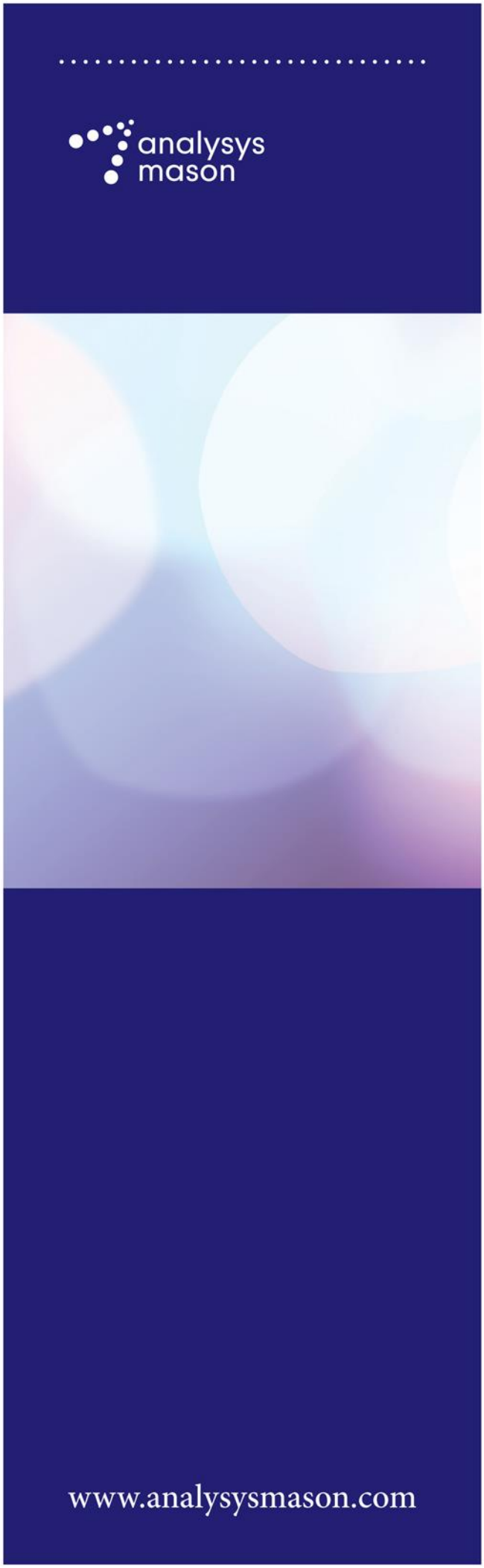

Report for Telekom Slovenije

Comments on AKOS's proposed methodology for economic replicability test

08 June 2017

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Ref: 2007848-232

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1 Introduction

1.1 Background

The European Commission (EC) issued a Recommendation in 2013[1] which *inter alia* defined an economic replicability test (ERT) which should, under certain conditions,[2] be used instead of a price control obligation on regulated NGA wholesale access inputs.

AKOS has begun the implementation of the ERT, with the objective of introducing it as a remedy after the current round of market analysis of Markets 3a (wholesale local access provided at a fixed location) and 3b (wholesale central access provided at a fixed location for mass-market products). Telekom Slovenije currently has significant market power (SMP) in Markets 4 (wholesale (physical) network infrastructure access at a fixed location) and 5 (wholesale broadband access), which will be replaced by 3a and 3b, but this may no longer be the case throughout Slovenia following the market analysis.

This report was initially issued to Telekom Slovenije and submitted to AKOS in September 2016 on the basis of the following documents issued by AKOS during 2016:

- an initial "pre-draft" ERT methodology document which was discussed at the meeting at AKOS on 23 June which Analysys Mason attended, together with Telekom Slovenije
- a pre-draft Excel-based ERT model (which was also demonstrated at the meeting on 23 June), together with a data request.

AKOS has since, the original submission of this document issued:

- an informal updated model and model guide in February 2017. This took into account some of the information and arguments supplied by Telekom Slovenije and Analysys Mason to AKOS.

- a formal market analysis and draft decision for public consultation in May 2017. Analysys Mason has been provided with a translation of parts of this draft market analysis to English. This public consultation document contains a short description of the intended ERT methodology remanding to the previously issued informal documents for details. This public consultation document, while brief, introduces some modifications to the ERT methodology. A new version of the ERT model or of the detailed methodology was not issued at this time.

Telekom Slovenije has commissioned Analysys Mason to comment on AKOS's methodology document and pre-draft ERT model. The intention is for this report to be submitted to AKOS by

1 Commission Recommendation of 11.9.2013 *on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*, C(2013) 5761 final, available from http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/c_2013_5761_en.pdf.

2 These conditions include equivalence of inputs (EoI), technical replicability, retail price constraints created by actual take-up of upstream passive, non-physical or virtual wholesale inputs, legacy access network products or from alternative infrastructures.

Telekom Slovenije. Given the uncertainties of if and how the methodology has changed since September 2016, we have been asked to submit the full 2016 document highlighting where modifications have or appear to have been introduced.

For the sake of clarity, we only comment on the market analysis and draft decision when it has introduced modifications to the 2016 draft ERT methodology.

1.2 This report

The comments we provide in this report mainly relate to the following two documents:

- The *European Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*, C(2013) 5761 final (hereinafter referred to as the 'EC Recommendation')
- *BEREC Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)* issued on 5 December 2014 (hereinafter referred to as the 'BEREC Guidance').[3]

We also refer to five European national regulatory authorities (NRAs) that have already introduced ERTs:

- the **ILR** (Luxembourg), which issued a description of its methodology on 4 April 2014[4]
- the **MCA** (Malta), which issued its final decision on this topic on 26 February 2016[5]
- **CNMC** (Spain), which issued a decision on market analysis and remedies on 24 February 2016; among other things this laid out its overall approach to the ERT.[6] However, CNMC is still in the process of preparing a more detailed methodology document that fleshes out the details of the ERT

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3 Available from http://www.berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/4782-berec-guidance-on-the-regulatory-accounting-approach-to-the-economic-replicability-test-ie-ex-antesector-specific-margin-squeeze-tests

4 ILR, *Principles and methodology of the margin squeeze testing approach (economic replicability test) in Luxembourg*, 4 April 2014, available from http://www.ilr.public.lu/communications_electroniques/avis_consultations/avis_200613/Consultative_Document_Margin_Squeeze.pdf.

5 MCA, *Virtual unbundled access to fibre-to-the-home: Implementing the VULA Remedy*, Response to Consultation and Decision, 26 February 2016, MCA/D/16-2513, available from https://www.mca.org.mt/sites/default/files/attachments/decisions/2016/VULAdecisionFeb16.PDF.

6 CNMC, *Resolución por la cual se aprueba la definición y análisis del mercado de acceso local al por mayor facilitado en una ubicación fija y los mercados de acceso de banda ancha al por mayor, la designación de operadores con poder significativo de mercado y la imposición de obligaciones específicas, y se acuerda su notificacion a la Comisión Europea y al Organismo de Reguladores Europeos de Comunicaciones Electrónicas (ORECE)*, anme/dtsa/2154/14/mercados 3a 3b 4, available in Spanish from https://www.cnmc.es/Portals/0/Ficheros/Telecomunicaciones/Resoluciones/2016/1603_Marzo/20160224_ANME_DTSA_2154_14_MERCADOS_3a_3b_4.pdf.

- **PTS** (Sweden), which issued a methodology for the ERT on 19 February 2015[7]
- **Ofcom** (UK), which issued its decision on the methodology for the ERT on 19 March 2015.[8]

1.3 Structure of this document

Our report follows the structure and headings used in AKOS's methodology document. Under each heading we provide a summary of AKOS's position and then set out our comments on it. The remainder of this document is therefore laid out as follows:

- Section 2 provides an overview of the ERT
- Section 3 discusses the characteristics of the operator that AKOS intends to model
- Section 4 focuses on the implementation of the methodology in AKOS's ERT model
- Section 5 provides our conclusions

The report includes two annexes containing supplementary material:

- Annex A provides analysis comparing the competitive situation in Slovenia to that in other EU Member States
- Annex B illustrates a potential error that can arise when using tilted annuity with historical costs.

7 PTS, *Bilaga 4, Modellreferensdokument (MRD 1.0), Riktlinjer för framtagandet av ett ekonomiskt replikerbarhetstest (ERT)*, Dnr: 14-1253, 28 October 2014, available in Swedish from https://www.pts.se/upload/Remisser/2014/bil-4-mrd-ert.pdf.

8 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

2 The economic replicability test (ERT)

In §2 of its methodology document, AKOS sets out the main parameters of the ERT as defined by the EC Recommendation and outlines its intended position on these parameters. In this section we summarise AKOS's position and provide our comments on it.

2.1 Brief background

Summary of AKOS's position

AKOS summarises a "shift in thinking the Commission" with the introduction of the ERT and highlights two points:

- A recognition that greater flexibility is necessary to encourage investment in NGA networks (particularly by operators with SMP)
- Under certain conditions, SMP operators should not be subject to *ex-ante* cost-oriented price regulation of wholesale NGA products, but should instead have to pass an ERT as a safeguard to competition.

AKOS also refers to guidance issued by BEREC in December 2014 in which it recognised that the ERT is a particular form of *ex-ante* margin-squeeze test whose purpose is to safeguard/promote competition.

Analysys Mason's comments

While we agree with the overall representation of the ERT by AKOS, we would like to highlight some key objectives of the ERT that were omitted or not fully covered by AKOS, namely:

- To increase legal certainty and regulatory predictability[9]
- "*[T]o allow those operators investing in NGA networks a certain degree of pricing flexibility to test price points and conduct appropriate penetration pricing*"[10] at the wholesale level but also at the retail level in order to "*foster penetration of very high-speed broadband services*".[11] This is based on the finding that there are demand uncertainties for NGA-based retail services and that SMP operators may need to "*use penetration pricing strategies in order to foster retail demand for such NGA-based retail services*".[12]

9 Recital 1 of the EC Recommendation.

10 Point 49 of the EC Recommendation.

11 *Ibid*.

12 Recital 62 of the EC Recommendation.

The BEREC Guidance also recognises that the ERT "*needs to be applied intelligently and its parameters calibrated accordingly*" in order to ensure "*that the aims to both "provide more pricing flexibility to SMP operators and the ERT's purpose to preserve competition are met*".[13]

We believe that the background provided by AKOS and the additional objectives outlined by us above clearly highlight that the ERT should allow the SMP operator greater flexibility than the *status quo* regulation in order to provide it with appropriate incentives to invest further in the deployment of NGA networks. The guidance from BEREC further highlights how the lack of a careful and consistent implementation and design of the ERT can easily lead to a very different outcome than the reaching of the aims of the EC Recommendation. We will in the following sections of this document highlight and discuss a number of areas where we believe that AKOS's suggested methodology indeed does lead to such a different outcome.

Analysys Mason suggestion: AKOS needs to take a holistic view of the aims and objectives of the ERT as proposed by the EC and BEREC and ensure that its actual implementation of the ERT is consistent with those objectives.

2.2 What is an ERT?

§2.2 of AKOS's methodology document touches upon a wide range of issues. In order to facilitate the reading of this section we have chosen divide this section into subsections, each touching upon an important area of the comments of AKOS.

2.2.1 Overall definition

Summary of AKOS's position

AKOS provides the following overall definition of the ERT, quoting the EC Recommendation: "[the ERT] *should ensure that the margin between the retail price of the SMP operator and the price of the NGA wholesale input covers the incremental downstream costs and a reasonable proportion of common costs*".[14]

Analysys Mason's comments

We do not have any comments on the overall definition of the ERT as provided by AKOS. We do however feel that it is important to clarify what the term 'downstream' refers to. It is a term that comes from the *ex-post* context and is often used in e.g. margin squeeze cases. The EC has provided the following definition in a guidance document on (*ex-post*) enforcement of Article 82 of the EC Treaty related to: "*The term 'downstream market' is used to refer to the market for which the refused*

13 BEREC Guidance, p.6.

14 EC Recommendation, recital 64, quote also used by AKOS.

input is needed in order to manufacture a product or provide a service."[15] (Margin squeeze is, in an *ex-post* context, considered as a variation of refusal to supply.) It therefore refers to additional activities or inputs that are required in addition to the wholesale input (which is supplied on an upstream market) in order to create the products sold on the downstream market (which is typically a retail market). There is thus a clear distinction between two separate types of inputs that are required:

- Upstream inputs: these are the wholesale inputs on the upstream market on which the operator offering them is dominant (*ex-post* application) or has SMP (*ex-ante* application). In the case of the ERT these are regulated NGA wholesale products in Markets 3a and/or 3b.

