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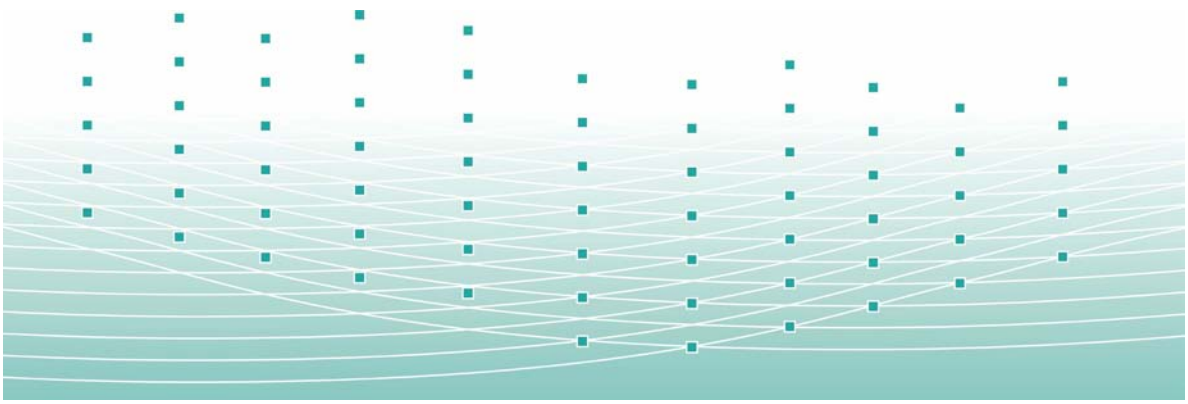
Federal Department of the Environment,
Transport, Energy and Communications DETEC

Federal Office of Communications OFCOM
Telecom Services Division

Public survey of experts

concerning

methods for the determination of regulated wholesale prices in the telecommunications sector



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References

1 Introduction

The Federal Office of Communications (OFCOM) is conducting a survey concerning the determination of prices of wholesale products and services in the telecommunications sector which are subject to network access regulation. With this questionnaire, OFCOM intends to initiate a broad technical discussion on the principles and methods of price regulation. As the definition of the problem in section 2 below indicates, a number of issues are raised in relation to the future implementation of the approach to price regulation currently in practice. The questionnaire is intended to establish a basis, in order to understand the perception of the problem in the telecommunications sector and to acquire knowledge of what effects can be achieved with the different options for action.

The following aspects in particular constitute the background to this survey:

- Criticism has been expressed by various parties regarding the relevant provisions in the ordinances concerning the calculation of cost-based access prices.
- In its evaluation of the telecommunications market (cf. [1]), the Federal Council expressed the need for a more in-depth examination of the method of calculating costs. In particular, attention was given to the use of replacement costs in contrast to historic costs. As is evident from its response to the interpellation by a member of the Council of States, Filippo Lombardi (cf. [2]), it must also be borne in mind in this context that parts of the prescribed methodology no longer take sufficient account of technological developments. The Federal Council therefore announced that by autumn 2012 it would submit to interested parties a revision of the Telecommunications Services Ordinance (TSO; cf. [3]), with alternative cost calculation methods, for public consultation. It is of the opinion that a sustainable solution can be achieved only by involving the parties concerned and their somewhat divergent interests. The survey is therefore intended to give those concerned an early opportunity to give their expert opinions on price regulation issues.
- In the deliberations on its decision of 7 December 2011 concerning interconnection, access to the fully unbundled subscriber line and colocation (cf. [4], p. 26 ff.), the Federal Communications Commission (ComCom) had already announced a change in practice relating to the Modern Equivalent Asset (MEA) approach. It stated that from 2013 new technologies would be incorporated in the cost calculation. Only in this way is it possible to meet the requirement that replacement costs can be determined on the basis of Modern Equivalent Assets (MEA). In practical terms, a packet-switched interconnection network will be used for modelling instead of a circuit-switched network, and in the access network fibre-optic cable will be used in place of twisted copper pairs.

