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DISCOUNTS AND PRICE DISCRIMINATION IN THE TELECOMMUNICATIONS REGULATION OF NGA NETWORKS

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Abstract

While the economic theories have come to the conclusion that discounts and price discrimination are enhancing welfare, an obligation to offer non-discriminatory prices has been implemented in the sector specific regulation for telecom operators enjoying SMP. Moreover, price discrimination has generally been accepted in competition law cases. This might change in the future as the EU Commission has published the draft recommendation for the regulation of Next Generation Access networks (NGA). In this draft recommendation, the EU proposes to allow for the introduction of discounts (price discrimination) in certain cases related to Next Generation Access (NGA) networks on the wholesale level.

This paper looks at the implications of an acceptance of price discrimination in the sector specific regulation of telecommunication markets. We conclude that price discrimination is expected to be effective in creating incentives for investments in NGA networks, but that there is a risk that price discrimination will harm competition which in turn might imply negative welfare effects. Therefore, a case-by-case analysis instead of a general approach is required.

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1. INTRODUCTION AND BACKGROUND

While most private companies are using price discrimination, i.e. selling the same product to different (wholesale or retail) customers at different prices, as a tool to maximise the producer surplus, this has in several cases been regarded as problematic for dominant telecommunication operators subject to ex-ante regulation. For these operators, the obligation of non-discrimination as set out in the EU Access Directive, Article 10, has in a large set of cases been imposed for regulated access offerings.

The reason stated by the regulatory authorities is that discrimination might harm competition. This could for instance be the case when discrimination has negative outcomes on small operators (i.e. as in the case of volume discounts) and therefore might increase costs for new market entrants.

In 2009, the EU Commission published a second version of the draft recommendation for the regulation of next generation access networks (NGA). This was updated on the 1st of July 2010 and a final version is expected for autumn 2010. In this draft recommendation, the EU proposes to allow for the introduction of discounts (price discrimination) in certain cases related to Next Generation Access (NGA) networks on the wholesale level. The aim of this change of direction in the regulation is to foster innovation and welfare growth by promoting investments in NGA networks. Hence, the implementation of the draft recommendation would imply that Article 10 of the Access Directive should not be applied to NGA networks or investments, which in most cases and countries would lead to a partial deregulation with regard to obligations.

This paper looks at the implications of price discrimination and discounts for the promotion of efficient investments, the welfare effects and the development of competition in the markets for NGA networks. It looks at the current sector specific regulation for telecommunications and the implementation of competition law within the EU.

The research question in the paper is to identify the outcomes of the acceptance for price discounts and discrimination within the sector specific regulation.

2. SECTOR SPECIFIC REGULATION

The purpose of this chapter is to assess the current regulation and the situation with respect to NGA and the change of direction regarding non-discrimination and price discrimination. Thereby, there are two aspects of interest. At first, the question is how and in what context, the EU Commission changes its approach towards non-discrimination obligations and price discrimination issues.

Secondly, the NGA recommendation leads to the situation where the EU Commission explicitly recommends acceptance for price discrimination for NGA wholesale offers but not for wholesale offers in legacy networks. This might contradict the EU framework (and also the national implementation in EU member states) which is based on technological neutrality, implying that copper and fibre infrastructures (like fixed and mobile in general) cannot be treated differently (Article 16 of Directive 2002/21/EC). This immediately leads to the question whether different technologies which enable different (quality of) services are to be seen as substitutes or not. This has an impact on how markets are defined, analysed and how significant market power (SMP) is being determined.

In this respect two specific documents/provisions of the regulatory framework are important – the NGA recommendation and the provisions of the Access Directive.