- Downstream inputs: these are the inputs that the buyer of access needs to acquire or produce in addition to the upstream inputs in order to provide the downstream (in this case NGA-based retail products). These can consist of:

  – Network costs: e.g. customer premises equipment (CPE), backhaul (in case of market 3a inputs), core connectivity, service platforms, etc.

  – Commercial costs: e.g. access to (TV) content, marketing, cost of sales network, etc.

  The difference between the retail price and the wholesale price needs to be sufficient to ensure that downstream costs can be covered. This is illustrated in Figure 2.1 below.

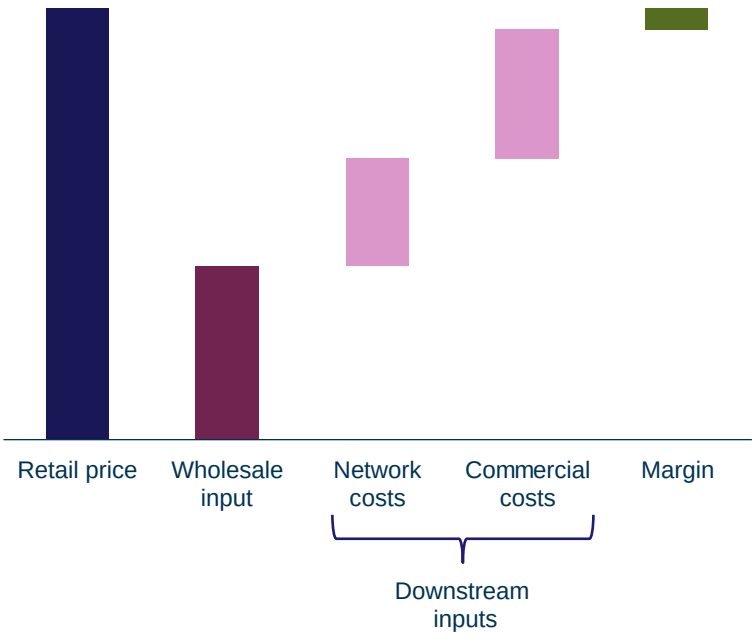


Figure 2.1: Illustration of ERT [Source: Analysys Mason, 2016]

15 European Commission, *Communication from the Commission – Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings*, 2009/C 45/02, point 76 (Section D), published in the Official Journal of the European Union on 24 February 2009, available from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0224(01)&from=EN.

The ERT is applied as a remedy for NGA-based products on wholesale markets 3a and/or 3b and the term SMP operator refers to an operator with SMP on those markets. It is important to note that the downstream inputs are the responsibility of the access seeker and not of the SMP operator.

2.2.2 EEO test

Summary of AKOS's position

AKOS quotes the EC Recommendation which states that the use of the so-called equally efficient operator (EEO) test should be the default option when assessing the downstream costs in an ERT. An EEO test is defined by the EC as: "*a lack of economic replicability can be demonstrated by showing that the SMP operator's own downstream retail arm could not trade profitably on the basis of the upstream price charged to its competitors by the upstream operating arm of the SMP operator*".[16]

AKOS furthermore notes that there can be some occasions when an EEO test will not be sufficient "*such as when market entry or expansion has been frustrated in the past*".[17] And that the NRA can, in such case make adjustments for scale to the costs used in the test "*so as to help ensure that there is a realistic prospect of economic replicability being achieved. However, a caveat is placed on this in that any adjustment to scale should not go beyond what is deemed necessary to ensure effective competition.*"[18]

Analysys Mason's comments

We agree with AKOS' interpretation of the EC Recommendation but would like to make the following additional comments:

- The EC states that the "*[t]he use of the EEO standard enables NRAs to support the SMP operators' investments in NGA networks and provides incentives for innovation in NGA-based services.*"[19]
- The EC provides further guidance on the conditions that need to be present for it to be possible to make scale adjustments to the EEO costs only "*[w]here market entry or expansion has been frustrated in the past (as shown for example, by past behavioural findings) or where very low volumes of lines and their significantly limited geographic reach as compared to the SMP operator's NGA network indicate that objective economic conditions do not favour the acquisition of scale by alternative operators*".[20]

16 EC Recommendation, recital 64, quote also used by AKOS.

17 *Ibid*, recital 65, quote also used by AKOS.

18 AKOS methodology, p.7.

19 EC Recommendation, recital 64, quote omitted by AKOS.

20 *Ibid*, Annex ii, p.27.

- BEREC has also provided guidance on the trade-off between using EEO or reasonably efficient operator (REO)/adjusted EEO:[21]

> "*While the pure EEO test relies on static efficiency any adjustments to this approach taking into account transitory disadvantages of even efficient competitors in terms of e.g. lower scale and volumes/density of lines draws on the benefits of (an improved) dynamic efficiency in a long-run perspective. Therefore the REO/adjusted EEO approach is more suitable in a situation where dynamic efficiency is likely to overcompensate static inefficiencies resulting from (slightly) higher end user prices as the case may be, i.e. if alternative operators can be expected to grow and reach economies of scale comparable to the SMP operator's. Thus the focus of the REO/adjusted EEO approach lies on promoting sustainable competition and with this fostering infrastructure investment of alternative operators as well.*
>
> *The choice of EEO or REO/adjusted EEO requires an in-depth analyses of the aspects mentioned (e.g. cost structure of the relevant value-added level, market stage etc.), and the targeted scenario (e.g. retail price level, diversity of services – and their availability). The assumptions can differ depending on the underlying national market situation.*"[22]

The above, in our view, clarifies that:

- EEO is the level of efficiency that should be used in the test as a default option, as it provides the best support for SMP operators' investment in NGA networks (which is one of the main aims of the EC Recommendation, as discussed in Section 2.1)

- Adjusted EEO can *only* be used as a transitory measure when the current competitive intensity can be demonstrated to be low, and only as a specific measure to create conditions for market entry or acquisition of scale by alternative operators

- If cost standards that lead to higher downstream costs than EEO are used there is a risk of important negative consequences, such as:
  - higher end-user prices (as identified by BEREC)
  - reduced incentives for the SMP operator to invest in NGA networks and provide innovative services (as identified by the EC)

- If a NRA wishes to make scale adjustments to the EEO, it needs to conduct thorough and in-depth analysis to demonstrate that the conditions for doing so are present in the market. It cannot just start from the supposition that this is the case, without actually demonstrating it.

Furthermore, the EC has made it clear that an EEO test refers to the downstream arm of the SMP operator, which implies that the cost structure of that SMP operator needs to form the basis of the

21 BEREC also makes reference to the REO (reasonably efficient operator), which is a standard that some NRAs use in sector-specific *ex-ante* margin-squeeze tests and that is similar to the adjusted EEO but that can also include additional modifications beyond for scale (e.g. to product or geographic scope, network architecture). See the BEREC guidance for further definitions.

22 BEREC Guidance, p.31.

test. If adjustments are used (such adjustments being contingent on a demonstration that they are necessary, as discussed above) then they should be only for scale and not to e.g. scope or business model (e.g. buy/lease instead of build).

Analysys Mason suggestion: EEO should be used as the basis for the test. If any adjustments are made they should only be for differences in scale. NRAs must demonstrate that the conditions for making such adjustments exist before they deviate from the standard EEO option.

2.2.3 Inclusion of other wholesale inputs from SMP operator

Summary of AKOS's position

AKOS provides a categorisation of cost inputs which it also "re-arranges" into a "cost-stack". This cost stack includes the following items:

- Upstream costs:
  - regulated NGA wholesale inputs from SMP operator
- Downstream costs:
  - other wholesale inputs from SMP operator
  - other wholesale inputs from third parties (e.g. content)
  - own network and content costs
  - network and content related opex
  - retail, sales, marketing and provisioning costs
  - business-related opex (overheads).

On the last page of its methodology document, AKOS provides some examples of the costs that can be included in each of the cost items listed above (see Figure 2.2 below).

Figure 2.2: Downstream costs examples provided by AKOS [Source: AKOS, 2016]

Downstream cost type	Example
Other wholesale inputs from SMP operator	Regional and/or national backhaul, dark fibre and co-location costs
Other wholesale inputs from third parties (e.g. content)	TV content, Internet peering and transit fees, mobile termination fees and dark fibre
Own network and content costs	Own duct and fibre assets, network equipment such as multi-service access nodes (MSANs), routers and servers
Network and content related opex	Technical staff costs, site rentals, power and air-conditioning costs
Retail, sale, marketing and provisioning costs	Marketing campaigns, sales commissions, customer activation, initial customer care, ongoing customer care
Business-related opex (overheads)	Executive directors, human resource, accounts

AKOS includes a downstream category which it calls "Other wholesale inputs from SMP operator" (see Figure 2.2). It states that this category could include, for example, regional and/or national backhaul, dark fibre and co-location costs.

Analysys Mason's comments

The inclusion of the category 'Other wholesale inputs from SMP operator' implies that the modelled downstream operator, which (as discussed in Section 2.2.1 above) should refer to the downstream arm of the operator with SMP in the upstream market,[23] would buy wholesale inputs from itself. The upstream arm would only include the wholesale inputs that are part of the regulated market (Market 3a and/or 3b). AKOS has, however, quoted "other wholesale inputs from the SMP operator" that are not part of these markets (e.g. regional and/or national backhaul and dark fibre).[24] These inputs would therefore not be part of the upstream arm but of the downstream arm. AKOS therefore implies that the downstream arm would buy (possibly non-regulated) wholesale inputs from itself, rather than produce the network components internally. This is clearly a *non-sequitur*.

In addition, if such wholesale inputs are used in the ERT they must clearly replace "Own network and content costs" and/or "Network and content related opex", as otherwise this would lead to double-counting. Notwithstanding the double-counting point, the use of wholesale *instead* of "own network costs" could potentially result in a distortion of the downstream costs. The prices of such wholesale inputs may or may not reflect the costs of the SMP operator (depending on the basis on which the prices for such services are set).[25] As a matter of principle, it would also be a deviation from the adjustments that the EC allows to be made to the EEO, even in a situation where AKOS can demonstrate that such adjustments need to be made. In fact the EC Recommendation only allows for adjustments to scale, whereas the use of wholesale inputs that the SMP operator does not *de facto* buy from itself would be an adjustment to technology choices and architecture.

Analysys Mason suggestion: AKOS should remove the reference to other wholesale inputs from the SMP operator as part of the upstream inputs.

2.2.4 Technical replicability

Summary of AKOS's position

AKOS describes technical replicability as follows:

"*In many cases, alternative operators will utilise wholesale services provided by the SMP operator. They will then add additional facilities, either provided via their own network infrastructure and/or*

23 We also note that several markets exist and that the SMP operator can differ from one geographic and / or product market to the next. For this reason it is difficult and confusing to talk about an SMP operator in general.

24 These inputs are therefore either not regulated at all or regulated in other product / geographic markets (where the SMP operator may, especially after the conclusion of AKOS market analysis of Markets 3a and 3b, be a different entity from the operator which has SMP on the market for which the ERT is a remedy).

25 It could be possible to use wholesale inputs as a proxy for the EEO costs, if the prices for these inputs are set on a cost-oriented basis (which would imply that they are regulated in other markets).

purchased from other third parties, in order to be able to technically replicate the SMP operator's own retail offer."[26]

Analysys Mason's comments

AKOS's description appears to suggest that technical replicability is dependent on additional facilities, not just upstream inputs. The reference to "Other wholesale inputs from SMP operator" (as discussed in Section 2.2.3 above) also appears to suggest that the SMP operator should be required to offer certain other wholesale inputs to the alternative operators. This would imply that the SMP operator, through a remedy imposed on a wholesale market, should be responsible for the access that alternative operators have to inputs from other wholesale (or self-supply) markets (some of which it may not even be active in, that have not been defined as susceptible to *ex-ante* regulation and/or where the SMP operator may be a different one). However, the EC Recommendation makes it clear that the technical replicability applies to the regulated wholesale input(s) only: "*provide access seekers with regulated wholesale inputs that allow the access seeker to effectively replicate technically new retail offers of the downstream retail arm of the SMP operator*" (underlining added for emphasis).[27]

AKOS therefore appears to confuse two different concepts:

- **Technical replicability:** the obligation that can be imposed on an SMP operator jointly with the ERT; as discussed above, this relates exclusively to the regulated wholesale inputs.
- **Technical replication:** when an access seeker uses a combination of the regulated upstream wholesale inputs and its own downstream activities to *de facto* replicate the technical characteristics of a retail offer of the SMP operator. An access seeker is responsible for its downstream activities (even if some of these activities are regulated in other product markets).