The analysis of this questionnaire and the information derived from it will be incorporated in the process for the design of possible alternative cost calculation methods, as announced by the Federal Council in its response to the Lombardi interpellation.

OFCOM invites all interested experts to submit their written responses and comments on the questions listed in this document by 16 March 2012.

Please send your comments in electronic form (Word format), quoting reference “Survey of Experts” to tc@bakom.admin.ch. **OFCOM reserves the right to publish the submitted responses together with the identity of the participants.**

Any questions concerning this survey may be sent in writing by e-mail to tc@bakom.admin.ch or conveyed by telephone on 032 327 55 88 to the secretariat of the Telecom Services division.

2 Definition of the problem

The following remarks explain the context surrounding the survey. They outline why the Federal Council, in its response to the interpellation by Councillor Lombardi, refers to the fact that the prescribed methodology in part no longer takes sufficient account of technological developments.

2.1.1 The existing situation and the basic concept of price regulation currently in practice

It seems to be acknowledged that the access network of a fixed network - or at least parts of it - may constitute a monopolistic bottleneck as a result of high barriers to entry into the market. If such bottlenecks are present in the value chain, the danger exists that providers of retail services which use the wholesales services of the access network may be impeded in competition by the owner of the bottleneck. For the latter there is at least an incentive to set an excessive wholesale price which could lead to excessive retail prices.

The task of regulation is to prevent failures of the market and if possible to contribute to an outcome which would occur in a competitive environment. To this end, in Switzerland and in other countries, theses from the theory of contestable markets are drawn upon. Their main assertion is that even in markets with few providers, competition can arise if under inefficient behaviour, the entry into the market of an additional provider is pending. In « as-if » competition, the regulatory authority plays the part of the potential market entrant and attempts, through simulation of the same, to generate a competitive effect. To do this, a modelled determination of the efficient cost level of a hypothetical provider is necessary. The cost level determined in such a manner then represents the price ceiling for the regulated undertaking. In other words, the prices regulated in this way correspond to the costs of efficient service provision, including compensation for the capital employed, as they would occur in competition.

The determination of cost-based prices presupposes for its part that the costs of providing a service are known. These include the costs of the assets involved, which in turn result from a determination of their value. The capital costs of an asset in a financial year are determined using the depreciation costs and interest costs. The applicable standard in the ordinance (Art. 54 TSO) prescribes that the MEA approach[1] should be applied for this purpose.

The MEA approach can be closely linked with the construct of the hypothetical market entrant. To construct its own network, a hypothetical entrant into the market would have recourse to the most up-to-date means of production in each case, for reasons of efficiency. It can be assumed that the new assets will provide the existing service more efficiently. If this were not the case, higher production costs would result, which could lead under competition to disadvantages in relation to competitors. This would probably mean that the interested companies would not actually buy the new assets. MEA therefore also means that the relevant level of costs is determined by the technology and/or those assets which a hypothetical market entrant would use.

As mentioned above, the goal of price regulation is to eliminate failures of the market in order to bring about functioning competition or rather a market outcome as if functioning competition existed. Under such conditions, consumers would optimally benefit from a quality offering which best meets their needs, plus an optimal price-performance ratio. Overall, this increases welfare. This is also the approach adopted by the Telecommunications Act (TCA; cf. [5]) in its aim (Art.1). The model of contest-

[1] MEA is a concept from accounting and cost-accounting. It is used to derive replacement values or costs of assets. This means that the costs of an existing asset are measured against the costs of the most modern available asset. MEA is intended to determine the value of assets purchased in the past. One prerequisite for its use is that a comparable modern asset exists. Comparability in this context relates to the performance provided by the asset.

able markets, the hypothetical provider and the MEA approach provide appropriate conditions for contributing to the fulfilment of these wishes.

