



AMT FÜR KOMMUNIKATION
FÜRSTENTUM LIECHTENSTEIN

Analysis of the market for call origination on the fixed network (M2)

***Call origination on the public telephone network
provided at a fixed location (wholesale service market)***

(Final version)

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1 Introduction

1.1 Legislative basis

By virtue of Art. 20 of the Law concerning Electronic Communication (KomG)¹ the Office for Communication is required to examine whether effective competition obtains on the electronic communication markets in Liechtenstein. If effective competition does not exist, that is, one or more providers possesses significant market power, the Office is to apply such measures of special regulation (under Art. 23 et seq. KomG) as are needed in order to remove the competition problems that have been determined to exist. This procedure is termed market analysis.

The Office for Communication has defined, and the Government has published in the Official Gazette,² the scope of the service and/or product markets that are to be investigated in accordance with Art. 21 (1) KomG. This was done taking into consideration the Recommendation on Relevant Markets by the EFTA Surveillance Authority.

The existence of significant market power – corresponding to a position of dominance in a market under general EEA competition law – has to be determined by taking into account in particular the criteria laid down in Art. 31 VKND.³

If the Office for Communication determines that one or more providers have significant market power in a defined market, the Office has the power to impose such measures of special regulation under Arts. 34 to 43 VKND as are necessary and proportionate and suited to remove the competition problems obtaining on the market in question.

The following market analysis first investigates the question of whether self-sustaining competition exists from an economic perspective on the wholesale service market for "call origination on the public telephone network provided at a fixed location" (fixed network call origination market) or, as the case may be, whether self-sustaining competition would prevail from an economic perspective without regulation. Such factors and problems as may stand in the way of such self-sustaining competition shall be identified. The presence of economic market power will be investigated in this connection; in particular the criteria of Art. 31 (1) to (3) VKND will be considered according to their relevance for the market in question. Proceeding from a determination of providers having significant market power and the identification of relevant competition problems on the fixed network market for

¹ Law of 17 March 2006 concerning electronic communication (Kommunikationsgesetz; KomG), LGBI. 2006 No. 91.

² Announcement of 3 February 2009 on the determination of relevant material and geographical electronic communications markets (market definition), LGBI. 2009 No. 69.

³ Ordinance of 3 April 2007 on electronic communication networks and services (VKND), LGBI. 2007 No. 67.

call origination, the necessary measures of special regulation will be imposed that are suited to remedying the problems for competition that have been determined.

1.2 Market analysis process

The procedure for the market analysis and the imposition of measures of special regulation consists of the following steps:

Complete process of special regulation	Market analysis in its broad sense	1	Collection and analysis of the necessary data on the market and from undertakings.
		2	Definition of the relevant markets in a national context from a material and geographical point of view.
		3	Determination of (any) SMP undertakings.
		4	Identification of any current and potential problems for competition.
		5	Structure and design of any measures of special regulation that are to be imposed.
		6	Consultation of interested groups nationally, i.e. undertakings which will be affected by planned measures.
		7	Submission of the market analysis and the planned measures for review by the EFTA Surveillance Authority and the regulatory authorities in the EEA.
		8	Imposition of any necessary measures by means of an administrative decision.
		9	Control of the implementation and compliance with the measures which have been imposed.

Figure 1: Overview of the complete process of special regulation

The above overview presents the process of special regulation as a whole. The market analysis in its broad sense here⁴ is understood to include the adoption of any necessary regulatory measures if need be, and so extends across steps 2 to 8 in the above overview.

1.3 National and EEA-wide consultation

To the extent that the Office for Communication foresees adoption of measures of special regulation that are likely to have significant effects on the market concerned, it is obliged

⁴ One can define market analysis in its narrow sense as relating to steps 2 to 5.

to announce this to interested parties in conformity with Art. 24 (1) KomG and to give such parties the opportunity to make their position known within a reasonable period. The Office is for this purpose empowered in particular to hold public consultations in accordance with Art. 46 KomG.

Hence the Office for Communication published on 27 April 2009 under Art. 40 KomG its official analysis of the market for fixed network call origination. Interested parties were invited to submit comments on the analysis and in particular on the measures of special regulation proposed in it during a public consultation period in accordance with Art. 24 (1) in conjunction with Art. 46 (1) KomG and Art. 24 (1) RKV.

The following undertakings submitted comments by the end of the national consultation period on 30 June 2009: ICT-Center AG; Liechtensteinische Kraftwerke (LKW); Mobilkom (Liechtenstein) AG; Swisscom (Schweiz) AG; Telecom Liechtenstein AG (TLI); MTtel AG; Wasserversorgung Liechtensteiner Unterland (WLU). The comments are, in so far as they are not subject to confidentiality, published on the Office's website.⁵

The comments were taken into consideration when preparing the present final version of the market analysis in so far as they were in the Office's view of importance and/or entailed consequences.

The Office for Communication has formally notified TLI of the planned regulatory measures in M2 by letter dated 22 January 2010. By response letter dated 15 February 2010 TLI maintained its previous position on the matter without raising any new objections. It requested however to allow for sufficient time to comply with the regulatory measures to be imposed, in particular with regard to the cost accounting and reference offer requirements.

If the Office for Communication intends to adopt measures of special regulation which are likely to have effects on trade between EEA States, the Office has then in addition to the national consultation exercise to consult the EFTA Surveillance Authority and the other NRAs in the EEA beforehand in conformity with Art. 7 of the Framework Directive 2002/21/EC (Art. 24 (2) KomG).^{6,7} This EEA-wide consultation serves to establish transparency and the consolidation of the single market.

During a first phase, the EFTA Surveillance Authority is given a period of one month to review the analysis and any planned measures submitted to it. If the Authority expresses a reasoned doubt as to the compatibility with EEA law of measures that have been

⁵ <http://www.llv.li/amtstellen/llv-ak-marktanalysen/llv-ak-marktanalysen-konsultationen.htm>.

⁶ Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services ("Framework Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5cl.01).

⁷ For the details of the procedure for submission according to Art. 7 of the Framework Directive see also: Recommendation of the EFTA Surveillance Authority No. 193/04/COL of 14 July 2004 on notifications, time limits and consultations provided for in Article 7 of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 113, 27.4.2007, page 10.

submitted, it can extend this period by two months in order to allow further investigation of the matter. If no such doubts exist, the Office for Communication can adopt the measures that were submitted. On the other hand, if the EFTA Surveillance Authority comes to the conclusion within the extended period that the market definition or the analysis of significant market power is contrary to applicable EEA law, it can forbid the Office for Communication from bringing the planned measures into force.

With regard to the structure and design of concrete measures of special regulation per se, that is the obligations which are imposed on providers, the EFTA Surveillance Authority has solely the competence to comment on them, not to reject them. If the EFTA Surveillance Authority does comment on a draft measure submitted, then the Office for Communication has to take its comments into utmost account.

All relevant documents and published information related to the submission of measures of special regulation by the Office for Communication are accessible via the electronic portal⁸ of the EFTA Surveillance Authority. All public documents related to the national consultations are viewable on the Office for Communication's website.⁹

1.4 Basic aspects of the market analysis

From an economic viewpoint, the position of significant market power is related to an undertaking's power to increase prices without having to suffer significant sales losses. In accordance with the thesis of equivalence from the EFTA Surveillance Authority and the European Commission, effective competition prevails on a market when no undertaking on the market possess a position of significant market power.¹⁰

In the following market analysis, the terms "effective competition", "functioning competition", "competition that is effective" are used synonymously. Effective competition presupposes that the competition also exists without any ex ante regulation (anticipatory regulation) on this market, but taking into consideration ex ante regulations on other markets of relevance for this market. If the competition on one market is also not dependant on regulations on other markets, not only is the competition effective, but also self-sustaining. Accordingly in the market analysis, the conditions for competition are to be assessed as to whether none of the ex ante regulations affecting this market exist on the present market (this is also termed the "green field approach"). Otherwise the danger exists that effective competition is ascertained for a market although the market outcome is primarily determined by existing regulation and not by competitive forces. The consequence of this would be that (at least over the medium term) structurally driven competition deficits arise and market dominant operators utilise their position to the disadvantage of the consumers.

⁸ <https://eea.eftasurv.int/portal/>

⁹ <http://www.llv.li/amtsstellen/llv-ak-marktanalysen/llv-ak-marktanalysen-konsultationen.htm>

¹⁰ Cf. chapter 3.1.1.

1.5 Composition of the market analysis

The market analysis is composed as follows: The first chapter provides an introduction to the subject-matter under investigation. Chapter 2 contains detailed assessments of the market definition and delineation as well as a description of the products and services. The analysis of competition itself is to be found in chapter 3, in which all aspects for the assessment of relevant market power indicators are examined. Chapter 4 focuses on the potential for market abuse and (potential) competition problems on the call origination market at fixed locations. Finally, chapter 5 discusses the regulatory measures that are appropriate for remedying the competition problems that have been determined and formulates the concrete measures of special regulation.

1.6 Time frame

The time frame for the present market analysis amounts to two to three years. The Office for Communication will continue to keep the market concerned under further observation during this period and, if necessary, initiate a fresh market analysis. Art. 21 (2) KomG lays down that the conditions for competition in the markets identified in the Announcement on market definition are to be reviewed at least once every four years.

1.7 Sources of data

The essential data that have provided the basis for the following market analysis were collected by the Office for Communication by means of an annual questionnaire to operators over the years 2004 to 2008. The collection of market data takes place each year in the summer in relation to the preceding calendar year. For reasons of proportionality, any collection of the requested data between these intervals is normally only conducted additionally if this seems indicated by a rapid change in market conditions or by other special reasons.

To supplement the data gathered in the context of the yearly questionnaires, data obtained under the previous legal framework have been used as necessary. No further reference will be made in the following market analysis to these data or to the data collected during the survey of operators; all other external sources of data will only be referred to specifically as necessary. Additionally, the Office for Communication keeps the market in question, like other relevant markets, under constant observation. Hence the present analysis also relies on the Office's further current information and data.

1.8 Competition authority

Liechtenstein has no national competition law beyond the rules of competition applicable under the EEA Agreement. Nor does Liechtenstein have an independent competition

authority at present. Legal recourse in competition cases is therefore to be sought in accordance with the applicable EEA law before the ordinary national courts or by referring the matter to the EFTA Surveillance Authority and/or the European Commission. The exception to this is the Office for Trade and Transport by virtue of Art. 2 (1) of the Law of 23 May 1996 on the Implementation of the Rules of Competition in the European Economic Area, LGBI. 1996 No. 113, under which that Office has responsibility for the implementation of competition rules to the extent that the courts do not have jurisdiction. This responsibility is however essentially directed towards supporting the EFTA Surveillance Authority and the undertaking of actions by the State, and not towards the material application and enforcement of EEA competition rules.

For these reasons, cooperation with or consultation of a competition authority in the sense of the second sentence of Art. 16 (1) of the Framework Directive 2002/21/EC¹¹ is not possible in the case of the present market analysis in Liechtenstein.

¹¹ Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services ("Framework Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5cl.01).

2 The market under investigation

2.1 Development of the fixed network sector in Liechtenstein

Up to 1998, the provision of telecommunications in Liechtenstein occurred under the PTT Treaty of 1978 concluded between Liechtenstein and Switzerland. The network in Liechtenstein was an integral part of the Swiss telephone network (of Swisscom). The network components situated in Liechtenstein, including the access network, were provided, maintained and operated by Swisscom in the name and on the account of the Liechtenstein State. Their owner was the Liechtenstein State. In 1998, the separation from the Swiss telephone network occurred with the liberalisation of the telecommunications sector and the founding of the 100% State-owned stock corporation LTN Liechtenstein Telenet AG (hereunder called "LTN").

LTN was only entrusted with the operation of the network. Following an invitation for tenders in relation to the provision of basic services, the retail customer relationship was transferred to Telecom FL AG which belonged to Swisscom. Telecom FL was then 100% taken over by LTN in 2003 following an increase in LTN's capital. The merger of the two undertakings to now become Telecom Liechtenstein AG (hereunder called "TLI") occurred on 1 January 2008.

The Liechtensteinische Kraftwerke (LKW), which is also 100% State-owned, is responsible for the expansion and operation of the copper, optical fibre and CATV networks in Liechtenstein. At the beginning of 2007 and as a result of a "consolidation agreement" concluded between LTN and LKW, all retail customer relationships and "intelligent" network components were concentrated at LTN and all passive network components, including in particular the access network, transmission lines, cable routes, etc. were bundled together at LKW. Hence from this point in time, LKW has been the owner of all fixed access networks. LKW is no longer active on the retail customer market but rather only on the wholesale service market. By contrast only TLI has a presence on the retail customer market.¹²

2.2 What is fixed network call origination?

The call origination service (to establish the connection) which is provided on the market presently under investigation covers the transmission of voice and data traffic from subscribers to the first interconnection-capable local exchange of the source network. The first interconnection-capable local exchange is fundamentally regarded as that exchange

¹² Please also see section 3.5, item 3, second sentence of Annex II from 27 February 2008 to the consolidation agreement from 11 July 2006, published in ruling 605/08/COL by the EFTA Surveillance Authority dated 17 September 2008, Annex, pages 4 and 7.

to which at least one network operator is interconnected with this source network and on which the traffic can be handed over close to its origin.

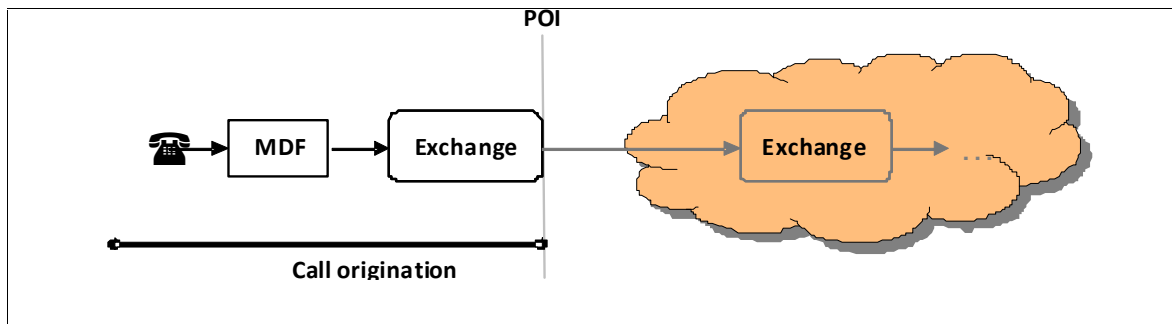


Chart 1: Origination service for subscribers to the first interconnection-capable exchange

The origination service is a pure call service and as such it is to be differentiated from the access service (see for instance the analysis of the subscriber connection and the physical access to same in Market 4) forming the basis for same.

