be taken into account as potential competition when assessing significant market power. However, as the Commission ascertains that the market delineation has no bearing on the outcome, they leave the market definition open.

In contrast, the Swedish authority has changed the market definition including the cable, traditionally used to transmit TV, after receiving objections from the Commission.

Applied methods

Most countries only use the qualitative methods when delineating the relevant market. That means they look into the product characteristics, prices and intended use, when applying the SSNIP framework.

However, the United Kingdom is a country which uses quantitative methods. In order to decide whether broadband and narrowband services at the retail level are in the same market, they conduct a SSNIP based on questionnaire to end-users. They compare the SSNIP results with the critical loss and find that broadband and narrowband services are in separate markets. Also Ireland has conducted a survey, but not in connection with a SSNIP-test, cf. Table 6.

Table 6: Methods used delineating the relevant market 12

Country	Qualitative Methods				Quantitative Methods		
	Product characteristics	Intended use	Price	SSNIP framework	SSNIP test	Survey	Critical Loss
Sweden	√	√					
Denmark	√	√		√			
Norway	√	√		√			
UK	√	√	√	√	√	√	√
Ireland	√	√	√	√		√	
France	√	√	√	√			
Germany	√	√		√			

Note: There is no reply for the Netherlands as there is no available information on methods applied in English.

Source: The National Regulatory Authorities' decisions.

Chapter 4 Significant market power

In order to regulate telecom operators these must be designated as having significant market power (SMP). Operators with SMP will have certain obligations to ensure competition on broadband access. In this chapter, we describe how the eight countries have handled the issue of giving SMP status to certain operators. We describe the obligations assigned by the national regulatory authorities in the next chapter.

Significant market power (SMP) is equivalent to *dominant position* under European competition law. Hence, the National Regulatory Authorities shall designate operators with significant market powers in accordance with principles of designation of dominant position under competition rules.

When analysing whether operators have significant market power, the central question is basically whether or not the operators are exposed to competitive pressure preventing them from raising their prices. The competitive pressure can come from existing competitors, from potential competitors, or from buyer power.

We conclude that all countries, with one exception, have identified an operator with significant market power in both the market for unbundled access to the local loop and the market for bitstream access. The exception is the market for low quality bitstream access in the Netherlands, where no operator has significant market power. The reason is that there is strong competition between alternative networks in the Netherlands.

We also conclude that the national regulatory authorities use a broad variety of indicators to analyse whether an operator has significant market power. However, the most important indicators are market share, control of bottlenecks, potential competition and buyer power.

4.1. Market 11

SMP operators

All eight national regulatory authorities in our study have given an operator SMP status in market 11, i.e. the market for unbundled access to the local loop. The primary reason is that there only exists one nation-wide copper network in these countries, cf. Table 7.

Table 7: SMP on relevant market 11

Country	SMP in Relevant Market	Who
Sweden	√	TeliaSonera AB
Denmark	√	TDC A/S
Norway	√	Telenor ASA
UK except Hull	√	British Telecom
Ireland	√	Eircom
France	√	France Télécom
Germany	√	Deutsche Telekom
Netherlands	√	Koninklijke KPN N.V.

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.
Source: The National Regulatory Authorities' decisions.

Methodology

The national regulatory authorities use a broad variety of indicators to analyse whether an operator has significant market power. However, the most important indicators are market share, control of bottlenecks, vertical integration, potential competition and buyer power, cf. Table 8.

Table 8: Factors used when assessing SMP in Market 11

Category	Indicator	SE	DK	NO	UK	IR	FR	DE	NL	Sum
Concentration	Market share (%)	99	100	100	85	100	100	90	100	8
	Market share	√	√	√	√	√	√	√	√	
Entry Barriers	Potential supply capability				√					1
	Sunk cost		√		√	√	√			4
	Economies of scale	√	√			√	√	√		5
	Economies of scope		√		√	√	√	√		5
	Financial resources		√		√				√	3
	Distribution & sales channels						√	√		2
	Regulatory entry barriers		√							1
	Ubiquity				√	√				2
	Control of bottleneck	√	√	√			√	√	√	6
	Firm size						√	√		2
	R&D		√						√	2
	Knowledge & asymmetric info.		√							1
	Required investments					√	√	√	√	4
	Economies of density					√	√			2
Branding and advertising			√						1	
Potential Competition / Innovation	Potential Competition	√	√	√		√	√	√		6
	Innovation			√						1
	Barriers to expansion							√		1
	Vertical Integration	√	√		√		√	√	√	6
Provider characteristics	Bundling /Differentiation	√						√		2
	Leverage of SMP		√							1
	Price Development		√					√		2
	Supplier Behaviour		√							1
Demand Conditions	Buying power	√	√	√	√	√	√	√	√	8
	Consumer Information		√							1
	Switching /lock in effects		√							1
Sum		7	18	5	10	9	11	15	4	79

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.
Source: The National Regulatory Authorities' decisions and notices to the European Commission.

Denmark and Germany are the countries who mention most indicators of significant market power in their notice to the Commission. The countries mention 18 and 15 indicators respectively. At the other end the scale, the Netherlands and Norway mention only 4 and 5 indicators, respectively. These differences can either reflect true differences in the level of

analysis in different national regulatory authorities, or they can reflect that some national regulatory authorities only mention the decisive indicators in their notice to the Commission while other national regulatory authorities mention all indicators considered in the analysis.

The most important indicators are market share, control of bottlenecks, potential competition and buyer power.

The market share is an important indicator because a high market share, e.g. above 90 percent, shows that the provider in question controls most of the market. Hence, in many cases the market share is almost sufficient information to conclude that the provider has significant market power.

The control of bottleneck, i.e. the local loop, is also an important indicator. If the provider controls central facilities it will be very difficult for existing competitors to expand or for new competitors to enter the market, unless the market is regulated.

The potential competition is an important indicator, because strong potential will discipline providers with high market shares. The reason is that price increases invites new competitors to enter the market. Hence, to avoid inviting competitors to enter the market, existing providers will be reluctant to increase the prices.

The buyer power is an important indicator of market power, because strong buyers can often prevent sellers from increasing the prices. The market power between sellers and buyers can counterbalance each other.

In addition to these widely used indicators, the national regulatory authorities have used a number of other indicators, cf. Box 1.

Box 1: Short explanations of indicators used in SMP analysis

Concentration:

- The share of volume of turnover of the largest provider in the relevant market.

Entry barriers:

- Potential supply capability: The highest production capability of providers on the market.
- Sunk cost: Costs which will not be recouped in case of exit from the relevant market.
- Economies of scale: A production process in which an increase in number of units produced causes a decrease in the costs of each production unit.
- Economies of scope: A production process in which an increase in number of different types of products decrease the costs of each production unit.
- Financial resources: Access to in-house and external capital.
- Distribution & sales channels: The possibility of transporting and selling products.
- Regulatory entry barriers: Entry barriers created by governmental measures.
- Market growth: The extent the total turnover in the relevant market is growing.
- Ubiquity: Competition impact of the being present and established everywhere.
- Control of bottleneck: Control of infrastructure that is not easily duplicated
- Firm size: The number of staff, turnover etc. of providers on the relevant market.
- R&D: The level of R&D needed in order to provide a product on the relevant market.
- Required investments: The level of investment needed in order to provide a product on the relevant market.
- Economies of density: A production process in which an increase in households gives the possibility to decrease costs of each production unit.
- Branding and advertising: The level of marketing and branding needed in order to provide a product on the relevant market.
- Technological advantage: The extent a provider has a technological advantage.
- Knowledge & asymmetric info: The amount and allocation of knowledge needed in order to provide a product on the relevant market

Potential competition:

- Potential Competition: Possible competition pressure in the relevant market within the time frame of the market review.
- Innovation: Invention of new production processes and products.
- Barriers to expansion: Conditions which make it difficult for existing operators to expand and achieve larger market shares.
- Vertical Integration: A firm providing both wholesale products and related retail products.
- Horizontal integration: A firm who controls different parallel infrastructures that may be used to supply products on the same relevant market.

Provider characteristics:

- Bundling/Differentiation: Selling different products together or making the products heterogeneous.
- Leverage of SMP: Transfer market power from market to another market.
- Price Development: Change in prices over time.
- Supplier Behaviour: The influence of supplier behaviour on competition conditions on the relevant market.
- Profitability: The extent one or several providers have higher profits than others on products in the relevant market.
- Price: The extent one or several providers charge higher prices than others on products in the relevant market.

Demand:

- Buying power: The extent countervailing buying power eliminates any market power in the relevant market on the supply side.
- Consumer Information: The extent consumers are informed about prices, quality and other characteristics of products on the same relevant market.
- Switching /lock in effects: Inflicted costs for customers when changing suppliers.

Source: Copenhagen Economics, the National Regulatory Authorities' decisions.

4.2. Market 12

SMP operators

In market 12 there is one exception where the national regulatory authority has not identified an operator with significant market power. The exception is the market for low quality bitstream access in the Netherlands. The reason is that there is strong competition between alternative networks in the Netherlands. In all other countries, an operator with significant market power has been identified, cf. Table 9.

Table 9: SMP on relevant market 12

Country	SMP on Relevant market	Who
Sweden	√	TeliaSonera AB
Denmark	√	TDC A/S
Norway	√	Telenor ASA
UK Conveyance	√	British Telecom
UK except Hull Origination	√	British Telecom
Ireland	√	Eircom
France Regional	√	France Télécom
France National	√	France Télécom
Germany IP	√	Deutsche Telekom
Germany ATM	√	Deutsche Telekom
Netherlands high quality	√	Koninklijke KPN N.V.-
Netherlands low quality	None	

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities' decisions.

Methodology

The national regulatory authorities use a broad variety of indicators to analyse whether an operator has significant market power. However, the most important indicators are market share, economies of scale and scope, control of bottlenecks, and vertical integration, cf. Table 10.

Table 10: Factors used when assessing SMP in Market 12

Category	Indicator	SE	DK	NO	UK ¹⁾	UK ²⁾	IR	FR ³⁾	FR ⁴⁾	DE ⁵⁾	DE ⁶⁾	NL ⁷⁾	NL ⁸⁾	Sum
Concentration	Market Share (%)	78	87	100	55	55	85	93	60	>70	>70	60-70	30-40	
	Market Share	√	√	√	√	√	√	√	√	√	√	√	√	12
Entry barriers	Sunk cost		√	√	√	√								4
	Economies of scale	√	√	√	√	√	√	√	√	√	√	√	√	12
	Economies of scope	√	√	√	√	√	√	√	√	√	√	√	√	11
	Financial resources		√	√	√	√				√	√			6
	Distribution & sales channels			√	√	√				√	√			4
	Regulatory entry barriers		√	√										2
	Ubiquity						√							1
	Control of bottleneck	√	√	√		√		√	√	√	√	√	√	10
	Market growth				√	√								2
	Access to customers						√							1
	Firm size							√	√	√	√			4
	R&D		√							√	√			3
	Technological advantage					√								1
	Knowledge and asymmetric information		√											1
Potential Competition	Potential Competition	√		√			√	√	√	√	√			7
	Innovation			√										1
	Barriers to expansion			√	√	√				√	√			5
	Horizontal Integration			√										1
	Vertical Integration	√	√	√		√		√	√	√	√	√	√	10
Provider characteristics	Bundling /Differentiation	√		√		√				√	√	√	√	7
	Leverage of SMP									√	√			2
	Price Development		√	√						√	√			4
	Anticompetitive behaviour		√											1
	Profitability					√								1
	Pricing					√								1
Demand	Buying power	√	√	√	√	√	√			√	√	√		9
	Switching /lock in effects		√	√										2
Sum		8	14	17	6	15	8	7	7	15	15	7	6	125

Note: UK1) is conveyance in UK, UK2) is asymmetric broadband origination in UK except for Hull, FR3) is France Regional, FR4) is France National, DE5) is bitstream access based on IP technology in Germany, DE6) is bitstream access based on ATM technology in Germany, NL7) is high quality bitstream access in the Netherlands, and NL8) is low quality bitstream access in the Netherlands. The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities' decisions and notices to the European Commission.

Norway, the UK and Germany are the countries who mention most indicators of significant market power in their notice to the Commission. The countries mention between 15 and 17 indicators. At the other end the scale only 6 indicators are mentioned in the market for low quality bitstream access in the Netherlands and in the market for asymmetric bitstream access in the UK. These differences can either reflect true differences in the level of analysis, or they can reflect that some national regulatory authorities only mention the decisive indicators while other national regulatory authorities mention all indicators considered.⁷

The most important indicators are market share, economies of scale and scope, control of bottlenecks, and vertical integration.

Market share is an important indicator because a high market share shows that the provider in question controls most of the market. In the only market with no SMP, low bitstream access in the Netherlands, the leading provider has a market share of 30-40 percent.

⁷ For the Netherlands we have only studied the EU notices because the analyses are written in Dutch.

Economies of scale and scope are also important indicators. Economies of scale occur when there is a high utilisation rate on the network such that it services many households. Economies of scope occur when the network provides several services simultaneously, e.g. broadband and television. Economies of scale and scope give the provider cost advantages that make it difficult for other providers to compete effectively. This gives the provider with economies of scale and scope more market power.

If the provider controls central facilities, i.e. bottleneck, it will be very difficult for existing competitors to expand or for new competitors to enter the market, unless the market is regulated.

The potential competition is an important indicator, because strong potential will discipline providers with high market shares. The reason is that price increases invite new competitors to enter the market. Hence, to avoid inviting competitors to enter the market, existing providers will be reluctant to increase the prices.

Finally, vertical integration is important as a vertically integrated operator may have the incentive and the ability to discriminate between “own” downstream business and other downstream operators.

In addition to these widely used indicators, the national regulatory authorities have used a number of other indicators. Many of the indicators have also been used to identify significant market power in market 11, nevertheless there are a number of indicators that have only been used in the analysis of market 12, cf. Box 1 above.

Chapter 5 Obligations

There are SMP operators in all countries studied. The national regulatory authorities are therefore obliged to impose a remedy that can solve some of the problems caused by the existence of strong market power. In this chapter, we describe the obligations imposed on SMP operators.

All eight countries in the study accentuate the need for regulating access to the local loop of the fixed network. They ascertain the local loop of the fixed network as a bottleneck. This is partly due to the fact that there are no equivalent networks in any country, perhaps with an exception of the cable network in the Netherlands. Local loop unbundling is considered the best way to achieve some infrastructure competition. The reason is that access to the local loop makes it possible to differentiate and innovate data and telephony services.

Before deciding on the appropriate regulation, the national regulatory authority has to determine the purpose with the regulation. Should it encourage competition between different service providers today or encourage competition between different infrastructures in the future? Most authorities agree that competition is a better guard for efficient markets than is regulatory intervention. This requires infrastructure competition between alternative networks, as for example in mobile telecommunications markets.

There is a trade-off between promoting competition on the existing networks today and promoting competition between alternative new networks in the future. If regulation makes it attractive for competitors to use the existing market, it will lead to increased competition today on the existing network. However, when it is attractive for competitors to use the existing network, it becomes less attractive to build a new competing network. Too much emphasis on the current situation, with strict regulation as a consequence, will decrease the incentives to invest in competing infrastructure solutions.