2.1 THE RECOMMENDATION ON NGA REGULATION

According to discussions in Europe², the migration towards access networks with extended capabilities in the transmission of large bandwidths raises issues of strategic importance that require regulatory decisions. The EU Commission published a recommendation on the regulatory principles for NGA.³ This draft recommendation aims to set standards in implementing obligations for SMP operators (i.e. operators with significant market power or “dominant firms”) in an environment of NGA developments. These obligations are already defined in the Access Directive⁴ and serve as a toolkit. According to these measures, the Commission's aim is to make these obligations future proof in the light of the implementation of NGA networks. Following on from these discussions, the draft recommendation for NGA regulation was published for consultation in autumn 2008, and a revised version was published on 12 June 2009.⁵ That version

² Please refer to e.g. the ECTA Conference “ECTA Fibre Investment Conference 2009” in Brussels, 25.6.2009 and the responses within the consultation regarding the EU Commission recommendation (http://ec.europa.eu/information_society/policy/ecommm/library/public_consult/nga_2/index_en.htm#responses)

³ See draft recommendation on regulated access to next generation access networks http://ec.europa.eu/information_society/policy/ecommm/doc/library/public_consult/nga_2/090611_nga_recommendation_spc.pdf

⁴ See Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive).

⁵ Cf. http://ec.europa.eu/information_society/policy/ecommm/library/public_consult/nga_2/index_en.htm#responses.

triggered further discussions and revisions until on 1 July 2010 a final version was reached which was agreed between Member States and then was sent to the European Parliament. The report of the European Parliament was not completed upon the deadline for submitting this paper.

In the draft recommendation for NGA, the EC makes suggestions regarding obligations for non-discrimination, transparency and equal access as well as regards tariff regulation. In particular, the basis for the tariff regulation should still be cost-based prices for products for which there are access obligations. The optimal cost base is still regarded to be incremental costs (LRIC), and the cost should be determined for an efficient operator. New elements in the recommendation are:

- Abandoning regulated national prices: The Commission in the June 2009 version recommended that the price for access to physical network infrastructure should not be a geographical average in the case of substantial geographical cost differences, however, this part was deleted in the July 2010 version whereas the determination of separate geographical regional markets was maintained (this is also an effect of Article 8 Section 5 of the “better regulation” directive which entered into force in November 2009 with the revised EU framework);
- The assessment of specific risks should be considered in the cost of capital (WACC) determinations; and
- The implementation of “long-term access pricing” and volume discounts in the regulation.

We are only looking at the last element of these principles in the sequel. Regarding the implementation of long-term access pricing and volume discounts, these suggestions are less consistent with the idea of strict cost-based pricing determined with LRIC as the cost base.⁶ The suggestions regarding volume discounts and lower prices for wholesale customers that commit for longer periods always bear the risk of discrimination and hence a breach of the

⁶ The draft recommendation even excludes cost orientation as a method of tariff regulation in the following cases: (1) Multiple fibre co-investment of SMP operator with at least one further partner; (2) Non-exclusive project which is open to further interested parties on the same conditions; (3) All co-investors have access to the jointly established infrastructure on the same conditions, see Plückebaum, T., “EU-Entwurf einer Empfehlung über regulierten Zugang zu Next Generation Access Networks (NGA), WIK Newsletter no. 76, 2009. EU-Entwurf einer Empfehlung über regulierten Zugang zu Next Generation Access Networks (NGA), WIK Newsletter No. 76, p. 4.: p. 5.

non-discrimination obligations (Article 10 of the Access Directive).⁷ To deal with this problem, the Commission proposes that volume discounts and long-term access pricing should only be allowed as long as they are reflected in reduced costs for the regulated operator. Financing costs can be reduced through lower risks associated with investments made by wholesale customers which could motivate price differentiation without violating the principle of LRIC pricing.

2.2 NON-DISCRIMINATION⁸

As alluded to above, discounts on the wholesale products may be in conflict with the requirements of non-discrimination. The obligation of non-discrimination stems from Article 10 of the Access Directive. It is amongst the remedies that a national regulatory authority can levy upon operators. The main idea behind this remedy is that SMP operators treat all access seekers identically and thus do not differentiate between any third parties. However, the non-discrimination obligation is not absolute. It refers to treat the provision of similar wholesale services, identical circumstances and comparable conditions. Therefore, it may be discussed whether the provision of wholesale offers may differ if there is a substantial differentiation between the access seekers e.g. with respect to the locations at which access is realised, the volumes of traffic or the technical realisation. At least it does not seem completely unreasonable to interpret the EU framework as allowing for a small degree of different conditions as not violating the principle of non-discrimination. A discount – granted upon the commitment to a certain volume of purchase – is in itself such a differentiation/discrimination which may, however, be justified.