The concepts listed above were therefore chosen with reference to realising the objectives of the telecommunications legislation and constitute the background to the requirements for calculation of cost-based prices, as currently regulated under Art. 54 TSO. They are mutually dependent and can only contribute to a meaningful economical outcome through consistent interaction. In the converse argument, this means that the contribution to achieving the goal is not guaranteed if the concepts exhibit internal inconsistencies or if interaction is disturbed.

2.1.2 Modern Equivalent Asset

The carrier networks constructed in the past are based predominantly on circuit-switched PSTN (Public Switched Telephone Network) technology. These technologies, developed in the 1970s, are now reaching their limits and are not being further developed. In this connection, one often speaks of the Next Generation Networks (NGN) which differ fundamentally from PSTN networks. NGNs can be adapted dynamically, they are packet-switched (using IP Internet Protocol) and all services are essentially handled via an IMS (IP Multimedia Subsystem) platform. They permit new functionality and a multiplicity of different multimedia services at the same time. In addition they support different access technologies such as xDSL, GSM, DOCSIS, etc. Numerous providers, for example, are planning or already rolling out IMS platforms. Accordingly, the regulatory authority ComCom came to the conclusion in its decision of 7 December 2011 that the traditional regulated interconnection prices will from 2013 have to be based on the costs of their counterparts in an NGN. Accordingly, a new technology is to be considered for implementation of the MEA approach.

Within the access network sector too, ComCom stated in the above-mentioned decision that a hypothetical provider would in the future construct a fibre network instead of a twisted copper pair network. Such next generation access networks (NGAs) offer an x-fold transmission capacity and enable the provision of new services.

The question now arises as to whether, in view of technological developments, an adequate implementation of the MEA approach is still possible.

No fundamental problems arise from this circumstance in relation to the determination of termination and origination charges. The main services and performances - namely call termination and origination - are also present in an NGN. For these, therefore, the costs for comparable situations involving the subject of regulation can also be computed with the new technology.

In the case of costing the access network services - in particular in the case of a copper-based local loop (LL) - technological development does lead to implementation problems, in contrast with interconnection. The provision of an access network is not a service which is provided, but an infrastructure which is sub-leased. Equivalence would therefore demand that the characteristics of a copper access network are also to be found in a fibre access network. It must therefore be possible to isolate these characteristics in terms of costs.

The fibre access network of a hypothetical market entrant opens up new possibilities of use compared to a copper access network and is functionally far superior, to the extent that it is now difficult to directly compare the performance of fibre and copper access networks. The application of the MEA approach, however, requires this direct comparability. It is now questionable whether an objective approach exists which can meet this requirement. If this is not the case, the cost-oriented determination of the price for a subscriber line using modern technology is called into question.

2.1.3 LRIC and falling demand

One simple solution to the problem with the MEA approach outlined above might be to no longer prescribe it as mandatory for deriving replacement values. However, this procedure would not necessarily produce an outcome which contributes to achieving the objectives of the TCA. If the basis for cost

modelling of regulated prices continued to be a copper network, this would produce a result which would not be consistent with the theory of contestable markets. Accordingly, the price regulation approach is self-contradictory and there would arise inconsistencies between the three fundamental concepts which constitute the current price regulation approach. The following remarks are intended to illustrate these considerations.

It can already be observed that the demand for copper local loops is falling. Because of the expansion of next generation access networks, it is to be expected that this drop in demand will become more pronounced in the future. The copper access network can therefore be described as a product with limited potential for profitability. The profitability of a newly constructed copper access network must therefore be called into question. In view of this fact, it appears inappropriate to prescribe a system of price regulation with a hypothetical market entrant who enters the market with a copper access network.

Falling demand also leads to reduced economies of scale, as the large block of fixed costs in a network is spread over a smaller quantity. In the long-run incremental costs (LRIC) model, this development leads to rising prices: a result which would not be expected in markets with functioning competition. Reduced demand would instead tend to express itself in falling prices with technologies which were running out of steam. Accordingly, the incentives for investment might be distorted with LRIC and might in the long run be weakened.