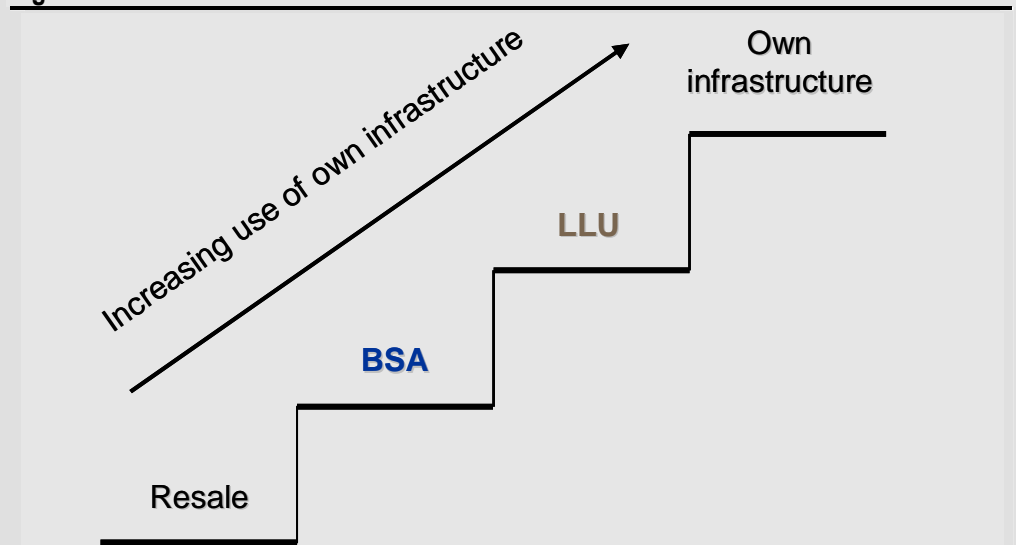
Regulation has to balance current and future competition on the markets. Regulation with the sole purpose of generating infrastructure competition would let the incumbent operator exploit the market power and make large profits today, in order to invite investments in new alternative networks. However, introduction of infrastructure based competition can be made stepwise. The theory of competition on services evolving to infrastructure competition is often referred to as the investment ladder, cf. Box 2.

Box 2: The ladder of investment

The ladder of investment is a dynamic access theory which deals with increased infrastructure competition in the longer run by providing access to existing networks in the shorter run (service competition). It is assumed that investments are made in a step by step way by new entrants. In order to allow new entrants to gradually invest in own infrastructure they need a chain of access products to acquire a customer base by offering their own services to end users based on wholesale access. Once the new entrants have gained a critical mass, i.e. obtaining enough revenues to finance the investment, they will increasingly deploy their own infrastructure. In order to facilitate the climbing up the ladder, one has a softer regulation of the lowest steps, while a harder regulation of the highest steps.

Regarding broadband, there are several access products: resale, bitstream access (BSA) and local loop unbundling (LLU). Resale is the access form which requires least investment but also gives the access operator least leeway to differentiate and innovate their products. Local loop unbundling is the access form which requires most investment but also gives the access operator most leeway to differentiate and innovate their products, cf. Figure 3.

Figure 3: Ladder of investment



Source: Copenhagen Economics

Source: Copenhagen Economics, Cave & Vogelsang (2003)

The walk up the ladder of investments can be made in small steps. One step is to go from providing broadband based on bitstream access which requires low investments from the provider to providing broadband based on local loop unbundled access which requires more investment from the provider.

There are two main ways in which the national regulatory authority can design regulation that influences the providers' incentives to move up the investment ladder.

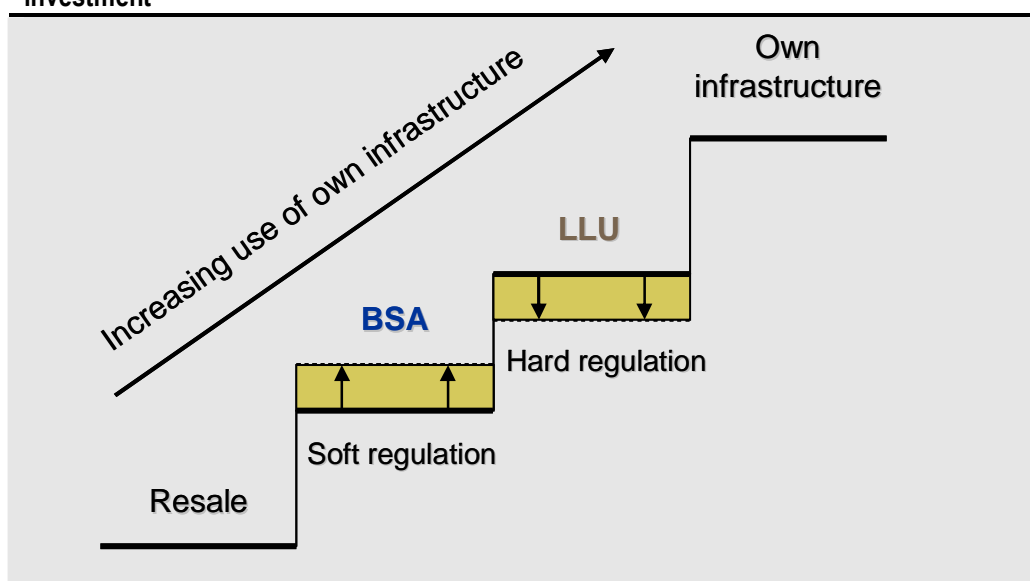
First, the national regulatory authority can decide on how heavy the regulation should be. The range of proposed and used obligations ranges from soft regulation, such as transparency conditions, medium regulation, such as non-discrimination, to heavy price regulations.

Heavy regulation generally promotes competition between different service providers as prices are determined by the national regulatory authority and thus can be set low enough to encourage entry into the market for service providers. However, as the regulation reduces the profits from owning a net, it will also reduce the incentives to build alternative competitive infrastructures.

Soft regulation, on the other hand, may enable operators with significant market power to exercise their market power to exploit profits from the market and thus lead to high prices for consumers. However, soft regulation can also stimulate the construction of alternative infrastructures as it is profitable to own a net.

Second, the national regulatory authority can balance the regulation between different markets. The national regulatory authority can give incentives to move up the ladder by imposing different types of regulation on related markets. As described above strong regulation tends to attract new service providers. The national regulatory authority can use heavy regulation on steps high up on the ladder where entry is a problem, and use less regulation on lower steps on the ladder. This gives operators incentives to move up the ladder. We find that several countries in our study do, in fact, balance the regulation of bitstream access and local loop unbundling in this way, cf. Figure 4.

Figure 4: Regulation of bitstream access and local loop unbundling in the ladder of investment



Source: Copenhagen Economics and

In many countries, the national regulatory authority does not see pure infrastructure competition as a realistic scenario in the short to medium future. For instance, the UK Regulatory Authority considers effective infrastructure competition unlikely: “Ofcom does not expect inter-modal competition between DSL and cable operators to be effective between now and the end of the decade and thus sees a need to promote access based competition.”⁸

5.1. Type of obligation

We have studied which types of obligation the national regulatory authorities have stated in their decision. We have divided the obligations into the main categories light, medium and heavy obligations.

All national regulatory authorities in our study require the incumbent to provide access to the local loop. This should be done at non-discriminatory conditions. Apart from Norway, they also require cost oriented prices on access to the local loop.⁹ With exception of the Netherlands, the

⁸ ERG (2005), p. 11.

⁹ There are also other related services to the local loop, such as collocation. We focus on the rental of the local loop as this is the main access product.

cost orientation is based on LRAIC or similar cost methodologies. The purpose is to provide cost efficient prices and correct incentives to new investments. The National regulatory authority can use a variety of obligations, see Box 3.

Box 3 Types of obligations

Obligation of transparency requires operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices.

Obligation of non-discrimination ensures that the operator applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners.

Obligation of accounting separation may require a vertically integrated company to make transparent its wholesale prices and its internal transfer prices inter alia to ensure compliance where there is a requirement for non-discrimination or, where necessary, to prevent unfair cross-subsidy. National regulatory authorities may specify the format and accounting methodology to be used.

Obligation of access imposes operators to meet reasonable requests for access to, and use of, specific network elements and associated facilities, for instance in situations where the national regulatory authority considers that denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end-user's interest.

Obligations of price control and cost accounting relate to cost recovery and price controls, including obligations for cost orientation of prices and obligations concerning cost accounting systems, for the provision of specific types of interconnection and/or access, in situations where a market analysis indicates that a lack of effective competition means that the operator concerned might sustain prices at an excessively high level, or apply a price squeeze, to the detriment of end-users. National regulatory authorities shall take into account the investment made by the operator and allow him a reasonable rate of return on adequate capital employed, taking into account the risks involved.

Source: Copenhagen Economics

Market 11

Market 11 is a heavily regulated market. Transparency and non-discrimination obligations are used in all investigated countries. But so too are the heaviest obligations such as price controls and cost accounting, cf. Table 11

Table 11: Obligations in market 11

Country	Light obligation	Medium obligation		Heavy obligation	
	transparency	non-discrimination	accounting separation	access	price control and cost accounting
Sweden	√	√	√	√	√
Denmark	√	√	√	√	√
Norway	√	√		√	√
UK	√	√	√	√	√
Ireland	√	√	√	√	√
France	√	√	√	√	√
Germany	√	√		√	√
Netherlands	√	√	√	√	√

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities' decisions and notices to the European Commission.

The heavy regulation suggests that the national regulatory authorities are more concerned with the current situation than with promoting the development of alternative infrastructure. In fact, only three of the surveyed countries discussed the implication of the regulation on the ladder of investment, i.e. the UK, France and Norway. Moreover, national regulatory authorities have stated that infrastructure-based competition is currently unlikely, and they therefore focus on competition between the service providers.

One of the countries that consider the investment ladder is France. The French National Regulatory Authority declares that access to the local loop may give increased competition on television services as French unbundled local loop operators have started to also provide television services along Internet and IP telephony.

However, even if most of the countries agree on the purpose of local loop regulation, the UK national regulatory authority, OFCOM, singles out as a national regulatory authority who has taken complementary steps in order to make local loop competition effective and sustainable. They have established a regulatory authority dedicated to handle practicable unbundled local loop issues and enforced a separation between British Telecom's access services and other services; see Box 4:

Box 4: Telecommunication Review in the UK

In the UK, OFCOM conducted in 2004 and 2005 a Strategic Review of telecommunications. They also investigated broadband. In light of this review, they made three important announcements on broadband regulation: Competition at the deepest level, vertical separation and a new regulatory authority for local loop unbundling.

Firstly, they declared that the regulatory principle is to promote competition at the deepest level of infrastructure where it will be effective and sustainable. As regards broadband, this will mean competition based on LLU in areas with higher customer density.

Secondly, they found that vertical integration and control of the fixed network both gave British Telecom the incentive and the ability to discriminate between own downstream business and other downstream operators. Accordingly, based on competition rules, OFCOM found structural separation between access services and other services to be an appropriate measure. British Telecom has offered undertakings to make sure that there is a structural separation. OFCOM has so far accepted the undertakings, but keep the door open for an ownership separation if the present undertakings are not sufficient to remedy any discrimination.

Finally, OFCOM has set up a new regulatory body, Adjudicator, who is responsible for all the practical LLU issues. The reason is that there are so many practical issues which need to be solved in order to make the access regulation function.

Source: Baake and Preißl (Eds.) (2006)

Market 12

Market 12 is also heavily regulated. However, in Norway and the Netherlands the market is regulated without price controls and cost accounting, cf. Table 12.

Table 12: Obligations in market 12

Country	Light obligation	Medium obligation		Heavy obligation	
	transparency	non-discrimination	accounting separation	access	price control and cost accounting
Sweden	√	√	√	√	√
Denmark	√	√	√	√	√
Norway	√	√	√	√	
UK (conv.)	√	√	√	√	√
UK (orig.)	√	√	√	√	√
Ireland	√	√	√	√	√
France, reg.	√	√	√	√	√
France, nat.	√	√	√		√
Germany, IP	√	√	√	√	√
NL, high	√	√		√	

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.

Source: The National Regulatory Authorities' decisions and notices to the European Commission.

In spite of the vast regulation, France, the UK and Norway explicitly refer to “ladder of investment framework” when they ascertain the optimal regulation of bitstream. France and the UK consider bitstream being the most viable option in less populated areas. In those areas it is, for the time being, deemed that local loop unbundling is not a viable option. Consequently, they mandate the incumbents to provide bitstream access, see more information on France in Box 5.

Box 5: Bitstream regulation in France

The French national regulatory authority, ARCEP, considers it to be necessary to regulate access at regional level, i.e. bitstream. The reason is that the French NRA considers it not viable to provide local loop unbundling to the whole French population. In some parts of the country the population density is not high enough to make local loop unbundling investments profitable. Bitstream may therefore complement the local loop unbundling offer and make it possible provide nation-wide offers. A sign of bitstream access as a step on the ladder is the focus on avoiding margin squeeze of bitstream operators. Price control should hinder any price squeeze.

In the same thought, ARCEP considered the competition to be restraint at providing access at a national level. For other operators than France Telecom, it is necessary to connect all the regional access point in order to provide nation-wide offers. However, as both the French national regulatory authority and the European Commission ascertain that regulation would become obsolete as soon as the local loop unbundling and bitstream are effectively on place, the regulation was set for only one year and was more light-handed. Recently, ARCEP has also proposed to abandon the regulation at national level.

Source: ARCEP (2005f), ARCEP (2005g), ARCEP (2005h)

5.2. Type of price regulation

There are several types of regulation. They vary from the hardest one, which is cost plus, to the softest, which, apart from no regulation, is price cap, see Box 6

Box 6: Short explanations of price obligations

- Cost plus: Price regulation which is based on calculating the cost of the wholesale product, then include an additional amount to represent profit.
- Price minus: Price regulation which is based on the retail price minus price of inputs which are not included in the wholesale product.
- Price cap: Price regulation based on the maximum price on one product or a weighted price maximum on several products.

Source: Copenhagen Economics

Market 11

The price obligations imposed on market 11 are generally very restrictive. In all countries in the study, obligations containing some kind of price control on market 11 are imposed. In all of them but Norway, the market is regulated with the most restrictive type of price control – cost plus. This type of regulation is based on the operator’s costs for providing a specific service and to that a reasonable profit is added. In Norway, the market is regulated with a price cap which implies that the price must not exceed a specific price ceiling, cf. Table 13.