3. COMPETITION LAW PRACTICE

The situation in the sector specific regulation can be compared to the way price discrimination is dealt with according to competition law. The comparison is relevant as telecommunications markets not regulated according to sector specific regulation are falling under the competition law principles. Further, non-discrimination is a cornerstone principle of the Treaty on the Functioning of the European Union (TFEU).

The European competition law does not ban price discrimination in general.

⁷ Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive).

⁸ The recommendation especially in the July 2010 version contains numerous interesting aspects with respect to when SMP operators have to make available new fibre based access products and when they are entitled to introduce new retail products but these aspects cannot be discussed in detail here.

Competition law may only interfere with price discrimination carried out by undertakings holding a dominant market position (compared to SMP operators within the sector specific regulation). Dominance within competition law practice is a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the end consumers.⁹

3.1 ABUSIVE CONDUCT ACCORDING TO ARTICLE 102 LIT. (C) TFEU

Ex-post regulation for dominant undertakings is based on Article 102 TFEU (ex-article 82 EC) which prohibits any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it. Such abuse may, *inter alia*, consist in “*applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage*” (Article 102 (c) TFEU). Further, even if the conditions of Article 102 (c) TFEU are not met, price discrimination of dominant undertakings may still constitute an abusive conduct according to the general ban in Article 102 TFEU. Such an exception could e.g. be the case when not trading parties, but end consumers or competitors are affected.¹⁰

3.2 DISSIMILAR CONDITIONS

The wording “*dissimilar conditions*” in Article 102 TFEU covers an unlimited number of trading conducts. Whether the conditions applied are dissimilar is assessed from the viewpoint of the party to which such conditions are applied.

The EC Commission and the European Courts have applied Article 102 (c) TFEU mainly to differential pricing. When it comes to price discrimination, this may result from the regular pricing policy of an undertaking or from the application of certain fidelity rebate schemes. For example, in *British Airways*, the ECJ held that applying different commission rates to travel agents according to whether or not they had achieved their individual sales objectives by comparison with the reference period, was discriminatory, because the bonus schemes at issue entailed the application of different rates of commission to agents who had sold the same number of tickets.¹¹

⁹ ECJ, *United Brands v. Commission*, [1978] E.C.R. 207; COM, Discussion paper on the application of Article 82 of the Treaty to exclusionary abuses, 2005, <http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>, no. 20.

¹⁰ *Schröter*, in: *von der Groeben/Schwarze*. Kommentar zum EU-/EG-Vertrag, 6th edition, 2003, Art. 82 no. 224; *Möschel*, in: *I/M*, Wettbewerbsrecht: EG, 4th edition, 2007, Art. 82 no. 255.

¹¹ ECJ, *British Airways v. Commission*, [2007] E.C.R. I-2331, para. 139.

3.3 EQUIVALENT TRANSACTIONS

In order to determine whether there is an equivalent transaction (as stated in Article 102 TFEU), it is essential to evaluate the price, nature, composition and quality of the products or services concerned.¹² The most common justification for unequal treatment is that the costs of the products or services or the customers to which a certain price is charged are not subject to an equivalent transaction.¹³ In *United Brands*, the ECJ expressly recognized that differences in transport costs, taxation, customs duties, the wages of labor force, the conditions of marketing, the differences in the parity of currencies, or even the density of competition could justify price differences.¹⁴

3.4 WITH OTHER TRADING PARTIES

Article 102(c) TFEU aims at preventing upstream and downstream markets from anti-competitive effects. It bans the unequal treatment of “*trading parties*” of a dominant undertaking. Trading parties are costumers or distributors of a dominant undertaking, but not private end consumers.