In view of the emerging inconsistencies between the three fundamental concepts of the current system of price regulation, the price regulation approach currently prescribed in Art. 54 TCA must be examined, at least with regard to unbundling of the local loop. Retaining the LRIC of a hypothetical provider in order to determine cost-based prices could produce an outcome which no longer corresponds to the behaviour to be expected in a market with functioning competition.

3 Information on the party making the submission

Company / organisation:

Contact:
Street:
Postcode, town:
Telephone: Fax:
E-mail:

- ☐ Fixed network operator
- ☐ Mobile network operator
- ☐ Cable network operator
- ☐ Manufacturer of telecommunications equipment
- ☐ Service provider
- ☐ Content provider
- ☐ Consumer organisation
- ☐ Association
- ☐ Authority
- ☐ Consultant
- ☐ Other, which?

Do you purchase one or more of the following products in accordance with Art. 11 TCA

- ☐ fully unbundled access to the local loop
- ☐ fast bitstream access
- ☐ interconnection
- ☐ leased lines
- ☐ access to cable ducts
- ☐ none

4 Comments on the introduction and the definition of the problem

This section gives you an opportunity to make general comments and remarks concerning the introduction and the definition of the problem. Do you agree with the outlining of the issue? Would you set out other priorities? Please comment in particular on Modern Equivalent Assets and the issue of establishing functional equivalence between copper and fibre access networks as well as LRIC and the associated effects in the case of falling demand.

5 Questionnaire

The actual questionnaire can be found in the following sections. Please note the following remarks:

- The survey is aimed primarily at providers of telecommunications services. All interested organisations are, however, invited to give their technical comments on the questions in hand.

- Unless otherwise specified, the wholesale stage is the subject matter.

- The fully unbundled local loop according to Art. 11 TCA is designated FULL. Therefore, unless otherwise specified, FULL refers to a connection via a twisted metal pair (esp. a twisted copper pair).

- Market participants: this term includes the market-dominant provider, alternative telecommunications service providers (TSPs) and other providers active in the market in question.

- Investments: In this context, this term refers to investments in the development of telecoms networks.

- In what follows, access products refer to products in accordance with Art. 11 TCA without the rebilling for fixed network local loops.

5.1 The existing situation

Q 1. What criteria do you consider to be important for evaluating different price calculation methods? Please prioritise the criteria.

Q 2. How do you rate an adaptation of the price regulation method which is based solely on FULL? Alternatively, what criteria would you apply for a generally formulated, product-neutral adaptation of the method of price calculation?

Q 3. Art. 54 TSO could be amended to the effect that the requirement is removed only for FULL, to use the MEA approach. How would you assess this type of revision? In this case, in the cost modelling, should overall demand consisting of fibre and copper connections be applied to design the copper access network?

Q 4. At present, replacements costs are used as the **cost basis**[2] for price calculation, with the exception of the rebilling for fixed network local loops. Among others, the contestable markets model constitutes the theoretical background, i.e. incentives are applied for duplication of the infrastructure concerned.

   a. Would you set a different cost basis for specific cost blocks within individual access products? Would you set a different cost basis for access products or for activities in the value chain?

[2] The cost basis designates the costs which are included in an initial stage. A distinction is made between historic costs and replacement costs.

b. What would be possible criteria to determine duplicability?

c. Do you see a justification for applying historic costs in the case of cable ducts? What would the consequences be?

d. Apart from FULL, cable ducts can also be used for more modern transmission media such as fibre. If historic costs are applied in the case of cable ducts, would a problem or distortion of price signals result from this?

Q 5. In detail, ComCom sets cost-accounting replacement costs and calculates the annual capital costs using the so-called tilted annuity[3] formula.

a. Would you apply a different capital cost calculation method for specific cost blocks within individual access products? Would you apply a different capital cost calculation method for access products or for activities in the value chain?

b. Do you see a need to change the capital cost calculation method? How would you change the method?