Table 13: Price control obligation used in market 11

Retail minus	Cost plus	Price cap	No price regulation
	Sweden Denmark United Kingdom Ireland France Germany Netherlands	Norway	

Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.
Source: The National Regulatory Authorities’ decisions and notices to the European Commission

Apart from the Netherlands and Norway, the price regulation is based on long run cost efficient prices and correct incentives to new investments. A price control based on long run incremental costs plus common costs, should send the correct “make or buy” signals, i.e. make your own network or buy access to existing networks. However, as pointed out by Cave (2006), the presence of uncertainty and high sunk costs makes the option of continuing to buy more attractive. In order to provide a neutral incentive between buying and making, one should also cover the value of the option. This does not seem to be the case for price regulation in any of these countries, perhaps, but one. The most likely effect is that LLU operators will continue to use the incumbent’s network in the future and not build alternative networks.

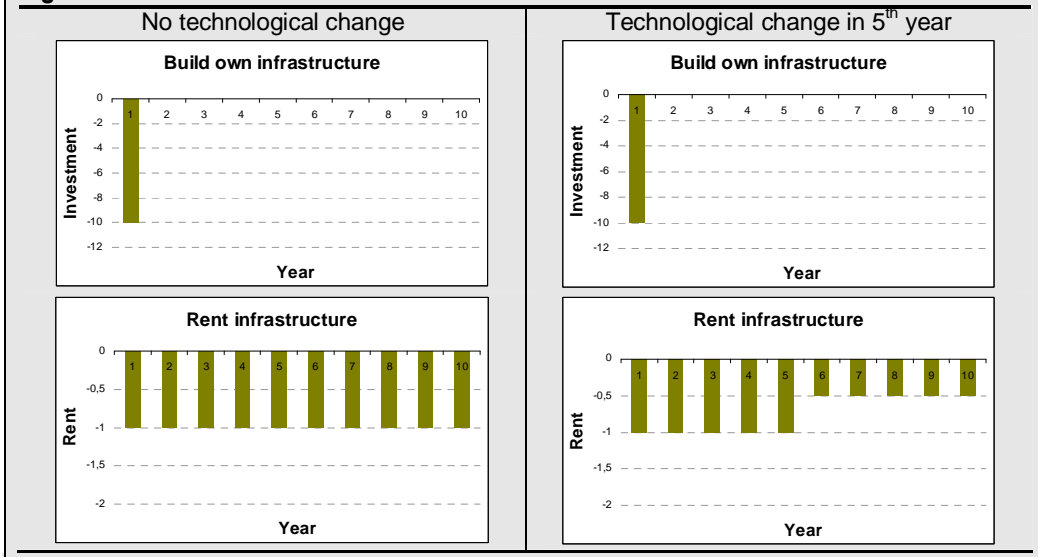
The possible exception is OFCOM (2005b), which has stated its approach to risk in the assessment of the cost of capital. In the statement they maintain that a correct price regulation should also take into the “the real option”. However, it does not appear that they have adjusted the ELRIC price regulation of LLU in order to take this “real option” into account. They accentuate this option for the Next Generation Access.

Box 7: Example of option value of using the existing network

It is important that price regulation takes into account that building own infrastructure involves a real option value. The real option value is that value it has to decide whether to build the infrastructure now or later. Expectations about future technological developments may make it attractive to wait and observe the technological development before the investment is made, i.e. there is an option of building the infrastructure later and this option has a value. This affects the balance between renting access to existing infrastructure and making own infrastructure. The presence of sunk costs, which may not be recouped in case of exit, and uncertainty about future demand and technological development will make suppliers liable to rent in stead of buying. If they create their own infrastructure, they will be stuck with the investment.

For example. If a provider chooses to make its own infrastructure, he must invest 10 billion kroner in present value. The life time of the investment will be 10 years. The costs of the investment will be independent of future technological development. If the provider in stead chooses to rent access he will under no technological change pay 1 billion kroner in present value each year. Seemingly, he will be indifferent between making and renting. However, if there is a technological change which cut renting costs in half in five years, the costs of renting will be lower than making its own infrastructure. Consequently, the uncertainty of future conditions and sunk costs when making its own network, will make the provider wait and see and renting, see Figure 5

Figure 5: Make or rent



Source: Copenhagen Economics, Cave (2006)

To the extent the cost plus method is used for the local loop unbundling, the different local loop unbundling operators will at the retail level compete on prices and quality based on the access price and other relevant costs.

Market 12

The obligations on market 12 are restrictive, but much less so than in market 11. In Norway and the Netherlands, the obligations do not include any price control. Further, in the cases where price control is imposed, primarily the least restrictive, i.e. retail minus obligation, is used. Only in three countries is cost plus obligation imposed on the operators.

Table 14: Price control obligation used in market 12

Retail minus	Cost plus	Price cap	No price regulation
Sweden UK (origination) UK (conveyance) Ireland France (National)	Denmark France (Regional) Germany		Norway Netherlands (high quality)

Note: Note: The Dutch data is based on notice summary and Commission comments as the decision is in Dutch.
Source: The National Regulatory Authorities' decisions and notices to the European Commission

The price effect of the bitstream access regulation will among other things depend on choices of retail minus or costs plus as the price regulation method. In countries with retail minus price regulation, for instance in the UK, bitstream access operators will compete on the retail margin. Any substantial retail price falls would most likely come from local loop unbundling operators which force the retail prices down. If there is instead a cost plus regulation, as in Denmark, the bitstream prices will reflect the access costs and not necessarily the retail prices.

Balancing regulation on related markets

Apart from designing the obligations by deciding the degree of regulation, the national regulatory authorities can balance the regulation between different markets and increase the effects of the regulation. Harder regulation in higher steps of the ladder and less regulation in the lower steps will give operators incentives to move up the ladder and give dynamic effects towards more infrastructure-based competition. Hard regulation on lower steps will on the other hand give operators few incentives to move on.

We have investigated the balance of obligations imposed on the two related markets 11 and 12.

We find that six countries, Sweden, the UK and Ireland, the Netherlands, Norway France (National) use harder regulation on market 11 than on market 12. The market highest on the investment ladder is regulated harder than lower markets, is coherent with the idea of promoting infrastructure competition. The design gives an incentive for the service providers move up the investment ladder and enjoy the protection of hard regulation.

On the other hand, three countries use the same regulation on both market 11 ad market 12, namely cost plus regulation. The three countries are Denmark, Germany, France (Regional); cf. Figure 6.

Figure 6: Comparing price regulation of local loop unbundling (market 11) and bitstream access (market 12)



Note: FR(R) is France regional, FR(N) is France national
Source: Copenhagen Economics

Appendix A Implementation

Market 11

Countries	Date of Notice	Date of NRA decision
Sweden	2004-07-02	2004-11-24
Denmark	2005-04-13	2006-01-05
Norway	2006-01-11	2006-02-20
UK	2004-08-26	2004-12-16
Ireland	2004-04-19	2004-06-15
France	2005-05-17	2005-06-08
Germany	2005-02-25	2006-04-22
Netherlands	2005-11-04	2005-12-21

Market 12

Countries	Date of Notice	Date of NRA decision
Sweden	2004-07-02	2004-11-24
Denmark	2005-06-30	2005-11-02
Norway	2006-01-11	2006-02-20
UK	2003-12-15	2004-05-13
Ireland	2004-07-29	2005-02-24
France Regional	2005-04-12	2005-06-08
France National	2006-06-27	2006-07-29
Germany (IP)	2006-07-21	2006-09-22
Germany (ATM)	None	
Netherlands	2005-11-04	2005-12-21

Appendix B Definition of Relevant Market in Summary Notifications, Market 11

Sweden

Product market

Wholesale unbundled access (including shared access) to metallic loops and subloops for the purpose of providing broadband and voice services. This market is included in the Commission's Recommendation on relevant markets as market no.11.

Deviation

Not applicable as the defined relevant market corresponds to that in the Recommendation.

Denmark

Product market

Market no. 11 in the Commission's Recommendation: "Wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services".

The National IT and Telecom Agency (NITA) have defined the relevant product market to also include "administrative full unbundled access".

NITA has defined "administrative full unbundled access" to be shared access where the end-user no longer has a narrow-band service. In practice, administrative full unbundled access is used when an end-user – whose narrowband and broadband services are delivered on the basis of shared access – terminates his narrowband PSTN- or ISDN-service (e.g. if he wants to switch to IP-based telephony). When that happens, the operator has the opportunity to order administrative full unbundled access, which means that the operator's splitters stay in place and thus, that no further technical work is required and that no "down time" is incurred by the end-user (as opposed to when shared access is succeeded by full unbundled access).

The arguments for inclusion of "administrative full unbundled access" in market 11 are in addition:

- Administrative full unbundled access has existed in the Danish market since April 2003 and was made accessible as a result of a national mediation due to a demand among national suppliers of electronic communications networks or services. The

national suppliers also requested NITA to include administrative full unbundled access in its decision on market 11.

- Administrative full unbundled access facilitates the possibility for the national suppliers to deliver broadband access service to end-users. Administrative unbundled access was earlier only available on the basis of non-discrimination as set down in Regulation (EC) No 2887/2000 of The European Parliament and of The Council of 18 December 2000 on unbundled access to the local loop.
- Administrative full unbundled access facilitates the improvement of both end-user services and operator efficiency/operator incurred costs. This is due to the fact that the end-user will experience no “down time” when terminating his shared access-based PSTN- or ISDN-subscription, and that the operator will not have to disconnect and remove his splitters thus requiring no additional technical work.
- It is NITA’s understanding that administrative full unbundled access is substitutable with unbundled access (including shared access) to metallic loops and sub-loops.

Deviation

The nationally defined market is in line with the market defined in the Recommendation. However, it should be noted that NITA has defined the relevant product market also to comprise “administrative full unbundled access”, see paragraph 1.1 above.

Norway

Product Market

Yes. The market for wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services is market number 11 in the Recommendation on relevant markets. In NPT’s assessment, the product market comprises only of the nationwide copper-based access network

Deviation

NPT deems the relevant product market to be in accordance with the Recommendation.

United Kingdom – except Hull

Product Market

Wholesale local access market. This market is included in the Commission’s Recommendation: “Wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services”.

Deviation

Not answered

Ireland

Product Market

Wholesale unbundled access (including shared access) to metallic loops and sub-loops, for the purpose of providing broadband and voice services.

Deviation

Not applicable

France

Product Market

Wholesale unbundled access (including shared access) to metallic loops and sub-loops.

Deviation

ART considers that there is no difference with the Recommendation on relevant markets.

Germany

Product Market

The market for access to the local loop. The market for “wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services” is listed under point 11 of the Annex to the Commission Recommendation. As regards the factual situation in the Federal Republic of Germany it has been found to consist of

- Unbundled/bundled access to copper loops at the main distribution frame or subloops (Bundled Access is only included under exceptional circumstances, in case that in individual cases the offer of bundled access is unreasonable and therefore unjustified)
- Line sharing;
- Unbundled/bundled access to local loops on the basis of „OPAL“ and „ISIS“ at the main distribution frame or sub-loops.

Deviation

Bundled Access is only included in the market insofar as under exceptional circumstances, in case that in individual cases the offer of bundled access is unreasonable and therefore unjustified. (This is not considered as a deviation.)*

Access to the local loop on the basis of “OPAL” and “ISIS”: This kind of local loop partially consists of optic fibre. It is included in the market because of the specific circumstances in the Federal Republic of Germany. This exceptional situation has to be seen against the background of German Reunification.

Netherlands

Product Market

The relevant product market consists of the market for wholesale unbundled access (including shared access) to metallic loops and sub-loops.

Deviation

None

Appendix C Definition of Relevant Market in Summary Notifications, Market 11

Sweden

Product Market

Wholesale broadband access. This market is included in the Commission's Recommendation on relevant markets as market no.12.

Deviation

Not applicable as the defined relevant market corresponds to that in the Recommendation.

Denmark

Product Market

Market no. 12 in the Commission's Recommendation: "Wholesale broadband access". The National IT and Telecom Agency (NITA) has defined the relevant product market to only include bitstream access (BSA). In general, BSA is defined as a product delivered on the copper access network analyzed on market 11 giving access to the supply of broadband services to end-users. BSA may include transmission from the end-user via the DSLAM and the ATM-node and through the ATM-network to the ISP of the operator or to points in between.

In the scope of this market analysis, BSA includes respectively:

- Transmission from the end-user to the DSLAM,
- Transmission from the end-user via the DSLAM to the ATM-node, and
- Transmission from the end-user via the DSLAM and the ATM-node and through the ATM-network to the ISP of the operator.

Neither the ISP-service itself nor wholesale internet connectivity is included in the BSA product.

BSA option 1 is currently mandated in the national Danish legislation. BSA option 2 is the form presently sold as BSA by TDC. Alternative operators has pointed out that in practice, option 2 is often sold together with transmission in TDC's ATM network (BSA option 3). As option 2 includes transmission from the DSLAM to the ATM-node, this practice has made it a not economically viable option to buy ATM-transport from other operators than TDC.

Deviation

The nationally defined market is in line with the market defined in the Recommendation.

Norway

Product Market

Yes. The relevant product market corresponds to Market 12 in the Recommendation, "Wholesale Broadband Access". The market includes broadband access services at the wholesale level, and is referred to in the analysis as the market for wholesale broadband access. The market for wholesale broadband access is technologically neutral, cf. section 2. This means that the market is not defined as only including Telenor's wholesale supply of broadband access services other than LLU, but also includes broadband access services offered through other access networks than the copper based one. Simple resale is not included in the market for wholesale broadband access.

Deviation

NPT deems the relevant product market to be in accordance with the Recommendation

United Kingdom Conveyance

Product Market

Broadband conveyance. This represents a segment of the Wholesale broadband access market as defined in the Commission's Recommendation (point 12).

Deviation

The Director's definition differs from that of the Commission in that it distinguishes between two markets within 'wholesale broadband access'. Asymmetric broadband origination and broadband conveyance are considered to be complementary goods rather than demand or supply side substitutes*

UK Origination

Product Market

The remaining segment (asymmetric broadband origination) is covered by a parallel notification.

Deviation

The Director's definition differs from that of the Commission in that it distinguishes between two markets within 'wholesale broadband access'. Asymmetric broadband origination and broadband conveyance are considered to be complementary goods rather than demand or supply side substitutes*

Ireland

Product Market

The relevant market is a market for the supply of wholesale broadband access services, a market which covers 'bitstream' access permitting the transmission of broadband data in both directions and other wholesale access provided over other infrastructures, if and when they offer facilities equivalent to bitstream access.

ComReg has concluded that the market for wholesale broadband access includes

- Self-supply by cable operators,
- Self-supply by FWA operators,
- Externally-supplied bitstream services and;
- Self-supplied bitstream services.

Deviation

Not applicable

France Regional

Product Market

Wholesale broadband access.

Deviation

ART considers that there is no difference with the Recommendation on relevant markets.

France National

Product Market

Wholesale broadband access delivered at the national level.

Deviation

This market is not listed in the Recommendation on relevant markets. As a consequence, ARCEP used the 3 criteria test in order to define this market as relevant for ex ante regulation.

Germany IP

Product Market

Commission Recommendation market number 12:

Wholesale broadband access (bitstream access).

Definition of two submarkets:

1. bitstream access market with handover on IP level. This market also includes HFC broadband access (TV-cable infrastructure)

Deviation

The proposed market definitions correspond to those recommended by the Commission.