The wording of Article 102 (c) TFEU indicates that the provision shall protect customers from being exploited by the dominant firm (so called “secondary-line” discrimination). However, the provision can be applied equally to prevent discrimination that is harmful to competitors of the dominant firm (so called “first-line” discrimination). For example, a dominant supplier may opt to charge prices below cost on a selective basis only to customers of specific competitors. Such behaviour may constitute an abuse in the form of predatory pricing and price discrimination. For example, in *Hilti*, the Commission held that a selective discriminatory pricing policy by a dominant firm designed purely to damage the business of, or deter market entry by, its competitors, whilst maintaining higher prices for the bulk of its other customers, is both exploitive of these customers and destructive of competition.¹⁵

¹² *Geradin/Petit*, Price Discrimination under Article 82(2) (c) EC: Clearing up the Ambiguities, Global Competition Law Centre, 2005, <http://ssrn.com/abstract=1112254>, page 16.

¹³ See for example COM, *Ilmilulaitos/Luftfartsverket*, [1999] OJ 1999 L69/24, para. 44 and ECJ, *AKZO Chemie BV v. Commission*, [1991] ECR I-3359, para. 120.

¹⁴ ECJ, *United Brands Co and United Brands v. Commission*, [1978] E.C.R. 207, para. 228.

¹⁵ COM, *Eurofix-Bauco v. Hilti*, OJ 1988 L65/19, para. 81.

3.5 COMPETITIVE DISADVANTAGE

A further condition for abuse is that the trading parties in question need to be competitors of each other or potential competitors.¹⁶ Otherwise a trading party may not suffer a “*competitive disadvantage*” from the discriminatory conduct of a dominant undertaking. Phrased differently, the competitive disadvantage of one trading party is likely to result from the fact that another trading party benefits from the discrimination. In practice this condition is readily assumed to be satisfied.¹⁷

3.6 RELEVANCE FOR NGA MARKETS

By looking at the markets for NGA and price discrimination, one can conclude that these are susceptible for market abuse according to competition law if certain pricing schemes are implemented by firms gaining a dominant position in certain situations. This is the case because many telecommunication operators with market dominance are integrated operators offering both wholesale and retail offers. Price discrimination will therefore be negotiated between trading parties which are in several cases also competitors. If the price discrimination is to be seen as dissimilar prices to different trading partners for equivalent transactions and it is practiced by a dominant firm, it would constitute an abuse according to Article 102 TFEU.

4. PRICE DISCRIMINATION FROM AN ECONOMIC POINT OF VIEW

In this section, we assess the microeconomic theories on price discrimination, emphasising on the outcomes on total welfare, consumer welfare and market concentration/competition. Thereby the specific characteristics of the telecommunications industry with high CAPEX and a large difference between marginal and long-run incremental costs play an important role.

4.1 DEFINITION AND TYPES OF PRICE DISCRIMINATION

The common definition of price discrimination is “the practice of selling the same product to different customers at different prices even though the cost of sale is the same to each of them. More precisely, it is selling at a price or prices such

¹⁶ COM, *GVL*, [1981] OJ 1981 L370/49, para. 51.

¹⁷ See for example ECJ, *Irish Sugar plc v. Commission*, [1999] ECR II-2969.

that the ratio of price to marginal costs is different in different sales".¹⁸

There are different forms of price discrimination. Bouckaert et al. describe the three typical degrees of price discrimination:¹⁹

- First Degree: The supplier is able to perfectly discriminate across its customers and the price set equals the maximum each customer is willing to pay. In this case, the supplier succeeds to capture the entire consumer surplus. This is according to most studies unrealistic, as it requires that the supplier has full information about its customers.
- Second degree: The supplier sets a price which varies with the number of units purchased by the customer, i.e. volume discounts and bonus payments.
- Third degree: The price discrimination takes place when the supplier charges different prices to different groups of customers depending on their elasticity of demand. This is also referred to as Ramsey pricing.