We note that, in the past, AKOS has attempted to extend regulation into non-regulated markets. In 2005, it attempted to link the mobile termination rates of Mobitel (the mobile subsidiary of Telekom Slovenije, which was later merged into Telekom Slovenije) to its retail on-net prices. In 2007, it attempted to do so again (on the same market), this time for both Mobitel and Si.mobil. In both cases the EC issued strongly worded comments to AKOS:

- 2005: "*The Commission would like to emphasise that the retail prices of Mobitel may not be price regulated on the basis of the finding of SMP at the wholesale market.*"[28]
- 2007: "*This approach would nevertheless result in retail regulation through a remedy imposed pursuant to market analysis on a wholesale market. […] The Commission reminds APEK that problems identified by APEK in this wholesale market should be remedied by the*

26 AKOS methodology, p.5.

27 EC Recommendation, point 11.

28 European Commission, *Case SI/2005/0276: wholesale markets for voice calls termination on individual mobile networks in Slovenia. Comments pursuant to Article 7(3) of Directive 2002/21/EC*, p.4. Available from: https://circabc.europa.eu/sd/a/e13f25c3-c9b4-4a4e-9e98-8ae1b6686ac9/final%20en.pdf

implementation of an effective price control mechanism ensuring cost-oriented level of Mobitel's and Si.mobil's termination rate at wholesale level."[29]

Analysys Mason suggestion: AKOS should make it clear that technical replicability refers only to the characteristics of the regulated wholesale input(s).

2.3 Key ERT parameters

This section looks at the key parameters of the ERT, as listed in Annex II of the EC Recommendation.

2.3.1 Relevant downstream costs

Summary of AKOS's position

AKOS states that it "*has taken the view that to ensure that economic replicability is and/or remains a realistic prospect, the downstream costs should be adjusted to reflect an operator with a market share as specified in section 3.1*".[30]

It states that this is done based on the need to ensure that "*economic replicability "is a realistic prospect'*"".[31]

Analysys Mason's comments

In Section 2.2.1 above we showed how NRAs are only allowed to make adjustments for scale to the downstream costs of the SMP operator (i.e. deviate from an EEO test) under certain conditions, and based on a thorough and detailed analysis. We first note that AKOS does not appear to have undertaken any such analysis. Its (implicit) conclusion that economic replicability is not already a realistic prospect today appears to be a pure assumption or prejudice, rather than the conclusion of any analysis.

We have conducted analysis which we believe:

- strongly refutes the notion that alternative operators in Slovenia cannot already replicate the fibre to the home (FTTH) retail offers of the SMP operator (which is currently Telekom Slovenije)
- demonstrates that the Slovenian market is generally among the more competitive in Europe.

This analysis, presented in Annex A, shows that:

- alternative operators are already capable of replicating Telekom Slovenije's NGA-based retail offers, including triple- and quadruple-play offers (see Annex A.1)

29 European Commission, *Case SI/2007/0591: voice call termination on individual mobile networks in Slovenia. Comments pursuant to Article 7(3) of Directive 2002/21/EC*, pp.3–4. Available from https://circabc.europa.eu/sd/a/971d1dc9-6cc2-4e21-a67f-c3cbdd8eb69a/SI_2007_0591%20Comment%20letter%20final%20Acte_EN%252bdate%20et%20nr.pdf

30 AKOS methodology, p.7.

31 *Ibid*, citation in original which refers to recital 65 of EC Recommendation.

- Slovenia's retail broadband market and the underlying wholesale access markets are competitive and that alternative operators (using their own infrastructure and/or wholesale access from Telekom Slovenije) have been able to build scale in the market (Annex A.2).

On the basis of this analysis, we do not see any historical evidence that alternative operators have been frustrated in their plans for market entry and/or. Furthermore, alternative operators are already able to replicate the SMP operator's NGA-based offers. Therefore, the conditions that the EC Recommendation imposes in order to make any adjustment for scale to the EEO cost standard do not appear to be met in the case of Slovenia.

We would also like to remind AKOS that the EC Recommendation and the BEREC Guidance clarify that there is a trade-off between:

- focusing on competition (in which case the EC Recommendation allows scale adjustments) and
- fostering investment on NGA networks by the SMP operator (for which the EEO standard is more suitable).

This is discussed further in Section 2.2.1.

In Annex A.3 we discuss the development of NGA and FTTH coverage in Slovenia, and show how there appears to be a need for further incentivisation of NGA coverage. AKOS should also keep this objective in mind when deciding which cost standard to use.

Figure 2.3 summarises the position taken by the five European NRAs that have introduced ERTs. Three of them (Malta, Spain and Sweden) have used EEO tests, while Luxembourg and the UK have chosen a different approach. Below we further analyse these two decisions in order to understand the considerations made by these NRAs and to what extent they can apply to Slovenia.

Figure 2.3: Summary of how NRAs that have introduced ERTs have treated downstream costs

Country	Test used	Rationale	EC comment
Luxembourg	Similarly efficient operator: has the same basic costs as the SMP operator but does not enjoy the same economies of scale and scope	The Luxembourg market is characterised by large differences in market share between the SMP operator and the alternative operators	Adjustment for scale is warranted given the market structure and the historical development of the market
Malta	Equally efficient operator	Avoid giving false signals to potential access seekers Support investment in FTTH by GO (the SMP operator) There is a strong price constraint in the retail market due to Melita (a competing cable operator with a similar market share to GO)	No comment

Country	Test used	Rationale	EC comment
Spain	Equally efficient operator	Alternative operators have a sufficiently large base of broadband customers, and so it is not necessary to adjust for scale when calculating costs	No comment
Sweden	Equally efficient operator	Conditions for deviating from EEO not fulfilled (based on analysis of SMP and alternative operator market shares)	No comment
UK	Adjusted EEO	Ensure that BT cannot foreclose the superfast broadband market in a phase of transition from basic to superfast broadband	No comment

Figure 2.4 shows the *retail* market shares of the SMP operator in the five countries described in Figure 2.3, plus Slovenia, while Figure 2.5 shows the *wholesale* market shares for the same countries. The figures:

- highlight that the retail and wholesale market shares of the current SMP operator in Slovenia are lower than those of the SMP operators in Spain and Sweden where the NRAs found that the conditions for deviating from the EEO were not fulfilled
- provide a clear rationale for the Luxembourg NRA's decision to deviate from EEO given the high retail (and wholesale) market shares of the SMP operator.

Figure 2.4: Share of retail broadband market held by SMP operators in the five EU Member States that have introduced ERTs, plus Slovenia [Source: Analysys Mason Research, 2016]

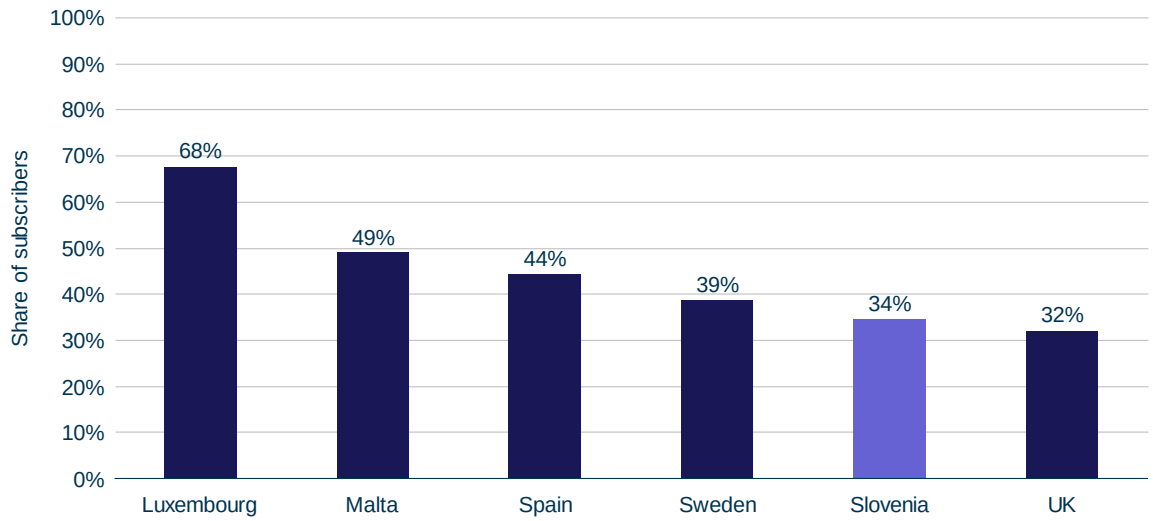
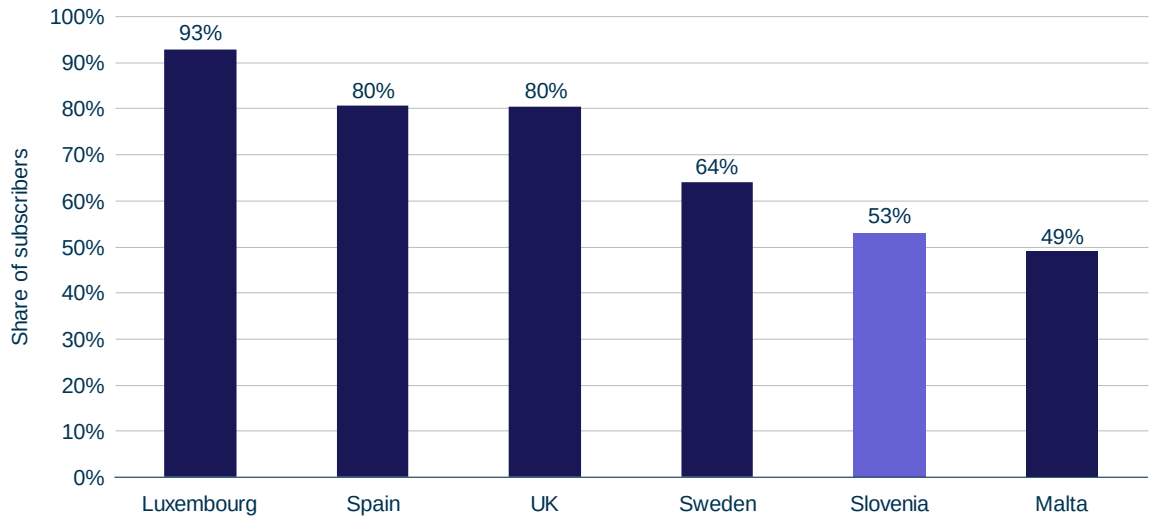


Figure 2.5: Share of retail broadband lines supplied that is over the SMP operator's network in the five EU Member States that have introduced ERTs, plus Slovenia (proxy of wholesale market share) [Source: Analysys Mason Research, 2016; PTS, 2014]



Note: The figure for Sweden relates to June 2014.

The conclusion of the UK regulator, Ofcom, that an adjusted EEO approach should be used, was based on a detailed analysis (for example, it dedicated 18 pages of a 2014 VULA[32] Consultation paper[33] to this issue). Among other things, the analysis considered UK-specific evidence such as:

- Competition in the UK was mainly focused on standard (copper-based) broadband products. Superfast broadband was at an early stage of development, and there was a risk that BT could strengthen its market position in this transition phase

- The only practical way for alternative operators to supply NGA-based broadband was to purchase VULA products from BT due to high barriers to entry. The only other substantial competitive network was that of Virgin (a cable operator) which had substantially lower coverage than BT

- BT was strengthening its market position in the specific superfast broadband market segment. It was "*winning a substantial share of VULA-based retail superfast broadband subscribers, achieving approximately 72% of the new VULA connections supplied by Openreach in Q1 2014*. […] *This has resulted in BT currently retailing nearly 80% of all VULA connections*".[34] Ofcom

32 VULA = virtual unbundled local access.

33 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 June 2014, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

34 *Ibid*, paragraph 3.61.

also concluded that "*BT's retail share of superfast broadband subscribers in 2016/17 could still be higher than it has achieved in relation to the retail broadband market as a whole*".[35]

It appears clear that these conditions do not apply in Slovenia.

In summary, our analysis shows that AKOS's choice of making scale adjustments to the EEO appears to be:

- based on a prejudice and not on any form of analysis
- without justification as the EC's requirements for making such scale adjustments are clearly not fulfilled
- in direct contravention of one of the main objectives of the EC Recommendation, which is to provide better incentives for the SMP operator to invest in NGA networks
- inconsistent with the positions taken by other European NRAs that have introduced ERTs.

Analysys Mason suggestion: AKOS should conduct an EEO test, as the conditions for deviating from this default position are clearly not fulfilled for Slovenia.

Updated AKOS position and Analysys Mason comments

AKOS has in its market analysis and draft decision changed its position on this issue. It has acknowledged that the conditions for using a REO standard are not in place and that a EEO standard should be used. It however introduces a provision that allows it to use other sources of information and test a REO if it considers the EEO data provided from Telekom Slovenije not to comply with the requirements of the input data for the ERT model. This provision introduces:

- What appears to be a fundamental misunderstanding from AKOS' side: a hypothetical lack of suitable data from Telekom Slovenije may warrant the use of data from other sources as a proxy for EEO but it does not warrant a punitive change in cost standard from EEO to REO. AKOS appears to conflate the data source with the cost standard.