Germany ATM

Product Market

bitstream access market with handover on ATM level.

Deviation

The proposed market definitions correspond to those recommended by the Commission.

Netherlands high quality

Product Market

High quality wholesale broadband access (products with overbooking ratio 1:1 until 1:20)

Deviation

None, both markets fall into the market for wholesale broadband access as identified in the Commission Recommendation.

Netherlands low quality

Product Market

Low quality wholesale broadband access (products with overbooking ratio > 1:20)

Deviation

None, both markets fall into the market for wholesale broadband access as identified in the Commission's Recommendation.

Appendix D Description of Obligations in Summary Notification, Market 11

Sweden

Light obligation – transparency

Requirement to publish a reference offer (art 9)

Medium obligation – non-discrimination

Requirement not to unduly discriminate (art 10)

Medium obligation – accounting separation

Accounting separation obligation (art 11)

Heavy obligation – access

Requirement to provide wholesale unbundled access on reasonable request (art 12)

Heavy obligation – price control and cost accounting

Cost oriented prices based on a LRIC-model (art 13)

Denmark

Light obligation – transparency

Requirement to publish a reference offer (art. 9) Other obligations of transparency (art. 9)

Medium obligation – non-discrimination

Obligation of non-discrimination (art. 10)

Medium obligation – accounting separation

Obligation of accounting separation (art. 11)

Heavy obligation – access

Requirement to provide wholesale unbundled access on reasonable request (art. 12)

Heavy obligation – price control and cost accounting

Price control based on a LRIC-model (art. 13) Cost accounting obligations (art. 13)

Norway

Light obligation – transparency

Transparency (publication and reference offer) – AD art. 9, Electronic Communications Act. § 4-6, Ecom Regulations §§ 2-5 and 2-6.

Medium obligation – non-discrimination

Non-discrimination – AD art. 10, Electronic Communications Act § 4-7, paragraph 1 and 2

Medium obligation – accounting separation

Heavy obligation – access

Access /co-location/information and support systems – AD art. 12, Electronic Communications Act § 4-1, cf. § 2-2 of the Ecom Regulations for access to wholesale unbundled access (including shared access to metallic loops and sub-loops. Electronic Communications Act § 4-4, paragraph 4 cf. Ecom Regulations § 2-6 for access to colocation. Electronic Communications Act § 4-5, second paragraph cf. Ecom regulations §§ 2-4, 2-5 and 2-6. If access is denied, Telenor shall give the requester a documented and justified refusal of the request, cf. Electronic Communications Act 4-1, third paragraph and § 4-4, fifth paragraph. Activation fees, prices for co-location with related services, including access to information and support systems are not covered by the price cap regulation. The pricing of these services are to be based on the principle of cost orientation. Pursuant to Electronic Communications Act § 4-9 NPT is imposing on Telenor an obligation to run cost accounts for wholesale unbundled access (including shared access) to metallic loops and sub-loops. A description of the systems imposed for running cost accounts shall be made public.

Heavy obligation – price control and cost accounting

Price and accounting controls – AD art. 13, Electronic Communications Act § 4-9, an obligation is being imposed on Telenor ASA to set charges for full access to the fixed access network in accordance with a price cap regulation described in Draft decision Section 9.2.

United Kingdom

Light obligation – transparency

Obligations relating to transparency (Art 9): Requirements to publish guidelines on request for new Network Access. Requirement to publish a Reference Offer. Requirement to notify charges, terms and conditions, requirement to notify technical information, requirement to publish information on quality of service.

Medium obligation – non-discrimination

Requirement to not unduly discriminate (Art 10)

Medium obligation – accounting separation

Requirement to have cost accounting systems and accounting separation (Art 11 and Art 13)

Heavy obligation – access

Requirement to provide network Access on reasonable request (Art 12)

Heavy obligation – price control and cost accounting
Price regulation (ie cost orientation)?

Ireland

Light obligation – transparency
Transparency -Regulation 10

Medium obligation – non-discrimination
Non-Discrimination -Regulation 11

Medium obligation – accounting separation
Accounting Separation -Regulation 12

Heavy obligation – access
Access to, and use of, specific network facilities -Regulation 13

Heavy obligation – price control and cost accounting
Price Control and Cost Accounting - Regulation 14*

France

Light obligation – transparency
Obligation of transparency (article 9)

Medium obligation – non-discrimination
Obligations of non discrimination (article 10).

Medium obligation – accounting separation
Obligation of accounting separation (article 11).

Heavy obligation – access
Obligation of access to, and use of specific network facilities (article 12).

Heavy obligation – price control and cost accounting
Price control and cost accounting obligations (article 13)

Germany

Light obligation – transparency
The publication of a standard reference unbundling offer containing the elements listed in Annex II of the Access Directive 2002/19/EC4; communication of the location of local loops and of collocation spaces to interested parties on request.

Medium obligation – non-discrimination
Non-Discrimination

Medium obligation – accounting separation

Heavy obligation – access

Fully unbundled access to the local loop in the form of a copper pair and shared access; bundled access to the local loop in the form of a copper pair at the main distribution frame, including to the OPAL/ISIS variant; collocation for the purpose of granting bundled and unbundled access to loops, including the cooperation between undertakings such that these undertakings can interconnect collocation spaces*

Heavy obligation – price control and cost accounting

Ex ante price control, based on the costs of the efficient provision of services;

Netherlands

Light obligation – transparency

Reference offer, based on article 6a.9 (2) of the Telecommunications Act;

Medium obligation – non-discrimination

Non-Discrimination, based on article 6a.8 of the Telecommunications Act;

Medium obligation – accounting separation

Separated accounting, based on article 6a.10 of the Telecommunications Act*.

Heavy obligation – access

Access, based on article 6a.6 of the Telecommunications Act;

Heavy obligation – price control and cost accounting

Tariff regulation, based on article 6a.7 of the Telecommunications Act*

Appendix E Description of Obligations in Summary Notification, Market 12

Sweden

Light obligation – transparency

Requirement to publish a reference offer (art 9)

Medium obligation – non-discrimination

Requirement not to unduly discriminate (art 10)

Medium obligation – accounting separation

Accounting separation obligation (art 11)

Heavy obligation – access

Requirement to provide bitstream access on reasonable request (art 12)

Heavy obligation – price control and cost accounting

Cost oriented prices based on a retail minus model (art 13)

Denmark

Light obligation – transparency

Requirement to publish a reference offer (art. 9) Other obligations of transparency (art. 9)

Medium obligation – non-discrimination

Obligation of non-discrimination (art. 10)

Medium obligation – accounting separation

Cost accounting obligations (art. 13) Obligation of accounting separation (art. 11)

Heavy obligation – access

Requirement to provide wholesale access to bitstream access – both with and without simultaneous supply of services on the low frequency part of the line – and to co-location on reasonable request (art. 12) of services on the low frequency part of the line – and to co-location on reasonable request (art. 12)

Heavy obligation – price control and cost accounting

Price control – uniform national pricing based on the method of modified historic costs in order to avoid risk of margin squeeze (art. 13)

Norway

Light obligation – transparency

Transparency (publication and reference offer) – AD art. 9, Electronic Communications Act. § 4-6

Medium obligation – non-discrimination

Non-discrimination – AD art. 10, Electronic Communications. Act § 4-7, paragraph 1 and 2

Medium obligation – accounting separation

Accounting separation – AD art. 11, Electronic Communications Act § 4-8, between Telenor ASAs network and its internal service provider operations.

Heavy obligation – access

Access /co-location/information and support systems – AD art. 12, Electronic Communications Act §§ 4-1, first, second and third paragraph. If access is denied, Telenor shall give the requester a documented and justified refusal of the request, cf. Electronic Communications Act 4-1, third paragraph and § 4-4, fifth paragraph.

Heavy obligation – price control and cost accounting

United Kingdom Conveyance

Light obligation – transparency

Obligations relating to transparency (Art 9) eg transparency as to quality of service and price publication obligations. Requirement to publish a Reference Offer. Requirement to notify charges, terms and conditions. - requirement to notify technical information

Medium obligation – non-discrimination

Requirement not to unduly discriminate (Art 10)

Medium obligation – accounting separation

accounting separation (Art 11)

Heavy obligation – access

Requirement to provide network access on reasonable request (Art 12) requirement to publish a Reference Offer. Requirement to notify charges, terms and conditions. Requirement to notify technical information.

Heavy obligation – price control and cost accounting

Retail minus pricing approach for network access

United Kingdom Origination

Light obligation – transparency

Obligations relating to transparency (Art 9) eg transparency as to quality of service and price publication obligations. Requirement to publish a Reference Offer. Requirement to notify charges, terms and conditions. - requirement to notify technical information

Medium obligation – non-discrimination

Requirement not to unduly discriminate (Art 10)

Medium obligation – accounting separation

accounting separation (Art 11)

Heavy obligation – access

Requirement to provide network access on reasonable request (Art 12) requirement to publish a Reference Offer. Requirement to notify charges, terms and conditions. Requirement to notify technical information.

Heavy obligation – price control and cost accounting

Retail minus pricing approach for network access

Ireland

Light obligation – transparency

Transparency -Regulation 10

Medium obligation – non-discrimination

Non-Discrimination -Regulation 11

Medium obligation – accounting separation

Accounting Separation - Regulation 12

Heavy obligation – access

Access to, and use of, specific network facilities - Regulation 13

Heavy obligation – price control and cost accounting

Price Control and Cost Accounting - Regulation 14*

France Regional

Light obligation – transparency

Obligation of transparency (article 9)

Medium obligation – non-discrimination

Obligations of non discrimination (article 10).

Medium obligation – accounting separation

Obligation of accounting separation (article 11).

Heavy obligation – access

Obligation of access to, and use of specific network facilities (article 12).

Heavy obligation – price control and cost accounting
Price control and cost accounting obligations (article 13)

France National

Light obligation – transparency
Obligation to formalize and transmit to the ARCEP the tariffs and conditions of internal transactions between the wholesale branch and the retail branch (article 11)

Medium obligation – non-discrimination
Obligations of non discrimination.

Medium obligation – accounting separation
Obligation of accounting separation (article 11).

Heavy obligation – access

Heavy obligation – price control and cost accounting
Price control

Germany IP

Light obligation – transparency
Obligation to issue a reference offer. Obligation to submit information on internal input and revenues.

Medium obligation – non-discrimination
Non-discrimination obligation.

Medium obligation – accounting separation
Accounting separation

Heavy obligation – access
Obligation of access for the purpose of interconnection and collocation. The obligation refers to all xDSL variants, including also ADSL2, ADSL2+, SDSL4 and VDSL5 . In its response to the Commission's request for information, BNetzA confirmed that stand alone bitstream access⁶ is part of the market and will be introduced in parallel with "the European harmonised development" **

Heavy obligation – price control and cost accounting
Price control obligation**

Netherlands high quality

Light obligation – transparency
Reference offer, based on article 6a.9 (2) of the Telecommunications Act;

Medium obligation – non-discrimination
Non discrimination, based on article 6a.8 of the Telecommunications Act;

Medium obligation – accounting separation

None

Heavy obligation – access

Access, based on article 6a.6 of the Telecommunications Act;

Heavy obligation – price control and cost accounting

None

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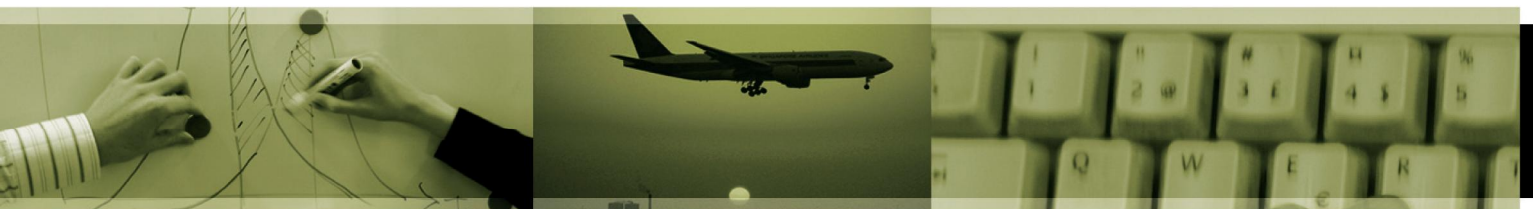
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BUYER POWER IN TELECOM

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INFORMED DECISIONS



COPENHAGEN ECONOMICS

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PREFACE

The Swedish Competition Authority has asked Copenhagen Economics to study the role of countervailing buyer power in national regulators' decisions on SMP status in the markets for mobile and fixed net voice call termination.

Countervailing buyer power is a field of growing controversy. Four European courts have recently annulled regulatory authorities' decisions on the grounds of inadequate or erroneous appraisal of countervailing buyer power.

We have surveyed the assessments of countervailing buyer power in the existing literature, in SMP decisions in Sweden, Norway, The United Kingdom, and in the comments by the European Commission on notified draft decisions by Member States. The survey reveals a number of differences in the analytical approaches to the concept. This may jeopardize the development of a stable and transparent regulatory regime for telecommunications. We therefore recommend regulators to prioritise a more thorough analytical agenda in the future. Countervailing buyer power will clearly play an important role for future regulatory action in telecom markets.

The report is written by M. Sc. Simen Karlsen, Ph.D. (Econ.) Karl Lundvall, M. Sc. Jonatan Tops and Ph.D (Econ) Henrik Ballebye Olesen.

Copenhagen, 26 January 2008

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Chapter 1 | MAIN FINDINGS

Telecom operators have by definition a 100% market share in their own termination market - calls can only reach a Tele2 subscriber if terminated in Tele2's own network.

Such market shares would normally alone constitute a strong indication of SMP (significant market power) of operators. The key constraint on the market power of these operators is the relative strength on the buyer side. Since the telecommunications industry typically involve many situations in which the same operators encounter each other, the assessment of this aspect is particularly important. The principal question is whether the buyer power can *countervail* the market power of the supplier.

For this reason, countervailing buyer power plays a key role in SMP analyses. Recently, four different courts have annulled national regulatory authorities' decisions due to inadequate analyses of countervailing buyer power. These are Ofcom in the UK, OPTA in the Netherlands, ComReg in Ireland and Ficora in Finland.

In this report, we review the role of countervailing buyer power in SMP decisions by national regulators in the markets for mobile and fixed net voice call termination. We make the following three observations.

First, the assessments are based on a number of indicators which vary between regulators. In total we identify 22 different indicators that can be organised into four categories: regulatory impact, discrimination between buyers, incentive to use buyer power and excessive pricing, see Table 1.1 below.