5.2 Investment incentives and competition effects

According to the aim of the Telecommunications Act (Art. 1 TCA), a range of cost-effective, high quality, and nationally and internationally competitive telecommunications services should be available to the population and the economy. This should also be ensured in the future. Today's investments ensure that it will also be possible to fulfil the aim in the future.

Q 6. (Relative) **prices** are an important factor for investment incentives and competition effects.

a. What effect does the difference between the (copper) FULL price and NGA access prices (for FTTx, DOCSIS 3.0, LTE and the like) have in relation to investment incentives?

b. In this context, please explain the role of end customers' willingness to pay for products which compared to products via FULL enable a distinctly higher data transmission speed and a wider variety of services.

3 $A = I \cdot \frac{WACC - dp}{1 - \left(\frac{1+dp}{1+WACC}\right)^T}$

where A is the annuity, WACC is the weighted average cost of capital, I is investment, dp is the rate of price change and T is the service life.

c. How would an upward price trend for FULL affect the investment incentives of a market-dominant provider on the one hand and other market participants on the other? What effects on consumers can be expected (end user prices, quality of services, etc.)?

d. How would a downward price trend for FULL affect the investment incentives of a market-dominant provider on the one hand and other market participants on the other? What effects on consumers can be expected (end user prices, quality of services, etc.)?

e. Should FULL prices be differentiated regionally? Please give reasons.

Q 7. The question is also posed regarding the costs of **parallel operation** of copper and fibre access networks.

a. What additional costs are incurred for parallel operation of copper and fibre access networks? What sort of effects does this have on the efficiency of the market participants?

b. Does parallel operation of copper and fibre access networks weaken investment incentives?

c. Accordingly, should the market-dominant provider be allowed to switch off its copper access network? When? What would be the shutdown criteria? How should any dismantling of exchanges take place?

d. Would end user prices for services with the same performance, as with those via FULL, increase after switch-off of the copper access network in the absence of access regulation for fibre access networks?

Q 8. The minimisation of **market distortions** generally plays an important part in terms of efficient investment.

a. Within the context of the FULL price calculation method, how can it also be guaranteed that the least possible distortion of intramodal competition[4] occurs?

[4] The term “intramodal competition” refers in this context to competition within a specific telecoms network. Usually, a distinction is made here between fixed networks, cable networks and mobile radio networks. The fibre and copper access network are partly assigned to the same mode (fixed network).

b. Within the context of the FULL price calculation method, how can it also be guaranteed that the least possible distortion of intermodal competition[5] occurs?

Q 9. The predictability or rather the stable evolution of prices is also a factor in relation to investment incentives. The fixation of prices or the use of other remedies in advance provides predictability but may favour errors in regulation. What is your position on this?

Q 10. What additional factors concerning investment incentives and competition effects should be taken into account with regard to achieving the objectives of the TCA aim?

5.3 Price calculation methods for access products

Please give your comments on the questions below, applying criteria such as consumer benefit, competition effects, investment incentives and/or your own criteria which you consider important.

Q 11. At present, in your opinion, what would be the optimal method of price calculation for FULL? Please describe the method in sufficient detail, e.g. with reference to the cost basis to be applied or any problems with application, and give reasons for your choice.

5.3.1 Anchor pricing

In the case of anchor pricing, a specific price level, e.g. for FULL, would be frozen. Such possible anchor points would be an average of the price over the last few years or the last regulated price in the case of the entry into force of a revised ordinance.

Q 12. How do you rate this method? What would be its effects?

Q 13. What problems might arise with the application of anchor pricing? How could these problems be tackled?

5.3.2 Discounted cash flow

In the case of the discounted cash flow (DCF) method, a business scenario for copper access networks would be constructed, e.g. for the FULL price in which the necessary investment would be compared with the envisaged returns. This essentially enables demand effects to be taken into account.

Q 14. How do you rate this method? What would be its effects?