- Some arbitrariness from AKOS side as to when data supplied by Telekom Slovenije is not considered compliant with the requirements of AKOS ERT model especially considering that AKOS has not provided any detailed guidelines for the format of the data it wants to use.

2.3.2 Relevant cost standard

Summary of AKOS's position

AKOS confirms that a LRIC+ cost standard should be used, which it defines as "*pure incremental costs […] marked up to cover a reasonable proportion of common costs also related to the*

35 *Ibid*, paragraph 3.68.

downstream activities".[36] It furthermore clarifies that the underlying cost base should reflect the historical costs of the SMP operator.

Analysys Mason's comments

We generally agree with the position taken by AKOS as described in this section.

However, we would like to comment on certain items that are not explicitly addressed by AKOS. In particular:

- The use of a long-run incremental cost (LRIC) model requires the identification of an increment, which AKOS has not considered (although its reference to "pure incremental" costs suggests a "small" increment, as discussed further below)
- AKOS offers no definition of what it considers to be the "*reasonable proportion of common costs*".

Below, we consider both of these points, which we consider to be interrelated. We believe that this discussion highlights the need for consistency between the selection of the increment, the reasonable proportion of common (and shared) costs, and the choice of the retail products to be tested and the level of aggregation of the test (as discussed further in Section 2.3.4).

Before considering these issues, we set out definitions of LRIC, LRAIC and pure LRIC.

BEREC defines **LRIC** as:

> "*the cost of producing a specific additional increment of a given service in the long run (the period over which all costs are variable) assuming at least one other increment is produced. It includes all the directly assignable variable economic costs of a specific increment of service, which is usually less than the whole service. In principle, there are an infinite number of different sized increment that could be measured. However, these increments can effectively be grouped into three different categories: 1. a small change in the volume of a particular service; 2. the addition of a whole service; or 3. the addition of a whole group of services.*"[37]

BEREC also provides a definition of another cost standard, long-run average incremental cost (**LRAIC**):

> "*a form of LRIC where the increment is a whole group of services. In the context of telecommunications, LRAIC has often been used to set interconnection charges with the increments usually defined as the whole group of services using the core network. These services (PSTN, leased lines, etc.) include those provided by the operator with significant market power, as well as those of interconnecting operators. The costs of the network*

36 AKOS methodology, p.7.

37 BEREC Guidance, p.54.

providing this wider group of services are then divided by all traffic to produce the average incremental cost."[37]

This concept is also concisely illustrated by the 2009 EC Recommendation on fixed and mobile termination rates, which introduced the concept of pure LRIC for wholesale call termination. That Recommendation defined the process by which **pure LRIC** for that specific service should be calculated:

"*The relevant incremental costs (i.e. avoidable costs) of the wholesale call termination service are the difference between the total long-run costs of an operator providing its full range of services and the total long-run costs of that operator not providing a wholesale call termination service to third parties.*

A distinction needs to be made between traffic-related costs and non-traffic-related costs to ensure the appropriate attribution of those costs. The non-traffic-related costs should be disregarded for the purpose of calculating wholesale termination rates. From the traffic-related costs only those costs which would be avoided in the absence of a wholesale call termination service being provided should be allocated to the relevant termination increment. These avoidable costs may be calculated by allocating traffic-related costs first to services other than wholesale call termination (e.g. call origination, data services, IPTV, etc.) with only the residual traffic-related costs being allocated to the wholesale voice call termination service."[38]

The pure incremental cost of a specific service should, as highlighted above, be equal to only the additional cost of providing that specific service, on the assumption that the operator already provides all other services. The pure incremental cost would not include the cost of items that are shared with other increments. As an example, if the increment is defined as being one flagship product, then the costs of core routers or backhaul fibre cables/trenches would typically not be incremental (unless their cost would scale with the specific increment). Similar discussions apply to retail costs; it is unlikely that the number of retail staff, stores operated or advertising scale with a single flagship product. The incremental cost of that flagship product for these items would therefore be zero.

The above highlights how one or more appropriate increments need to be defined in order to calculate LRIC costs. The ERT is a remedy that relates specifically to flagship products provided over NGA networks (see Sections 0.0.0 and 2.3.4 below). It is therefore reasonable to assume that those flagship products are the increments that should be looked at.

This is also recognised by BEREC: in a response to comments from TDC on its consultation on the guidance document, it clarified that the distinction between LRIC and LRAIC is based on the level

38 European Commission, *Commission Recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC)*, Annex, available from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009H0396&from=EN.

of aggregation used in the test (see Section 2.3.4 for further discussion of aggregation levels).[39] In other words, if a test is conducted at an aggregate level and considering all retail products or bundles then LRAIC(+) is the appropriate cost standard, whereas if it is conducted for only the most relevant retail products (flagship products), either product by product or on an aggregated basis, then the LRIC(+) cost standard should be used.[40]

We believe that the above clearly highlights how the increment may vary, depending on whether the flagship products are analysed:

- *on a product-by-product basis*, in which case each product should be the increment
- *on an aggregated basis*, in which case the set of services included in the aggregate should be the increment.

BEREC also explicitly recognises the need to only recover incremental costs from specific products: "*the allocation of joint costs is highly relevant for any cost standard used (e.g. access lines can be used by voice telephony services or broadband services or both at the same time). Therefore allocation keys have to ensure that all costs [efficiently] incurred are recovered across all services and at least the incremental cost by each service.*"[41]

It should be noted that BEREC refers to joint costs and not to common costs or overheads as the costs that should be recovered from individual products. BEREC also highlights how the existing *ex-ante* margin-squeeze tests used by some NRAs "*use a lower cost standard when assessing the product-by-product than compared to that used in assessing the replicability of the aggregation of all products.*" It also notes that "*[t]his approach provides some pricing flexibility at the product level while ensuring that the overall "portfolio" is replicable*".[42]

AKOS does not make any reference to the size of the "reasonable share" of common costs that is to be allocated. Both the EC Recommendation and the BEREC Guidance are also silent on this specific topic.

We have analysed the approach taken by NRAs which have already introduced ERTs to the cost standard used (both in terms of increment and the treatment of common costs).

The NRAs in the UK and Sweden highlight the need to define increments that are consistent with the configuration of the test:

- Ofcom (the **UK**) discusses different options for what it calls output increments. These include a total broadband approach (aggregate test of both standard and superfast broadband products),

39 BEREC, *Report on the BEREC public consultation on document "Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)"*, 5 December 2014, p.10. Available from: http://www.berec.europa.eu/eng/document_register/subject_matter/berec/reports/4786-report-on-the-berec-public-consultation-on-document-8220guidance-on-the-regulatory-accounting-approach-to-the-economic-replicability-test-ie-ex-antesector-specific-margin-squeeze-tests

40 This is clarified in table 1 in Section 6.2 of the BEREC Guidance.

41 BEREC Guidance, p.32 (highlights in original).

42 *Ibid*, p.25.

total fibre approach (entire portfolio of bundles that use VULA, the relevant wholesale input) and individual product or product group approach. It further clarifies a test done on the individual product level (as opposed to the fibre portfolio level) means "*the use of a narrower output increment* [which] *requires the removal of costs that are incremental to the fibre portfolio but are common across individual products, i.e. individual product LRICs include fewer costs than the fibre portfolio LRIC*".[43]

- PTS (**Sweden**) clarifies that in an LRIC model only the incremental costs for a specific product are calculated and that if there is a common production of multiple products then no shared costs are allocated to the individual product.[44]

The decisions of the NRAs in **Malta**, **Luxembourg** and **Spain** do not contain any detailed discussions on the increment used and so do not allow us to understand how these NRAs approached the issue. At the time of writing, the Spanish NRA had not yet published any details of its reasoning on this topic.

When it comes to the reasonable share of common costs:[45]

- The NRAs in **Luxembourg** and **Malta** have implemented so-called equi-proportional mark-ups (EPMUs), which are a standard method used in regulatory cost models, although they have not provided any specific motivation for this choice.

- Ofcom, the **UK** NRA, has also implemented EPMU using as a driver either the number of customers, the number of products or the revenue. However, Ofcom made it clear that prescribing the level of common costs that BT would need to recover from each individual retail product would have been disproportionate, whereas an EPMU-based approach is suitable when conducting a wide aggregate test.[46]

- PTS, the regulator in **Sweden**, has identified the LRIC (with the relevant product as the increment, and no shared or common costs allocated) cost standard as a floor for the amount of costs to be allocated to a product and the fully distributed cost (FDC) standard as a ceiling. It has further identified the difference between the two as the sum of the shared and common costs that can theoretically be allocated to a product. It thereafter adopted a "pragmatic approach" for estimating the reasonable share of common and shared costs of allocating 50% of the difference

43 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, paragraph 5.135, p.112, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

44 PTS, *Beslut om fastställande av företag med betydande inflytande på marknaden för lokalt tillträde till nätinfrastruktur (marknad 3a)*, 19 February 2015 (corrected on 20 March 2015), 11-9306, pp.12–14, available in Swedish from https://www.pts.se/upload/Beslut/Internet/2015/11-9306-rattelse-beslut-lokalt-tilltrade-150320.pdf.

45 Among other things, the Spanish NRA will decide on the reasonable share in a separate proceeding.

46 See, for example, Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

between the FDC and the LRIC.[47] It should be noted that PTS's decision was taken in the context of a definition of product-by-product tests for a limited number of flagship products.

The positions taken above by Ofcom and PTS, as well as the BEREC Guidance, highlight how the reasonable share of common (and shared) costs needs to be defined consistently with the overall design of the test. In particular, the share must be defined consistently with the definition of increments (as also discussed in this section) but also with the level of aggregation in the test (as discussed further in Section 2.3.4). An EPMU approach is likely to be disproportionate and severely limit the SMP operator's pricing flexibility, especially for a product-by-product test as AKOS wants to perform.

Analysys Mason suggestion: AKOS should construct its model in accordance with the LRIC+ methodology using only the flagship products as the increment. AKOS should also devise an appropriate definition for the reasonable share of common costs that are to be covered as part of the test (which should be less than EPMU). Both of these definitions should be consistent with the approach used regarding the retail products to be tested and the aggregation level of the test, to ensure that the SMP operator has sufficient pricing flexibility.

Updated AKOS position and Analysys Mason comments

AKOS has not offered any clarifications with regards to cost standards and increments.

2.3.3 Relevant regulated wholesale inputs and the relevant reference prices

Summary of AKOS's position

AKOS intends to use the most relevant regulated wholesale input(s) used or expected to be used by access seekers. It acknowledges that different products can be used in different parts of the country (due to the network characteristics of the SMP operator), and that the ERT model will need to take this into account. It further clarifies that the ERT will be based on the relevant reference wholesale prices, which should be equivalent to those that the SMP operator charges to its own retail arm.

AKOS further acknowledges that the (upstream) NGA wholesale inputs can only be defined once its ongoing market analysis has been finalised, but that they could include, for example:

- unbundled fibre to the home
- bitstream utilising very-high-bitrate digital subscriber line (VDSL) technology
- bitstream utilising fibre technology
- bitstream utilising data over cable service interface specification (DOCSIS) technology
- bitstream utilising fixed-wireless access technology (such as long-term evolution (LTE)).

47 PTS, *Beslut om fastställande av företag med betydande inflytande på marknaden för lokalt tillträde till nätinfrastruktur (marknad 3a)*, 19 February 2015 (corrected on 20 March 2015), 11-9306, pp.12–14, available in Swedish from https://www.pts.se/upload/Beslut/Internet/2015/11-9306-rattelse-beslut-lokalt-tilltrade-150320.pdf.

Analysys Mason's comments

We generally agree with the approach proposed by AKOS. However, we note that AKOS makes no reference to volume discounts or long-term access pricing agreements between the SMP operator and access seekers, whereas the EC Recommendation explicitly states that such pricing models should be given due weight.[48] Pricing flexibility is in fact one of the main objectives of the EC Recommendation.

Analysys Mason suggestion: AKOS should ensure that its ERT takes due account of possible flexible wholesale pricing schemes.

Updated AKOS position and Analysys Mason comments

AKOS has, in its market analysis and draft decison, identified the following most relevant regulated NGA wholesale inputs on which the ERT should apply on the following wholesale inputs:

- Market 3a:
  - virtual unbundled local access (VULA) to the shortened copper loops;
  - virtual unbundled local access (VULA) to the copper network upgraded with vectoring technology;
  - unbundled access to fibre local loop in point-to-point (P2P) network;
  - virtual unbundled local access (VULA) to a passive optical network (PON) in point-multipoint (P2MP) network;

- Market 3b:[49]
  - bitstream access on NGA copper network (VDSL technology and advanced technology);
  - bitstream access on optical fibre network (FTTH technology);

AKOS states that a separate ERT should be applied for each of the above wholesale inputs and that the model is applied uniformly to the Slovenian territory and national market.