Table 1.1 Assessed indicators of countervailing buyer power in SMP decisions

Category	Sweden	UK	Norway
1. Regulatory impact			
Purpose of the regulations	√	√	√
Terms of the regulations	√	√	√
Predicted outcome of regulatory dispute		√	
Content of agreements		√	
Formulation of agreement		√	
Changes in agreement		√	
2. Discrimination between buyers			
Possibility of buying combined service from fixed net incumbent	√	√	√
Usage of combined service from fixed net incumbent		√	
Actual prices		√	
3. Incentive to use buyer power			
Importance of reaching seller's customers		√	
Loss of turnover		√	
Lack of transparency	√	√	
Reputational damage	√	√	
Occurrence of price differentiation and refusal	√	√	
Recovery of higher termination charges		√	
4. Excessive pricing			
Benchmark prices	√	√	√
Benchmark price changes	√		√
Costs		√	
Other assessments			
Price sensitivity		√	
Information	√	√	
Reciprocity		√	√
Alternative options	√	√	√
Total number of aspects examined	10	21	7

Source: Copenhagen Economics and SMP decision in Sweden, the UK and Norway, cf. SMP decisions in References.

Secondly, Ofcom reviewed two to three times more indicators than the regulators in Sweden and Norway in its most recent decisions. This may be an effect of the 2004 annulment of a previous SMP decision by the UK Competition Appeal Tribunal.

Thirdly, buyer power is rarely sufficiently 'countervailing' to remove an identified SMP status in termination markets. Indeed, there are no such examples in the cases we have reviewed.

Our study also reveals that regulators differ in their appraisal of the need for imposing remedies on operators with SMP. In Sweden, the regulator only analyse whether an operator has the *ability* to raise termination prices, which corresponds to the assessment of SMP. If it has, remedies are imposed. In Norway, the regulator goes one step further and briefly assess whether SMP operators also have an *incentive* to raise prices. Ofcom goes even further and also analyse whether any additional termination revenue will be *reallocated* back to customers. Absent such compensatory reallocation, remedies are imposed on SMP operators.

Chapter 2 THE OUTSET

The role of countervailing buyer power has become a debated aspect of regulators' assessment of whether operators enjoy SMP in their own network, i.e. dominant position in competition law. Operators have by definition a monopoly when terminating calls to their own subscribers. The ability of operators to take advantage of such monopoly power is to a large extent limited by the joint power of the players on the buying side. This aspect has received increased attention by scholars and academics lately. Countervailing buyer power is therefore an area of increasing importance in telecom regulation.

2.1. MOTIVATION

Countervailing buyer power is commonly understood as the restraint buyers put on a seller's market power. Consequently, if buyers have sufficient countervailing buyer power, a seller cannot behave independently of its consumers. The European Commission makes explicit reference in its guidelines to the importance of correctly evaluating this aspect.

*"The existence of buyer power and the ability of network operators to raise termination rates above the competitive level should be examined on a case-by-case basis in the context of the SMP assessment on this market."*¹

Recently, however, four different courts have annulled national regulators' decisions due to inadequate or erroneous assessment of countervailing buyer power, including the UK, OPTA in the Netherlands, ComReg in Ireland and Ficora in Finland.² The development casts doubt on the quality and accuracy of the adopted methodologies to evaluate buyer power. In this study, we review a selection of decisions involving assessments of countervailing buyer power on termination markets for mobile and fixed net telecommunications.³

We limit the scope of the review to a range of regulatory SMP decisions from Sweden, UK and Norway. We also include the comments by the European Commission on national regulators' draft SMP decisions. The review is conducted within the analytical frame as defined by economic theory and European competition case law.

An operator with SMP possesses by definition an *ability* to behave independently of competitors and customers, for instance by raising prices. It may not always be the case,

¹ European Commission (2007), p. 25

² Foros and Steen (2007)

³ It is beyond the scope of the report to assess the impact of countervailing buyer on the design of new remedies, e.g. introducing receiver party pays. In the termination markets, the main competition problem is the application of the principle calling party pays, which leads to the bottleneck. For instance, it could be of utmost interest to assess whether imposing the remedy receiving party pays could eliminate this bottleneck.

however, that the operator necessarily also has an *incentive* to do so. In addition, even when an SMP-operator have such incentives, consumers may remain unharmed if the ‘excess’ revenue is *reallocated* back to consumers through, for instance, subsidised mobile phones or lower subscription prices. In our review of regulator’s decisions, we will also consider the extent to which these aspects are considered.

The study is outlined as follows. In this chapter, we firstly expand on the motivation for the study in section 2.1. In section 2.2, we provide a definition of countervailing buyer power and relate some key findings from economic theory. In paragraph 2.3, we describe how the concept is codified in European competition law using two recent cases on horizontal mergers.

In chapter 3 we introduce the main characteristics of telecommunications markets and draw conclusions on the principal areas that need to be evaluated in SMP assessments. In chapter 4 we survey the role of countervailing buyer power in recent SMP-decisions in three different countries. Chapter 5 shortly describes the extent to which these decisions also have considered the incentives of SMP-operators to raise termination fees and on the waterbed effect.

2.2. DEFINITION

The OECD defines buyer power as

“a situation which exists when a firm or group of firms, either because it has a dominant position as a purchaser of a product or service or because it has strategic or leverage advantages as a result of its size or other characteristics, is able to obtain from a supplier more favourable terms than those available to other buyers.”⁴

Interestingly, there is no reference to the market power of the seller. In essence, it is the ability of a certain buyer to negotiate better purchasing terms than available to others that constitutes the heart of the concept.

In a retailing market, OECD adopts the following definition.

“... a retailer is defined to have buyer power if, in relation to at least one supplier, it can credibly threaten to impose a long term opportunity cost (i.e., harmful or withheld benefit) which, were the threat carried out, would be significantly disproportionate to any resulting long term opportunity cost to itself.”⁵

⁴ OECD (1998), p. 49

⁵ OECD, (1998), Supra note 8

The definition is related to a Nash bargaining situation. When a buyer discontinues trading with one of its suppliers, its proportional loss depends on the cross-price elasticity between the supplier's own product and its competitors' products, rather than on its own market share. On the contrary, the supplier's proportional loss is directly linked to the retailer's market share. This is the main logic behind the assertion that firms with larger market shares also can be expected to have stronger buyer power.

From a more general perspective, antitrust authorities should be concerned about monopsony for exactly the same reasons as for monopoly. There are certainly situations when the existence of either monopoly or monopsony may motivate the creation of the other. However, such a bilateral monopoly is hardly an optimal solution for consumers and would most likely be considered as a less attractive option for the parties than an ordinary merger. Hence, there is little reason for antitrust authorities to permit the creation of a monopsony to balance a downstream monopoly.

It is sometimes argued that antitrust law enforcement should assume a more flexible attitude towards buyer cartels. From a strictly economic perspective, such a policy would only be motivated when there is one supplier, constant returns to scale in production and no significant sunk costs. In such a bilateral monopoly, both parties would prefer vertical integration. In any case, it is unlikely that the buyer cartel would pass on reaped gains to consumers.

In the literature, countervailing buyer power has most frequently been assessed in merger analysis. Typically, merging parties advance circumstances that mitigate the lessening of competition which accompany mergers. For instance, a merged firm may be better able to countervail existing selling power of suppliers and reduce input prices which would ultimately benefit consumers. If so, it can be motivated for antitrust authorities to clear mergers among buyers in cases where suppliers are strong. An alternative, more traditional, less controversial and easier approach would be to simply rely on market forces to gradually wear down market power and hence always bar mergers which result in dominance, be it accompanied with countervailing buyer power or not.

2.3. EU CASE LAW

Countervailing buyer power has gained more influence in European competition law enforcement lately. The main focus is on whether buyer power leads to consumer harm or not, especially in relation to vertical agreements and price discrimination.

Over the years, the assessments of dominance in European competition law have gradually become more economically oriented, moving away from market shares as the overriding evaluation criteria. By implication, there is an increased focus on the role of buyer power. In fact, the definition of dominance has an implicit reference to buyer power.

“The dominant position referred to in Article 82 relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition in being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers.”⁶

Consequently, if buyers are sufficiently powerful, a supplier will not be able to act independently and hence not be in a dominant position.

Countervailing buyer power is also accounted for in the horizontal merger guidelines by the European Commission and the OFT, as shortly outlined below.

Guidelines

The horizontal merger guidelines by the European Commission (2004) contains three references to buyer power.

The first reference concerns the creation or strengthening of buyer power in upstream markets (section IV.4). The merged firm, empowered through its sheer expansion in size, may be in a position to obtain lower prices by reducing its purchase of inputs. This may reduce output and harm consumers. These risks are greater when suppliers themselves are fragmented and therefore have limited seller power. The merged entity may also use its increased buyer power to increase rivals costs in supply markets.

The second reference to buyer power in the guidelines considers the specific *countervailing* effects. The Commission is to analyse the relative position of customers to balance the increase in market power of a merged entity. The guidelines provide three examples of how countervailing buyer power may be exercised.

- the ability to quickly switch to other suppliers
- the ability to signal realistic vertical integration plans
- the ability to actively sponsor expansion in supplier markets

⁶ Court of Justice of the European Communities (1978), paragraph 65

The third reference is to purchasing efficiencies - increased buyer power may be beneficial for competition if it lowers input costs without harming downstream competition or total output (§62).

The OFT guidelines on dominance treats countervailing buyer power in much the same fashion. Most interestingly, the authority provides illustrative examples drawn from their enforcement experience. Switching to other suppliers is considered as a critical manifestation of buyer power. In cases where switching is not viable option, buyer power can be imposed using alternative means such as delaying purchases, restricting supplementary purchases, and threaten to enter the supplier markets themselves.

The evaluation of buyer power, however, is a complex task and involves more variables than sheer size. Strong brand names of suppliers may constitute a considerable hindrance for exercising countervailing buyer power – this is exemplified by the food retail industry in which certain small suppliers may offer so-called “must have” brands. Even if a supplier is small, consumers may exhibit high brand loyalty and switch shop if the supply in their normal shop is discontinued. The Danish Competition Authority reaches similar conclusions in its *Konkurrenceredegørelsen 2006*.

Recent cases

Two recent Commission merger cases are illustrative in understanding the guidelines mentioned above and the current economic thinking. These are the Korsnäs/AD Cartonboard merger in 2006 and the Stora/Enso merger in 1998.

The 2006 case was unconditionally, and quite surprisingly, approved in phase one despite the creation of a near-duopoly by letting AD Cartonboard acquire Korsnäs. The merger involved the second and third largest suppliers in the Common market of liquid packaging board. The merged entity did not become market leader, but the merger nevertheless led to a substantial increase in concentration. The two largest firms represents over 90% of the market in the European Union.

The production is characterised with high fixed costs and the output is sold to converters with considerable market power, including Tetra Pak, Combibloc and Elopak. These companies process the material into liquid packaging containers for milk and juice. Before the merger, StoraEnso was a large producer with a competitive fringe of the two smaller players Korsnäs and AD Cartonboard. The demand side consisted of one large customer, Tetra Pak, and two smaller, Elopak and Combibloc. After the merger, two large suppliers remained, facing one large and two smaller customers. In all, this proved to be a rather peculiar market structure. The key questions were whether the two suppliers would have the ability and incentive to expand production if the other party would

raise prices, and whether customers had sufficient countervailing buyer power also after the merger.

The Enso/Stora merger in 1998 had been approved by the Commission once it deemed the customers “on balance” to possess enough countervailing power to offset any adverse effects. Consequently, the critical question in the Korsnäs/AD Cartonboard case was whether the merger was sufficient to tip the delicate balance into the red. As it turned out, it was not. In contrast, the wording of the decision by the Commission suggests that they were convinced that countervailing buyer power on behalf of Tetra Pak and others were strong enough to remove any anticompetitive concerns. Furthermore, Tetra Pak possessed both the strength and the know-how to replace any of the two large suppliers or to initiate in-house production.

In sum, we conclude that both economic theory and European competition case law acknowledge the effects of countervailing buyer power. The main thrust of the analysis has, however, been directed to mergers. As we shall see in the next chapter, the needs and analytical environment when evaluating countervailing buyer power in telecoms is distinct.

Chapter 3 REGULATION OF TERMINATION MARKETS

Telecommunication naturally involves both a caller and a receiver. The call is normally paid for by the caller, but the call usually involve two networks - that of the caller and that of the receiver. These are referred to as the origination and termination network, respectively. Normally the owner of the origination network pays for access to the termination network. As noted above, the operator of the receiver has by definition a 100% share of this termination market. For smooth interconnection between networks, owners of termination networks are normally regarded as enjoying SMP and therefore subject to regulation.

However, termination markets are special. Operators are, in a sense, alternating between being buyers and sellers of each others' termination services. In addition, operators are also competitors in retail markets. Some operators are active in various geographical markets and in mobile as well as fixed net telecommunications. Others are not. Accordingly, mainstream economic theory and European competition case law on countervailing buyer power may not be directly applicable to these markets.

3.1. TELECOM TERMINATION MARKETS

Termination markets have a number of characteristics that distinguish them from other markets. Five such characteristics are listed in Table 3.1 below. A first observation is that there is only one network in which a call can be terminated. When a TeliaSonera subscriber calls a Tele2 subscriber, Tele2 is the only available terminator. Moreover, it is the consumer at the receiving end who decides in whose network the call is terminated. The operator in the originating network, and ultimately the subscriber, pays for the service, an arrangement denoted calling party pays.

Table 3.1 Characteristics of termination markets

Characteristic	Comment
1. No alternative	Calls must be terminated in the network used by the receiver
2. Interlinked products	Revenue on both outgoing and incoming calls
3. Buyers are also sellers	All operators have outgoing and incoming calls from other networks
4. Buyers/Sellers are also competitors	Termination fees constitute a competitive burden
5. Operators are regulated	Most operators' behaviour is constrained by regulation

Source: *Copenhagen Economics*

Secondly, the products are interlinked – more subscribers imply increased termination revenue as the number of incoming calls becomes larger. On the other hand, termination expenses also increases following more outgoing calls.

Thirdly, all operators are both buyers and sellers of termination services. Reciprocal negotiations of termination are commonplace. In most other markets, the roles are seldom combined.

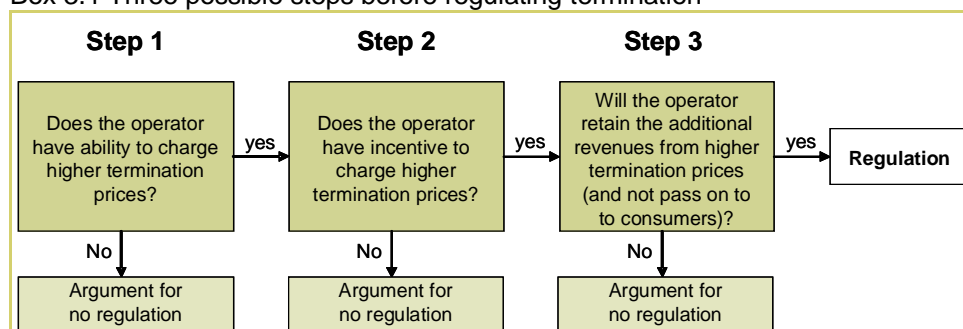
Fourthly, besides being buyers and sellers of each other's termination services, operators are also competitors. Termination market strategy thus becomes an integral part of the overall competitive strategy.

Finally, the competitive behaviour of operators is constrained by a range of regulations. For instance, operators are obliged to interconnect their networks with each other. These constraints need be accounted for when assessing whether an operator has SMP.