The origination service is – because it is requested by network operators and not by retail customers – a wholesale service (i.e. wholesale product), for which the network operator requesting same must, if need be, pay a rate (called an origination rate) to the provider. The demand for call origination on the wholesale level is derived from the demand by the subscribers on the retail customer level: Every subscriber of a network operator requires call origination as a wholesale service to carry out a call to another subscriber – regardless of whether they are connected to the same or to another communications network operator.

However the fixed network origination service is related only to that service which is requested by network operators in Liechtenstein and which is provided in Liechtenstein from a Liechtenstein-based operator. Hence the findings provided in this document are only applicable to the domestic origination service vis-à-vis network operators and only this is subject to potential regulation in the sense of the present analysis.

For this service vis-à-vis the network operators, the domestic network operator charges – provided it concerns a destination network priced call – a rate, the so-called call origination rate. With a source network priced call, the origination network operator charges the service indirectly to the retail customers via the retail customer rate.

2.3 Definition of the relevant product market

In accordance with the Guidelines of the EFTA Surveillance Authority on market definition and the assessment of significant market power (hereunder called the "SMP Guidelines"),¹³ the basis for the definition of the materially relevant market is a test of

¹³ Guidelines of the EFTA Surveillance Authority of 14 July 2004 on market analysis and the assessment of significant market power under the regulatory framework for electronic communications networks and services referred to in Annex XI of the Agreement on the European Economic Area, OJ C 101, 27.04.2006, page 1.

substitutability on the demand and supply sides of the product or service in question. Products all belong to the same market when both consumers and providers see them as sufficiently interchangeable. A generally acknowledged procedure for determining this is provided by the so-called SSNIP test (small but significant non-transitory increase in price – SSNIP) or the test of the hypothetical monopolist.

The EFTA Surveillance Authority in its Recommendation on Relevant Markets¹⁴ has identified in accordance with Art. 15 of the Framework Directive 2002/21/EC¹⁵ those materially relevant product and service markets which can be considered for ex ante (anticipatory) regulation. It is assumed that for these markets – because the EFTA Surveillance Authority has already examined whether the applicable criteria are fulfilled – ex ante regulation will also be considered in Liechtenstein if need be. Hence the Office for Communication does not have to repeat this examination as the competent Regulatory Authority, unless it has reasonable doubt as to the criteria's specific concordance with the national context or the definition of the relevant national product market deviates from that which has been recommended.

In accordance with the EFTA Surveillance Authority's Recommendation on Relevant Markets, the relevant material market was defined in Part A, item 2 of the Annex to the Announcement on market definition as "call origination on the public telephone network at a fixed location." This market corresponds to Market No. 2 in the EFTA Surveillance Authority's Recommendation on Relevant Markets as well as that from the European Commission.¹⁶

The call origination is one of the three main elements (in addition to the call termination and the transit) required in order to be able to offer telephone services to retail customers. These services can either be bought, rented or rendered directly by the provider if it establishes its own (extensive) network.

To put the above definition in a concrete form, the call origination is a wholesale service from subscriber network operators the purpose of which consists of taking the traffic initiated by users at network termination points in their own communications network from those network termination points to the nearest exchange which is capable of

¹⁴ EFTA Surveillance Authority Recommendation of 5 November 2008 on relevant product and service markets within the electronic communications sector to be considered for ex ante regulation in accordance with the Act referred to at point 5cl of Annex XI to the EEA Agreement (Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services), as adapted by Protocol 1 thereto and by the sectional adaptations contained in Annex XI to that Agreement, OJ C 156, 9.7.2009, page 18.

¹⁵ Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services ("Framework Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5cl.01).

¹⁶ The European Commission has described the underlying material product markets in its explanatory remarks to the Recommendation on Relevant Markets, Explanatory Note (Commission staff working document SEC2007/1483) to Commission Recommendation 2007/879/EC of 17 December 2007 on Relevant Product and Service Markets within the electronic communications sector to be considered for ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ, L 344, 28.12.2007, page 65.

interconnecting with other networks. An interconnection-capable exchange is an exchange at which such traffic is and/or can be transferred to at least one other network operator.

The relevant market covers voice as well as fax and modem dial up connections including dial up connections to the internet. It includes the origination services of all subscriber network operators.

Origination services by means of Voice over Broadband (VoB) are components of the market under consideration, while origination services by means of Voice over Internet (VoI) are not. In contrast to VoI, with VoB the provider also controls the underlying broadband connection and thus can influence the quality and availability of the services delivered in this way.

Hence the decisive material market for the present market analysis is in accordance with the EFTA Surveillance Authority's Recommendation on Relevant Markets. From the Office for Communication's perspective, there are no indications that the relevant market does not fulfil the criteria for a potential ex ante (anticipatory) regulation in Liechtenstein or will have to be defined differently in terms of its material dimension due to national circumstances.

2.4 Services and products

While it is true that the origination services which are provided on the market under consideration are generally used for the supply of voice telephony and data traffic to exchanges, the billing and the business models for this wholesale service traffic differ substantially from each other. Fundamentally, a difference can be drawn between three categories of origination services:

1. Origination services for interexchange network operators ("INO");
2. Origination services to destination network priced service numbers "destination SN");
3. Origination services as self supply.

2.4.1 Origination services for interexchange network operators ("INO");

These services are provided by all operators which have customers directly connected to their networks ("origination network operators") and reroute calls from these customers at their request to interexchange network operators. The interexchange network operator charges the calls to the customers and pays the origination network operator an origination rate for the supply of the call.

2.4.2 Origination services to destination network priced service numbers ("destination SN")

These services are provided by origination network operators whose customers dial destination network priced service numbers. Under these numbers, services are provided based on public communications services, whereby the rate for the service is determined by each operator on whose network the service is provided. These include among others telephone numbers for services with regulated rate upper limits (800 freephone numbers or 8xx shared cost or regular cost numbers) or numbers for value added services calculated variably (90x premium rate services).

While it is true that the origination network operator does levy the rate from the retail customers, however it passes this on minus an origination rate (in addition to a surcharge for a collection risk and billing if need be) to the service network operator, provided the called up service was provided in a different network. In the case of a call to a destination network priced service which is processed in its own network, this service is to be regarded as self supply as the network operator itself provides the origination service.

2.4.3 Origination services as self supply

Unlike the other two categories, no direct wholesale income is available for self supply. Instead, the services are provided to the retail arm of one's own undertaking for the provision of retail customer services.

The self supply is considered because the demand for the "origination" wholesale product is based on the demand on the retail market. As already detailed in the market definition, the test of the hypothetical monopolist is conducted on the wholesale level: Hence – in addition to the substitution on the supply and demand sides – the consequences of a 5% to 10% price increase on the wholesale market are also to be taken into account in the demand on the retail market. A 5% to 10% increase in the prices on the origination market will lead with a high probability to an increase in the prices on the retail customer market. Such an increase then always proves to be unprofitable when a sufficiently high number of customers switchover to a vertically integrated provider as a reaction to the price increase. In this way it becomes obvious that the market power of a hypothetical monopolist who solely offers his wholesale product externally will also be limited by those undertakings which offer the wholesale service solely (or also) internally. Hence the internal services to the market are to be included.

Fundamentally, self supply includes:

- ▶ the internal network voice calls, i.e. voice calls which remain within a network (source network and destination network priced) and
- ▶ the source network priced external network voice calls, i.e. voice calls for which the origination network operator has levied a rate on the retail customer market,

but which has not charged itself an origination rate and transferred the call to another network operator.

2.5 Definition of the relevant geographic market

The geographically relevant market is that geographical area in which the relevant product is supplied and demanded under sufficiently similar or homogeneous conditions of competition.

In accordance with Part B of the Annex to the Announcement on market definition, the relevant geographic market for the present analysis is defined as the entire State territory of Liechtenstein.

This is in accordance with the jurisdiction of the Office for Communication and the applicable scope of the KomG as well as especially of the country-wide extent of the subscriber fixed network of Telecom Liechtenstein AG and the homogenous conditions on this market country-wide for the supply and demand. The origination price is uniform country-wide and at present there is only one interconnection-capable (local) exchange.¹⁷

2.6 Provider of origination services

Currently there is only one provider of origination services at a fixed location in Liechtenstein, Telecom Liechtenstein AG (TLI). TLI was formed at the beginning of 2008 from the merger of LTN Liechtenstein Telenet AG and Telecom FL AG.

Liechtensteinischen Kraftwerke (LKW), to which at the beginning of 2007 the ownership of the passive network structure was transferred from the former LTN, does not itself have its own subscribers and exchanges and does not offer – at least at present and in line with its strategy as communicated¹⁸ – any fixed network origination services. Since the transfer of the access network to LKW, TLI purchases the subscriber connections as unbundled products from LKW and thus continues to have the required power of control over the access to the provision of origination services. Furthermore, TLI has been designated universal service provider by the Government's decision of 3 February 2009.

In addition to TLI as the only active provider of fixed network origination services currently in Liechtenstein, other fixed network operators which already have a basic infrastructure at their disposal could enter the market (such as for instance Matt Antennentechnik AG with its CATV network).

The following table contains information on the extent (measured in minutes of origination traffic) of the origination market.

¹⁷ While taking into account the units sold.

¹⁸ See footnote 12.

Year	To interexchange network operators	To destination network priced telephone numbers	Self Supply (to source network priced telephone numbers)	Internet dial up (source network priced)	Total
2004	14'341'853	103'586	84'386'696	19'112'767	117'944'902
2005	14'767'055	81'449	78'955'831	13'105'629	106'909'964
2006	16'948'621	65'410	71'023'684	8'088'905	96'126'620
2007	19'084'308	65'940	67'094'884	4'421'583	90'666'715
2008	17'433'945	67'416	61'847'242	2'468'000	81'816'603

Table 1: Development of the fixed network operator origination market (in origination minutes)

The data shows that the volume of traffic to interexchange network operators, i.e. the indirect access via carrier selection and/or carrier pre-selection, in the period being observed over the last five years increased from 12% initially to a highest level of 21% of the total origination fixed network traffic in 2007, but only remained at this level however in 2008 due to the strikingly lower total volume of traffic. In absolute terms however, the traffic via carrier (pre-)selection in 2008 declined by almost 10%.

The volume of traffic to destination network priced service numbers contains almost only self supply, so that these calls are barely transferred to other providers. Hence the rate for the origination service to destination network priced telephone numbers is only of extremely minimal significance in Liechtenstein. Likewise, the minutes to such telephone numbers over the last few years continually declined and were stagnant for the first time in 2007.

The self supply (traffic to source network priced telephone numbers) account for a share of 72% (2004) to 76% (2008) of the total origination traffic in the fixed network, representing the most important form of origination service. Hence the share of the self supply has slightly increased over the course of time. It is also true for the separately recorded internet dial up traffic on 870 regular cost numbers that this is primarily provided on an internal network basis. The dial up internet traffic decreased radically (-97%) in the period under review and today is only of minor importance. The total number of origination minutes is decreasing more powerfully at present than that caused solely by the declining minutes from internet dial up traffic, which indicates an increasing substitution of fixed network voice calls by mobile network calls.

The composition and development of the total origination traffic in the fixed network is presented once more as an overview in the chart below:

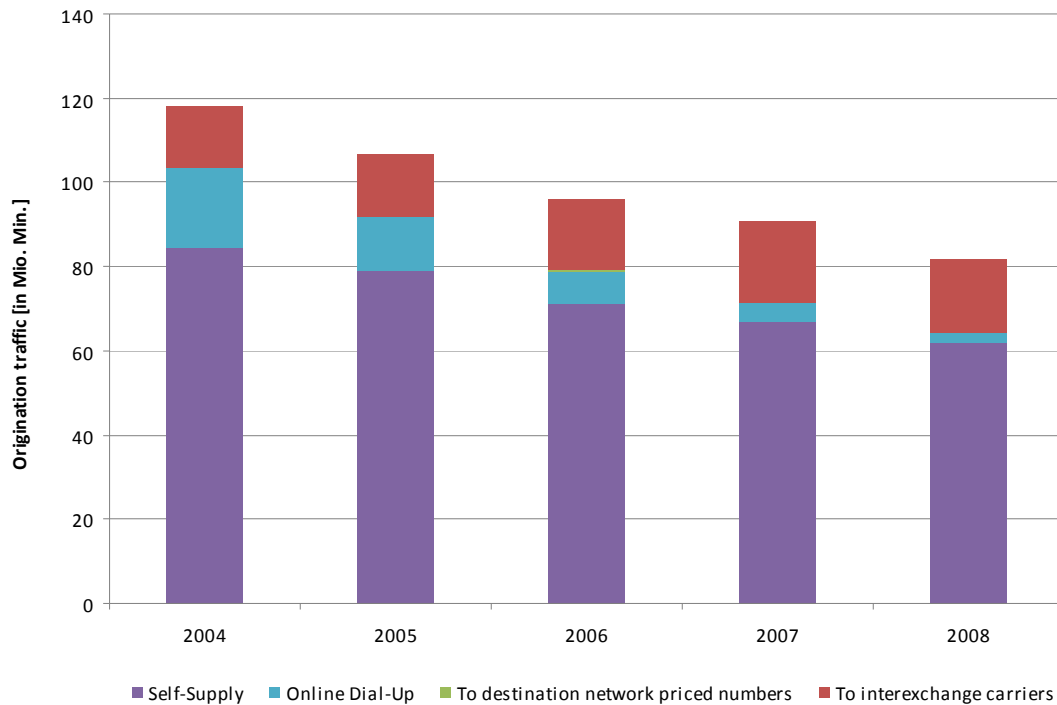


Chart 2: Overview of origination traffic in the fixed network and its composition

Hence if we add up all the services that the operator TLI provides to itself as origination services, this amounts to slightly less than 79% of the total traffic. Only 21% of the origination services (mostly in the form of traffic to interexchange network operators – INOs) is provided to other operators and an origination rate is only charged for this share of the wholesale market. Hence when references are made in this analysis to the origination rate, this is applicable to 21% of the total origination traffic.