We have the following comments:

- AKOS suggestion to conduct the test on both market 3a and market 3b is in direct violation of the EC Recommendation which states that the test should only be conducted at one wholesale layer which may be passive, active, non-physical or virtual:

  "*NRAs should identify the most relevant regulated inputs used or expected to be used by access seekers at the NGA-based wholesale layer that is likely to be prevalent within the timeframe of the current market review period in view of the SMP operator's rollout plans, chosen network topologies and take-up of wholesale offers.*

48 See, for example, point 49 of the EC Recommendation.

49 The products on market 3b should be tested only in settlements that are not considered competitive (159 settlements out of 6036 are not regulated)

Such an input may consist of an active input, a passive input or a non-physical or virtual input offering equivalent functionalities to a passive input."[50]

- In this case, we would (without having conducted any analysis) assume that the most likely demanded services could be:
  - Fibre-unbundling or VULA GPON in more urban areas (that are more likely to be covered by FTTH)
  - Bitstream on FTTC/VDSL networks that are more likely to be in less urban areas

- AKOS has identified multiple wholesale inputs on each of market 3a and 3b. These inputs refer to different geographies as Telekom Slovenije uses different network architectures across the country. Testing multiple inputs therefore appears consistent with the EC Recommendation.[51] It does however not appear consistent with reality or with the EC Recommendation to conduct each of the tests nationally *if* each wholesale product is only available in a restricted geographic area.

- The first wholesale input identified by AKOS on market 3a does not appear to be an NGA input.

2.3.4 Relevant retail products

Summary of AKOS's position

AKOS considers that "*the relevant retail products are all of those offered by the SMP operator that utilise one or more of the relevant NGA-based regulated wholesale inputs*".[52]

It further states that "*[w]here a relevant retail product is contained within a product bundle (for example, double or triple play products), then the ERT must be carried out separately on both the relevant retail product sold in isolation and also with it sold as part of each applicable bundle*."[53]

Analysys Mason's comments

AKOS's conclusion that *all* retail offers (based on NGA wholesale inputs) are to be considered as flagship products is clearly in direct contravention of both the letter and the spirit of the EC Recommendation. In multiple places, the EC Recommendation very explicitly makes it clear that only a sub-set of products can be considered as flagship products:

50 EC Recommendation, p.27

51 The EC states that *"If the SMP operator's network characteristics and the demand for wholesale offers vary greatly throughout the territory of a Member State, the NRA should assess the feasibility of differentiating the most relevant NGA-based regulated wholesale layer per geographic area and adapt the test accordingly."* EC Recommendation, p.27-28

52 AKOS methodology, p.8.

53 *Ibid*.

- "*The NRA need not to run the test for each and every new retail offer but only in relation to flagship products to be identified by the NRA.*"[54]

- "*The design of the test, applying […] only for flagship products*".[55]

BEREC makes the same point:

- "*ERT is lighter, and according to the Recommendation would be applied only on the most relevant NGA wholesale and flagship products and therefore on a limited scope of NGA products.*"[56]

- "*[T]he Recommendation foresees that NRAs would (only) assess the most relevant retail products – the so-called 'flagship products'*"[57]

Furthermore, both the EC Recommendation and the BEREC Guidance lay out principles for selecting the flagship products:

- "*NRAs should identify flagship products on the basis of their current and forward-looking market observations, in particular taking account of their relevance for current and future competition. This should include an assessment of retail market shares in terms of the volume and value of products based on NGA regulated wholesale inputs and, where available, advertising expenditure.*"[58]

- "*[T]he product that generates the highest revenue share or the one with the highest market share. Other criteria to select the flagship products might be possible e.g. advertising costs as suggested by the Recommendation, customer growth, relative gross net additions, or relative advertising spend*".[57]

We note that AKOS does not appear to intend to conduct any such analysis. Again, this appears to be in clear contravention of the EC Recommendation.

We also understand that AKOS intends to conduct tests on a product-by-product basis.[59] During a meeting with Telekom Slovenije (which Analysys Mason also attended), AKOS's representatives expressed the view that this was prescribed by the EC Recommendation. However, we note that BEREC does not appear to share this conclusion: "*The Recommendation is silent on the level of*

54 Recital 66.

55 Recital 67.

56 BEREC, *Report on the BEREC public consultation on document "Guidance on the regulatory accounting approach to the economic replicability test (i.e. ex-ante/sector specific margin squeeze tests)"*, 5 December 2014, p.10. Available from: http://www.berec.europa.eu/eng/document_register/subject_matter/berec/reports/4786-report-on-the-berec-public-consultation-on-document-8220guidance-on-the-regulatory-accounting-approach-to-the-economic-replicability-test-ie-ex-antesector-specific-margin-squeeze-tests

57 BEREC Guidance, p.35.

58 EC Recommendation, p.28 (Annex II).

59 This is not entirely obvious from its methodology document, but it becomes clear when examining the pre-draft Excel model.

aggregation to undertake the ERT (e.g. for each flagship product individually or for a portfolio of flagship products identified)."

The BEREC Guidance also makes it clear that:[60]

- An aggregate approach provides efficiency benefits, as it allows the regulated operator more pricing flexibility thus allowing more competitive retail offers to be made available to the public.
- A product-by-product approach ensures that each product is replicable.
- If tests are conducted at a product-by-product level, it may be appropriate to use a lower cost standard. For example, this could be done by reducing the size of the increment and/or the share of common costs that are included. This is discussed further in Section 2.3.2.

Furthermore, BEREC makes it clear that the NRA should decide on the appropriate level of aggregation in light of the competition problems identified in the market.[61]

In our view, the key issue here is whether the competitors of the SMP operator can replicate the SMP operator's full product portfolio, or whether they need to focus on certain parts of that portfolio. Based on our experience, the products that are typically most difficult to replicate are:

- products that include pay-TV services, as it can often be difficult to gain access to premium content. In some markets, some specific types of content (often for the national football league) are extremely valuable and the rights to this content are acquired on an exclusive basis by vertically integrated pay-TV operators (e.g. BSkyB or BT in the UK, Telefónica in Spain)
- products that include mobile services.

However, these concerns do not seem to apply to the Slovenian market, as there are four operators offering the full range of services, including pay TV and mobile, each with its own proprietary network. This is discussed further elsewhere in this report (e.g. in Section 2.3.1 and Annex A). This would seem to indicate that an aggregate approach be more suitable for the Slovenian market.

Our conclusion is therefore that AKOS should appropriately analyse and define the flagship products for the Slovenian market and then conduct the test for an aggregate of those flagship products.

The conclusions above are also supported by our analysis of the decisions of other NRAs which have introduced ERTs, as summarised in Figure 2.6. In fact, no other NRA has implemented the combination that AKOS is suggesting, which is to define all NGA-based retail products as flagship products and conduct product-by-product tests. More typical implementations are to conduct either:

- an aggregate test for all flagship products (or even for all retail products)

60 BEREC Guidance, p.25.

61 BEREC Guidance, p.36.

- a product-by-product test for a limited set of products.

Figure 2.6: Approach taken by other NRAs to the definition of flagship products and aggregation level

Country	Definition of flagship products	Aggregation level of test
Luxembourg	Those retail products which, in descending order, represent a cumulative revenue share of 70% of all of the SMP operator's retail products Additionally, all products which on their own represent a revenue share of 10% will be included (if not already part of the 70%)	Product by product
Malta	As for Luxembourg, but based on subscriber base In addition, one standalone business and residential broadband product is also included (unless already captured)	Aggregate test supplemented by specific tests for standalone residential and business broadband products
Spain	Existing bundles that are marketed with at least one pay-TV or mobile service, and which individually represent more than a given percentage (to be set) of the total NGA connections New bundles can also be considered under certain (similar) conditions	Product by product
Sweden	A total of four products are tested, across: • two market segments with different competitive situations • the most relevant bundled product and standalone product	Product by product
UK	The entire fibre broadband portfolio	Aggregate-level test only

The implementation adopted in Luxembourg, involving product-by-product tests on a relatively widely defined set of flagship products, is closest to the approach suggested by AKOS.

However, when the EC commented on the ILR's draft decision, it:[62]

- highlighted how: "*the economic replicability test currently proposed by ILR would risk overly limiting the flexibility and amount to a de facto ex-ante price regulation*" and how this could be disproportionate

62 European Commission, *Commission decision concerning:*

– Case LU/2014/1633: Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location in Luxembourg

– Case LU/2014/1634: Wholesale broadband access in Luxembourg

– Case LU/2014/1637: Remedies in the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location and for wholesale broadband access – Economic Replicability Test

Comments pursuant to Article 7(3) of Directive 2002/21/EC1, pp.11–12.

Available from https://circabc.europa.eu/sd/a/02fcba4e-0623-47ab-bf17-6a1de586cf19/LU-2014-1633-1634-1637%20ADOPTED_publication_EN.pdf

- but concluded that the specific characteristics of the Luxembourg market (large differences in market share between the SMP operator and alternative operators with no significant development, and a lack of major constraints on the retail pricing of the SMP operator) could make such a stricter test appropriate for a transitional period.

The analysis that we have conducted (see Section 2.3.1 and Annex A) clearly shows how the structure and development of the Luxembourg market are markedly different from the situation in Slovenia.

In the UK, Ofcom justified its decision to apply a test at an aggregate level on the grounds that it "*affords BT an appropriate level of flexibility to decide how it recovers common costs across products.*"[63] In fact, Ofcom concluded that testing at the level of individual products or even groups of products would limit BT's flexibility to set differentiated prices for different products and respond to changes or differences in consumer demand and would therefore be "*disproportionate*".[64] The EC did not comment on the level of aggregation used in Ofcom's test.[65]

The Ofcom decision also highlights the need for consistency between the cost standard and increment used (see Section 2.3.2) and the level of aggregation. Ofcom, in fact, noted that specifying a certain approach to common cost recovery would reduce its flexibility in terms of where it recovers common costs, but that this risk was offset by the aggregated approach it used.[66]

The Maltese NRA, the MCA, initially proposed a fully aggregated test. In this case the EC did intervene and reminded the MCA that this approach could disadvantage access seekers which only compete with some flagship products, new entrants or small-scale access seekers.[67] The MCA subsequently amended its ERT so that it is carried out at an aggregate level, and separate tests are carried out for standalone business and residential broadband offers (which form part of the flagship products). It adopted this approach to ensure that it was possible for small-scale operators to enter the market.[68] However, we note that the Maltese market is very unusual, in that it only has two operators, incumbent telecoms operator GO and cable-operator Melita, each with its own network.

63 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, paragraph 5.140, p.114, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

64 *Ibid*, paragraph 5.127, p.110.

65 European Commission, *Commission Decision concerning Case UK/2015/1692: Wholesale local access at a fixed location in the United Kingdom – Remedies, Comments pursuant to Article 7(3) of Directive 2002/21/EC*, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/statement/EC_response_to_Draft_Statement.pdf.

66 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, p.91, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

67 European Commission, *Commission Decision concerning Case MT/2015/1803: Wholesale local access provided at a fixed location in Malta – modification of remedies, Comments pursuant to Article 7(3) of Directive 2002/21/EC*, available at https://circabc.europa.eu/webdav/CircaBC/CONNECT/e-cctf/Library/01%20-%20Commission%20Decisions/Commission%20Decisions%202015/MT-2015-1803%20Adopted_EN.pdf.

68 MCA, *Virtual unbundled access to fibre-to-the-home: Implementing the VULA Remedy*, Response to Consultation and Decision, 26 February 2016, MCA/D/16-2513, p.40, available from https://www.mca.org.mt/sites/default/files/attachments/decisions/2016/VULAdecisionFeb16.PDF.

The concerns regarding new entry that apply to the Maltese market are therefore very different from those that apply to the Slovenian market (as discussed above).

We also wish to note that we find AKOS's approach to products and bundles to be somewhat confusing. AKOS states that products should be tested both in isolation and as part of bundles. However, this raises several questions:

- What does AKOS mean by "a product" and "a bundle" and what is the difference between the two? The EC Recommendation clarifies that bundles are a type of flagship product: "*Flagship products are likely to be offered as a bundle*".[69]

- What does AKOS mean by testing products as part of bundles? In the past AKOS has chosen to split (the revenue and costs associated with) bundles into their components and conduct the test at that component level. However, BEREC has made it clear that tests should be conducted on the bundle.[70]

- What does AKOS mean by testing products in isolation? For example, it is very possible that certain products are not sold on a standalone basis but only as part of bundles. As stated above, the tests can then only be conducted at the bundle level.

Similarly, it is not clear to us what AKOS means by a product-by-product approach. For example, Telekom Slovenije's approach is to offer:

- different groups of bundles (e.g. TopSolo, TopTrio, Modri)

- different variants of these groups (e.g. TopTrio A, TopTrio B, TopTrio C, with different bandwidths, and different bundles of TV channels and voice minutes)

- additional options for these packages (e.g. extra set-top boxes, extra TV content).