In the case of the regulation of NGA, the EU Commission explicitly recommends the acceptance of volume discounts, hence the second degree of price discrimination. The EU Commission also recommends that suppliers would be able to provide discounts to wholesale customers which commit themselves for a longer period in time. This can be seen as a type of the second degree of discrimination (a discount for large purchases) or as a method to differentiate the customers according to their willingness to pay, which would be the third degree of discrimination.

In order to avoid conflicts with the cost orientation obligations and the non-discrimination obligations, the EU Commission states that these must be appropriate. Ruhle and Lundborg conclude that "to deal with this problem, the Commission proposes that volume discounts and long-term access pricing should only be allowed as they reduce costs, i.e. financing costs can be reduced though lower risks associated with investments made by wholesale customers, which could motivate price differentiation without violating the principle of LRIC pricing".²⁰ In the same paper Ruhle and Lundborg show that the cost differences

¹⁸ Posner, R. "Antitrust Law", Second Edition, University of Chicago Press, Chicago and London 2001, p. 79-80

¹⁹ Bouckaert J., Degryse H., van Dijk T., "Price Discrimination Bans on Dominant Firms", CESifo Working Paper No. 2192, January 2008, p. 5

²⁰ Ruhle E-O., Lundborg M., "EU Policy for next generation access – an innovative or incremental step forward?", Telecommunications Policy 34, 2010, p. 40

for NGA investments based on the shift in risks from the supplier to the wholesale customer leaves a very small room for differentiation in prices.

4.2 WELFARE EFFECTS

The results of the academic research so far are that price discrimination increases the producer surplus while the outcomes on the consumer surplus and the overall welfare are heterogeneous. It is hard to say, a priori, whether a given form of price discrimination increases or decreases welfare. The welfare effects of discriminatory prices generally depend on factual issues, such as if it increases total output.²¹ This is e.g. the case when discounts for some customers enable these customers to buy the product although they would not be able or willing to buy the product at an average price paid by other customers.²²

Varian found already in 1985 that a necessary condition for price discrimination to improve welfare is that output increases.²³ Since then though there are findings when assessing input pricing (as the case for NGA investments and regulation) showing that in certain situations, welfare increases only when output falls.²⁴ This is especially the case, when the supplier is a vertically integrated firm or in case of input prices (“wholesale prices”). Valetti demonstrated in 2003 that input price discrimination can be detrimental both in terms of a lower consumer surplus and lower total welfare even if the upstream monopolist has no incentive to favour a particular downstream firm.²⁵

Also Geradin and Petit come to the conclusion that there can be negative effects from price discrimination. A negative outcome can be the result if the only effect of price discrimination is that the market shares are reallocated between the existing market participants. In these cases, the welfare effects might be negative as operators are forced out of the market (cnf. “predatory pricing”).²⁶

²¹ Geradin D., Petit N., “Price Discrimination under EC Competition Law: The need for a case-by-case Approach”, GCLC Working paper 07/05, 2007, p. 2

²² Geradin D., Petit N., “Price Discrimination under EC Competition Law: The need for a case-by-case Approach”, GCLC Working paper 07/05, 2007, p. 6

²³ Varian H., “Price discrimination and social welfare”, *American Economic Review*, 75, 870-975, 1985

²⁴ Valetti T., “Input price discrimination with downstream Cournot competitors”, *International Journal of Industrial Organisation*, 21, 969-988, 2003 AND Yoshida, Y. “Third degree price discrimination in input markets: output and welfare”, *American Economic Review*, 90: 240-246, 2000

²⁵ Valetti T., “Input price discrimination with downstream Cournot competitors”, *International Journal of Industrial Organisation*, 21, 969-988, 2003

²⁶ Geradin D., Petit N., “Price Discrimination under EC Competition Law: The need for a case-by-case Approach”, GCLC Working paper 07/05, 2007, p. 6