2.7 Buyers of fixed network origination services

In accordance with the above analysis of the origination services, the buyers of origination services are mainly interexchange network operators which are chosen due to the carrier selection or and/or pre-selection by users of other communications networks in order to process outgoing calls.

Service network operators represent further buyers of the origination service. In order that the service (numbers) operated in their networks can be reached by users of other communications networks, service network operators must access the origination service of the subscriber network operator concerned. They play a minor role in Liechtenstein.

Subscriber network operators provide origination services for themselves and also for other networks. The origination service is a wholesale service component of a retail

customer product. Ultimately, the demand for origination services is derived from the demand on the retail customer markets.

2.8 Earlier regulation of the fixed network origination market

To date TLI (formerly LTN) as the only provider of fixed network origination services submitted its cost accounting for the calculation and approval of the rates at regular intervals to the Office for Communication. The rates as set were approved on the basis of the full costs. The validity of the Reference Interconnection Offer (RIO) for the former LTN of 1 April 2005 was last extended by a decision of the Office for Communication of 28 June 2007 up to the conclusion of the results of the market analysis in the corresponding markets. From 1 January 2008 onwards the operator, now named TLI, has been offering the Reference Interconnection Offer utilising the same prices as those earlier approved for LTN.

The only point of interconnection (POI) which is offered as an interconnection-capable exchange in Annex 4 to RIO is the one in Schaanerstrasse 1, FL-9490 Vaduz. No other interconnection-capable exchanges exist. However when requested, TLI offers further interconnection points in accordance with the RIO. As per the information provided to the Office for Communication, the other network operators are only interconnected with TLI at the exchange as named.

In Annex 5 to RIO, a price of CHF 0.02 per minute was shown for the call origination in LTN's fixed network (although this price is somewhat misleadingly aimed explicitly only at carrier pre-selection operators). Hence the regulated price for the "origination" service in TLI's fixed network, i.e. the establishing of a connection from the user's network termination point to the next local interconnection-capable exchange, currently amounts to CHF 0.02 per minute.

3 Market power

3.1 Undertakings with significant market power

3.1.1 Single dominance

Under Art. 3 (1) (3) KomG an "undertaking having significant market power" is regarded as "an undertaking that either individually or jointly with others enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers." Art. 3 (1) (3) KomG is coextensive with the applicable requirements of EEA law under Art. 14 (2) of the Framework Directive.

In connection with the assessment of whether an undertaking individually enjoys a position of significant market power (single dominance), the Office for Communication is required to consider "in particular" the following criteria in accordance with Art. 31 (1) VKND:

- a) The size of the undertaking, its size in relation to the relevant market, as well as the changes in the relevant positions of market players over the course of time;
- b) The magnitude of barriers to market entry as well as the degree of potential competition resulting from this;
- c) The degree of countervailing buying power;
- d) The degree of demand and supply elasticity;
- e) The respective maturity of the market;
- f) Technological advantages or superiority;
- g) Any advantages in the sales and distribution organisation;
- h) The existence of advantages resulting from economies of scale, scope and concentration;
- i) The degree of vertical integration;
- k) The degree of product diversification;
- l) Access to capital;
- m) Control over infrastructure not easily duplicated;
- n) Market behaviour in general, such as pricing policy, marketing approach, bundling of products and services or the establishment of barriers.

The national as well as the EEA legal framework have resolved the connection between "significant market power" in the meaning of Art. 3 (1) (3) KomG and "effective competition" in the meaning of Art. 20 (1) KomG by means of the so-called "thesis of

equivalence", whereby no effective competition prevails if at least one undertaking having significant market power is found to be present. Thus the EFTA Surveillance Authority in its Guidelines¹⁹ states that the conclusion that genuine competition exists on a relevant market is equivalent to the finding that on this market there is no operator that has a dominant position individually or jointly with others. "Effective competition" is defined to the effect that on the relevant market there is no undertaking that enjoys a position equivalent to dominance individually or jointly with others (cf. Recital 27 of the Framework Directive).

The above-mentioned Guidelines on Market Analysis and the Assessment of Significant Market Power are decisive in rendering the market analysis operative: In contrast to general competition law, sector-specific regulation pursues an *ex ante* approach – the assessment of competitive relationships proceeds from the premise that no regulation exists (the "green field approach"). Hence the EFTA Surveillance Authority also states the following in its Guidelines: *"[W]hen assessing ex ante whether one or more undertakings are in a dominant position in the relevant market, NRAs are, in principle, relying on different sets of assumptions and expectations than those relied upon by a competition authority applying Article 82 of the Treaty and Article 54 of the EEA Agreement ex post, within a context of an alleged committed abuse. Often, the lack of evidence or of records of past behaviour or conduct will mean that the market analysis will have to be based mainly on a prospective assessment. [...] The fact that an NRA's initial market predictions do not finally materialise in a given case does not necessarily mean that its decision at the time of its adoption was inconsistent with the Framework Directive."*²⁰ Footnote 74 in the Guidelines states in addition that *"NRAs do not have to find an abuse of a dominant position in order to designate an undertaking as having SMP."*

If an undertaking enjoys significant market power on a particular market, it can then also be considered as an undertaking having significant market power on a closely related market horizontally and vertically and/or geographically, when the links between the two markets are such as to allow the market power held in one market to be leveraged onto the other market, thereby strengthening the overall market power of the undertaking (on "leveraging", see Art. 22 (2) KomG).

3.1.2 Collective market power (joint dominance)

Two or more undertakings can be assumed to have significant market power jointly if they – even in the absence of structural or other relationships between them – are active on a market whose character displays incentives for coordinated behaviour (Art. 31 (2) VKND).

¹⁹ Cf. SMP Guidelines, Paras. 19 and 113.

²⁰ Cf. SMP Guidelines, Paras. 71 and 72.

As there is only one operator active on the market, it cannot be assessed on the present market whether two or more undertakings together enjoy significant market power (joint dominance or collective dominance) on the origination market.

3.2 Market players and market shares

Market shares are regarded especially in case law as an essential indicator for market power.²¹ The economic significance of this indicator flows above all from the theory of monopolies and oligopolies as well as from empirical evidence for the linkage between market shares and profitability (in the form of price-cost margins). Thus there is both theoretically and empirically a positive connection between an (undertaking's individual) market share and an (undertaking's individual) price-cost margin. Neither the empirical nor the theoretical literature however provide information as to from which level of market share onwards "significant market power" may be suspected (or even proven) to exist. In case law, the following thresholds have established themselves: With a market share below 25% it can be presumed that the undertaking in question does not enjoy a position of (individual) dominance. A market share of 40% will raise, according to the decision-making practice by the European Commission and EFTA Surveillance Authority, suspicions about the existence of a dominant position, while in some cases market dominance could also exist below this threshold (because of other factors). The consistent case law of the European Court of Justice has held that at 50% – leaving extraordinary circumstances to one side – the existence of market power can be taken as proven.²²

A high market share on its own does not however mean the existence of a dominant market position; in reaching a judgement an essential aspect is also the development of the market shares: Thus it is important for example to observe the market share of an undertaking not only at a particular point in time but also to look at the change in the market share over time. If the market share is high and stable (or even growing) over a long period of time, the existence of market power is more likely to be assumed than when the market share is sinking or subject to significant fluctuations. Furthermore, the market share has also to be placed in relation to the market shares of the competitors. If the undertaking in question has a significantly higher market share than even the largest of its rivals, the finding of a dominant market position is then more probable than in cases in which several undertakings have high market shares. It goes without saying that – in order to obtain a comprehensive picture – even in cases of very high market shares, further indicators must still be examined; in particular the causal factors underpinning the high market share must be investigated.²³

²¹ Art. 31 (3) (a) VKND as well as the SMP Guidelines of the EFTA Surveillance Authority, Paras. 75 to 78.

²² Cf. SMP Guidelines, Para. 76.

²³ By way of example, a higher market share on an innovative market in a very early stage of the market would be assessed differently than in an already saturated market with switchover costs.

The structure of the market and thus the number of market players as well as their market shares are dependent on economies of scale, sunk costs and the minimum efficient scale²⁴ of an undertaking. If for instance there are high economies of scale, then *ceteris paribus* a higher concentration is also to be expected. In extreme cases the industry is a natural monopoly, i.e. costs are (from a static perspective) optimal if only one single undertaking is in production. Since high economies of scale can thus lead both to a high concentration and to high market entry barriers, market power can fairly be assumed where significant economies of scale exist.

3.2.1 Characteristics and assessment of the market player and market shares indicator

As already detailed in chapter 2.3, TLI is currently the only provider of fixed network call origination on the present market. Hence TLI has a 100% market share. TLI – and/or prior to the merger, LTN and TFL – has already held this market share since 1998, the point in time when the former PTT Treaty was replaced by a liberalised market regulation. However to date, the liberalisation of the fixed network markets has not lead to any reduction in the market shares as no other operator has entered the market. Consequently from a dynamic viewpoint as well, no shift in the market share has occurred over the last 10 years.

From today's perspective, the Office has not received any indications that in the next two to three year period being considered in the market analysis that the entry of one or more alternative providers is planned which would entail such serious shifting in the market share that TLI's dominant position on the call origination market could be questioned. Of course it cannot be excluded that in the period of time under consideration other operators enter the origination market, especially because several (e.g. Matt Antennentechnik) already have the required infrastructure in several municipalities or unbundled lines (to date however only for the provision of broadband services).

3.3 The existence of economies of scale and scope

3.3.1 Significance of the economies of scale and scope indicator

If the market shares show that an undertaking's services output far outstrips that of potential competitors quantitatively, this raises the question: Can this undertaking, because of its higher quantitative output, provide its services on the market at lower unit costs and so obtain a competitive edge over its potential competitors, thus making their entry onto the market more difficult? This will tend to be the case for any services that have a cost structure with a high proportion of fixed costs spread across the volume. Such returns to scale²⁵ not only secure a competitive advantage vis-à-vis existing competitors,

²⁴ MES – minimum efficient scale.

²⁵ Economies of scale in production occur when the average costs (costs per unit) decrease with increasing quantitative outputs.

they also impede the market entry of potential competitors which must first sell a minimum quantity in order to trade on the market profitably (minimum efficient scale). The dominant undertaking's higher margins additionally expose existing and potential competitors to the danger that they will not be able to match to the same extent short-term price reductions made by the undertaking with significant market power and thus will no longer be competitive.

In addition to economies of scale, an undertaking can also gain economies of scope if it is operating on different markets. These economies of scope are fundamentally of high relevance for the call origination market because for economic reasons an operator would never only be active on an origination market. An undertaking which makes origination services available to other operators also offers retail customers these services and is thus active on the markets for access and call services.

The connected customers not only want to make calls, they also want to be called, so that it is usual for an operator to also provide services on the call termination market. As the same infrastructure is utilised in order to provide the services to the various markets, economies of scope arise. However these economies of scope not only accrue to the undertaking with the highest quantitative output. It is far more the case that all operators benefit (to differing degrees) from them because, as a rule, everyone provides services on both the termination market and on the retail customer markets as well. Hence in order to assess the market power of an undertaking on an origination market, economies of scope are of subordinate importance – as they are utilised by all operators.

3.3.2 Characteristics and assessment of the economics of scale and scope indicator

Economies of scale

TLI's concrete economies of scale could not be determined on the basis of the data available because there is a lack of scenarios with different quantitative outputs and costs dependent on same, and this also seldom occurs in practice. This is because it is almost impossible to isolate the effects of fluctuations in costs (economies of scale); changes in costs are mostly traceable to a range of different causes such as changed replacement prices, increases in efficiency, etc.

For that however, it may be assumed from the costs structure that the economies of scale at TLI are considerable. The fixed costs outweigh the variable costs by far. The more origination minutes to which the fixed costs are now allocated, the lower the production costs per minute, so that economies of scale can be achieved and an undertaking with many origination minutes can provide the services more cheaply with similar technology than can its potential competitors.

Hence the higher fixed costs share suggests that TLI can provide the origination services more cheaply than potential competitors and thus can gain and/or hold a competitive edge due to its high quantitative output. Hence it could achieve higher profits in an

unregulated environment through the economies of scale on this market and abuse its market power as the case may be.

Economies of scope

It is beyond dispute that TLI offers its products on all telecommunications markets at fixed locations (except for termination markets of other providers) as thus acts as an all-round provider of telecommunications services. Hence the danger exists that it can leverage a potential market power on the origination market onto other markets. Please refer to the details in this regard in chapter 3.5.

By contrast, a potential alternative network operator can, but does not necessarily have to, operate on all markets so that it cannot use the economies of scope to the same degree. As TLI is an all-round provider of fixed network telecommunications services, if need be it can use the economies of scope to a greater degree than potential competitors can.

3.4 Barriers to market entry

3.4.1 Significance of the barriers to market entry indicator

Barriers to market entry can be defined as all those factors that permit the undertaking(s) active on a market to raise its/their prices above the costs without additional instances of market entry being induced by this. The higher the market barriers therefore are (i.e. the more difficult market entry is), the higher – *ceteris paribus* – potentially will be the degree of market power which the established undertaking(s) has/have. What is decisive for the assessment of market power is however not merely the existence of such market entry barriers, but also the level of competition that occurs behind these barriers. Hence, market power can especially be supposed to exist where the market concentration is high and at the same time high barriers to market entry prevail.

In its Recommendation on Relevant Markets, the EFTA Surveillance Authority together with the European Commission distinguishes between two kinds of barriers to market entry, namely structurally and legally determined barriers:

A structurally determined barrier to access is present if at a given level of demand the state of technology and the corresponding costs structure are such that asymmetries between established operators and market entrants are created so that the latter are hindered in their entry onto the market. Although economies of scale and scope do not form barriers to market entry per se, they do have the effect that operators must have a high output volume and/or wider range of products when they enter the market in order not to be at a costs disadvantage vis-à-vis the established undertaking. If uncertainty exists about the success of an undertaking on a market, then the risk of the market entry increases with the level of sunk costs which can no longer be retrieved from a potential market entry.

Legally determined barriers arise not from economic conditions, but from legislative, administrative or other State measures that have a direct impact on the conditions of access and/or the position of operators on the market in question.

3.4.2 Characteristics of the barriers to market entry indicator

The barriers to entering and leaving the call origination market are the same as those on the access markets. In order to offer the origination service, the operator must possess the power of disposition over the connection and charge this service to the buyer as required. Usually the owner of the infrastructure is the origination network operator. It is only in the case of unbundling that every operator which requests an unbundled line is an origination network operator.