3.2. ASSESSING THE NEED FOR REGULATION

These characteristics are relevant both for the assessment of whether an operator has SMP and for the assessment of whether imposing remedies is necessary. Regulatory practice, as well as economic literature, has sometimes proposed that the mere existence of SMP, which corresponds to an *ability* to, for example, raise termination fees, is not a sufficient motivation for regulation. Also relevant is whether the operator in question has an *incentive* to use his SMP in an uncompetitive manner. And lastly, even if an operator both has the ability and incentive to raise termination fees, it is sometimes likely that consumers are not hurt since the added termination revenue is allocated back to consumers, for instance through better subscription terms. This is referred to as the *waterbed* effect. The three possible assessment steps are outlined in Box 3.1 below.

Box 3.1 Three possible steps before regulating termination



Source: Copenhagen Economics

Addressing these steps is a challenging task for any regulatory authority. And there is no commonly accepted understanding of the most appropriate empirical strategy. Swiftly, we go through each of the steps below.

The ability to behave independently

To address whether an operator has an ability to set higher termination fees, one has to focus on whether the entity is in a position to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers. Based on economic theory, there are two main antagonist approaches: the classic monopoly theory and the modern economic theory of bargaining.⁷

In economic theory, suppliers of termination services are monopolists setting a monopoly price. This theory could be relevant due to two conditions. Firstly, buyer power is restricted by the fact that the calling party pays while the called party chooses the termination operator. Secondly, regulation of buying operators' own network restricts their countervailing buyer power.

In the theory of bargaining, both the seller and the buyer have bargaining power. The monopolist is dealing with a monopsonist. Whether the operator has SMP or not then depends on the relative negotiating power between the two. For instance, a small entrant offering mobile telecommunications services may have negligible supply power when faced with an incumbent offering both fixed net and mobile services.⁸ It is typically more important for the smaller operator to establish a termination agreement than for the incumbent. It may sometimes be possible for the incumbent to deliberately delay this process, which can be regarded as an expression of SMP. Such situation can be hard to address by the conventional arsenal of regulatory tools.⁹

The assessment by regulators of the ability of operators to raise prices with special reference to countervailing buyer power is the focus of chapter 4. We will systematically describe the methods applied and evaluate whether the assessment of countervailing buyer power depend on operator size.

The incentives to behave independently and the waterbed effect

If an SMP-operator has no incentive to use its market power uncompetitively, there is little motivation for imposing remedies. In the case of two mobile operators, the literature is ambivalent on whether the receiving operator has an incentive to set high termination prices.¹⁰

On the one hand, one could argue that the terminating operator has the incentive to increase termination price as this would lead to higher costs for competitors. On the other

⁷ Binmore and Harbord (2005) and Foros and Steen (2007)

⁸ Idem.

⁹ Binmore and Harbord (2005)

¹⁰ Binmore and Harbord (2005), p. 449

hand, one could argue that higher termination prices would increase the incentive for competitors to act aggressively and capture customers from rivals. In order to avoid this from happening, the terminating operator may refrain from doing so.

Regarding interconnection between fixed and mobile networks, it can be expected that operators indeed have incentives to increase termination prices. The reason is that the competition between mobile and fixed net operators normally is weak, which means that there are no strategic reasons to keep termination prices low.¹¹

Termination services at the wholesale level are closely related to services at the retail level. More customers result in more termination revenues as subscribers both receive and make calls.

In the telecoms literature, there is an increased attention on the possible interdependence between termination services and retail telecommunications services. One line of reasoning asserts that any additional termination revenue would be passed on to end-users in form of subsidised phones and lower subscription and traffic prices. This is often called the waterbed effect.¹² This effect is stronger when retail competition is hard. As the national regulatory authorities and the European Commission conclude that mobile competition is effective in most EU countries, we consider it also relevant to look at this effect. If the operators allocate all additional termination revenue back to their consumers, one could argue that the operators are not behaving to an appreciable extent independently of consumers, i.e. do not have SMP.

In chapter 5 we review the extent and results of regulators' assessments of the incentives of SMP-operators and of the existence of waterbed effects.

¹¹ Binmore and Harbord (2005)

¹² For more information on possible waterbed effect, see for instance Genakos and Valletti (2007) and Littlechild (2006).

Chapter 4 COUNTERVAILING BUYER POWER IN SMP DECISIONS

In this chapter, we examine the role of countervailing buyer power in SMP decisions in termination markets, which correspond to step 1 in Box 3.1 above. Our sample of decisions are drawn from Sweden, Norway and the United Kingdom. We also scrutinise the comments by the European Commission on draft decisions by Members States.

We find that the authorities acknowledge the possibility that, due to countervailing buyer power, telecom operators may not have SMP in termination markets despite a market share of 100%. In the sample of decisions reviewed, however, we have not found any such example. National regulators and the Commission typically conclude on the existence of SMP for telecom operators in termination markets.

We also find that the analyses of countervailing buyer power are primarily based on four main questions: First, does the current regulation leave room for countervailing buyer power? Second, are small buyers discriminated? Third, do the buyers have an incentive to exercise buyer power? And fourth, what does past pricing behaviour indicate?

4.1. SMP STATUS

The European Commission is clear on the need to assess countervailing buyer power when assessing SMP status in termination markets.

“The Commission acknowledges that the market definition – call termination on individual networks – does not automatically mean that every network operator has significant market power; this depends on the degree of any countervailing buyer power and other factors potentially limiting that market power.”¹³

The same stance is found in its comments on a notification from Ofcom.

“The Commission notes that a detailed assessment of the competitive effects of obligations to be imposed on BT [British Telecom] as a result of finding BT to have SMP is important for the finding that all other PECNs [Public Electronic Communications Network operators] have SMP as well.”¹⁴

In addition, the Commission calls for a careful consideration of evidence.

¹³ European Commission (2003)

¹⁴ The Commission has commented on five countries' assessment of countervailing buyer power.

“The Commission is of the view that a 100% market share raises a strong presumption of SMP, save in exceptional circumstances which need to be clearly and unambiguously demonstrated by the national regulatory authority.”¹⁵

In particular, the Commission has raised objections to the SMP assessments in two EU countries, Spain and Germany. In these countries, the national regulatory authorities had concluded that countervailing buyer power made regulation unnecessary.

Regarding the Spanish SMP assessment, the regulator, Comisión del Mercado de las Telecomunicaciones (CMT), argued that countervailing buyer power would make the regulation of termination of mobile-to-mobile call redundant. They reached this conclusion despite the fact that they considered the Spanish mobile operators to have SMP for termination.

“In CMT’s opinion, all three mobile operators have some countervailing buying power in their mutual relations such as to restrict the ability of those operators to set excessive mobile termination charges. However, this assessment does not affect the designation of SMP, but is instead reflected in the remedies.”¹⁶

We also note that the Spanish national regulatory authority considered there to be competition problems for termination of fixed-to-mobile calls. This suggests that the fixed network operators had lower countervailing buyer power in termination markets than mobile operators.

Evidence from the UK

In contrast to the European Commission, the UK Competition Appeal Tribunal emphasizes the need for an extensive analysis of SMP. A regulator must consider all possible factors that may have an impact on the decision.

“Nonetheless, it was for Ofcom to analyse whether there was sufficient countervailing buyer power in the market to negate the finding of SMP.”¹⁷

In fact, the UK Competition Appeal Tribunal annulled Ofcom’s previous SMP decision of the mobile operator H3G on the basis of an incomplete assessment of countervailing buyer power.

¹⁵ European Commission (2005e)

¹⁶ European Commission (2006c)

¹⁷ Competition Appeal Tribunal (2004), p. 9

“We note that it was against the background of those strong prima facie indicators of SMP that Ofcom reached its decision that there was no effective competition in that market and, accordingly, concluded that H3G has SMP. Nonetheless, it was for Ofcom to analyse whether there was sufficient countervailing buyer power in the market to negate the finding of SMP. We take the view that on that one aspect of its decision, Ofcom did not meet the standard required of it.”¹⁸

Ofcom’s market analyses of the fixed net termination markets show that 100% market share does not necessarily lead to SMP. In case of no regulation of the fixed net incumbent, Ofcom tends to find other fixed net operators not having SMP due to the countervailing buyer power of the fixed net incumbent.

“However, in the absence of regulation, other fixed network providers would not possess SMP in the provision of their fixed geographic call termination services to BT because of BT’s countervailing buyer power.”¹⁹

As regards the relevant threshold for finding SMP in light of countervailing buyer power, the regulatory authorities refer to the EU’s Framework Directive.

“The test to assess whether countervailing buyer power is sufficient to prevent the exercise of SMP is that set out in Article 14 (2) of the Framework Directive, namely: whether countervailing buyer power can constrain an MCT [Mobile Call Termination] provider from having the “power to behave to an appreciable extent independently of competitors, customers and ultimately consumers”. In the context of this review, Ofcom considers that MNOs [Mobile Network Operator] will have SMP if they are able to sustain charges to an appreciable extent above the competitive level.”

Country studies – overall conclusions

In all three countries, the regulatory authority has designated all mobile and fixed net operators SMP in their own networks. Primarily, the authorities found that countervailing buyer power did not sufficiently restrict the seller power to neutralise SMP, cf. Table 4.1.

¹⁸ Competition Appeal Tribunal (2004), p. 8

¹⁹ Oftel (2003a), p. 22

Table 4.1 Designation of SMP status

SMP designation	Sweden	UK	Norway
Fixed net termination	√	√	√
Mobil termination	√	√	√
Reasoning	Monopoly circumvents buyer power	Monopoly circumvents buyer power	Monopoly circumvents buyer power

Source: Copenhagen Economics and SMP decision in Sweden, the UK and Norway, cf. SMP decisions in References.

4.2. METHODOLOGIES EMPLOYED

The empirical approaches used by the European Commission and the national regulatory authorities in Sweden, Norway and the UK are similar in reasoning but differ with respect to comprehensiveness.

European Commission

In the German case, the European Commission argued that the national regulatory authorities should make the following four assessments in order to conclude whether an operator has SMP or not for termination.²⁰

Firstly, the impact of regulation should be explicitly accounted for. For instance; would the buyer, faced with interconnection obligations, be able to turn down offers of allegedly high termination prices?

Secondly, buyer power should not only be assessed for large, but also for small, operators. For instance, are there any examples of smaller operators paying higher termination prices, or is this not possible due to non-price discrimination?

Thirdly, the national regulatory authority should consider whether the buyer has the incentive to turn down termination offers. For instance, would rejecting a termination agreement create protests from the buyers' customers and negative publicity due to lack of interconnection?

Fourthly, the national regulatory authorities should look at past behaviour. For instance, is there any concrete demonstration of the constraining effects of buyer power on supplier behaviour?

²⁰ European Commission (2005a and 2005e)

Country studies - examinations

In all three examined countries, the regulatory authorities focus on the four assessments to which the European Commission refer, with particular emphasis on regulatory impact. However, the regulators also look briefly at some other aspects, cf. Table 4.2.

Table 4.2 Different assessments of countervailing buyer power

Factor Assessed	Sweden	UK	Norway
Regulatory impact	√	√	√
Discrimination between buyers	√	√	√
Incentive to use buyer power	√	√	√
Excessive pricing	√	√	√
Price sensitivity		√	
Information	√	√	
Reciprocity		√	√
Alternative options	√	√	√

Source: See Table 4.1

The table illustrates that Ofcom's reaction to the Competition Appeal Tribunal's annulment has been to consider more aspects of buyer power compared to Sweden and Norway. It is illustrative to present Ofcom's approach in some detail.

Firstly, Ofcom acknowledges that the bilateral monopoly setting, as analysed by Binmore and Harbord (2007), is an appropriate analytical framework. Hence, they measure the negotiation power between a monopolistic seller and a monopsonistic buyer. In this way, countervailing buyer power is a relative term.

*"The framework within which Ofcom has conducted the countervailing buyer power analysis is the same as the one proposed by H3G, namely a bilateral monopoly setting, with H3G as the monopolist (only 1 seller) and BT as the monopsonist (only 1 buyer) of termination. This is a widely used and recognised framework for characterising negotiations of fixed-to-mobile termination and is the framework that was used in the June 2004 CTM [...] statement. Ofcom's review of the evidence confirms that it remains appropriate."*²¹

Secondly, Ofcom uses the Office of Fair Trade's (OFT) guidance of market power as a practical starting point when identifying a number of relevant factors in the assessment of countervailing buyer power.²²

²¹ Source: Ofcom (2007a), p. 26

²² For more information, cf. Ofcom (2007b), pp. 24-25.

Next, we turn to the four assessments highlighted by the European Commission in section 4.3 – 4.6. In section 4.7 we consider remaining aspects and in section 4.8, we take a closer look at the assessment of smaller operators.

4.3. REGULATORY IMPACT

A key question in the analysis of countervailing buyer power is: What would happen in the absence of regulation? This is the “but-for situation”. A controversial issue is whether the but-for situation should be evaluated with or without the current regulation in the market in question.

The European Commission argue for the second approach. The “but-for situation” is that all regulation, except that related to SMP on the market under investigation, remains. The Commission emphasises that regulation of buyers has a large impact on their countervailing buyer power. An evaluation absent regulation would consequently be irrelevant. The point was highlighted in the comments issued to the German regulator, see Box 4.1.

Box 4.1 A German case

The German regulator authority maintained that SMP should be assessed in a scenario absent regulation, according to the so-called strict Greenfield approach. The argument was that it would be inconsistent to look at a situation with regulation when the purpose of the assessment was to check for competition problems which warranted regulation.

In its comments, the European Commission rejected the German approach. The Commission was of the opinion that the regulator should take into account regulation which did not originate from the SMP analyses in question and would be expected to exist during the time horizon of the market analyses:

“The Commission considers that obligations flowing from existing regulation (other than the specific regulation imposed on the analysed market) must be taken into consideration when assessing the ability of an undertaking to behave independently of its competitors and customers on that market.”²³

Moreover, the Commission argued that the regulation of the largest buyers would significantly constrain the buyer’s buyer power. Consequently, even the smallest operators would presumably have SMP for termination.

“It is generally considered that countervailing buyer power of a large operator is essentially lost if its call termination rates are additionally regulated in the separate market for call termination on that operator’s individual public telephone network.”²⁴

Source: European Commission (2005a and 2005e)

Based on the Commission’s emphasis on the restrictive effects of regulation on buyer power, we could easily believe that termination operators per definition have SMP. How-

²³ European Commission (2005e)

²⁴ European Commission (2005a)

ever, the Commission commented on a notification from Ofcom that the British regulator should make a detailed assessment of the regulatory impact before concluding on SMP.

“The Commission notes that a detailed assessment of the competitive effects of obligations to be imposed on BT as a result of finding BT to have SMP is important for the finding that all other PECNs have SMP as well.”²⁵

Country studies - conclusions

The regulators of Sweden, Norway and UK shares the view of the Commission that regulation is the relevant scenario for the but-for situation. They also agree that regulation in general constrains buyer power since it limits the possibilities for leveraging SMP in neighbouring markets, cf. Table 4.3.