It is interesting for the telecommunications industry and especially the NGA markets, where the fixed costs are making up a large fraction of the total costs, that welfare effects from price discrimination are especially positive in industries where the supplier has declining average costs. Price discrimination allows suppliers with a high proportion of fixed costs to expand their output with a positive marginal return on capital to a great extent as the marginal costs are very low. In this case, every additional customer will have a positive contribution to the common and fixed costs. Prohibiting price discrimination would thus prevent efficient recovery of fixed costs and would, in the long run, have a negative impact on investments.²⁷

The conclusions to be drawn from this research are that a generally accepted method to evaluate the welfare effects is to measure the total output. In most cases in the telecommunications industry, with a high proportion of fixed costs, the marginal costs are low and the outcomes on welfare and investments are especially positive. Contradictory to these findings, the welfare effects can be negative in case of input prices, which is the case for the wholesale regulation of NGA markets. In case of non-vertically integrated NGA operators, price discrimination might have a positive impact on welfare and investments but in case of vertically integrated operators, the outcomes from price discrimination is difficult to determine and must be assessed on a case-by-case basis.

5. PRICE DISCRIMINATION AND NGA

5.1 TECHNOCLOGICAL CHANGE THROUGH NGA DEVELOPMENTS

Developments towards NGA pose new challenges for regulation. The reasons are to be found in the changes in the technical and commercial environment. NGA are established in a different environment. Whereas Current Access Generation (CGA) to the largest extent is based on copper infrastructure which has been deployed decades ago under a monopolistic regime for which access obligations seemed very appropriate, NGA is being deployed in a competitive setting. This leads to a different commercial assessment.

Furthermore, NGA offers a variety of possibilities with respect to the realisation and the interplay between fibre and copper networks, e.g. FttC, FttB and FttH. All of these variations imply a discussion about the existence of significant market power, the delineation between core and access networks and the question of cost standards and pricing that shall apply. This also touches upon the consistency of prices compared to existing wholesale products (from the CGA

²⁷ Geradin D., Petit N., "Price Discrimination under EC Competition Law: The need for a case-by-case Approach", GCLC Working paper 07/05, 2007, p. 6

environment). Especially the delineation between core and access network leads to a revision of the classical demarcation point between that part of the infrastructure that is individual for each customer and where infrastructure elements are bundled to serve a group of customers. This again has an impact on the wholesale products which may be offered (voluntarily or based on regulation), i.e. whether and how unbundling and bitstream access are technically realised in an NGA environment. The technical demarcations and differentiations determine the extent of the provision of services along the value chain and thus the costs for the NGA wholesale products as well.²⁸

5.2 PRICE DISCRIMINATION, INVESTMENT INCENTIVES AND NGA INVESTMENTS

In the area of regulation, there has been an ongoing discussion on the outcomes of regulation, especially with regard to investment incentives. According to several studies, the alternative to remove or lighten the regulation would increase the investment incentives as it allows above-normal profit.²⁹ Jorde, Sidak and Teece have concluded that ex-ante regulation of network elements (through mandatory unbundling on a cost oriented basis) reduces investment by incumbents both in maintaining and improving networks. They further state that the regulation delays investments by competitors as those can rely on the infrastructure of the incumbent.³⁰ De Bijl and Peitz argue that wholesale access regulation may no longer be appropriate in the light of the outcomes of regulation on investment incentives.³¹

On the other hand, as long as there is a competition problem in the wholesale access markets one can argue that the dominant operator will leverage its market power to competitive downstream markets, which will reduce the overall welfare.³²

An interesting experience on the further deregulation is provided by the US during the last decade. The regulatory authority has withdrawn nearly all access obligations including the obligations for fibre access networks. Among the

²⁸ Cnf to Lundborg M., "Lessons learned from the regulation of LLU for the future regulation of NGA networks", In: Promoting New telecom infrastructures – markets, policies, and pricing, Ed. Marklund J., 2010 (Forthcoming)