Since the transfer of the passive network infrastructure, i.e. the copper-pair based access network, from LTN (now TLI) to LKW in 2007, TLI is no longer the owner of the subscriber connections required for the provision of the origination service. However TLI continues to have the power of disposition over these connections of its customers, but now however on the basis of the unbundled access to these lines under the present ownership by LKW.

As call origination is defined as the outgoing traffic service from the caller to the first interconnection-capable exchange, the offering of the origination service to connected subscribers presupposes that they will conduct active (i.e. outgoing) calls. Own subscriber connections can only be achieved with substantial investment outlays and are regarded as an infrastructure which is difficult to duplicate (cf. chapter 3.6). The high investment costs represent to a large extent sunk costs for which a potential alternative use is lacking. In addition to these investments in the network, advertising, marketing and distribution services have to also be provided in order to increase the trust and the degree of brand awareness at the potential customers and ultimately win them over to changing their connection.

In light of the significant costs to gain new customers, regulatory measures such as unbundling are aimed at reducing this market barrier and are intended to lighten the market entry. However unbundling and partial unbundling are only able to reduce the market barriers to an insufficient degree as these options frequently do not seem to make sense from an economic viewpoint due to the size relations on the market and the customer density. Despite the unbundling option, the barriers to market entry remain high due to the significant investment costs linked to this and the market potential as given.

By means of unbundling or based on a broadband wholesale product (bitstream access) in the more distant future VoB could play an important role in the provision of the origination service. With VoB the retail customer can conduct his calls over his broadband connection without additionally having a dedicated line for voice telephony. Since the second half of 2007, TLI has with "Connnecta" itself offered such a bundled product (i.e. package). There were 485 VoB connections at the end of 2008. Moreover in the period

surveyed, no indications of VoB usage for voice telephone via alternative operators were observed.

VoB lowers the barriers to market entry because the customer-facing infrastructure can be used not only for voice telephony but also for broadband applications so that greater economies of scope and scale can be obtained than with infrastructure used only for voice telephony. It can be observed abroad especially that the ISPs are targeting their VoB offers at small and medium sized operations for which they provide the VoB broadband connection as an additional service. Hence VoB represents a possible alternative to voice telephony over the PSTN and would – when provided by alternative operators – strengthen competition on the Liechtenstein origination market.

3.4.3 Competition assessment of the barriers to market entry indicator

In the investment intensive market under investigation which is characterised by economies of scale and in which a minimum efficient scale is required in order to operate profitably, the barriers to entering and exiting the market are considerable. By means of the unbundling possibility together with VoB, the market barriers can be lowered and the market entry facilitated. While it is true that to date unbundled lines were requested to a minor extent by potential competitors of TLI, up to now however these were not used to offer fixed voice telephony services. A further stimulus to competition could result in the future from frequency (channel) unbundled access to the CATV network of LKW by alternative providers. Although these operators could enter the market with lower expenses – in comparison to the traditional market entry to date by providing one's own access lines or by setting up a dedicated narrowband connection for voice telephony services via an unbundled line – the threat potential from the market entry is not sufficient to guarantee effective competition on an unregulated market or restrict TLI's existing market dominance on the origination market in the analysis period.

3.5 Extent of vertical and horizontal integration

3.5.1 Significance of the integration indicator

In addition to the economies of scope which an undertaking active on several markets can achieve, a vertically integrated undertaking which operates on both the wholesale as well as the retail customer markets can leverage its market power from one market onto another (potentially competitive) market. For a profit maximising undertaking, the attraction of such market power leverage consists of the fact that the market onto which the market power is to be leveraged is not, as the case may be, subject to any price setting restrictions by other providers and consequently it can demand somewhat excessive

prices and gain higher profits on the potentially competitive market as well.²⁶ In order to achieve that, the undertaking will shut out (i.e. foreclose) competitors from potential competitive markets or discourage potential market entrants and/or pursue a coordinated strategy across several relevant markets. In this way, distortions to competition are caused on other markets (vertical and horizontal market power leverage) on which without the leveraging of market power the competition would also function without regulation.

Hence when assessing the competition on the origination market it should be noted to what extent an undertaking with potentially significant market power is vertically and horizontally integrated and whether due to a lack of regulation there are incentives to leverage its market power onto other markets. Furthermore the questions have to be answered, to what extent other undertakings in the downstream parts of the value chain are dependent on the services from the undertaking with significant market power and how integrated the competitors are.

3.5.2 Characteristics and assessment of the integration indicator

Foreclosure strategies can not be verified empirically for Liechtenstein because the market to date was subject to regulation and the Regulatory Authority prevented any leveraging of market power. Consequently as an alternative, an assessment has been undertaken on which markets the undertaking with potentially significant market power being examined is active and onto which markets it could potentially leverage its market power.

Since the sale of the passive network infrastructure to LKW in 2007, TLI is no longer a fully integrated telecommunications undertaking. However TLI continues to be a partially integrated full service provider and covers both the call origination downstream markets as well as a wide range of other markets. On downstream markets, it offers voice telephony (both as access and as calls) as well as broadband connections to all customer groups on the retail customer markets. Without TLI's origination service, interexchange network operators (INOs) could not offer voice telephony on the retail customer markets. A reverse integration of these operators is only possible with high outlays both financially and in terms of time, so that there are significant barriers to integrating the INOs.

TLI is also integrated horizontally, because it is active on both the call termination as well as the transit markets.

As a result of the horizontal (and partially vertical) integration, TLI has the opportunity to leverage its market power on the origination market onto other competitive markets and in this way strengthen its market position on the other markets and create a competitive advantage for itself.

²⁶ In the literature, the attractions of such market power leverage are not completely undisputed because such leverage could prove to be disadvantageous for the undertaking in a few cases (Chicago School). In this regard please refer to the ERG Remedies (2006) for more details.

3.6 Control over infrastructure not easily duplicated

3.6.1 Significance of the infrastructure indicator

One can speak of control over infrastructure that is not easily duplicated (Art. 31 (1) VKND as well as Para. 78 of the SMP Guidelines) if certain infrastructure necessary for the provision of services is in the hands, exclusively or to a large extent, of a single undertaking and high barriers exist to the establishment of alternative infrastructure. Such control can allow the corresponding undertaking to exert market power because it is the only provider of the service and neither current nor potential competition exists. It can in addition also be possible for the undertaking to leverage its market power onto downstream or neighbouring markets.

3.6.2 Characteristics and assessment of the infrastructure indicator

TLI is the only operator – based on LKW's passive access network as a wholesale service product – that has a country-wide subscriber fixed network in Liechtenstein. It is able to route the traffic to other subscribers or to other network operators. It maintains direct interconnections with all national mobile network operators so that it is able to terminate the origination traffic to these network operators. Furthermore it is also able to transfer the traffic to foreign operators for call termination as it has concluded corresponding contracts with foreign partners for this purpose and has international exchanges. It has many years of know-how at its disposal and well trained personnel. In order to be able to charge its origination services, it maintains the billing systems required for this.

As TLI is the only network operator that has a country-wide subscriber fixed network and direct national and international exchanges and international interconnection agreements, it has control over an infrastructure that is not easily duplicated and thus – not least because of its status as a (national and international) universal service provider as well – it has a competitive advantage over its competitors. The regulatory obligations (like the provision of ULL in the context given) could not to date restrict its control over this infrastructure to such an extent that it was not able to exert its market power over the origination market.

3.7 The degree of countervailing buying power

3.7.1 Significance of the countervailing power indicator

If due to a lack of competitive pressure an undertaking potentially has market power, this does not automatically mean that this market power can also be exerted over the buyers (e.g. in the form of excessive prices). In fact this is dependent on the buyers' bargaining power (the countervailing buying power). The greater the degree of countervailing buying power there is, the less an undertaking that potentially has market power can also exert it. Countervailing buying power is *ceteris paribus* then greater when a switchover to other

providers is possible and linked to low switchover costs or the corresponding wholesale service can easily be provided on its/their own to a significant extent and if the customer is responsible for a large share of the undertaking's revenue.

3.7.2 Characteristics and assessment of the countervailing power indicator

The assessment of the countervailing buying power occurs at the service level as the bargaining situation between providers and buyers for individual services on this market can prove to be very different and a joint analysis of the countervailing power would not take the differences sufficiently into account. As detailed in chapter 2.4, three services are offered on this market:

- ▶ Origination services as self supply;
- ▶ Origination services to INOs;
- ▶ Origination services to destination network priced service numbers.

The countervailing buying power does not have to be assessed for self supply because the same undertaking acts as the buyer.

TLI is the sole undertaking that provides the origination service for INOs so that they can offer voice telephony services to their retail customers. TLI is obliged by regulation to provide such an offer. It is only due to this regulatory obligation and due to a sufficient margin between the wholesale service prices (among others for the call origination and termination) and the retail customer prices that the INOs are in a position to offer attractive products on the retail customer market. Hence they are dependent on TLI's origination service. From TLI's perspective, INOs are competitors on the retail customer markets to which it must grant access to its network and which provide the call service for the customers connected to TLI's network. Hence it fundamentally has little interest in providing the origination service to these competitors as it is more attractive for it to itself sell the call service to the customers connected to its network. Thus countervailing buying power on the part of the INOs can be excluded due to the one-sided nature of the interest.

The following analysis ultimately relates to the origination service to destination network priced service numbers in external networks for which the origination network operator receives a wholesale service rate. Although in addition to TLI two further operators currently have allocations for destination network priced service numbering resources, their practical extent of prevalence and usage is extremely limited. Hence the assessments hereunder concerning possible countervailing power are of theoretical importance and are only being detailed here for the sake of completeness.

An origination network operator like TLI (network A) offers the "origination" service on the origination market. The service network operator (SNO, network B) requests this service, conducts the call through its network and supplies it to the content provider (CP) which is connected to its network.

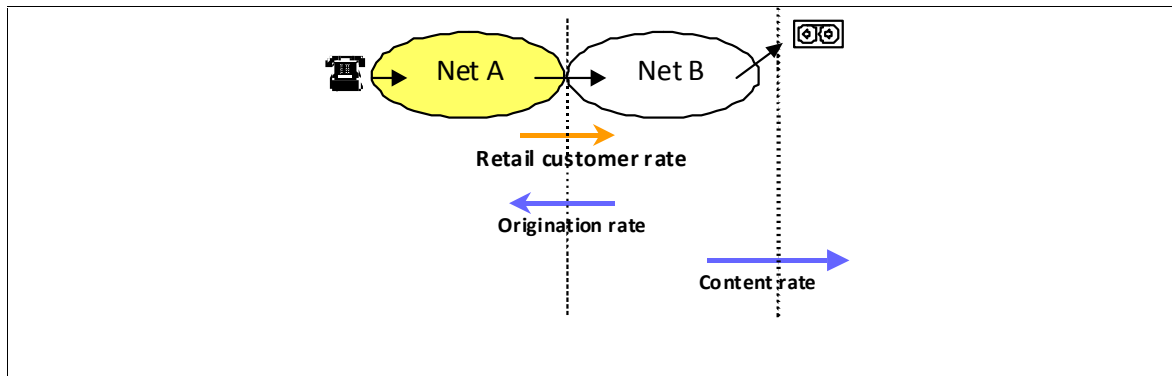


Chart 3: Call to a service telephone number and corresponding payment flows

As can be seen from chart 3, network A passes on the retail customer rate to network B, but receives an origination rate for its origination service. The network operator B passes a part of the retail customer rate on to the content provider.

Network operator A is now competing on several markets: On the one hand as a rule it is competing on the origination market with other subscriber network operators for the provision of the origination service – competition that is based on the competitive relationships on the access markets. At the same time it tries – in competition with the service network operators on the service network market – to win over the content provider so that calls from its customers can be conducted internally on its network. In this way it participates in the content provider's revenues and does not have to provide services to external operators.

As the bargaining power and the incentives are different, the destination network priced service numbers are broken down yet again into freephone numbers, numbers with regulated upper price limits and premium rate numbers, and separately analysed.

Freephone numbers

With this business model, retail customers call a telephone number for no tariff (i.e. rate free), with the complete costs being borne by the content provider. The service network operator (SNO) which levies the complete rate from the content provider pays the origination network operator (ONO) an origination rate. In the negotiation about the origination rate, the number of connected customers plays an important role on the part of the ONO, while the attractiveness of the content plays this role on the part of the SNO. The bargaining power is allocated depending on how powerful the partners are, and different negotiated solutions can occur. A fundamental aspect here is that the countervailing buying power is primarily based on the content offered (and hence from the content provider) and less so on the SNO. As a rule the interests of the content provider prevail with a freephone number because sales are effected with this number and information is provided on products, etc. As the overwhelming interest does not lie with its own customers and its own customers do not pay for the call, the ONO has an

incentive to have excessive origination rates without experiencing any corresponding restrictions from its own customers.

TLI, which enjoys a dominant position on the origination market, is facing hardly any adequate countervailing power. By increasing the origination rate, it could leverage its power in call origination onto the SNO market by setting the prices for the content provider in such a manner parallel to increasing the origination rate that a margin squeeze occurs and consequently other SNOs are ousted out of the market.

Premium rate numbers

Premium rate numbers are telephone numbers for which a rate has to be paid above and beyond the pure connection costs intended to cover the costs of the content (added value).

For billing purposes, the caller bears the complete rate comprising the telephone and content costs. From an economic viewpoint, the SNO ultimately receives this rate and pays the origination network operator for its service and the content provider for its content from this. An increase in the origination rate would eventually be reflected in the retail customer prices if the content provider and the SNO do not offset this difference. Theoretically a countervailing buying power could be construed, because the origination rate is being borne by that party which has to pay for the complete retail customer rate: The retail customer, confronted by the increase in the retail customer price, switches over to the network operator charging the lowest origination rate. In practice however, this possibility of a disciplining impact is not a given due to a range of specific aspects:

- ▶ It is barely possible to limit the power of network operators like TLI with many subscribers because firstly their customers are important for every content provider and secondly they have an incentive to increase the costs for the competitors by means of high call origination rates and at the same time induce the content provider to switch the network by means of low rates for service providers.
- ▶ As a rule the costs for calls to destination network priced service numbers represent a small part of the total telephone bill, so that this parameter is only of minor importance for a switchover of the network operator.
- ▶ As a rule the rates for premium numbers are at an amount at which the origination rates account for just a fraction of same and play barely no role in relation to the rates for premium numbers.
- ▶ To the extent that it concerns the fixed network, the retail customers have no alternative in terms of switching the operator.