It is not clear from AKOS's methodology document whether its definition of products/bundles refers to the first, second or third option above. (It goes without saying that the number of possible combinations increases the further down the list one goes.)

Taking into account the characteristics of the Slovenian market, it appears clear that triple-play is the most popular package group. Figure 2.7 shows the breakdown of all retail broadband products in Slovenia between single, dual, triple and quadruple play. It is taken from AKOS's latest quarterly report and shows that >50% of total broadband connections (likely even more when considering only NGA-based products) are triple-play. It would therefore, considering our discussion above, appear reasonable to define all NGA-based triple-play products as the flagship products and then conduct a test for these at an aggregate level.

69 EC Recommendation, Annex II.

70 BEREC Guidance p.36, section 4.4.

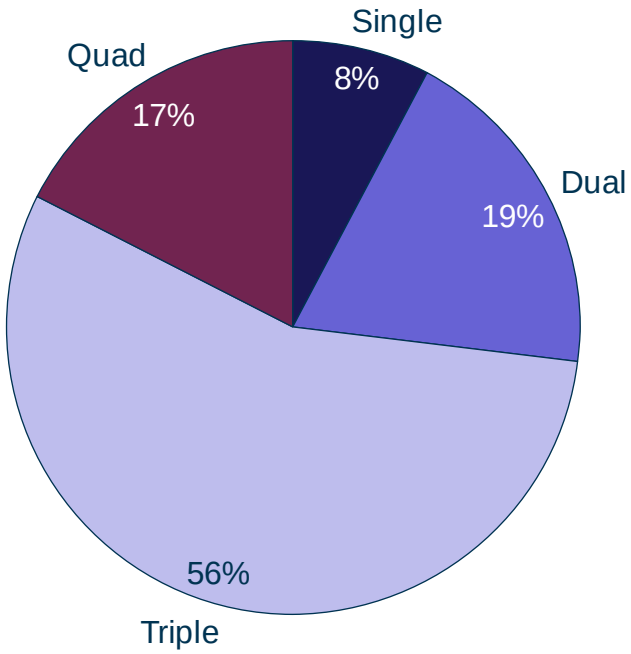


Figure 2.7: Breakdown of broadband subscriptions in Slovenia between single-, dual-, triple- and quad-play [Source: AKOS,2016]

Note: the numbers have been read of a chart in AKOS's quarterly report for Q1 2016 and may as such not be exact.

Analysys Mason suggestion: AKOS should define a limited set of flagship products through an analysis as described by the EC and BEREC. It should also reconsider the level of aggregation at which the test is undertaken. The appropriate level of aggregation, considering the characteristics of the Slovenian market, appears to be an aggregate test. We believe the appropriate approach for Slovenia to be to test an aggregate of all NGA-based triple-play products. There should also be consistency between the level of aggregation and the cost standard and increment used.

Updated AKOS position and Analysys Mason comments

AKOS has, in its market analysis and draft decision, significantly changed its approach to flagship products, identifying a much smaller set of products as being flagship products, stating that the following should be considered flagship products:

- Current offers of Telekom Slovenije
  - two leading retail products via NGA copper network (VDSL technology and advanced technology) in terms of market share (connections)
  - two leading retail products via NGA copper network (VDSL technology and advanced technology) in terms of value (revenue) of the product,
  - two leading retail products via optical fibre network (FTTH) in terms of market share (connections) and
  - two leading retail products via optical fibre network (FTTH) in terms of value (revenue) of the product.

- Products that have the potential to become important in the future:
  - those products that Telekom Slovenije forecasts could enter the above list in the next 12 months.
  - the two products on which Telekom Slovenije has the highest forecasted advertising spend

AKOS further clarifies that:

- market share is measured at the date of enforcement whereas revenues refer to the preceding 12-month period
- specific products are defined based on technology and upload/download speed but that other features such as TV schemes, mailboxes, etc are considered in aggregate on a specific product defined as above.

We consider AKOS modified position to be much more reasonable and in line with the Recommendation than the position taken in the draft ERT methodology issued in 2016. It is important to note that AKOS has now defined relatively narrow flagship products which, by definition, results in small increments (see Section 2.3.2).

2.3.5 Relevant time period

Summary of AKOS's position

The test is to be conducted as a discounted cashflow (DCF) test over the estimated average customer lifetime (which can vary from one product to another and needs to take due account of the specific characteristics of retail products provided over NGA networks).

The costs included in the test can be related to the upstream wholesale input, annualised downstream costs (with the annualisation to be done based on the assets used and their lifetime) or to downstream opex. The weighted average cost of capital (WACC) will be the one that AKOS applies to the SMP operator and determines from time to time (in separate proceedings).

Analysys Mason's comments

We agree with AKOS's position.

Analysys Mason suggestion: No comment.

2.3.6 Technical replicability

Summary of AKOS's position

AKOS clarifies that there are two pre-requisites that need to be in place the ERT to be "*an appropriate non-discrimination tool*":

- *Equivalence of inputs (EoI):* the SMP operator needs to provide the same regulated wholesale products at the same prices and using the same transaction process to its own retail arm and to third-party access seekers.

- *Technical replicability:* access seekers can technically replicate the retail offers of the downstream retail arm of the SMP operator. AKOS notes that the EC Recommendation allows the technical replicability tests to be conducted by either the SMP operator or the NRA. It also concludes that, in Slovenia, it should be the SMP operator which conducts the technical replicability test and then provides the NRA with the necessary documentation to demonstrate the results of the test.

Analysys Mason's comments

In Section 2.2.4 earlier we stated our belief that AKOS is misinterpreting the term technical replicability to refer to more than the characteristics of the regulated wholesale product supplied by the SMP operator *allowing* access seekers to replicate a retail offer. AKOS's position in this section appears to be that access seekers should be able to *de facto* technically replicate a retail offer. We have, however, already demonstrated that technical replicability only refers to the characteristics of the wholesale offer.

On the issue of technical replicability, below we provide summaries or quotations of the positions adopted by the five NRAs which have introduced ERTs.

- Luxembourg (ILR): "*The availability of proper wholesale products provided under non-discriminatory Equivalence of Input (EoI) obligations ensures the technical replicability of relevant retail products.*"[71]

- Malta (MCA): "*ensuring technical replicability of the SMP operator's retail offerings is of paramount importance in fulfilling the non-discrimination obligation imposed on GO. In its consultation document, the MCA stated that non-discrimination is effectively achieved when an access seeker is provided with the same technical and commercial information regarding the relevant regulated wholesale inputs in the same manner and in sufficient detail, subject to confidentiality, to that which is available to GO's retail arm.*"[72]

- Spain (CNMC): the SMP operator (Telefónica) is required to provide the necessary wholesale inputs that allow other operators to replicate Telefónica's retail offers.[73]

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71 Institut Luxembourgeois de Regulation, *Principles and methodology of the margin squeeze testing approach (economic replicability test) in Luxembourg*, 4 April 2014, p.4, section 2.4, available from http://www.ilr.public.lu/communications_electroniques/avis_consultations/avis_200613/Consultative_Document_Margin_Squeeze.pdf.

72 MCA, *Virtual unbundled access to fibre-to-the-home: Implementing the VULA Remedy*, Response to Consultation and Decision, 26 February 2016, MCA/D/16-2513, p.18, section 5.3, available from https://www.mca.org.mt/sites/default/files/attachments/decisions/2016/VULAdecisionFeb16.PDF.

73 CNMC, *Resolución por la cual se aprueba la definición y análisis del mercado de acceso local al por mayor facilitado en una ubicación fija y los mercados de acceso de banda ancha al por mayor, la designación de operadores con poder significativo de mercado y la imposición de obligaciones específicas, y se acuerda su*

- Sweden (PTS): the SMP operator (TeliaSonera) is obliged to demonstrate (via a technical replicability test) that the retail products it offers can be produced with the wholesale products that it supplies to third-party access seekers.[74]

- UK (Ofcom): "*We are satisfied that these regulated wholesale inputs, which have been carefully developed to ensure they are fit-for-purpose, ensure that competitors can technically replicate BT's NGA and CGA-based retail offerings.*"[75]

The positions of these five NRAs further clarify that the technical replicability remedy refers only to the characteristics of the wholesale product and not to any other inputs.

Analysys Mason suggestion: AKOS should clarify that the technical replicability obligation applies only to the characteristics of the regulated wholesale offers.

2.4 Who will carry out the "official" tests?

Summary of AKOS's position

The SMP operator should populate the model developed by AKOS and forward the populated model (along with associated documentation) to AKOS. This should be done for each retail product. AKOS will make a version of the model available to alternative operators, so that they can gather and provide evidence of situations in which an ERT result appears not to be correct.

AKOS can also carry out further ERTs on its own initiative or in response to submissions made by operators.

Analysys Mason's comments

We have already commented on the definition of flagship products and on the level of aggregation that AKOS intends to use (see Section 2.3.4). AKOS's intended approach of requiring the SMP operator to submit separate documentation for each product creates a significant administrative burden for the SMP operator.

notificacion a la comisión europea y al organismo de reguladores europeos de comunicaciones electrónicas, ANME/DTSA/2154/14/MERCADOS 3a 3b 4, III.4.7.2 Obligación de acceso, p.136. available in Spanish from https://www.cnmc.es/Portals/0/Ficheros/Telecomunicaciones/Resoluciones/2016/1603_Marzo/20160224_ANME_DTSA_2154_14_MERCADOS_3a_3b_4.pdf.

74 PTS, *Beslut om fastställande av företag med betydande inflytande på marknaden för lokal tillträde till nätinfrastruktur (marknad 3a)*, 19 February 2015 (corrected on 20 March 2015), 11-9306, p.189, available in Swedish from https://www.pts.se/upload/Beslut/Internet/2015/11-9306-rattelse-beslut-lokalt-tilltrade-150320.pdf

75 Ofcom, *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30, Volume 1: Statement on the markets, market power determinations and remedies*, 24 June 2014, point 10.195. p.214, available from http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/fixed-access-market-reviews-2014/statement-june-2014/volume1.pdf.

We question the usefulness of submissions from alternative operators on the ERT. They will not have any information that is not already available to the SMP operator and so it will be very difficult for them to provide any useful insights.

Analysys Mason suggestion: AKOS should review the documentation that needs to be submitted, to ensure that the administrative burden on the SMP operator is proportionate.

Updated AKOS position and Analysys Mason comment

AKOS has significantly changed its position on this topic. Telekom Slovenije will now provide requested input data to AKOS but AKOS will conduct the test.

If AKOS is in charge of conducting the test it is however important to ensure that:

- There is an obligation upon AKOS to actually undertake the test within given time periods
- The test is sufficiently transparent to Telekom Slovenije so as to ensure regulatory certainty and allow Telekom Slovenije to assess independently if an offer will pass the test without having to wait for AKOS.

2.5 When will an ERT need to be carried out?

Summary of AKOS's position

The SMP operator will need to undertake an initial set of ERT assessments for all relevant products and promotions once AKOS decision on the ERT has been implemented. Subsequently, the SMP operator will need to undertake new ERTs whenever any of the below listed trigger events are being planned or intended:

- launch of a new retail product
- downwards revision of the retail price
- upwards adjustment to the relevant wholesale price
- launch of a promotion involving a relevant retail product or a change to an existing promotion
- addition or amendments to any of the product components included in the retail products
- modifications to the quality of a product / service component included in a retail offer.

The ERTs need to be completed and the results sent to AKOS before any such event can go ahead.

Analysys Mason's comments

We understand AKOS's intention of undertaking the initial set of tests when the regulation enters into force. We however note that the current construct of the test (product-by-product tests for all NGA-based retail products with an LRAIC+ cost standard on the basis of what is de facto a REO test) leads to a significant possibility of the test not being passed by some retail products (which may be low volume) and whose prices were set before the introduction of the ERT. AKOS does not make

clear what would happen if this situation in which one or a few low volume products do not pass the test. The implication could potentially be that the SMP operator is forced to significantly reduce its wholesale prices (despite these wholesale inputs being used also for other retail positive margin retail products). We believe this to be a clear illustration of how AKOS's methodology (of testing all retail products individually without allowing flexibility on the recovery of shared costs) is entirely inappropriate, completely misaligned with the objectives of the EC Recommendation and could potentially lead to significant unintended consequences.

When it comes to the subsequent "trigger events", AKOS has concluded that all of the examples listed in the BEREC Guidance[76] should apply simultaneously in Slovenia. This approach appears disproportionate and is without precedent. The last three trigger events on AKOS's list appear particularly problematic, as:

- They severely limit the pricing flexibility and responsiveness of the SMP operator in the retail market

- They lack clarity; for example, what is "a modification to the quality of a product"? If an operator improves its network performance, has it changed the quality?