²⁹ See e.g. Gans J. and S. King „Access holidays for network infrastructure investment”, Agenda, Vol. 10/2, pp 163-178

³⁰ Jorde T.M., Sidak J.G. and Teece D.J. "Innovation investment and unbundling", Yale Journal on Regulation, vol. 17, pp. 1-37

³¹ De Bijl P.W. and M. Peitz "Innovation, convergence and the role of regulation in the Netherlands and beyond". TILEC Discussion paper No. 2007-016, 2007

³² Kirch F. und C. von Hirschhausen „Regulation of NGN: Structural separation, access regulation, or No regulation at all?", Communications&Strategies, No.69, 1st Quarter 2008

withdrawn obligation is the one for shared access of the local loop. The only remaining remedy relevant for broadband access is LLU. The conclusion by Marcus and Elixmann on the outcomes of this deregulation is that the markets have developed in a series of non-geographically overlapping duopolies of CATV operators and incumbents. They interpret that the deregulation has had mixed results.³³

“The U.S. has seen strong investments in fibre access by incumbents, and steady improvements in cable plant, but negligible investments (or disinvestments) on the part of competitors. Broadband penetration and the price/performance of offers are reasonable, but probably nowhere near what might have been expected given the ubiquity of cable television and the enormous head start that the U.S. once had.”

According to the changes brought about by NGA, there is not much speaking for a change to the current competition situation with a limited number of access networks (normally one incumbent network and at best an additional CATV network) and dominant operators as a consequence. First, the infrastructures remain subject to significant economies of scale as their development requires large, sunk investments. Second, property owners will likely not allow operators to duplicate the last network section on the premise/indoors. Hence, it is unlikely that there will be additional parallel networks in the future.³⁴

Based on the discussion and findings on the (thought) positive impact of deregulation on investments and the mixed empirical results in the US, it is difficult to draw any clear cut conclusions on the optimal regulatory option. Rather, there is a trade-off between investment incentives and the safeguarding of competition.³⁵

With regard to NGA, where investment incentives are of high importance in order to enable and foster the technological development towards higher bandwidth access networks, a deregulation for new networks becomes more interesting. On the other hand, if the deregulation enables the SMP operators to derive monopoly or oligopoly gains for their existing networks, the risks are immense that the SMP operator chooses not to invest in NGA networks and that the deregulation leads to increasing competition problems. Hence, the deregulation might only be allowed for revenues derived from NGA networks and the way it is implemented must not have any overspill effects to the markets based on legacy

³³ Marcus J.S. and D. Elixmann „Regulatory approaches to NGNs: an international comparison“, *Communications&Strategies* No. 9, 1st Quarter 2008 , p. 34

³⁴ F. Kirch und von Hirschhausen C., 2008, p. 68. See also Marcus J.S. and D. Elixmann, 2008, p. 23

³⁵ See also Lundborg M., “Lessons learned from the regulation of LLU for the future regulation of NGA networks”, In: *Promoting New telecom infrastructures – markets, policies, and pricing*, Ed. Marklund J., 2010 (Forthcoming)

networks.

In the light of this, the proposal by the EU Commission to keep the current regulation, but to enable volume discounts and lower prices for operators committing themselves over time for the purchase of NGA wholesale offers, is promising, as it limits the deregulation to NGA investments, but still enables SMP operators to increase the producer surplus, which leads to increased incentives to invest.

5.3 RELEVANCE OF VOLUME DISCOUNTS AND PRICE DISCRIMINATION

If the regulatory authorities decide to deregulate the NGA markets “too much”, there is a risk that the NGA markets become monopoly markets just as in case of the legacy networks. This might force the authorities to change their strategy later on and to impose more regulation in a later stage, when the damage with regard to the competition situation is already done. Based on the NGA recommendation of the EU Commission, this problem is overcome by only recommending less regulation allowing for price discrimination to a limited extent, but to keep all the regulatory obligations as a tool to handle the competition problems.