Table 4.3 Regulatory impact

	Sweden	UK	Norway
Conclusion: Yes, signs of SMP	√	√	√
Reasoning	Regulation restricts buyer power	Regulation restricts buyer power	Regulation restricts buyer power

Source: See Table 4.1

Country studies - examinations

OFT examines both the content and purpose of the regulation in order to understand how it has influenced the termination agreements, while Norway and Sweden focused on just the regulations, cf. Table 4.4.

Table 4.4 Regulatory impact

Examined aspect	Sweden	UK	Norway
Purpose of the regulations	√	√	√
Terms of the regulations	√	√	√
Predicted outcome of regulatory dispute		√	
Content of agreements		√	
Formulation of agreement		√	
Changes in agreement		√	

Source: See Table 4.1

Regarding the purpose and the terms of the regulations, the two Scandinavian countries just state that the regulations force buyers to enter into termination agreements and prevent the incumbent fixed net operator from threatening to increase its own termination charges.

²⁵ European Commission (2003)

In contrast, when Ofcom assesses the purpose of regulations, they carefully check the purpose of each regulatory provision. For instance, they review whether the purpose of the end-to-end interconnection obligation has a special anticompetitive twist.

Concerning the terms of the agreements, Ofcom reviews the conditions in the regulations, for instance the period for negotiations, the interpretation of reasonable terms and Ofcom's leeway to decide or modify any termination terms.

In contrast to Norway and Sweden, Ofcom assesses also whether the regulations may reduce seller power. In practice, Ofcom tries to predict how they would intervene in a termination dispute, e.g. whether they would enforce termination charges which are not excessively above the competitive level.

Moreover, as the only regulator, Ofcom reviews the termination agreements. In doing this, they are looking for signs or traces of either market power on the seller side or countervailing buyer power on the buyer side. This review includes the final content of the agreements and the formulation of, and changes in, the agreements. In practice, Ofcom considers a number of factors serving as a potential indicator of buyer power.

- Reference to regulation in the agreements.
- Easiness for the seller and buyer to amend the agreement.
- Earlier agreement changes: Do they reflect changes in regulation or cost related parameters, such as traffic volume, or market power on either side?
- Examples of buyer pressure or seller pressure in correspondence between the parties, e.g. threats of rejections or delaying the processes.
- Outcome of such buyer and seller pressure.
- Internal documents on the seller's and buyer's strategy in negotiations.

Overall, Ofcom has undertaken a much more thorough examination of the regulatory impact. While Norway and Sweden mainly refer to the general impact of regulation, Ofcom identifies several regulation provisions that may have a bearing on the countervailing buyer power and examines their impact separately. These include the following.

- SMP regulations on related markets
- End-to-end interconnect obligations
- Carrier (pre)-selection
- Negotiating obligations

4.4. DISCRIMINATION BETWEEN SMALL AND LARGE BUYERS

Countervailing buyer power is generally analysed with respect to the fixed net incumbent, as the incumbent is the largest buyer and potentially also the strongest. However, the termination operators also encounter other fixed net and mobile players.

European Commission

In fact, the European Commission argues that national regulators should explicitly consider the fixed net incumbents' buyer power vis-à-vis other smaller operators. The Commission hence implicitly assumes that sellers of termination services would be capable of discriminating between, for instance, large and small operators.

The Commission's view on the ability to discriminate contrasts with the German national regulator, who stated that smaller operators would not discriminate between the fixed net incumbent and other operators. According to the German regulatory authority, other operators could circumvent any higher prices by profiting from the fixed network operator's lower negotiated prices for terminating calls on the small operators' network.

“Finally, RegTP [German regulatory authority] has failed to analyse ANOs' [other fixed network operators than the incumbent] market power vis-à-vis each other and vis-à-vis MNOs [mobile network operators]. Although, as RegTP points out, these operators may only play a marginal role on the demand side of the termination markets (since most of the traffic originating on their networks is terminated indirectly, using the transit and termination services provided by DTAG), an analysis of those direct interconnection agreements that exist between ANOs and/or with MNOs could have provided further information on the market power of ANOs.”²⁶

Country studies - conclusions

Conclusions differ between the countries on the possibility of this kind of discrimination. The Norwegian Authority argues that sellers may differentiate prices between large and small operators. Ofcom is, along with the Swedish regulator, of the opposite opinion, arguing that the combined transit and termination service from the fixed net incumbents constitute an efficient restraint on the price setting of the seller vis-à-vis smaller buyers, cf. Table 4.5.

²⁶ European Commission (2005e)

Table 4.5 Discrimination between small and large buyers

	Sweden	UK	Norway
Conclusion: yes, signs of SMP			√
Reasoning	Competitive alternatives for buyer	Competitive alternatives for buyer	None

Source: See Table 4.1

Country studies - examinations

There are also differences as regards the substantiation of the conclusions, cf. Table 4.6.

Table 4.6 Discrimination between small and large buyers

Examined aspect	Sweden	UK	Norway
Possibility of buying combined service from fixed net incumbent	√	√	√
Usage of combined service from fixed net incumbent		√	
Actual prices		√	

Source: See Table 4.1

While Norway alleges that the seller may differentiate prices, the UK assesses the possibility and traces of discrimination. In all three countries, it is analysed whether it is possible to buy a combined transit and termination service from the fixed net incumbent instead of direct termination with the termination operator.

However, only Ofcom goes any further and checks whether the operators use the combined service as a real alternative to direct termination agreement. Moreover, Ofcom has examined whether the operators actually differentiate their prices or charge uniform prices. Uniform prices would be a sign of the combined service being a real option, and vice versa.

*“These considerations are evidenced by the fact that, where termination charges are not regulated, MNOs do not charge each customer a different termination charge (as discussed in Section 3). Data received from each of the MNOs confirms that they charge the same for termination to all originating operators”.*²⁷

4.5. INCENTIVE TO USE BUYER POWER

We have now reviewed the assessments of regulatory impact and the possibility to differentiate between operators with different buyer power. In these assessments, the focus is on the ability to countervail seller power. However, one could also question whether the buyers have the incentive to use any possible countervailing buyer power.

²⁷ Ofcom (2007b), p. 72

European Commission

In fact, the Commission goes as far as to argue that they do not have an incentive to insist on lowering termination prices.

“Regardless of the existing regulatory framework set out above, DTAG has little economic incentive either to cut off current interconnection with, or to stop buying termination services from, any particular ANO. [...] If DTAG decided not to purchase termination from a certain ANO, this would conversely result in customer dissatisfaction, reputation damage and pressure from consumer organisations as DTAG’s retail customers would no longer be ensured end-to-end connectivity. [...] In addition, if DTAG were to cease to purchase termination from ANOs, this may have the effect of stimulating substitution via carrier selection. [...] In such a case, DTAG would lose market share in a core area of its business.”²⁸

Consequently, the Commission tends to believe that operators as buyers neither have the ability nor the incentive to insist on low termination prices.

Country studies - conclusions

All three countries conclude that the buyers have limited incentive to use refusal to interconnect, or to use differentiated end-user prices, as a weapon in order to exert pressure on termination charges. The primary reason is that buyers would face negative consequences if they refused the offer or differentiated the end-user prices based on differences in termination charges, cf. Table 4.7.

Table 4.7 Incentive to use buyer power

	Sweden	UK	Norway
Conclusion – Signs of SMP	√	√	√
Reasoning	Negative buyer consequences	Negative buyer consequences	None

Source: See Table 4.1

Country studies - examinations

However, there are considerable differences in regulators’ substantiations of their common conclusions, cf. Table 4.8.

²⁸ European Commission (2005e)

Table 4.8 Incentive to use buyer power

Examined aspect	Sweden	UK	Norway
Importance of reaching seller's customers		√	
Loss of turnover		√	
Lack of transparency	√	√	
Reputational damage	√	√	
Occurrence of price differentiation and refusal	√	√	
Recovery of higher termination charges		√	

Source: See Table 4.1

The Norwegian Authority just states that the incentive is absent.

”Hva gjelder forhandlingsstyrke mellom mobiltilbyderne, mener PT at det verken er teoretisk eller empirisk grunnlag for å si at slike forhandlinger kan bidra til at termineringsprisene vil presses ned til et nivå som ikke indikerer markedsstyrke. Aktørene har verken incentiver eller forhandlingsstyrke til å forhandle prisene tilstrekkelig ned. Tvert om vil PT anta at tilbyderne i slike forhandlinger har incentiver til å sette priser som er høyere enn de en ville funnet i et marked med fungerende konkurranse.”²⁹

In contrast, Ofcom examines several factors. Firstly, they consider the size of sellers of termination, e.g. number of subscribers, and evidence of the buyer's valuation of reaching an agreement, such as statements and internal documents, in order to indicate the importance for the buyer to reach an agreement.

Secondly, Ofcom tries to indicate the likely loss of turnover for the fixed net incumbent due to competition from mobile and fixed net operators. The question is how easy it is for call (pre-)selection operators to offer customers of the fixed net incumbent alternative means to reach the termination operator. As regards mobile operators, the question is to what extent customers would use their mobile phone instead of their fixed net phone.

Thirdly, Ofcom assesses the effectiveness of any refusal to interconnect due to lack of transparency. The main examination is the impact of number portability. Customers can now change operators while keeping their telephone number.

“This would mean that when a customer ported from a donor network to a recipient network, BT would be unaware that the number was now hosted on a network to which they otherwise might not provide termination. Similarly BT would be unable to provide connection to customers who had ported from the “excluded network”

²⁹ Post- og teletilsynet (2007), p. 33

*because it would be unaware that they were no longer hosted on that excluded network.*³⁰

Fourthly, Ofcom examines the possibility that the fixed net incumbent initially refuses to accept any increases of termination of rates but is subsequently forced to accept the increases retrospectively. If so, the consequences may be dire.

“BT may be unable to recover the charge differential from transit customers (in addition to being unable to pass on increases to its own retail customers).”³¹

Fifthly, Ofcom reviews whether there is any evidence that the fixed net incumbent has refused, or intended to refuse, to purchase mobile termination from a particular operator.

Finally, Ofcom examines the likely reactions from own customers as well as negative publicity from refusal to enter into an agreement with a smaller operator.

In Sweden, the regulator swiftly addresses the issue of transparency, of harm of own consumers as well as retail price differentiation based on higher termination prices.

4.6. EXCESSIVE PRICING

A concrete demonstration of the constraining effect of buyer power on a supplier's behaviour, can be an indication of countervailing buyer power. In contrast, excessive prices may indicate there is not sufficient countervailing buyer power.

European Commission

The Commission recommends regulators to provide concrete evidence on price behaviour when assessing countervailing buyer power.

“RegTP could have demonstrated this by showing that, in the recent past, DTAG has been able to exert sufficient pressure on the individual ANOs to keep their call termination rates at competitive levels. RegTP presents no evidence of this behaviour.”³²

³⁰ Ofcom (2007b), p. 91

³¹ Idem, p. 76

³² Source: European Commission (2005e)

Country studies – conclusions

All three countries find signs of SMP when assessing price behaviour in the termination markets. The prices are, at least partly, considered to be well above competitive level, cf. Table 4.9.

Table 4.9 Pricing behaviour

	Sweden	UK	Norway
Conclusion: yes, signs of SMP	√	√	√
Reasoning	Prices appreciably above competitive level	Prices appreciably above competitive level	Prices appreciably above competitive level

Source: See Table 4.1

Country studies – examinations

To identify excessive pricing, regulators need a pricing benchmark. Regulators commonly examine actual prices if they are not totally regulated. There are, however, alternative ways to conduct the analysis, cf. Table 4.10.

Table 4.10 Different options for finding a competitive level

Examined aspect	Sweden	UK	Norway
Benchmark prices	√	√	√
Benchmark price changes	√		√
Costs		√	

Source: See Table 4.1

In the three countries, the regulators compare the price level of the operator in question with the prices of other operators. If the prices are much higher, it might be a sign of prices being appreciably above a competitive level.

Similarly, the Norwegian and Swedish authorities compare the price changes of the operator in question with price changes of other operators. To the extent that regulated price reductions for one operator are not followed by price reductions of other operators, this can also be a sign of prices being appreciable above a competitive level.

Ofcom compares prices with costs, which are based on a cost model, i.e. long run incremental costs including a mark up for common costs.

4.7. OTHER ASSESMENTS OF COUNTERVAILING BUYER POWER

We have now reviewed the assessment aspects recommended by the Commission. In addition, the regulators address other dimensions.

Country studies – conclusions

In the three sample countries, we identify four other assessments of countervailing buyer power: price sensitivity, access to information, outside alternatives, reciprocity in interconnection negotiations.

With respect to the first three aspects, it is concluded that they are insufficient to alone have an decisive impact on the SMP-assessment. The ‘outside alternatives’ option fails by definition since there typically is no alternative termination network.

The possibility that reciprocity in termination negotiations might increase countervailing buyer power is undermined by the fact that the mobile operators know whether they are net receiver of net recipients of calls. In addition, the difficulties in discriminating termination charges between buyers and the regulatory restraint on the buyers weaken the potential threat of reciprocity in high termination prices.

In total, the authorities consider these factors to speak in favour of SMP on the termination markets.

Table 4.11 Other assessments of countervailing buyer power

	Sweden	UK	Norway
Conclusion: yes, signs of SMP	√	√	√
Reasoning	Moderate potential buyer power	Moderate potential buyer power	Moderate potential buyer power

Source: See Table 4.1

Country studies - examinations

Ofcom has examined four other factors with an impact of buyer power: price sensitivity, access to information, reciprocity in interconnection negotiations and outside alternatives, cf. Table 4.12.

Table 4.12 Other assessments of countervailing buyer power

Examined aspect	Sweden	UK	Norway
Price sensitivity		√	
Information	√	√	
Reciprocity		√	√
Alternative options	√	√	√

Source: See Table 4.1

Two related factors are the buyers’ price sensitivity and information set on actual termination charges in the market. When Ofcom assesses the level of price sensitivity, they focus on the seller’s termination proportion of the buyer’s total expenditure on termination.

The higher the proportion, the more likely it is that the buyer is price sensitive. The proportion is assessed both in terms of incoming traffic and of number of subscribers.

As regards the degree of information, Ofcom looks at the experience of the buyer or any concrete evidence of the incumbent's level of information.

“It appears reasonable that BT would:

- *compare the charge with that offered by other providers of mobile call termination, i.e., the other MNOs, for a similar service; and*
- *recognise the implications of the retail prices faced by its subscribers for calls to different mobile networks.*

4.31 The evidence shows that both of these factors were taken into account by BT. For example, in an e-mail from BT to H3G, BT sets out that “it has reached the conclusion that proposed termination rates, being significantly higher than call charges to other existing GSM services, represent too high a cost for BT’s retail customers.”³³

The examination of alternative options is straightforward as the authorities already in their market delineation defined the seller of termination as having a monopoly on its own network.

The operators are normally both sellers and buyers of termination services. Consequently, buyers could in principle use termination on its own network as countervailing buyer power. When Ofcom assesses this factor, they focus on three points.