Q 15. What problems might arise with the application of DCF? How could these problems be tackled?

[5] In contrast with “intramodal competition” (cf. footnote 4) the term “intermodal competition” refers in this context to competition between different telecoms networks. Usually, a distinction is made here between fixed networks, cable networks and mobile radio networks. The fibre and copper access network are partly assigned to the same mode (fixed network).

5.3.3 Glide path

A glide path, e.g. for the FULL price, would mean that starting out from a specific level, the price would fall over a prescribed duration to a prescribed level. One possible justification would be customers' relative willingness, increasing over time, to pay for services with substantially higher bandwidth. The copper access network would lose value relative to the fibre access network thereby justifying a falling price trend for FULL.

Q 16. How do you rate this method? What would be its effects?

Q 17. If a glide path were to be applied, how should this be configured, in your view? Please give your reasons and express a start and target value, as well as the duration of the glide path and any intermediate stages.

Q 18. One possible starting value for a glide path would be a price based on the current provisions in the ordinance. Operational costs (SRIC[6]) could serve as a target value for FULL.

a. How do you rate such a starting value? Would you agree with the argument that at the present time sudden price shifts for FULL must be avoided, with regard in particular to investment security?

b. How do you rate the proposed target value? What would be conceivable alternatives?

c. How long should the glide path be? Or rather, what criteria should be used as a basis for the glide path?

d. Should the glide path be linear or non-linear? Please give your reasons.

e. Does a non-linear glide path in which the changes become greater over time appear beneficial? Can the rate of technological adaptation be influenced in this way?

Q 19. What problems might arise with the application of a glide path? How could these problems be tackled?

5.3.4 Retail-minus

In the case of retail-minus, the costs which are incurred for efficient sales/marketing of a product are deducted from the end-user price. The goal of this method is in particular to prevent margin squeeze[7].

[6] In the case of SRIC (or SRIC+, which includes overheads) or short-run incremental costs or marginal costs, the costs which can be avoided in the short term are identified if a company can adapt its production quantity to a change in demand. Since overheads and fixed costs hardly change, or change only in a stepped manner, these costs, particularly in the case of telecoms networks, tend to become like operating costs.

Q 20. How do you rate this method? What would be its effects? What would have to be taken into special consideration for FULL?

Q 21. In Switzerland, for the end-user price, the price ceiling for a subscriber line of CHF 23.45 excl. VAT (Art. 22 TSO) is sometimes key. Do you see any problems resulting from this price ceiling in relation to the application of retail-minus? Would the FULL price be substantially distorted? How could any problems be tackled?

Q 22. There is increasing demand for bundled products in which television services, mobile telephony services, internet access and fixed-network telephony are combined. Do you see any problems resulting from bundled products in relation to the application of retail-minus? How could any problems with bundled products be tackled?

Q 23. There is the possibility of combining retail-minus and LRIC according to the following price rule: min[LRIC, retail-minus], i.e. the method which produces the lower price is applied. In some cases, this approach would make it possible to prevent both margin squeeze with retail-minus as well as excessive price setting with LRIC. Would such an approach be preferable to retail-minus on its own? Please give your reasons.

Q 24. What other problems might arise if retail-minus or a combination of retail-minus and LRIC are applied? How could these problems be tackled?

5.3.5 SRIC-LRIC mix

The SRIC method explained in connection with the glide path (section 5.3.3) could also be applied in combination with LRIC. In the latter variant, depending on the replicability of an installation for different cost elements, different cost scales (SRIC or LRIC) could be used.

Q 25. How do you rate this method, particularly also with regard to the FULL? What would be its effects?

Q 26. What criteria should be applied to determine replicability? Would there be alternative criteria other than replicability for the choice of the cost scale?

Q 27. What problems might arise with the application of an SRIC-LRIC mix? How could these problems be tackled?