In its recommendation on NGA regulation, the Commission limits its suggestions for price discrimination by only recommending volume discounts and discounts for long-term commitment and by stating that the discrimination must only be allowed to the extent, to which the costs are reduced. On strictly terms, this does not even fall under the definition of price discrimination.

Ruhle and Lundborg³⁶ have assessed the outcomes of the NGA recommendation, including the outcome of the limitations to the price discrimination set by the Commission. Thereby they conclude that the main cost reductions for the SMP operator are derived from the shift in risks from the SMP operator to its wholesale customers. In case of investments in NGA, the largest risk is that the penetration rates do not take up. As the SMP operator still bears the largest part of this risk, the change in costs are low with the effects, that the allowed discounts will be too small to have an effect on the investment incentives.

Another problem identified by Ruhle and Lundborg³⁷ which might motivate the regulatory authorities to only accept small discounts is a different outcome for different operators. It is likely that new entrants or niche operators will be less able to commit themselves to large volumes and also for longer contract periods,

³⁶ Ruhle E-O., Lundborg M., “EU Policy for next generation access – an innovative or incremental step forward?”, Telecommunications Policy 34 (2010). Pp. 36-44

³⁷ Ibid.

because a loss for a small operator or market entrant can only be covered by a small number of existing customers or no existing customers at all. In certain cases the allowed price discrimination (especially in case of volume discounts) will prevent market entry and limit competition by establishing markets with only a few operators. Hence, it is possible that the implementation of volume discounts and long-term price differentiation will promote single or joint dominance. For regulatory authorities this means that they will have to strike a balance between possible investment incentives on one hand, and the negative outcomes of less competition on the other. As the markets for NGA networks still has to emerge in most regions of Europe, and it is likely that only one NGA access operator will exist in each region, the regulatory acceptance of price discrimination in order to facilitate investment incentives might be an optimal solution.

6. CONCLUDING DISCUSSION

The EU Commission regards the acceptance of price discrimination to a certain extent, in order to incentivise investments in NGA networks. In its suggestion though, it limits the extent to what is justifiable.

By looking at the competition law practice, price discrimination is per se allowed, even for SMP operators. Although, under certain circumstances as in case of vertical integrated SMP operators discriminating one or some of its wholesale customers, price discrimination can be prohibited if it is indirectly harmful for consumers. Hence, in principle the competition law allows for price discrimination but makes some exceptions. This means in comparison to the suggestion of the EU Commission within the sector specific regulation, that the latter is still more prohibitive than the competition law practice.

The scientific findings regarding price discrimination is, that generally the welfare effects are increased, but this is not the case under all circumstances. Negative welfare effects might sometimes be the outcome in cases when the dominant firm is a vertical integrated operator competing with its own wholesale customers in the retail markets. As this is normally the case for wholesale NGA markets, this means that the cautious approach by the EU Commission, to only allow for price discrimination to a certain extent, is justifiable from an economic point of view.

It is questionable though if enough investment incentives are created in order to promote investments in NGA networks with such an approach. Due to the large extent of fixed costs for NGA networks, price discrimination is to be seen as an effective tool to increase investment incentives. Based on the experience that the NGA infrastructures tend to be bottlenecks, and the markets will experience

competition problems anyway, one could assume that the recommendation of the Commission would have increased the welfare to a higher extent if more price discrimination had been allowed for.

For authorities responsible for sector specific regulation of telecommunication markets, a balance in the trade-off between investment incentives for NGA networks and the establishment of competition (and thereby dynamic effects implied by competition) has to be struck. As an overall conclusion, a case-by-case analysis, as implemented by the European Regulatory Framework for sector specific regulation, is the best approach to balance the trade-off by integrating a large number of situation specific conditions into the regulatory decisions. The difficulty to choose the right approach can already be seen from the long-lasting discussion about regulatory holidays (i.e. the forbearance from regulatory involvement) as well as the debate about the consideration of a risk-adjusted WACC for investment into NGA. Also these aspects are a facet of dealing with the economic changes resulting from NGA developments.

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