- Unlike the first three trigger events they make no reference to the direction of the modification. To illustrate this, consider the situation where:
  - an operator launches a new offer that includes a promotional discount of x%, and this offer, including the promotion, passes the ERT
  - the operator later decides to replace the promotional discount of x% with a y% promotional discount, where $y < x$. It is obvious that this offer with the new promotional discount will, all other things being equal, pass the ERT[77]

  The above example highlights how these three trigger events, as currently defined, do not serve any particular purpose but instead increases the administrative burden on the SMP operator (and on AKOS itself).

The first trigger event (launch of a new retail product) also requires such a product to have been defined as a flagship product.

The combination of product-by-product tests for all NGA-based retail products (see Section 2.3.5), separate tests for geographically differentiated wholesale products (see Section 2.3.3) and the abovementioned trigger event list is likely to lead to a situation in which the SMP operator needs to submit a substantial amount of tests to AKOS (we believe hundreds per year).

Below we summarise the approach taken by the NRAs that have already introduced ERTs to when ERTs need to be carried out:

76 BEREC Guidance, p.41.

77 Similar examples can be envisaged for amendments to the components or to their quality: for example, an operator can choose to reduce the number of TV channels it offers to new subscribers or reduce the bandwidth offered.

- Luxembourg (ILR): the SMP operator will need to conduct the test once a year in order to show that it has met its obligation for the previous year. The ERT will also need to be conducted when new *wholesale* products that are used for the flagship products are being introduced or if the SMP operator changes the prices of the *wholesale* product or makes technical modifications to it that have an impact on the margin. The test must also be conducted each time a retail product becomes a flagship product.

- Malta (MCA): the authority requires the SMP operator to carry out an ERT test in the following situations:

  - *"1. A new wholesale/retail product by GO considered as flagship;*
  - *2. A change in the retail price of an existing flagship product;*
  - *3. A change in the wholesale prices planned by GO;*
  - *4. A change in a non-price parameter of an existing flagship product;*
  - *5. An existing non-flagship product that starts to qualify as a flagship product;*
  - *6. An existing flagship product that no longer qualifies as part of the flagship products;*
  - *7. The annual ex-ante test."*[78]

- Spain (CNMC): the SMP operator (Telefónica) is required to submit all relevant information relative to new retail products one month before launch of such products. Alternatively when the SMP operator intends to increase its wholesale prices. This can be modified in the more detailed methodology decision to be implemented.[79]

- Sweden (PTS): the first test is to be conducted six months after the remedy has been introduced. After this, the test will only be conducted again when the SMP operator (TeliaSonera) makes *significant* changes to its wholesale or retail pricing, the content or quality of the products or when it introduces new wholesale or retail products.[80]

- UK (Ofcom): *"BT to provide the data necessary to monitor compliance with the proposed VULA margin condition to Ofcom every six months, with Ofcom conducting a high-level assessment of the margin at six monthly intervals"*.[81]

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78 MCA, *Virtual unbundled access to fibre-to-the-home: Implementing the VULA Remedy*, 26 February 2016, MCA/D/16-2513, Art. 7, p.61, available from https://www.mca.org.mt/sites/default/files/attachments/decisions/2016/VULAdecisionFeb16.PDF.

79 CNMC, *Resolución por la cual se aprueba la definición y análisis del mercado de acceso local al por mayor facilitado en una ubicación fija y los mercados de acceso de banda ancha al por mayor, la designación de operadores con poder significativo de mercado y la imposición de obligaciones específicas, y se acuerda su notificacion a la Comisión Europea y al Organismo de Reguladores Europeos de Comunicaciones Electrónicas (ORECE)*, anme/dtsa/2154/14/mercados 3a 3b 4, available in Spanish from https://www.cnmc.es/Portals/0/Ficheros/Telecomunicaciones/Resoluciones/2016/1603_Marzo/20160224_ANME_DTSA_2154_14_MERCADOS_3a_3b_4.pdf.

80 PTS, *Beslut om fastställande av företag med betydande inflytande på marknaden för lokalt tillträde till nätinfrastruktur (marknad 3a)*, 19 February 2015 (corrected on 20 March 2015), 11-9306, p.255, Section 6.12.6.9, available in Swedish from https://www.pts.se/upload/Beslut/Internet/2015/11-9306-rattelse-beslut-lokalt-tilltrade-150320.pdf.

81 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, 4.78 (p.67) and 4.94 (p.70), available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

The above highlights how all of the NRAs which have introduced ERTs have chosen a much shorter list of trigger events than the one suggested by AKOS. The only NRA that has proposed a list of trigger events with any similarity to that proposed by AKOS is the MCA in Malta. We believe the most proportionate approach to be to undertake backwards-looking tests every six or 12 months.

Analysys Mason suggestion: AKOS should ensure that its approach to the process of conducting the test does not lead to unintended consequences such as the need to reduce wholesale prices because one small retail product does not pass the test (which is possible under the current definition). It should also conduct a proper review of the trigger events to ensure that the administrative burden on the SMP operator (and itself) is proportionate, rather than copy the list of examples provided by BEREC. A switch to regular interval test (e.g. every six months) appears more appropriate.

Updated AKOS position and Analysys Mason comments

AKOS new position is that the following count as trigger events:

Figure 2.8: AKOS proposed trigger events and Analysys Mason comments [Source: Analysys Mason, 2017]

AKOS position	Analysys Mason comment
Publication of an amended NGA (wholesale) reference offer In this case, only the current flagship products (those with the highest subscriber or revenue market share in the preceding 12 months) will be tested	No comment
Prior to launch of a new retail offer or modification of offers that are estimated to be or potentially become important (by market share, revenues or based on advertising spend). In this case Telekom Slovenije will need to submit information to AKOS at least 30 days ahead of launch including 12-month market share and revenue forecasts.	It should be made clear that this does not lead to a general obligation on Telekom Slovenije to submit all new retail products to AKOS for approval prior to launch. Any such (implicit or explicit) obligation would in fact be a severe restriction of Telekom Slovenije's retail pricing flexibility. This obligation *de facto* limits the pricing flexibility for Telekom Slovenije on its most important products as it may not be allowed to launch new promotions or make minor pricing adjustments on its most important products without giving AKOS a 30-day advance notice. Such advance notice does not appear aligned with the pace and structure of the retail market where promotions are continuously launched and modified. It would appear more reasonable to agree standardised promotion allowances that Telekom Slovenije cannot exceed in a given period but leave freedom for Telekom Slovenije to act within those set boundaries.
When a retail product that was not at launch estimated to become a flagship product has seen the highest growth in the preceding 3 months and therefore becomes a flagship product.	this case of flagship product was not identified by AKOS as a flagship product in its section 8.4.3.1.4. of the market 3a consultation. It is therefore not clear if it can be considered as a flagship product.

AKOS position	Analysys Mason comment
Telekom Slovenije will have to notify AKOS of such cases within 8 days of the current month.	Growth can be measured in different ways and the measurement needs to be defined by AKOS upfront. The most reasonable measure appears to be absolute subscriber/revenue growth (percentage growth is not meaningful as a product growing from 1 to 8 connections will have grown by 700% but this does not mean that it has become important). The obligation to provide such data within 8 days appears impractical and practically unfeasible as it often takes more than 8 days to close a financial month for reporting purposes.

The new proposed list of trigger events appears much more reasonable than the previously used one.

2.6 How will an ERT be carried out?

Summary of AKOS's position

AKOS describes a series of steps that should be undertaken each time "a relevant trigger event has been identified" in order to conduct the ERT. These include:

- SMP operator to provide a description of the product or bundle, its components and characteristics (including average usage)
- SMP operator to assess and document the technical replicability
- SMP operator to assess and document the most relevant NGA wholesale input(s)
- SMP operator to populate AKOS's ERT model for the specific offer
- SMP operator to produce documentation
- SMP operator to submit documentation and a copy of the populated ERT model to AKOS.

AKOS foresees a tacit approval mechanism, under which the SMP operator may "implement the trigger event" seven working days after submission to AKOS, unless AKOS has raised any objections. AKOS also retains the right to raise objections after the seven working days.

Analysys Mason's comments

We agree with the overall approach suggested by AKOS. However, we note that AKOS's ongoing right to raise objections seems to invalidate the tacit approval concept. In theory, AKOS could simply choose not to review the documentation received and then raise an objection later. In this way, through its own actions and without any fault on the part of the SMP operator, AKOS could create a situation which significantly damages the SMP operator, for example if it has to withdraw or modify retail products that have already been launched. We suggest that this right to raise objections should be removed or modified so that AKOS cannot raise objections that are related to material that was already available (i.e. it can only raise objections if new facts are brought to the

table). It may also be appropriate to extend the deadline somewhat in order to ensure that AKOS is able to conduct reviews as required within the seven-day windows (especially considering the frequency and amounts of tests that will be required under its proposed methodology as discussed in Section 2.5).

Analysys Mason suggestion: AKOS should not be allowed to retain a right to raise objections once the period of seven working days has elapsed if that objection is related to material already available.

Updated AKOS position and Analysys Mason comments

AKOS now, as discussed in Section 2.4, believes that it should be the party conducting the test. It describes a series of steps that should be undertaken each time "a relevant trigger event has been identified" in order to conduct the ERT. These include:

- SMP operator to provide data and information for flagship products to AKOS
- AKOS will begin with a preliminary ERT based on information obtained to identify the appropriate difference between retail and wholesale prices and verify the economic replicability
- AKOS will request the SMP to provide the data on audited sales (downstream) costs for the previous financial year, arising from separated accounts according to the LRIC methodology
- SMP is free to set up prices for local access service at a fixed location to NGA networks, as long as the obligation of replicability is considered

We note that the tacit approval mechanism is now no longer applied. This, together with a lack of an obligation upon AKOS to conduct its analysis within a given timeframe, provides significant regulatory uncertainty.

2.7 Reporting structure

Summary of AKOS's position

AKOS describes what information the SMP operator should provide it with each time an ERT is conducted. This includes:

- Documentation that is, in AKOS's view, not confidential to the SMP operator
  - a summary page with a predefined content
  - the characteristics of the retail product or product bundle
  - technical replicability assessment
  - assessment of relevant regulated NGA wholesale inputs and their reference prices
  - the output sheet of AKOS's ERT model
- Documentation that is, in AKOS's view, confidential to the SMP operator
  - a fully populated version of AKOS's ERT model.

Analysys Mason's comments

Overall, the information requested by AKOS appears reasonable. However, it is unclear which sheet AKOS means when it refers to the "output sheet" of its ERT model. We have assumed that AKOS is referring to the sheet called "O_Summary". However, there are many items on that sheet which, from our extensive experience of working with telecoms operators and NRAs, are typically considered as confidential and business secrets. These include:

- costs of customer premises equipment (CPE) and set-top boxes
- IPTV and VoD content costs
- cost of "final Internet access".

Analysys Mason suggestion: AKOS should ensure that the information it considers to be non-confidential is in fact non-confidential.

Updated AKOS position and Analysys Mason comment

AKOS now requests Telekom Slovenije to provide it with the following data that it will use to be able to conduct the test:

- Name,
- Technology,
- Upload and download speed,
- Other characteristics, such as various possibilities for TV schemes, telephony, etc.
- The criteria according to which it was selected as a flagship product

AKOS does not make any mention of what data will be made public.

We note that the data AKOS requests is not nearly sufficient for it to be able to conduct an ERT. It does e.g. not mention the following data that would be required:

- Revenues
- Take-up
- Traffic volumes (e.g. minutes)
- Offer specific costs (e.g. for content)

It is not clear to us how AKOS intends to conduct ERTs without access to such fundamental data.

3 The hypothetical competing operator

In §3 of its methodology document, AKOS provides an overview of the different parameters that should be used for what it calls the "hypothetical competing operator". In this section we go through AKOS's position and provide our comments on it. We also make reference to AKOS's pre-draft Excel model and review the consistency between the positions taken by AKOS and their actual implementation in the pre-draft model.

Updated AKOS position and Analysys Mason comment

AKOS makes no mention of hypothetical operators in its public consultation document. It has also, as discussed in Section 2.3.1 changed its position from REO to EEO which may make some of the considerations below obsolete. It is therefore not clear to us whether, and to what extent, AKOS intends to use the concepts below.

3.2 Size and scope

Summary of AKOS's position

AKOS has taken the view that the ERT model should reflect a hypothetical competing operator with a retail market share of 25%, offering the set of retail products discussed in Section 3.3 and potentially using the wholesale products described in Section 2.3.3.

Furthermore, AKOS considers that the hypothetical competitor owns a mobile network operator or has access to a suitable mobile virtual network operator (MVNO) arrangement. It also states that it intends to use its current Excel-based mobile termination rate model as the basis for the cost structure.