Hence it is also assumed with calls to premium rate numbers that the buyer side cannot exert any price disciplining impact on call origination rates.

Resellers which provide voice telephony services abroad under premium rate numbers also have no possibility (similar to the INOs) to exert disciplining pressure on the amount of the origination rate.

Numbers with regulated upper price limits (shared costs numbers)

In this case the costs are shared between the caller and the person called. The caller pays a fixed minute rate for this call regardless of which telephone costs actually occur. Any costs above and beyond this are borne by the person called. Generally speaking, the arguments detailed above under "freephone numbers" are also analogously true here. As the retail customer rate has an upper price limit, any increase is not reflected in the retail customer price but rather in the costs for the SNO and as a further consequence for the content provider. In this way a major network operator can increase the costs of its competitors on the service network market and provide incentives so that content providers are increasingly encouraged to switchover to its network.

3.7.3 Competition assessment

As the analysis shows, TLI is not facing any countervailing buying power. As it itself acts as a service network operator and competes with other network operators – provided these are active on the market – for content providers, it has an incentive to increase the costs of its potential competitors by means of high wholesale service prices and thus increase the price of calls to these service numbers and/or reduce the margin of the competitors. At the same time it can, by means of favourable offers to the content provider, encourage it to switchover to its network. Hence other potential network operators cannot exert any countervailing buying power.

Due to TLI's dominant position on the access market, ultimately the network operators cannot forego TLI's origination service without endangering their business model. Likewise, TLI's origination service is not replaced by switching over to the origination service of another potential operator.

Apart from that, the volume of traffic to destination network priced service numbers is of such minor importance (see chapter 2.6) – not least due to the lack of an IN platform²⁷ to generate these services – that the revenues achieved by means of exerting countervailing buying power are currently barely in any reasonable relation to the outlays.

In the end, retail customers also do not have any countervailing buying power, so that the analysis of this criterion also indicates the existence of TLI's market power in an economic sense.

Hence no countervailing buying power can be ascertained which would constrain TLI's market power.

²⁷ *Intelligent network platform.*

3.8 Other criteria

The other SMP criteria such as product differentiation, the maturity of the market, technological advantages or superiority, advantages in the sales and distribution organisation and access to capital supply hardly any information about the competition situation on the origination market.

Hardly any information can be provided regarding the product differentiation due to TLI's unique position on the market. It is true that the origination service is a homogenous product as such because there is barely no difference technically between the origination services of several operators, however economically they are not easy to substitute (see chapter 3.6) because the service is provided from a specific location to the exchange and the locations are not interchangeable. In fact any indication for more or less competition cannot be derived from this.

Since the origination services have been provided for years now, these services have barely changed since then and from today's perspective no serious changes are expected over the next two to three years, the market maturity and technological advantages play no role in the competition assessment. Likewise any advantages in the sales and distribution organisation are of no importance for the wholesale service market because these can be adjusted to the sales volume and thus are more easily scaleable.

3.9 Market behaviour

An undertaking's price setting policy and its market behaviour are important economic behavioural parameters and thus can be relevant for assessing market power. For instance, price movements over the course of time, the existence of price differentials between individual operators and patterns of price reactions observed provide fundamental indications about the current intensity of competition on the market.

With regard to TLI, any potential behaviour due to a lack of regulation is not observable because TLI's origination service has been regulated for years. Hence no conclusions can be drawn empirically from the behaviour to date. However conclusions may be drawn about probable behaviour from the incentive structures of a profit orientated undertaking. Such incentive structures are examined in the analysis and thus potential competition problems are identified (see chapter 4).

3.10 Summary of the competition assessment and determination of the undertaking with significant market power

In summary it can be noted that TLI holds a 100% market share (measured in traffic minutes) on the origination market and thus is the sole provider of origination services in the fixed network. Hence any assessment whether two or more undertakings together have significant market power is not required. TLI is able to provide the origination service

at favourable rates compared to potential competitors due to the existence of economies of scale. The barriers to entering and exiting the market are significant in this market characterised by such economies of scale. TLI operates as a full service provider and universal service provider on both the downstream as well as the horizontal markets. As it has – based on LKW's copper-pair unbundled wholesale market product – a country-wide access network in Liechtenstein and since setting up a country-wide subscriber network (even if it is based on unbundling) is linked to considerable costs, it has control over an infrastructure that is not easily duplicated.

The Office for Communication has concluded from the results of the assessment of these criteria that TLI enjoys significant market power on the origination market. A countervailing buyer power could not be identified capable of limiting this market power.

4 The potential to abuse market power and competition problems

Hereunder, on the one hand current as well as potential competition problems on the fixed network origination market are examined.

With a view to the imposition of measures of special regulation as required, it is of central importance to consider which specific market failures and which competition problems would be expected (including their implications from the point of view of public welfare economics) in connection with an unregulated fixed network origination service (green field approach). The analysis of the potential to abuse market power that arises from a situation with a lack of regulation of course relies on the indicators assessed. Reference is made in this connection to the ERG's Common Position on Remedies (2006)²⁸, which provides the basis for this chapter.

4.1 Denial of access

Due to its market power on the origination market, TLI can where there is a lack of regulation leverage this onto other markets by refusing the potential competitors access to the origination service. This also covers situations in which the service is available at unreasonable conditions. As it is partially integrated vertically and active as a full service provider on the other downstream and horizontal markets and provides significant volumes of origination minutes, it has an incentive by means of such partitioning off to increase its market power on other markets whereby it increases the costs of its potential competitors by for instance setting unreasonable (non pricing) conditions. In this way it could establish a competitive advantage for itself on other markets and operate more independently from its potential competitors.

4.2 Non-price related aspects

Non-price related aspects concern delays, unjustified conditions and/or quality and the bundling of products.

By means of delays with the interconnection or the provision of the service, the origination network operator can also put the competitors at a disadvantage on the downstream markets and in this way erect market entry barriers to these markets and/or delay the market entry.

²⁸ ERG Remedies (2006): "Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework", ERG (06) 33, http://erg.ec.europa.eu/documents/docs/index_en.htm.

Horizontal market power leveraging between markets whose products are complementary is then possible when the undertaking which has market power on one market offers a bundle from among the products that other undertakings are not able to replicate. With bundled products consisting of the origination service and other services, TLI can leverage its market power onto other markets and in this way harm competitors on other downstream markets. This is true in particular for the bundling of the origination service with the (foreign) transit service. In a first case, the competition problem consists of the fact that the excessive prices if applicable are not only being demanded for the origination service but rather for the transit service contained in the bundle and thus a possible regulation of the origination prices can be of no avail. In a second case, the origination network operator refuses to provide the direct interconnection (denial of access) and at the same time refers to an (associated) transit network operator through which its origination service is to be purchased in a bundle. In this way the transit network operator can now demand unregulated prices as the case may be for its transit service and share the profit with the origination network operator. In both cases the origination network operator is leveraging its market power onto the transit market.

By means of this potential form of behaviour, TLI could establish a competitive edge for itself on other markets and disadvantage the competitors on these markets.²⁹

4.3 Excessive prices

As a profit oriented undertaking, TLI strives to maximise its profits. Hence in the event of a lack of regulation, it will use its market power on the origination market to set its origination rates above the level which would be expected on a competitive market. These higher rates lead – depending on the elasticity of the demand – in general to lower demand and thus to reduced public welfare than under conditions of competition. Still however, TLI would apply such excessive prices because it would achieve a higher profit with them than by pricing at the competitive level.

4.4 Price discrimination/margin squeeze

TLI could discriminate with regard to its call origination rates for the purpose of market power leverage in that it demands higher rates from external undertakings than from its own retail arm. In this way it could place its own retail arm in a better position than other undertakings so that the retail arm could offer better conditions than the competitors on the downstream markets. Basically with such a practice it would utilise the profits gained from the excessive prices on the origination market to subsidise other markets in order to offer predatory (i.e. foreclosure) prices there and in this way distort the competition. That an incentive for such behaviour is given in the event of a lack of regulation is reasoned

²⁹ Cf. ERG Remedies (2006).

by the competitive advantage that TLI could be able to gain on downstream markets. TLI could also discriminate between different buyers (especially if it concludes business with its own operators in other areas) which then negatively influences the competition.

In summary with the absence of regulation, the following potential competition problems can be ascertained on TLI's origination market due to its market power:

- ▶ Denial of access;
- ▶ Excessive prices;
- ▶ Price discrimination/margin squeeze;
- ▶ Non-price related aspects: Delays, bundling of products and unjustified conditions and/or inferior quality.

5 Regulatory instruments

5.1 Regulatory instruments under the KomG

In accordance with Art. 20 KomG, the Office for Communication is to take the necessary measures to remove or reduce the negative consequences of a lack of effective competition in the electronic communications markets. For this purpose it imposes on operators with significant market power – in accordance with Art. 23 KomG in conjunction with Arts. 34 to 42 VKND – one or more of the following measures of special regulation:

- ▶ The obligation of non-discrimination (Art. 34 VKND);
- ▶ The obligation of transparency (Art. 35 VKND);
- ▶ The obligation of accounting separation (Art. 36 VKND);
- ▶ The obligation to grant access to network facilities and network functions (Art. 37 VKND);
- ▶ Price controls and cost accounting obligations related to access (Art. 38 VKND);
- ▶ Obligations regarding services for retail customers (Art. 39 VKND);
- ▶ Obligations regarding the provision of leased lines (Art. 40 VKND);
- ▶ Obligations regarding retail customer rates (Art. 41 VKND);
- ▶ Obligations regarding carrier selection and carrier pre-selection (Art. 42 VKND).

According to Art. 43 VKND, the Regulatory Authority can impose other obligations related to interconnection and access than those laid down in Arts. 34 to 42 VKND on undertakings with significant market power where there are extraordinary circumstances. In such a case the Regulatory Authority must make a corresponding request to the EFTA Surveillance Authority. The EFTA Surveillance Authority's decision then forms the basis for that of the Regulatory Authority. As the regulatory obligations in accordance with Arts. 39, 41 and Art. 42 VKND are only to be imposed due to competition problems on the retail customer market and Art. 40 VKND is related to the leased lines market, Art. 34 to Art. 38 VKND are left as the pertinent potential regulatory instruments here.

5.2 Principles for the application of regulatory instruments

With regard to the imposition of regulatory instruments (measures of special regulation) for the regulation of competition, the Office for Communication is obliged to consider the goals for regulation under Art. 1 (2) KomG as well as the principles contained in Art. 5 (2) KomG.

As in the pertinent provisions of the EEA legal framework (Art. 8 (1) of the Framework Directive 2002/21/EC, Art. 8 (4) of the Access Directive 2002/19/EC³⁰ and Art. 17 (2) of the Universal Service Directive 2002/22/EC³¹), the principle of proportionality is explicitly referred to as one that must be complied with. The principle of proportionality states that the means used to achieve a particular goal may not exceed that which is necessary and appropriate for doing so. In order for a measure of the Regulatory Authority to conform to the principle of proportionality, there must firstly be a justified goal laid down in Art. 1 KomG (or the applicable principles under EEA law) which the measure pursues. The measure used to achieve this goal has secondly to be necessary for achieving same. Thirdly it may not represent an unreasonable burden for the operator concerned. The measure taken should thus be the minimum needed to achieve the goal in question.

On the basis of the goals contained in Art. 8 of the Framework Directive and in conjunction with further provisions in the relevant Directives (especially Art. 8 of the Access Directive and Arts. 10 and 11 of the Authorisation Directive 2002/20/EC³²), the ERG³³ has in cooperation with the Services of the European Commission (Directorates-General Competition and Information Society) established four principles that should be observed in the application of regulatory instruments:³⁴

- (1) Decisions of national regulatory authorities need to be well reasoned and in line with the goals and obligations of the Directives;
- (2) Where the infrastructure of the market dominant undertaking cannot be duplicated, the exercise of market power vis-à-vis consumers must be prevented;
- (3) If replication of the incumbent's (i.e. market dominant undertaking's) infrastructure is viewed as feasible, the available remedies (i.e. regulatory instruments utilised) should assist in the transition process to a sustainable competitive market based on infrastructure competition;
- (4) Remedies should be designed to be incentive compatible, i.e. the incentive to comply should be greater than the incentive to cheat (i.e. evasion).

³⁰ Directive 2002/19/EC of the European Parliament and the Council of 7 March 2002 on access to and interconnection of electronic communications networks and associated facilities ("Access Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5cj.01).

³¹ Directive 2002/22/EC of the European Parliament and the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services ("Universal Service Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5cm.01).

³² Directive 2002/20/EC of the European Parliament and the Council of 7 March 2002 on the authorisation of electronic communications networks and services ("Authorisation Directive"; Liechtenstein Compendium of EEA Law ("EWR-Rechtssammlung"): Annex XI – 5ck.01).

³³ European Regulators Group: It was established as an advisory body to the European Commission under Decision 202/627/EC of the European Commission of 29 July 2002 (OJ L 200, 30.07.2002. page 38; EWR-Rechtssammlung: Anh. XI – 5ci.01). The Office for Communication and the EFTA Surveillance Authority regularly attend ERG meetings.

³⁴ ERG Remedies, 2006, pages 51 to 67.

5.3 Selection and assessment of the regulatory options

As a result, regulatory instruments are selected and assessed while taking into consideration the principles detailed above. In this regard, firstly the regulatory instrument(s) (or combinations of instruments) are identified that correspond to the nature of the competition problems that have been found to exist and are suited to eliminating them. If several alternative instruments (or combinations of instruments) are suited to eliminating the competition problems, that instrument (or combination) will be chosen in a second step – according to the principle of proportionality – which represents (in a cost-benefit sense) the mildest means (Principle 1). The second step can be overlooked if in the first step only one regulatory instrument (or combination of regulatory instruments) is identified as being suitable.

Art. 33 VKND lays down, in an explicit embodiment of the general administrative law principle of proportionality, that measures of special regulation must correspond to the kind of problem that has emerged, be appropriate in light of the regulatory principles in accordance with Art. 5 (2) KomG and be justified.