Firstly, on the fixed network, the primary issue is whether the fixed net incumbent can use termination on its network as countervailing buyer power.

Secondly, on the mobile networks, the primary issue is whether it is a credible threat for mobile operators to charge a similar high (unregulated) price for termination on its own network. According to Ofcom, this depends on two conditions. One is traffic balance.

“If traffic between MNOs is balanced then the threat is not effective as a means of constraining the charges of a terminating MNO. The threat of higher reciprocal charges does not change the profitability of the terminating MNO. In this situation, as noted by respondents to the March 2006 Consultation, the outcome for charges could be that MNOs agree to charge each other relatively high or low charges. However, the evidence and theory in this area is not conclusive.

³³ Ofcom (2007a), p. 28

*[...] However, if the originating MNO is a net receiver of calls the terminating MNO will face a net cost associated with such a reciprocal agreement. Therefore the threat, to respond to a high termination charge by setting a similarly high termination charge in return, is a credible one for an MNO engaged in a reciprocal negotiation with another MNO from which they are a net receiver of calls.*³⁴

Another condition is the knowledge of traffic balance. The threat depends on whether the buyer is aware of the traffic balance between the buyer and the seller and on whether the traffic balance is stable between them. If not, the buyer would not know whether mutual high termination prices are in its interest.

Thirdly, Ofcom assesses whether it is possible for operators to discriminate between buyers. For instance, if the fixed net incumbent has entered into termination agreements with all mobile operators, it may be difficult for the originating mobile operator to threaten to charge a higher termination price. The reason is that the terminating operator may use the combined transit and termination services of the fixed net incumbent.

In Norway and Sweden, the authorities just briefly address outside options, reciprocal termination agreements and level of information.

4.8. THE IMPACT OF OPERATOR SIZE

The bargaining power is often influenced by the size of the sellers. Normally, large sellers have more power than smaller sellers. Hence, the analysis of countervailing buyer power depends on operator size.

European Commission

The Commission argues that regulation to a large extent eliminates the buyer power of larger operators.

*“While small networks will normally face greater buyer power than large networks, the regulatory requirements referred to in paragraph 26 above will normally redress this imbalance of market power.”*³⁵

Based on the regulatory restraint on the large operators, the Commission seems to be of the opinion that also small operators have SMP. As mentioned in its comments to the

³⁴ Source: Ofcom (2007b), p. 88

³⁵ Source: European Commission (2005a)

German regulator, none of the 53 alternative operators to Deutsche Telecom were sufficiently restricted by countervailing buyer power.

Country studies - conclusions

None of the regulators believe that seller size makes a difference on the overall SMP conclusion. The primary reason is that the countervailing buyer power of the large buyers is restrained by regulation of the buyers. Nevertheless, our investigation of the enforcement in Sweden, Norway and the UK shows that the degree of market power may vary depending on the size, Table 4.13.

Table 4.13 Size of the seller

	Sweden	UK	Norway
Conclusion: yes, signs of SMP	√	√	√
Reasoning	Regulation restricts countervailing buyer power	Regulation restricts countervailing buyer power and delay strategy is unlikely	Regulation restricts countervailing buyer power and possibility of discrimination

Source: See Table 4.1

Of particular interest is the Norwegian authority's assessment of smaller operators. The Norwegian authority acknowledges that smaller operators may have reduced relative supply power, but argue that the operators should document any impact from countervailing buyer power on termination prices.

"Tele 2 og TDC Song har også fastsatt sine termineringspris på et nivå som er høyere enn Telenor og NetComs. PT forventer imidlertid at Tele2 og TDC Song i kraft av sin avhengighet av Telenor som leverandør av innsatsfaktorer i større grad enn NetCom vil være utsatt for Telenors forhandlingsstyrke. Det er imidlertid svært usikkert hvordan dette eventuelt vil slå ut for termineringsprisene og kan ikke tillegges vekt før det foreligger dokumentasjon på at kjøpermakt på etterspørselssiden har stor betydning for fastsettelsen av termineringspriser."

In this context, it is also of interest that some smaller operators in Norway tried to increase the termination prices dramatically. The incumbent fixed net operator replied by playing an automatic message warning its customers every time they picked up the telephone in order to call customers of the smaller operators. Quickly, the smaller operators reduced the prices again.

In the UK, Ofcom makes a difference between new entrants and established small operators. The reason is that Ofcom considers delay strategy as the buyer's likeliest credible

threat in presence of regulation. Accordingly, Ofcom finds that a small operator is much more sensitive to delays when it is still not operative.

Country studies – assessments

There are some differences in how the three countries examine whether small and large sellers are faced with different degrees of countervailing buyer power, cf. Table 4.14.

Table 4.14 Impact of seller size

Examined aspect	Sweden	UK	Norway
Sensitivity to delays		√	
Evidence of delay tactics		√	
Consequences of dispute		√	
Impact of regulation	√	√	√
Incentive to use buyer power	√	√	√
Discrimination between buyers			√

Source: See Table 4.1

In Norway and Sweden, the emphasis has been on whether the fixed net incumbent still has some leeway to transfer market power from other markets to the termination market of the smaller operator. Consequently, these countries focus on the impact of regulation and on the incentives to use any buyer power.

In this respect, the Norwegian authority also emphasise whether any lower prices for fixed net incumbent will also result in lower prices for smaller buyers.

Ofcom argues that there is no room for levering market power from other markets. Instead they focus on whether the fixed net incumbent may use any delaying tactics in order to achieve lower termination prices from smaller operators. More precisely, Ofcom examines four issues: Sensitivity to delays, evidence of delay tactics, consequences of a dispute and regulatory impact.

Firstly, Ofcom examines whether the seller has already launched its termination services or not, i.e. whether or not there is an initial agreement. The reason is that the seller probably is more sensitive to interconnection delays if not yet operational, as the delay would represent an opportunity cost to the seller.

Secondly, Ofcom looks for evidence that the buyer sought to exploit the risks of delay. Ofcom also looks for concrete evidence of whether a new operator was concerned about potential delay on its launch.

“For example in an internal H3G memo dated 15 October 2001, attached to an email dated 12 October 2001, which notes the “time critical” nature of the BT agreement and subsequent memos relating to BT’s rejection of Hutchison3G’s interim call termination rate, which cites the risk of “impact on launch dates”.”³⁶

Thirdly, when there is an initial agreement, Ofcom looks at the consequences of a dispute. Would the dispute result in an interruption of services or just a referral of the dispute to Ofcom? And for any of the two alternatives, what would the economic consequences be for the buyer and the seller? In this context, Ofcom also examines the buyer’s incentive to insist on lower termination charges.

Fourthly, Ofcom considers the impact of regulation in order to indicate whether any higher countervailing buyer power facing smaller sellers are eliminated.

³⁶ Ofcom (2007a), p. 31

Chapter 5 SMP – IS REGULATION NECESSARY?

From an economic viewpoint, it is not obvious that a SMP operator should be subject to regulation. There are at least two arguments which suggest that the consumers are not harmed by SMP by operators in termination markets. They are identified as step 2 and 3 in Box 3.1 on page 14 above. Firstly, do the operators have the incentive to use any SMP, and, if so, do they allocate the additional revenue ultimately to their customers? The latter is referred to as the waterbed effect.

5.1. INCENTIVE TO BEHAVE INDEPENDENTLY

In this section, we examine to what extent the regulators have looked at the termination operators' incentive to behave independently of its competitors, customers and consumers. We also examine how the national regulatory authorities have examined the incentive effect and the conclusions they reached.

European Commission

In its comments to the national regulatory authorities' notifications, the Commission does not directly address the incentive to take advantage of any SMP. However, indirectly, the Commission appears sceptical that there would be no incentive to increase prices absent any SMP regulation.

Both in its comments to the Finnish and Austrian national regulatory authority, the Commission urged for strict price remedies as any commercial freedom would lead to higher termination prices.

“In particular, in view of the monopoly power of mobile network operators over termination on their network, the absence of countervailing buying power and past pricing practices, it is unclear on what basis TTK [Austrian regulatory authority] believes that commercial negotiations will lead on a short term to cost-oriented prices.”³⁷

In fact, the European Commission argues that buyers do not have an incentive to insist on lowering termination prices.

“Regardless of the existing regulatory framework set out above, DTAG has little economic incentive either to cut off current interconnection with, or to stop buying termination services from, any particular ANO. [...] If DTAG decided not to purchase termination from a certain ANO, this would conversely result in customer dissatisfaction, reputation damage and pressure from consumer organisations as

³⁷ European Commission (2004)

*DTAG's retail customers would no longer be ensured end-to-end connectivity. [...] In addition, if DTAG were to cease to purchase termination from ANOs, this may have the effect of stimulating substitution via carrier selection.[...] In such a case, DTAG would lose market share in a core area of its business.*³⁸

Consequently, the Commission tends to believe that operators as buyers neither have the ability nor the incentive to insist on low termination prices.

Country studies – conclusions

The three countries do not focus on whether or not the seller has an incentive to increase termination charges when assessing SMP. This can also reflect the fact that the UK Competition Appeal Tribunal concluded that, in order for a seller to have SMP, it is enough to look at the ability of the seller, i.e. not necessary to have the incentive.

*“Accordingly we reject Mr Green’s submission that Ofcom left a vital consideration out of account when it did not form a view about the incentive of H3G to raise its prices to an excessive level. Such a consideration is not relevant to the assessment of SMP (though it may be relevant to the remedy to be imposed).”*³⁹

Nevertheless, in reaction to stakeholders questioning the incentive effect, Ofcom states regarding fixed net termination that the seller has double incentives to increase its own termination charges.

*“As the calling party pays, terminating providers naturally have an incentive to raise the charge for termination to maximise their call termination profitability. In providing termination services to rivals in the retail market, a terminating provider has a further incentive to increase its call termination price. Not only does the terminating provider increase its call termination revenues but it also increases its competitors’ end-to-end retail costs, as the terminating provider’s competitors have to buy its call termination service.”*⁴⁰

Ofcom reaches the same conclusions in the analyses of mobile termination. Also the Norwegian regulator appears to have the same view, but without any reasoning, cf. Table 5.1.

³⁸ European Commission (2005e)

³⁹ Competition Appeal Tribunal (2004), p. 28

⁴⁰ Oftel (2003b), p. 87

Table 5.1 Incentive to increase termination charges

	Sweden	UK	Norway
Conclusion – Necessary to regulate		√	√
Reasoning	None	Termination a bottleneck	None

Source: See Table 4.1

Country studies – assessments

Ofcom asks whether an operator has an incentive to increase termination in light of the fact that it is the calling party who pays for a phone call while it is the receiving party who chooses the terminating operator, cf. Table 5.2.

Table 5.2 Incentive to increase termination charges

Examined aspect	Sweden	UK	Norway
Economic theory and calling party pays		√	

Source: See Table 4.1

Based on the economic theory of multi-sided platforms, Ofcom examines whether any price increase in termination services would result in lower demand.

5.2. THE WATERBED EFFECT

The waterbed effect arises when operators, while earning supranormal profits on termination, pass on the resulting profit to consumers. The argument is that high termination rates make it more profitable to attract more consumers to a network, and that the operators therefore will compete harder in order to attract and retain consumers. This could for example take the form of subsidies of mobile phones.

European Commission

The Commission does not explicitly refer to the possibility of a waterbed effect. However, it seems that they are sceptical to the existence of this kind of effect.

As already mentioned, the Commission rejects the Spanish national regulatory authority's point of view that competition between mobile operators at the retail level, would make an ex ante regulation less urgent.

“The Commission considers that CMT’s approach to regulate only the wholesale voice termination of fixed-to-mobile calls may not allow consumers to drive the maximum benefit in terms of price.”⁴¹

⁴¹ European Commission (2006c), p. 4

Country studies – conclusions

Ofcom is the only authority in our survey who has analysed possible waterbed effects. They did this in relation to the mobile termination markets. They find that there is a significant waterbed effect, but that it is not 100%. Accordingly, Ofcom concludes that there is a need for regulation of termination charges. The reason is that the competition is not perfect for mobile services, cf. Table 5.3.

Table 5.3 Size and impact of the waterbed effect

	Sweden	UK	Norway
Conclusion – Necessary to regulate		√	
Reasoning	None	Not full competition and inefficient price structure	None

Source: See Table 4.1

Besides, even if the waterbed effect was 100%, Ofcom considers that the price structure of high termination charges is economic inefficient for three reasons.

- Overconsumption of mobile services and underconsumption of fixed net services
- Distortion of competition, as there is an increasing competition between mobile and fixed net telephony
- Excessive termination prices may increase the risk of anticompetitive behaviour

Ofcom finds that the significance of the waterbed effect depends on the level of appropriate termination charges. In fact, Ofcom uses the waterbed effect as an argument for conservative assumptions of appropriate termination charges when choosing suitable remedies, cf. Box 5.1.

Box 5.1 Impact of the waterbed effect on termination charges

According to Ofcom, asymmetric impact of too high and too low regulated termination charges is an argument for conservative remedy approach:

“Ofcom remains of the view that the waterbed effect is unlikely to be complete. However, even an incomplete waterbed effect ameliorates the impact of the level of termination charges on MNOs’ profitability and so on MNOs’ ability or incentives to invest in 3G and consumer services. However, if termination charges are below costs, the mechanism of the waterbed effect may involve MNOs earning sufficient revenues to cover their costs by setting higher mobile retail prices. This may be detrimental to consumers in the long run because it may slow the growth of new mobile services and lead to slower investment by MNOs. This may lead to a loss in consumer welfare resulting from a delay in the availability and innovation in new services. Ofcom has concluded, therefore, that unit estimates adopted when identifying the appropriate level of MCT charges should be based on reasonably conservative assumptions which, in the presence of any uncertainty, are not likely to result in under-recovery of costs”⁴²

Source: Ofcom (2007b)

Country studies – assessments

When Ofcom assesses the presence and magnitude of waterbed effect, they focus on two factors: The combined profit of all mobile services and competition intensity on the mobile access and origination market, cf. Table 5.4.

Table 5.4 The size and impact of the waterbed effect

Examined aspect	Sweden	UK	Norway
Competition level		√	
Profit level		√	

Source: See Table 4.1

As regards the profit level, Ofcom examines whether the operators earn any excessive profit. To do this, Ofcom performs an accounting review of the reported profitability of the mobile operators. Ofcom acknowledges that estimating profitability is complicated and sensitive to assumptions made about the relevant costs base and the time horizon over which profitability is assessed. Consequently, Ofcom considers that the choice of assumptions has a bearing on whether returns are higher or lower than the cost of capital.

Regarding the competition level, Ofcom examines whether or not the competition can be assumed to be perfect based on the characteristics of the mobile access and origination market.

“Nevertheless, Ofcom remains of the view that, in a market with a limited number of network competitors, complicated retail tariffs and significant entry barriers (due to

⁴² Ofcom (2007b), p. 176

factors including the high level of sunk costs involved in entry and the historic scarcity of spectrum), the waterbed effect is unlikely to be complete.”⁴³

⁴³ Ofcom (2007b), p. 108

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