5.3.6 Other methods

Q 28. Do you see any other commendable methods which can be implemented? Please describe the methods in sufficient detail, e.g. with reference to the cost basis to be applied or any problems with application, and give reasons for your choice.

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[7] Margin squeeze occurs when a vertically integrated market-dominant undertaking sets low end-user prices in relation to the wholesale prices and makes it impossible for alternative efficient players in the market to offer competitive products in the end-user market.

5.4 Interconnection

Q 29. As mentioned above, from 2013 onwards ComCom will consider IP-based interconnection as the MEA in relation to PSTN. Do you consider that this adequately reflects the evolution of the market?

Q 30. In the interconnection sector, as a result of the switch to IP-based interconnection, there is a possibility of replacing charging for interconnection services on a per-minute basis with capacity-based charges (CBC). How do you rate this method? What would be its effects?

Q 31. Do you have any other comments on price regulation relating to interconnection?

5.5 OFCOM approach to a modern telecoms network based on NGN

As explained above, the application of the MEA approach raises the question of the most modern technology for the operation of a telecommunications network. Consequently, among other things the approach requires the simulation of a complete network construction using modern technology. In its transport architecture, such a new network would consist of the core network, aggregation network and access network. In the case of the core and aggregation network, one also typically refers to an NGN, whilst the access network can be assigned to the NGA group (cf. figure 1: Network architecture).

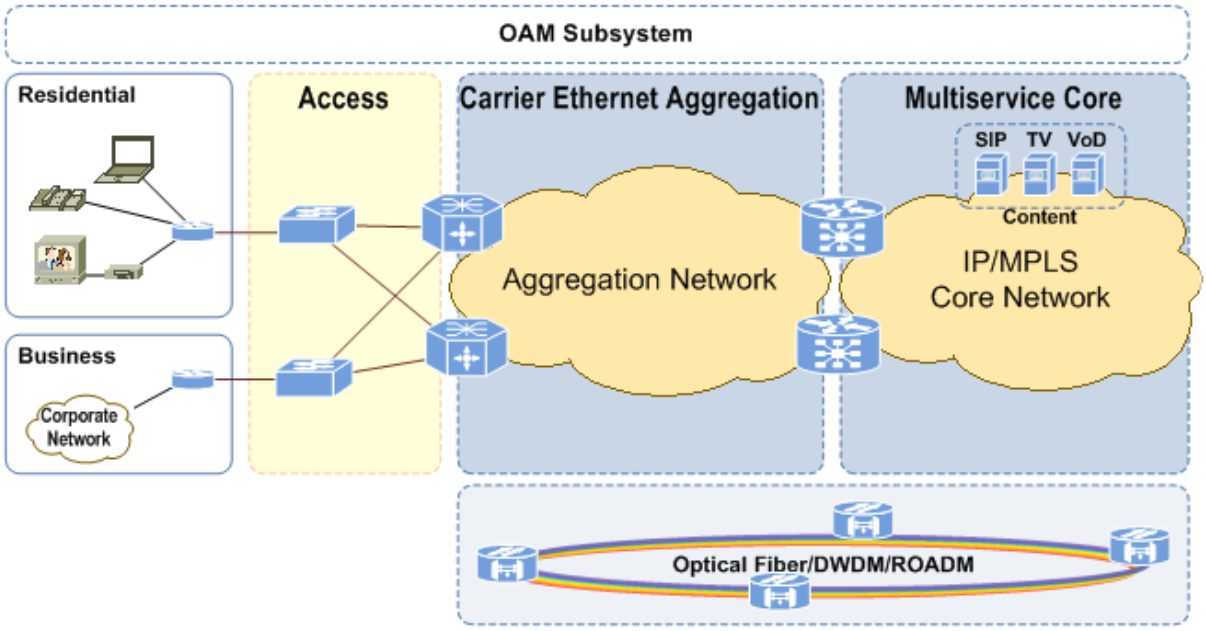

Figure 1: Network architecture

The three network types can be roughly specified in their technological structure as follows:

***Core Network**:*	
Layer 3 (Network):	IP/MPLS
Layer 2 (Data Link):	Carrier Class Ethernet, 10G/40G (in future 100G)
Layer 1 (Physical):	[D]WDM / ROADM
Medium:	Fibre

***Aggregation Network**:*	
Layer 3 (Network):	IP/MPLS (possibly MPLS-TP)
Layer 2 (Data Link):	Ethernet, 1G/10G (in future 40G)
Layer 1 (Physical):	DWDM
Medium:	Fibre

***Access Network**:*	FTTH, P2P Ethernet, 30M/100M (in future 1G)

It seems appropriate to assume that a newly implemented NGN network should allow a minimum combination of three services (triple play). These are IP telephony (VoIP), IP television (IPTV) and broadband internet. With the selected concrete implementation of the requirements of the new network, it should be possible to add other services without significant changes to the structure.

A functional network architecture based on the IMS principle constitutes an appropriate solution to meet these requirements. One of the primary functions of IMS is to simplify network management. For this purpose, IMS separates the control and transport functions. Therefore, IMS can bring savings in the management of the network. Using a common service platform also provides favourable conditions for economies of scope. In the case of the introduction of new services, the investment threshold should therefore be lower.

In addition, with reference to interconnection, requirements of a technical, legal and functional nature arise in relation to this modern telecoms network. They are listed in the following table:

Function group	Interconnection requirements
Transport functions	• Service-independent transport • Open interfaces • End-to-end QoS
Control functions	• Portability • Session initiation • Application service • Access control • Security
Application functions/services	• Real time (e.g. VoIP) • Streaming (e.g. IPTV) • Not in real time (e.g. IM) • Multimedia (e.g. IMS)
User profile functions	• OSS interface • Parameterisation of exchange data • Identity management
Legal requirements	• Emergency calls • Location • Legal interception • Data protection • Network security/integrity • Open access

Table 1 Requirements concerning interconnection

It stands to reason that such a network should guarantee reliability and redundancy. It should be possible to meet these quality requirements in the future by using a very small number of points of interconnection (PoI). Two or three PoIs per NGN might be sufficient.

***Note**: this very rough representation of the structure and the requirements of a new telecommunications network will be completed or additionally explained in early February by means of an annex entitled « OFCOM's vision of a modern telecoms network of the type NGN ». The annex will be available in German and French on the OFCOM website at the same location as this questionnaire.*

Q 32. To what extent are you in agreement with the structure and requirements in the above representation? Please explain any deviant ideas you may have.

Q 33. Please place your answer to question 32 within the context of cost modelling.

Q 34. In its decision of 7 December 2011 ComCom stated that it will only be possible to meet the statutory requirements in the future by the use of NGN and NGA.

a. What effects does this announcement have on the offering of interconnection interfaces?

b. What further effects might this announcement have on the participants in the market?

5.6 Comments

Please make any other comments.

References

[1] Federal Council (2010): *Evaluation zum Fernmeldemarkt – Bericht des Bundesrates in Erfüllung des Postulats KVF-S vom 13. Januar 2009 (09.3002)* [Evaluation of the telecoms market – Federal Council report in fulfilment of postulate KVF-S of 13 January 2009], http://www.bakom.admin.ch/dokumentation/gesetzgebung/00512/03498/index.html?lang=en.

[2] Federal Council (2011): *Diskriminierungsfreier Netzzugang in der Telekommunikation: Lombardo Filippo: fraction CVP/EVP/glp* [Non-discriminatory network access in telecommunications].

[3] SR 784.101.1 Telecommunications Services Ordinance of 9 March 2007 (TSO).

[4] Decision of the Federal Communications Commission ComCom of 7 December 2011 concerning interconnection, access to the fully unbundled local loop and colocation, http://www.comcom.admin.ch/themen/00500/00782/index.html?lang=en.

[5] SR 784.10 Telecommunications Act of 30 April 1997 (TCA).