With regard to the selection of the instruments for the present market (and the identified competition problems) Principle 2 is applicable (*where the infrastructure of the market dominant undertaking cannot be duplicated, the exercise of market power vis-à-vis consumers must be prevented*) and not Principle 3 (*If replication of the incumbent's (i.e. market dominant undertaking's) infrastructure is viewed as feasible, the available remedies (i.e. regulatory instruments utilised) should assist in the transition process to a sustainable competitive market based on infrastructure competition*). The underlying country-wide subscriber access network is scarcely replicable economically against the background of the market relationships, so that the cardinal objective in imposing regulatory instruments on this market cannot be to promote competition on the origination market itself, but rather the elimination of the competition problems identified in the market analysis with their detrimental impacts on competition on the downstream markets, and especially however on the retail customer.

The analysis of each instrument begins with a discussion of its purpose and general considerations. After that it is assessed which identified competition problems the regulatory instrument addresses and to what extent it is suited to deal with these or hinder the market power and/or its negative impacts. This is then followed by more details about the relationship to other regulatory instruments and the question is posed whether other obligations would be more proportionate. Finally the concrete design of the regulatory obligation is presented, whereby with combinations of obligations the analysis essentially examines in depth and/or refers to other regulatory instruments.

5.4 Access to network facilities and network functions

5.4.1 Purpose

The fundamental purpose of an access obligation (Art. 37 VKND) is to prevent the denial of the access/interconnection and – if a certain access variant does not yet exist – to specify the conditions for the access/interconnection (the wholesale service product). For this purpose, Art. 37 VKND contains detailed provisions on which obligations can be imposed with regard to the access of an undertaking with significant market power (technical interfaces, collocation, etc.). The access obligation is an effective instrument in order to stop the general refusal of the interconnection and/or to prevent non-price related anti-competitive practices.

5.4.2 Application to the identified competition problems

As already detailed in chapter 4.1, where there is a lack of regulation TLI has an incentive to leverage its market power onto other markets by it denying access to the origination service. The granting of access to date based on TLI's RIO was a consequence of regulatory pressure. The access obligation regulatory instrument is suitable for dealing with such abuse:

On the one side this obligation can guarantee that TLI, as the sole fixed network operator and interconnection partner for the interexchange network operators (INOs), provides the origination service to the INOs and thus from an economic viewpoint establishes the basis for (potentially) effective competition on the retail customer calls markets. On the other hand in cases of call origination to destination network priced service numbers, the possibility should be removed from it to exert its market power on the origination market and leverage this onto other competitive markets by it refusing the direct and/or indirect interconnection with the interconnection-capable exchange.

The obligation guarantees that the service offer is available to the subscribers on the sole fixed network in Liechtenstein and these subscribers' access may not be denied.

Furthermore, the competition problems of delays and competition impeding bundling of products – i.e. not necessarily price related problems – are prevented on the basis of the access obligation. In this way the access obligation in conjunction with the non-discrimination obligation guarantees that TLI does not establish a competitive advantage for itself by delaying the access for alternative network operators: When introducing new retail customer products that require other kinds of origination service as wholesale services (e.g. any flat rate offers), it should notify such alternative providers in a timely manner and offer them the corresponding wholesale service products at the latest at the same time as these retail customer products are introduced (see non-discrimination obligation in chapter 5.6).

Through the access obligation it is guaranteed that TLI fulfils all reasonable requests for access products and the origination services can be purchased without any bundling with products from other markets. In this way the potential problems with the bundling of products is also dealt with.

5.4.3 Relationship with other regulatory instruments

The access obligation is considered to be suitable when the access to wholesale services is thereby guaranteed whose replication is regarded as being technically unfeasible and/or economically inefficient and no change to this circumstance is to be expected over the next few years. As an alternative to an obligation to grant access in accordance with Art. 37 VKND, a non-discrimination obligation can be considered. This obligation states that an undertaking has to provide services and information for third parties at conditions equivalent to those for itself and/or affiliated undertakings (so-called internal non-discrimination obligation). This provision covers the aspect of market power abuse especially by means of non-price related practices (for a more detailed explanation see chapter 5.6). However in cases of call origination, the non-discrimination obligation cannot be regarded as being equivalent to the access obligation because firstly the obligation can only be imposed in a very abstract manner and secondly forms of access for third parties that the undertaking does not offer itself are not sufficiently covered by the non-discrimination. Furthermore, the imposition of non-discrimination would not be a milder means because the intensity of the conditions imposed would barely be lower in order to guarantee the same effectiveness of the regulation.

The most important kinds of access and their conditions should be defined by means of a Reference Interconnection Offer (RIO) that represents a requirement in accordance with Art. 34 VKND (non-discrimination obligation) (see chapter 5.6.4).

5.4.4 Concrete design of the access obligation

The access obligation should guarantee, without being affected by the general conditions for interconnection, that TLI grants access to its network and to its network components to the extent that this concerns call origination and is reasonable. In the context of such an interconnection, TLI should undertake all measures required for this and make the corresponding services and information available in a timely manner (tolerance of the connection through joining link, etc.). From the Office for Communication's viewpoint, this should occur in a form that lays down for every valid and reasonable request for access within the framework of Art. 37 VKND a corresponding wholesale service offer within a reasonable period of time, while also other requirements (see below) such as cost orientation and non-discrimination are taken into consideration.

Direct interconnection

TLI should be obliged to facilitate direct interconnection to the sole interconnection-capable exchange present. This should deal with the danger that TLI transmits the traffic

for INOs solely via a third party network (affiliated to/cooperating with it) whose operator demands an excessive transit rate as the case may be. In order to rule out such market power leverage strategies, TLI should be obliged to interconnect directly with other networks (in the meaning above).

Number and location of the interconnection-capable exchanges

Changes in the number and location of the interconnection-capable exchanges should be able to be taken into consideration. On the part of TLI, such changes should in any case be notified to alternative providers in such a timely manner that the competition is not impaired.

Time aspects

The interconnection should not be delayed or hindered in such a way that unreasonable preconditions are demanded that increase the costs of the interconnection partner or delay the interconnection excessively. Hence open access to technical interfaces, normal protocols or key technologies should be guaranteed. Likewise, arrangements for collocation facilities or other forms of shared usage of facilities should be provided for.

Finally, the access obligation in connection with the non-discrimination obligation should also guarantee that when introducing new retail customer products that require other kinds of origination services as wholesale services (e.g. any flat rate offers), TLI offers such products to alternative providers at the latest at the same time as the introduction of the retail customer products. Here, at the same time is understood to mean that new products may only first be offered by TLI on the retail customer level when a correspondingly adequate wholesale product is also offered to third parties. In this way the establishment of unjustified first mover advantages should ultimately be prevented.

Participation in the provision of the joining link

As the interconnecting of networks is achieved by means of joining links, the access obligation imposed should also cover the participation in the provision of joining links as this is a necessary prerequisite for the flow of traffic between networks and at the same time any refusal of same by undertakings with significant market power can be abused to prevent the entry of competitors and thus also ultimately has impacts on the structure of the transit market. The standard to be applied for the calculation of the rate for joining links is – because it concerns a leased line – to be laid down for the corresponding market as the case may be.

Technical and economic sustainability

The technical and economic sustainability for the use of and access to TLI's infrastructure is a given in terms of the interconnections for the purpose of call origination to the extent that such interconnections have already been established over the last few years. They represent the cornerstones of a liberalised market and thus are necessary to guarantee competition over the long-term on the downstream stages of the value added chain. The

initial investments required for the interconnection were already undertaken over the course of liberalisation, while for other forms of access the costs should be allocated in a fair and reasonable manner.

5.4.5 Conclusion

In order to deal with the competition problem of denying access and the vertical as well as horizontal leveraging of market power discussed in the market analysis, the regulatory instrument of an access obligation should be imposed on TLI – because the general interconnection obligation in accordance with Art. 44 and Art. 45 VKND as detailed above is not sufficient. In this way it can be guaranteed that TLI provides corresponding offers (provided these are not already covered by the RIO) to reasonable requests for access and that the origination services are provided via direct as well as indirect interconnection.

5.5 Price control

5.5.1 Purpose

Art. 38 VKND provides that the Office for Communication can impose obligations on undertakings with significant market power with regard to price controls and cost accounting. It has to take into consideration criteria such as for instance the efficiency, the investments made, the return on investment and the current market risk in correctly determining the access prices. Furthermore, Art. 38 (2) VKND contains provisions related to the burden of proof issue: It obliges an undertaking with a cost orientation obligation to verify that its rates can be computed from the costs and a reasonable return on investment. The Office for Communication can impose a cost accounting system on the operator that is independent from its own cost accounting.

Art. 13 of the Access Directive obligates the regulatory authorities to design measures regarding cost accounting and price controls in such a way that these serve the requirements for efficiency and sustainable competition and maximise the interests of the retail customers.

The price control instrument prevents an undertaking from being able to abuse its significant market power on an origination market in order to set excessive prices. Otherwise it could achieve excess profits on this market and leverage its market power onto other markets.

The price control is a necessary extension to the access regulation, because otherwise an undertaking with significant market power would – by means of setting excessive access prices – have the possibility of price related foreclosure strategies.³⁵ Furthermore, excessive prices lead to a lower volume of origination services than that which would arise

³⁵ Cf. ERG Remedies (2006).

with effective competition. In this way, allocation inefficiencies and public welfare losses occur.

5.5.2 Application to the identified competition problems

In essence, the price control instrument is aimed at directly and effectively (i.e. directly and appropriately to the nature of the problem) redressing the identified problem of excessive prices.³⁶ Hence this regulatory instrument is able to prevent an operator from setting excessive prices in order to increase the interconnection costs of its competitors and worsen their competitive position on the retail customer market – through to a foreclosure. As no sufficient duplication of the subscriber fixed network can be expected on the current market for the foreseeable future (Principe 2), the cost orientation standard in the sense of the effective provision of services – provided it is proportionate and reasonable – is to be applied because this is the only way that allocation and production inefficiencies can be curbed.³⁷

As INOs offer call services to customers connected to TLI's network which are in direct competition with TLI's call services, there is an incentive for it to exert its market power on the origination market – even if the access to the subscriber is guaranteed by a corresponding carrier (pre-)selection obligation on the retail customer access markets – in that it increases by means of excessive origination rates the costs of its competitors to such an extent that the margin between the wholesale service and retail customer prices is too low for an economically viable provision of the service (price discrimination/margin squeeze competition problems) for an efficient operator. In this way it can leverage its market power vertically from the origination market onto the retail customer markets. Such a competition problem not only concerns the call origination to INOs, in fact it is also analogously applicable to the call origination to destination network priced service numbers, whereby the problem is of minor significance for this service due to the low volume in Liechtenstein. The price control instrument prevents such a practice in that the undertaking with significant market power is issued with conditions on how it is to set these origination rates. The instrument corresponds to the nature of the present competition problems to the extent that it is aimed directly at the relevant strategic parameter here, the price.

As an obligation, the price control is an intervention intensive measure for the undertaking concerned because its price setting scope – a fundamental factor of the business activities on the market – is limited or even lost. In addition to its high intervention intensity, the price regulation also raises several specific economic issues. It is repeatedly argued by critics in connection with the cost orientation price regulation that the regulatory setting of rates does not take sufficiently into account dynamic competition effects (e.g. penetration pricing, external effects) as well as uncertainty and investment

³⁶ Cf. ERG Remedies (2006).

³⁷ Cf. ERG Remedies (2006).

risks, or that inefficient price structures are selected when there are overhead costs (e.g. no Ramsey pricing). The result is that losses in efficiency caused by the regulation could be induced by this. Hence it must be examined in the sense of proportionality, whether other milder instruments can produce effective impacts similarly with comparable effort and outlays.

5.5.3 Relationship with other regulatory instruments

With regard to the origination services to service providers, it must be considered as an alternative to the price control in the form of a cost orientation obligation whether if need be a combination of the non-discrimination obligation (in accordance with Art. 34 VKND) together with the obligation of accounting separation (in accordance with Art. 36 VKND) can replace the cost orientation.³⁸ By means of the obligation of accounting separation, the internal transfer prices can be made transparent which could then also be a basis for external transactions with the help of the non-discrimination obligation. In fact it would be conceivable to order separate accounting for the complete undertaking on the product level. However this would be disproportionate to measures affecting the product level, as areas would also be affected by this which are not subject to the regulation and the burden for the undertaking with significant market power would in general be far greater than if only certain products are subject to a price control and cost accounting. Furthermore it does not seem advisable to provide differing price control standards for origination services with differing intended destinations (INOs, service numbers) as this would not only endanger the consistency of the regulation, but especially would also increase the burden for the undertaking. Hence the non-discrimination obligation together with the obligation of accounting separation is not proportionate; thus a price control in accordance with Art. 38 VKND is preferable. No other regulatory instrument and/or a combination of same is capable of redressing the competition problems identified in connection with the price.

5.5.4 Concrete design of the price control

If the Regulatory Authority should now set – in the context of a dispute settlement procedure or by intervention on the part of the authority – call origination rates, a price determination method is to be applied. In this connection, the following approaches are relevant:

5.5.5 Efficient component pricing rule (ECPR)

ECPR prices are determined by taking the costs of the service in addition to those opportunity costs which accrue to the undertaking with significant market power when it offers the service to a competitor on the retail customer market. Under certain conditions, the ECPR is reduced to retail minus (retail customer price minus retail costs). ECPR prices

³⁸ ERG Remedies (2006).

would be considered especially when the development of self-sustaining competition on an origination market is to be expected in the foreseeable future³⁹ or market developments indicate that prices of retail customer markets in competition with each other could be utilised as a starting point. This approach is not suitable for determining the origination costs as such a development is not expected in the foreseeable future and indications of such a development are not identifiable.

5.5.6 Cost orientation

In order to determine the amount of the rates, this method utilises the costs which arise to an undertaking with significant market power for its wholesale services. Cost oriented prices are most proportionate in situations in which the undertaking with significant market power can charge excessive prices and the market power will not be limited by competitive forces over the longer term (Principe 2). Depending on the cost accounting method that is applied, the setting of the cost oriented prices can be very costly, time consuming and intervention intensive for the undertaking concerned.

The allocation distortions which were determined as competition problems are tightly connected to TLI's incentive to increase the origination rates above the competitive level. Hence the cardinal objective of the regulation must be to correct this market failure and set the origination rates at the amount of the competition prices – the level at which the public welfare is maximised. The "correct price" from an economic perspective is at the amount of the long-term marginal costs of an efficient operator for the provision of the service in addition to a premium for common costs and overhead costs. In a market with effective competition, when viewed over the long-term a "uniform market price" results from the dynamic market forces (e.g. market entries and market exits, volume adjustments, adjustments to the production factors) which is oriented to the long-term marginal costs of the industry which arise in order to efficiently satisfy the total demand (with the lowest costs). This long-term competitive equilibrium leads to a situation whereby the macroeconomic public welfare is maximised. Any deviation from this level worsens the consumers' position.

In an EEA-wide comparison, a range of regulatory authorities have utilised cost accounting systems based on the LRAIC principle (long run average incremental cost) that are independent⁴⁰ from the operators, or approaches related to this. In accordance with this method, from an economic perspective the efficient price for the access is at an amount of the long-term marginal costs for the service provision of a sufficiently efficient operator. With this approach, the taking into account of the overhead costs occurs in accordance with the stand-alone criteria: Only those kinds of overhead costs are to be proportionately included which would be unavoidable and which would also accrue to an operator which

³⁹ ERG Remedies (2006).

⁴⁰ Art. 38(2) VKND permits the Regulatory Authority to take a cost calculation independent from the cost calculation of the undertaking concerned to determine the costs of an efficient provision of the service.

solely offers the origination service. Hence every cost item must be examined in terms of its necessity for the provision of the origination service (for instance, marketing/sales services on the retail level are not taken into consideration). In addition, the FL-LRAIC (forward-looking LRAIC) approach is based on the revaluation of the assets at replacement prices.

Ultimately both a top-down and a bottom-up approach can be utilised for the concrete calculation of the origination costs. With the former, one assumes as a basis the network topology of the market dominant undertaking; with the latter, one models an efficient network either without taking into consideration (scorched earth and/or green field approach) or partially taking into consideration (scorched node concept) the basic network topology of the actual network. Mixed forms consisting of bottom-up and top-down models are conceivable.

However the effort and outlays to develop such a model and the collecting of valid cost input data for the model is considerable and linked to the usage of substantial financial and personnel resources. Furthermore when it is applied, a significant period of time has to be expected before the origination rates are determined. The disadvantages named above are even more marked in the unique context of the small-scale relationships in Liechtenstein and in the opinion of the Office for Communication are clearly disproportionate to the size of the market and the operators. Hence, historic full cost accounting is worth considering as a simpler alternative cost accounting model. In comparison to the LRAIC approach, this is linked to certain principles related disadvantages, however it does offer a range of implementation advantages.

However by utilising this cost accounting instrument, negative incentive structures can arise for the regulated undertaking (e.g. the danger of gold plating) if the actual costs which occur historically for the undertaking concerned (top-down) are utilised. The result is that losses in efficiency caused by the regulation could be induced by this. In order to counter corresponding incentives for the regulated undertaking to use resources inefficiently and report higher costs, it is necessary for the Regulatory Authority to identify possible inefficiencies and deduct them. Benchmarking which is described hereunder can be considered especially to identify possible inefficiencies.

TLI is the most important interconnection partner in Liechtenstein. It has a country-wide fixed network and is the only fixed network operator with origination minutes. Furthermore it has an incentive to leverage its market power onto other markets. Considering its importance and the available cost accounting⁴¹ which was already submitted to the Office for Communication, it is proportionate to regulate the origination rates and the rates for the annex services required for the interconnection on the basis of its costs.

⁴¹ The cost accounting submitted to the Office in the past for assessment purposes was that from LTN.

No other (milder) instrument is suitable compared to the cost orientation obligation to eliminate the identified competition problem aspects (excessive prices) linked to the price. Hence it follows that in light of the identified competition problems and the regulatory Principle 2, the setting of cost oriented origination rates is a suitable and necessary measure.⁴² Instead of using an LRAIC cost accounting system operated by the Regulatory Authority that is independent from TLI's cost accounting, and which in the opinion of the Office for Communication is clearly disproportionate to the size of the market and the operators concerned due to the resources and time required for it, the imposition of a cost orientation provision on the origination service in TLI's fixed network should occur on the basis of historic full cost accounting. In order to identify inefficiencies, benchmarking should be used to provide support.

In Annex 5 to RIO, the call origination in LTN's national fixed network is currently reported at a price of CHF 0.02 per minute (without any peak/off-peak difference). According to the price list, this price is explicitly valid only for carrier pre-selection operators. For calls originating in the fixed network to national mobile networks, the double rate has been applicable to date for the origination service as per the price list. In future this will be adjusted to the extent that also for these calls a uniform rate will be set only for the origination service.

The Office for Communication takes note that the European Commission issued on 7 May 2009 Recommendation 2009/396/EC on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU. The EFTA Surveillance Authority has issued (to date) no such own recommendation. The Commission recommends in particular that national regulatory authorities impose cost oriented termination rates by 31 December 2012 and introduce to this end an LRIC cost model. In exceptional circumstances, in particular due to limited resources on the part of the authority concerned, it may defer the introduction of such a cost model until 1 July 2014 or where it would be objectively disproportionate for those NRAs with limited resources to apply the recommended cost methodology after this date, such NRAs may continue to apply an alternative methodology up to the date for review of the Recommendation. This is on condition that the outcome resulting from the alternative methodology does not exceed the average of the termination rates set by NRAs implementing the recommended cost methodology.

The Office for Communication is of the view that the resources necessary for the introduction of an LRIC cost model are not available within the very small Office for Communication and that, therefore, the application of the recommended method would be objectively disproportionate. For that reason it intends to make use of the exemptions provided for by the Recommendation in these cases and to apply an alternative method as described in the present market analysis. It will take into account the EEA-wide average termination rates.

⁴² See in this regard ERG Remedies (2006), page 73 et seq.

5.5.7 Benchmarking

With benchmarking the setting of the price occurs on the basis of comparative values. For such a comparison, the prices on national and international markets⁴³ with comparable services can be utilised. As a price determination method, benchmarking is applied especially when the implementation effort in connection with the previously described price setting method (in relation to the competition problem) exceeds an extent justifiable for the Regulatory Authority and the undertaking and/or a correspondingly good basis for comparison exists. During the comparison, care must be taken to ensure the comparability of the markets utilised and if necessary any existing striking differences in the services which are taken for the comparison (differences in the costs, in the network capacity, in the technology, in countries' specific price levels, etc.) are to be adjusted when determining the origination prices to be applied. The markets utilised for the comparison neither have to nor can they be completely identical. This would also not be achievable in reality and would ignore benchmarking's applicability as a reliable price setting method in the first place. Hence any possible striking differences which remain are to be taken into account instead when setting the concrete prices. As a price determination method, benchmarking is applied especially:

- ▶ When the implementation effort in connection with the previously described price setting method (in relation to the competition problem) exceeds an extent justifiable for the Regulatory Authority and/or the undertaking.
- ▶ Or if the results of the survey of costs are for their own part implausible due to the database and/or significantly deviate from those prices which would normally arise on a (competitive) market. Such a kind of implausible result is for instance possible in the market entry phase when the undertaking concerned is operating in an area with declining average costs (and/or increasing economies of scale).⁴⁴
- ▶ And/or when a basis for comparison exists for the price comparison which is sufficiently secure statistically and hence the prices (costs) of the market dominant undertaking can be estimated.

Art. 38 (2), last sentence, VKND provides that the Office for Communication can for the setting of cost oriented prices also take into consideration other rates which are applicable to comparable markets open to competition. This comparative methodology for setting the rates is what benchmarking is. The low intervention intensity for the undertaking concerned when this method is applied, the low use of resources linked to

⁴³ Art. 38 (2), last sentence, VKND.

⁴⁴ In such a "temporary" market entry phase, the average costs can be far above the "normal market" prices (even above those that a profit maximising monopolist would set) and thus they cannot be applied. This argument is relevant especially in connection with new market entrants.

this, the quick setting of the rates under consideration in terms of the time required as well as its transparency and reliability represent its major advantages.

If a cost accounting model is operated by a regulated undertaking to determine the cost orientation prices, there is an incentive to report (too) high costs. Likewise with a lack of competitive pressure, the undertaking has no incentive to provide the services by means of an efficient use of resources. X-inefficiencies (e.g. the danger of gold plating) occur. In order to identify these as well as any reporting of excessive costs and be able to curb them, benchmarking should be used as a supporting methodology to determine cost oriented origination rates in Liechtenstein.

From the viewpoint of the Office for Communication, the instrument fulfils the principle of proportionality and hence is regarded as the adequate⁴⁵ supporting measure in terms of the competition problem determined of excessive prices.

5.5.8 Comparative data for benchmarking

Neither the European Commission nor the European Regulators Group (ERG) collect specific data about the prevailing fixed network origination prices. For this reason, no explicit comparative data on origination services is available.

However it is evident – in line with chapter 2.2 and the M3 market analysis – that the call origination and the call termination concern mirror-image services. In other words, in the production of the both services the same network components – even if in a reverse sequence – are utilised. Both cases concern the processing of a call from a network termination point at a retail customer to the point of interconnection with the alternative provider at the first interconnection-capable exchange. Hence the access costs resulting from this are fundamentally identical.

Mindful of this fact, the Office for Communication processes and consults on both of these markets together. Hence in the present analysis of the fixed network origination market, an additional analogue comparison with the prevailing termination prices is dispensed with and instead reference is made to the corresponding comparison in the context of the Analysis of the market for call termination in fixed networks (M3).

In the assessments of the costs relationship aspect of the origination rates in the context of the cost accounting model and reference offer submitted by TLI, the Office for Communication has recourse to the benchmarking data collected on the termination market in order to identify possible inefficiencies in the provision of the service.

5.5.9 Conclusion

From the discussions so far, it is clear that the price control, despite its intervention intensive character, has been identified as proportionate and as the sole effective

⁴⁵ See in the regard ERG Remedies (2006), page 73 et seq.

instrument that can deal with the competition problems of excessive prices and the leveraging in terms of price on the origination market.

The Office for Communication has drawn the conclusion from the considerations of the various price determination methods that for TLI, the origination rates for all kinds of call origination (INOs, service numbers) and other tariffs related to the call origination should be set on the basis of historic full cost accounting supported by benchmarking. A determination of the costs on this basis is proportionate because TLI is the only fixed network operator with subscribers connected to it and is the most important interconnection partner for all network operators. It has a country-wide fixed network and is the sole fixed network operator with origination minutes. Furthermore, the Office for Communication has already had costs related documents submitted to it.

5.6 The obligation of non-discrimination

5.6.1 Purpose

The non-discrimination obligation guarantees that the undertaking with significant market power offers other undertakings the equivalent conditions under the same circumstances as well as providing services and information for third parties at the same conditions and at the same quality as it does for itself and/or affiliated undertakings. In this way the non-discrimination obligation can guarantee that by means of its pricing the undertaking with significant market power cannot discriminate and prevents an undertaking which is regulated with regard to its rates on the wholesale market from leveraging its market power onto other markets by means of non-pricing variables. In order to support this non-discrimination, it is necessary to oblige the undertaking to publish a Reference Interconnection Offer (RIO). In this offer, partial services are to be sufficiently detailed, broken down in accordance with the market requirements and the conditions including the rates are to be specified.

5.6.2 Application to the identified competition problems

On the one hand the non-discrimination obligation is aimed at preventing price discrimination vis-à-vis the alternative network operators. This obligation guarantees that the undertaking with significant market power treats all competitors on the downstream markets equally and does not place them in a worse position than its own retail arm. Such an abuse of market power is prevented by the non-discrimination obligation.

On the one hand the non-discrimination obligation is able to curb the identified competition problem of market power leveraging by means of non-pricing variables (such as in the form of delays in negotiations, the withholding of necessary information and other unreasonable measures that ultimately increase the costs of the competitors or delay the market entry). In particular, the non-discrimination obligation in the form of the duty to submit an RIO permits more legal certainty and the provision of better information

to the providers on the market. The RIO has the advantage that alternative network operators, and especially undertakings just about to enter the market, have sufficient information available to them regarding the conditions for an interconnection with TLI, so that it is possible for them to be able to estimate the economic meaningfulness of an interconnection and/or of a business case even before concrete negotiations have commenced.

Moreover, a RIO lowers the transactions costs for all parties concerned because central elements are defined from the outset so that the stability on the market can be guaranteed and the incentives to make investments and for entries into downstream markets are provided. Furthermore a RIO shortens the negotiation time, because negotiations only need to be conducted about deviations, it eliminates potential disputes and gives operators the security that services can be purchased at non-discriminatory conditions.

5.6.3 Relationship with other regulatory instruments

The RIO primarily serves the purpose of setting essential access conditions for compliance with the non-discrimination obligation and reducing the transaction costs. Hence it is suitable for preventing possible non-pricing anti-competitive strategies. On the other hand, the access obligation guarantees that all operators must be granted reasonable access when they request it. Hence it goes above and beyond the obligation intended for standard cases in a RIO, whereby due to the non-discrimination obligation any discriminatory treatment of the buyers should also be ruled out for other forms of access (not provided for in a RIO), provided that the discriminatory treatment is not objectively justified.

Although the reference offer under the non-discrimination obligation in accordance with Art. 34 VKND is standardised, from a critical viewpoint one can also regard it as discharging the transparency obligation in accordance with Art. 35 VKND. Art. 9 (2) of the Access Directive of the European legal framework suggests this interpretation. Despite this, over the course of the present analysis, the legal assessment of which obligation the reference offer falls under is dispensed with and it is subsumed in accordance with the VKND under the non-discrimination obligation in accordance with Art. 34.

5.6.4 Concrete design of the non-discrimination obligation

In order to be able to effectively deal with the competition problems discussed, TLI should be obliged to make available to all other undertakings similar origination services under the same circumstances at equivalent conditions as it does for itself. For offers which are repeatedly requested, it is economically sensible and efficient with regard to the transactions costs if TLI adjusts and publishes the current RIO. This RIO should contain all necessary technical, economic and legal conditions required for the purchase of the service. The RIO should include sufficiently detailed partial services and the service offers should be broken down into individual components in line with the market requirements.

In concrete terms the offer is, under consideration of the services requested, to be designed in such an unbundled way that a buyer does not have to purchase services which he does not regard as necessary for his service provision. The offers in the RIO should, without being affected by any negotiations between the operators about special regulations outside the RIO, be sufficiently specified so that they contain the most important parameters and information in order to carry out the call origination via a direct and an indirect interconnection. This includes especially the rates and the conditions for the provision of the origination services.

In addition to a part that should contain the general provisions of a contractual nature, the RIO should at least contain the following components which are to be defined more closely:

- (1) Regulations concerning interconnection links;
- (2) Information about points of interconnection, location(s) of the interconnection-capable exchange(s);
- (3) Kinds of traffic and rates;
- (4) Regulations concerning carrier selection (interexchange network operator);
- (5) Regulations concerning the interconnection with the interconnection-capable exchange(s);
- (6) Regulation concerning access to services free of tariffs, services with regulated rate upper limits (shared costs numbers), freely calculable value added services, tariff-priced event services, telephone information services and the access to internet access services;
- (7) Regulations concerning the hand-over of traffic to transit network operators on behalf of third parties.

The costs to establish interconnection links, the information about locations of exchanges, the rates and further regulations on the interconnection represent the essential basis for carrying out interconnection and they are already included to a large extent in the current RIO. The further conditions concern the access to services free of tariffs, services with regulated rate upper limits (shared costs numbers), freely calculable value added services, tariff-priced event services, telephone information services and internet access services. These further services which are usual on an international level are only to be included in the RIO to the extent that these services are regularly requested and provided. In this way the proportionality should be preserved. The regulations on the traffic interconnection guarantees that TLI also transfers the traffic for third parties to transit network operators which on behalf of third parties transmit the traffic from TLI's network to a third party network (see chapter 5.4.4).

The reference offer must cover all access conditions. It is to be submitted in advance for approval to the Office for Communication and to be published by TLI. For this purpose the

Office must be able to inspect all necessary documents through which an assessment of the measure imposed (e.g. with regard to the price control and/or cost orientation) can be undertaken. The reference offer should, prior to its approval, be subjected to consultations by all interested parties. With these measures, in overall terms both comprehensive framework conditions and the further development of supportive framework conditions for origination services should be established.

Further details of the reference offer are in the event of dispute to be clarified in proceedings before the Regulatory Authority. In principle, all call origination related problems which arise over the course of time should be addressable in this way. Primarily however, a contract concluded under private law is to be given preference over proceedings because in the event of doubt, technical and processing aspects especially can be specified more closely in line with the requirements by the parties involved than by the Authority. Hence not every amendment wish negotiable between the parties involved must perforce lead to an imposed change in the reference offer. In the event however that a settlement cannot be reached, the invocation of the Regulatory Authority should be possible in all matters concerning the call origination.

From the Office for Communication's perspective, the obligation to publish a Reference Interconnection Offer (RIO) does not represent a disproportionate intervention into the operator's sphere because these contracts are – against the background of the interconnection and interoperability obligations – already available and a functioning practice for dealing with interconnection contracts and negotiations has been a given for years.

5.6.5 Conclusion

The non-discrimination obligation guarantees that TLI treats all competitors equally on downstream markets and does not place them in a worse position than its own retail arm. The obligation to publish a RIO guarantees that all necessary provisions required for the purchase of standard origination services by third parties are available in an appropriate form and thus the non-price related anti-competitive strategies such as delays and unjustified conditions and quality are prevented. At the same time such an obligation increases the transparency on the market and reduces the transaction costs so that the entry of new operators on downstream markets is facilitated. Hence the non-discrimination obligation for TLI is suitable, necessary and proportionate.

5.7 The obligation of transparency

The fundamental purpose of the transparency obligation (in accordance with Art. 35 VKND) is to improve the vertical market transparency (between providers and buyers) and thus to lower the transaction costs (e.g. search costs) and/or to intensify the competition

(on prices). Only when the buyer of the (wholesale) service is sufficiently informed about alternative offers (prices) can the competitive forces be effective.⁴⁶ Economic theory shows that on markets with imperfect information (e.g. information asymmetries), inefficient market results cannot be ruled out. However the pro-competitive impact of strengthening the market transparency cannot be merely reduced to the price parameter. Especially whenever an access price regulation exists and undertakings have an incentive to get around non-pricing action parameters, the transparency obligation can in conjunction with other obligations such as the non-discrimination obligation (in the form of a Reference Interconnection Offer) be an effective instrument in order to impede such non-pricing tactics.⁴⁷ Furthermore the transparency obligation can be utilised to support the Regulatory Authority when monitoring (possible) anti-competitive behaviour.

In order to assess the effectiveness of this instrument, the question must be posed whether the transparency obligation (alone) has an influence on the behaviour parameter of the market dominant undertaking, especially on the price, and if so which one. The reply to the first question is no. A necessary but not sufficient precondition for this would be that a buyer on the wholesale service level is able to purchase the service from more than one provider: Only then when at least one substitute exists can competition (on prices) – supported by an improved market transparency – develop. This is not the case on the origination market so that a transparency obligation (on the wholesale service level) alone is not suitable in order to deal with the identified competition problems (and especially with the problem of excessive prices).⁴⁸

Against this background, the transparency obligation is primarily to be seen as an auxiliary instrument for other obligations. Through the obligation to publish a RIO (in accordance with Art. 34 (3) VKND) the transparency requirements vis-à-vis other market players has been largely taken into account.⁴⁹ However the Office for Communication is dependent on this information in order to assess the compliance with other obligations. Hence further information duties in accordance with Art. 35 VKND are to be imposed on TLI. The information on accounting and cost accounting is required in order to determine the rates, while information on the technical specifications, network characteristics and the provision and usage conditions form a necessary component of an interconnection agreement. The information on the rates including the discounts and special conditions supports the price control instruments and serves the assessment of the non-discrimination obligation. The Office for Communication determines more precisely which

⁴⁶ The competitive impact of vertical market transparency is unequivocally positive in contrast to horizontal transparency.

⁴⁷ Cf. ERG Remedies (2006) in this regard as well.

⁴⁸ It is doubtful overall that there are a large number of competition problems which could be eliminated with a transparency obligation alone. Hence it is applied especially to support other regulatory obligations. See ERG Remedies (2006) in this regard as well.

⁴⁹ The RIO obligation can also be regarded as discharging the transparency obligation, whereby this obligation has a close connection with the non-discrimination obligation (cf. Art. 9 (2) Framework Directive).

concrete information is required and the degree of detail in this that has to be submitted in the course of fulfilling the price control as well as the design of the RIO.

Conclusion: The transparency obligation alone is not suitable to eliminate the identified competition problems. However the instrument does serve as an auxiliary instrument in combination with other obligations such as for instance the non-discrimination obligation in order to design these instruments and/or their controls or implementation more effectively.

5.8 Accounting separation

The instrument of accounting separation (Art. 36 VKND) serves to make transparent internal expenditures, costs and revenue among different areas of activity for the benefit of the Regulatory Authority in order to identify (for the Regulatory Authority) as the case may be cross-subsidisation and discrimination between the internal provision (internal transfer price) and external sales.⁵⁰ Accounting separation alone as well as in conjunction with the transparency obligation is not suitable to redress the competition problems as named. Analogously to the transparency obligation, here too the question whether the accounting separation obligation alone (and/or in conjunction with the transparency obligation) has an influence on the behaviour parameter of the market dominant undertaking, and especially on the price, has to be answered in the negative. Hence the accounting separation instrument is to be primarily regarded as a supplement to the other instruments such as the non-discrimination obligation (see below) or the price control (to collect data on costs).

However with the accounting separation obligation, precautions are taken in the way that it requires the assessment of the costs, the breaking down of the cost elements and the correct allocation to the cost centres to support the compliance with the price control obligation. At the same time the preconditions for the price control are established because the regulated undertaking is required to utilise certain formats as well as cost accounting methods so that an assessment of the cost is also possible quickly.

A global perspective of aggregated revenues and costs is still required in this connection in order to be able to make transparent possible shifts of profits or costs from regulated to unregulated areas (or vice versa). Otherwise an undertaking could have an incentive to allocate common costs for instance to those areas which are subject to regulation. As the price control only affects the products on the relevant market and as a rule this represents only a small part of an integrated operator's activities, accounting separation is necessary for the whole of the undertaking.⁵¹

⁵⁰ Cf. ERG Remedies (2006) in this regard as well.

⁵¹ Cf. ERG Remedies (2006).

For undertakings with a large number of products, the determination of cost orientation by means of a (short) procedure is only possible when there are regularly assessed separated accounts in the accounting separation framework. Only in this way can it be guaranteed that especially common costs and overhead costs on all products are allocated in accordance with where they arise.

In order to prevent the shifting of costs between the regulated markets and between the regulated and unregulated areas and thus guarantee the allocation of costs in accordance with where they arise, the accounting separation should at least occur and be organised in accordance with the relevant markets as per the Recommendation on Relevant Markets. At a minimum, the following information is to be provided in conformity with the requirements of the Office for Communication:

- ▶ revenues,
- ▶ costs (which can be differentiated in accordance with personnel costs, costs for the depreciation of assets, the costs of capital and sundry costs),
- ▶ a detailed schedule of fixed assets for the undertaking, key figures on personnel, cost drivers such as especially traffic volumes and other information necessary to assess the cost accounting.

The details of the concrete form the information is to take are specified by the Regulatory Authority in the context of an assessment performed at regular intervals. In this regard it is to be assessed whether the cost information that is to be provided regularly to the Office for Communication has the necessary specificity and granularity.

Conclusion: Accounting separation combats the competition problems of margin squeeze and excessive prices (by avoiding incorrect cost allocations), however as a sole obligation it cannot redress this problem or reduce the impacts of the market power. It is to be imposed as a necessary instrument to support the cost oriented price control obligation because TLI is active on other markets and the incentive exists to shift costs from unregulated to regulated fields of business. In light of the identified competition problems, this obligation should be imposed on TLI.

5.9 Other obligations

The Regulatory Authority can also impose obligations other than those laid down in Arts. 34 to 42 VKND with regard to access (Art. 43 VKND). These are either obligations on the retail customer level or obligations not named in KomG for when extraordinary circumstances arise. In such a case the Regulatory Authority must make a corresponding request to the EFTA Surveillance Authority. The EFTA Surveillance Authority's decision then forms the basis for that of the Regulatory Authority.

In accordance with their causes, the identified competition problems unequivocally concern problems on the wholesale service level. The application of measures on the

retail customer market would be neither economically sensible nor – in light of the new "wholesale service regulation before retail customer regulation" legal framework premise – proportionate.

In the current analysis, only those obligations named in KomG have been examined and no others, because according to the Office for Communication there was neither the occurrence of any extraordinary circumstances which would justify the application of such obligations nor are there any other instruments available which are suitable to eliminate the competition problems and which would be more appropriate.

5.10 Proportionality of the measures

Art. 33 VKND specifies in an explicit form of the general administration law principle of proportionality that measures of special regulation are in conformity with the kind of problem that occurs and must be reasonable and justified while taking into consideration the regulatory principles in accordance with Art. 5 (2) KomG.

The suitability of the measure of special regulation to be set to redress the identified competition problem has already been discussed in detail in the earlier sections of this chapter.

Furthermore, in the earlier sections of this chapter the various measures of special regulation available were assessed as to whether they represent the mildest means of intervention still capable of remedying the competition problems determined.

Ultimately when judging the question of the proportionality of the measures in a stricter sense, their reasonableness and/or intervention intensity must be discussed. Especially the selection of historic full cost accounting to determine cost oriented prices for the origination service – instead of an intrusive and costly bottom-up LRAIC model – guarantees this. The other measures to be taken, i.e. the imposition of obligations to guarantee non-discrimination, the preparation of a reference offer and the transparency represent per se minor interventions into the private autonomy of an operator and are accompanied by low implementation costs on the part of the undertaking concerned.

5.11 Summary: Regulatory instruments to be imposed

Proceeding from the competition problems identified in the present market analysis, the available regulatory obligations (measures of special regulation) were examined in order to determine to what extent they are individually or in combination able to counter the identified competition problems. In judging and selecting the obligations, the Office for Communication took particular care to ensure that the regulatory instruments selected are not only suitable and necessary, but that they also represent the respective mildest means in accordance with the principle of proportionality.

When one compares the proposed regulatory instruments with the identified competition problems, it becomes clear that at least one regulatory instrument is intended for each competition problem:

Actual/potential competition problem	Regulatory instruments
Denial of access	Access obligation
Excessive prices	Price control Accounting separation Transparency obligation
Price discrimination/margin squeeze	Price control Accounting separation
Non-price related aspects (delays, bundling, unjustified conditions)	Access obligation Non-discrimination obligation Transparency obligation

Table 2 : Allocation of the regulatory instruments to the competition problems for TLI

Table 2 schematically shows the fundamental relationships between the competition problems and obligations for TLI; for a more detailed analysis please refer to the information provided above.

The denial of access competition problem is countered by the obligation of access.

The access obligation in conjunction with the non-discrimination obligation prevents competition problems which are not price related in nature, such as delays, bundling or unjustified conditions. The transparency obligation reduces the transaction costs.

The competition problem of excessive prices is dealt with in the first place by the price control (in the form of cost orientation in accordance with the historic full costs supported by benchmarking). The accounting separation is an important auxiliary instrument in order to allocate the costs correctly to the fields of business and without which a quick assessment of the compliance with the cost orientation would not be possible. The transparency obligation guarantees that the required information is available.

The dangers of internal and external price discrimination and/or a margin squeeze are effectively countered by the price control obligation and supported additionally by the accounting separation obligation instrument.

Hence the Office for Communication regards it as necessary and reasonable in order to eliminate the competition problems determined on the national fixed network origination market of Telecom Liechtenstein AG to impose the following measures of special regulation on it:

- ▶ **Access to network facilities and network functions (Art. 37 VKND):** Grant access (direct or indirect interconnection) to the public telephone network at a fixed location for the origination of voice and data calls;
- ▶ **Price control and cost accounting for the access (Art. 38 VKND):** The obligation that the origination rates are oriented to the costs of an efficient operator based on historic full cost accounting and supported by benchmarking of the origination rates;
- ▶ **Obligation of transparency (Art. 35 VKND):** Duty to publish and update a Reference Interconnection Offer on the website of the operator;
- ▶ **Obligation of non-discrimination (Art. 34 VKND):** Internal and external non-discrimination duty in relation to the price and quality of the interconnection;
- ▶ **Accounting separation (Art. 36 VKND).**

The obligations proposed by the Office for Communication deal in an effective and proportionate manner with all of the identified competition problems on the origination market. They are sufficient from today's perspective to prevent TLI from abusing its market power on the origination market. No further regulatory instruments (in the sense of Art. 43 VKND) are required.