The model will be run for one retail product (or product bundle) at a time, but will be built to consider the demand from all of the retail products discussed in Section 3.3 as well as the wholesale products mentioned in Section 2.3.3, and it will also allow for additional core traffic from other services that the "competing operator would be expected to offer".

Analysys Mason's comments

Section 2.2.1 provided extensive discussion of AKOS's decision to deviate from the EEO test and instead introduce an adjustment for market share (i.e. for scale). However, we believe that AKOS's position in this section highlights how it is not only adjusting for market share but also *de facto* introducing a full REO test. The notion of defining the *scope* of a hypothetical competing operator

is a clear deviation from the EC Recommendation.[82] The scope of the EEO is, by definition, the same as the scope of the SMP operator.

The reference to the "competing operator" also being "expected to offer" a certain level of other core traffic also signals that AKOS intends to introduce modifications that go beyond scale. In particular, the words "expected to offer" introduce a certain level of arbitrariness ("expected" by whom?). If an EEO or adjusted EEO test is used, then additional core traffic should surely be that of the SMP operator (potentially adjusted for scale).

We note that AKOS's methodology document states that the model should be "populated" with traffic demand data generated by retail and wholesale products. However, the pre-draft version of the model is only populated with "retail traffic". Again, this appears to be a deviation from the adjusted EEO approach, as the SMP operator very likely offers both wholesale and retail services. For example, if the test is conducted for fibre unbundling products then the (hypothetical) downstream arm of the SMP operator will require backhaul and core networks to be dimensioned to carry both traffic for its own retail subscribers and traffic for wholesale broadband access (WBA) lines.

Analysys Mason suggestion: AKOS should align the scope and scale of the tested operator with that of the SMP operator.

Updated AKOS position and Analysys Mason comments

AKOS has now chosen to use the EEO standard, *de facto* aligning the size and scope of the tested operator with that of the (retail arm) of the SMP operator.

3.3 Retail products offered by the hypothetical competing operator

Summary of AKOS's position

AKOS intends to populate the ERT model with the retail broadband products and bundles currently offered by the SMP operator at the level of demand of the SMP operator in the most recent reporting period (thus reflecting the product mix of the SMP operator) but adjusted for market share.

The model will also include traffic uplifts to reflect the use of the core network for other retail purposes (for example, AKOS mentions leased lines for business customers). In order to reflect the additional traffic, AKOS plans to use the current Excel-based model for fixed termination rates, adjusted for the appropriate market share. It states that this reflects the overall traffic mix of the SMP operator.

82 The EC Recommendation, as discussed in Section 2.2.1, states that to test whether a SMP operator's own downstream retail arm could trade profitably on the basis of the upstream price charged to its competitors by its upstream arm, with potential adjustments for scale if certain conditions are met.

Analysys Mason's comments

As discussed in Section 3.2, AKOS's position in this context reveals another *de facto* deviation from the EEO or adjusted EEO test. In reality, the SMP operator offers not only broadband products but also a range of other products (mobile, PSTN, leased lines, etc.). In fact, the four largest fixed operators in Slovenia (in terms of retail market share) all offer a range of services (including mobile). Limiting the scope of the retail products offered by the hypothetical competing operator to just broadband products can therefore hardly be described as even "reasonable efficient".

We also note that the demand calculations in the pre-draft version of the model that we have received is not constructed around the level of demand of the SMP operator but around the level of demand of the overall market. The 'I_Demand' sheet of the model has, in Section 2, inputs for the overall market size and then, in Section 3, the product demand adjusted for the market share. The model is therefore clearly not reflecting the stated methodology.

In addition, we note that the demand part of the model is built around actual bundle-level average monthly consumption of voice minutes, gigabytes, TV channels (for IPTV) and movies (for video on demand (VoD)), which is then translated into peak-hour usage using a set of parameters. This is the typical approach used for voice traffic (which is generally billed at this metric so the information is collected), but in our experience it is not typically used for broadband, IPTV or VoD:

- Monthly broadband consumption is typically not measured as it is not billed (broadband tariffs are generally flat, not consumption based)
- IPTV is typically dimensioned for the entire network and not for a specific bundle (as the channels are multi-cast to all users)
- We have never seen a dimensioning of VoD on the basis of the number of movies watched.

We have commented further in Section 3.8 on the reasonability of using peak traffic to allocate costs but even if this method is used, AKOS's approach still appears overly complex (and difficult to update in future) and very difficult to reconcile with the EEO approach (or adjusted EEO). We simply do not see that there is any benefit in adding such complexity to the model. It would seem simpler (for all parties involved), as accurate and also more reflective of the EEO approach to just ask the SMP operator to provide its peak traffic parameters (in terms of Gbit/s in the peak hour per service).

Analysys Mason suggestion: AKOS should align the scope and scale of the tested operator with that of the SMP operator. The approach used for demand calculations for specific services should be modified so that it is based on the actual peak traffic usage of the SMP operator and not on overly complex and prescriptive bottom-up parameters that are not measured by typical operators.

Updated AKOS position and Analysys Mason comments

AKOS has now chosen to use the EEO standard, *de facto* aligning the retail scope of the tested operator with that of the (retail arm) of the SMP operator.

3.4 Wholesale products of the SMP operator used by the hypothetical competing operator

Summary of AKOS's position

The ERT model will be populated with a full set of fixed network wholesale products currently offered by the SMP operator that are used by at least one of the retail products or bundles (as defined in Section 3.3). The wholesale products will, in addition to the relevant NGA wholesale inputs, also contain all other wholesale products used to supply retail products and/or bundles.

Analysys Mason's comments

It is not clear to us what AKOS means when it states that the model will include "a full set of fixed network wholesale products", and that it will include a series of wholesale inputs in addition to the relevant NGA wholesale inputs.

The ERT is intended to function as a regulatory remedy in either Market 3a (wholesale local access provided at a fixed location) or Market 3b (wholesale central access provided at a fixed location for mass-market products) and only for NGA wholesale products. It therefore goes without saying (as already discussed in multiple places in this report, such as in Sections 2.1, 2.2.4 and 2.2.3) that the upstream wholesale inputs to the test must be the NGA wholesale products regulated in that/those market(s). Wholesale services that are not regulated or regulated on other markets should, if included in the test at all, be treated distinctly from these upstream inputs. It should be noted that the pre-draft version of the model only includes wholesale access inputs which are currently regulated under Markets 4 and 5 in Slovenia,[83] and so this definition problem only appears to apply to the methodology document.

The EC Recommendation also makes it clear that: "*NRAs should conduct only a single-level test, i.e. between the retail services and the most relevant NGA access input for the access seekers (for example fibre access at the cabinet, virtual unbundling)*".[84] It also states that if new NGA inputs are introduced that may in time become more prominent, then the ERT should be run with that input *instead*.

In this respect, we would also like to clarify that the rule about which wholesale products to use should be based on their actual (or expected) take-up by access seekers, not their usage by the SMP operator. In particular, it must be remembered that:

- the wholesale products identified in Market 3a are typically inputs to the wholesale inputs identified in Market 3b. For example, fibre unbundling (or copper unbundling) is a Market 3a product, and is an input to WBA (a Market 3b product).

83 AKOS's last market review was undertaken on the list of markets defined by the EC in 2007. This list has now been superseded and the markets that were formerly Markets 4 and 5 will be considered as Markets 3a and 3b in the next market review.

84 EC Recommendation, recital 67.

- there are occasions when wholesale inputs in one specific market are inputs to other wholesale inputs in the same market. As an example, a regional WBA product is a sub-set of a national WBA product.

From the SMP operator's point of view, therefore, it is therefore not possible to identify a one-to-one relationship between a specific retail product and a wholesale product.

In Section 2.3.3 of its methodology document, AKOS states that it intends to follow the EC's approach on this point. However, its suggested approach in this section of modelling all kinds of wholesale inputs clearly contravenes both the EC Recommendation and the principle it itself outlined.

We further note that in §2.3 of its methodology document AKOS acknowledges that the specific market situation in Slovenia is likely to lead to different wholesale products being used in different parts of the country. When the Swedish NRA encountered a similar problem, it decided to solve it by using an average national wholesale price rather than different tests for each input. We note, however, that neither this section of AKOS's methodology document nor the model make any allowance for the use of different wholesale products in different areas. It might be possible to run the AKOS model multiple times for different wholesale products. However, this appears to be inconsistent with the EC's recommended approach of conducting a single test (as described above) and could also dramatically increase the number of tests that need to be conducted by the SMP operator and reviewed by AKOS (especially given AKOS's intention to conduct product-by-product tests on all possible retail products (see Section 2.3.4), and the long list of "trigger events" it intends to use (see Section 2.5)).

Furthermore, we notice that the pre-draft model is built around a set of xDSL and FTTH wholesale products which can only be offered by Telekom Slovenije. This has been done despite AKOS's acknowledgement (see Section 0.0.0) that the relevant wholesale inputs can only be defined once its market review has been finalised, and those inputs could include a wide list of other technologies, such as bitstream over DOCSIS (i.e. over cable networks, presumably those of Telemach) or bitstream over LTE. This appears to suggest that AKOS has already made its decision, before undertaking its market analysis.

We would also like to point out that the list of wholesale products in the pre-draft model appears to be incomplete, and vastly underestimates the complexity of the wholesale offers of Telekom Slovenije (especially for WBA). For example, no reference is made to wholesale discounts, even though Telekom Slovenije currently has an obligation on WBA to reflect certain retail discounts on the wholesale side.

It should be noted that this complexity is largely the result of specific regulation introduced by AKOS itself.

Furthermore, as already stated in Section 0, the methodology and pre-draft model do not include any reference to flexible wholesale pricing mechanisms such as volume discounts.

Analysys Mason suggestion: The ERT should only include the most relevant regulated NGA wholesale products. The relevance should be based on actual or expected usage by alternative operators and not on any behaviour of the SMP operator. AKOS should consider using national averages for different wholesale products instead of applying different tests.

Updated AKOS position and Analysys Mason comments

See discussion in Section 2.3.3.

3.5 Wholesale inputs not sourced from the SMP operator

Summary of AKOS's position

The model will also be populated with additional wholesale inputs, which AKOS claims to be necessary for the hypothetical competing operator to achieve technical replicability. As examples, AKOS mentions TV content rights, Internet transit fees and potentially the cost of providing mobile services. The model will also be populated with the "*relevant reference price(s) that the hypothetical competing operator would be expected to pay*" based on the retail market share specified in §3.1 of AKOS's methodology document.

Analysys Mason's comments

AKOS refers to the need for the hypothetical competing operator to obtain wholesale inputs from sources other than the SMP operator in order to achieve technical replicability. As explained earlier in Section 2.2.4, we believe AKOS is misinterpreting the term technical replicability to refer to more than the characteristics of the regulated wholesale product supplied by the SMP operator.

All of the inputs described by AKOS in this section of its methodology document appear to be clear examples of downstream inputs and so should be treated in the same way as other network and commercial costs (as discussed later in Sections 3.8 and 3.9).

It should be made clear that AKOS does not, through SMP regulation in a specific wholesale market, have any power to regulate the cost items discussed in this section (even more so if such products are not provided by the SMP operator).

We also question how AKOS intends to assess how much a retail operator with a specific market share would be expected to pay for the items it has listed as examples. Such products are traded on a fully commercial basis and the prices tend to be regarded as confidential and sensitive. Furthermore, such negotiations (particularly for Internet transit and content, less so for MVNO access) are typically conducted on a group basis, not a national one. In this respect it is important to note that because two players in the market, Telemach and Si.mobil, are part of large international groups, they enjoy greater economies of scale and bargaining power on such products than Telekom Slovenije and T-2 do.

Analysys Mason suggestion: AKOS should remove any reference to technical replicability that is not strictly connected to the regulated wholesale products in the specific market where SMP has been found. The cost items discussed in this section should be treated jointly with network and commercial costs.

Updated AKOS position and Analysys Mason comments

AKOS continues to mention other wholesale costs from the SMP operator and from third parties as separate cost categories.

3.6 Average customer lifetime

Summary of AKOS's position

AKOS intends to use an average customer lifetime of 36 months as a default selection in the ERT. The basis for this conclusion is that the typical customer contract (commitment) period is 24 months, and so lifetime should be longer.

Analysys Mason's comments

AKOS has defined a customer lifetime of 36 months without taking any account of its own guidance (which is discussed in Section 2.3.5): "*the estimate of the average customer lifetime should take due account of differing characteristics and competitive conditions that could exist when comparing the provision of retail services over NGA networks compared to legacy networks.*"

It also appears to have reached this conclusion without conducting any analysis of actual churn levels and so is relying on preconceptions rather than real data.

Figure 3.1 below shows the average customer lifetime used by the NRAs that have already introduced ERTs. Two of the three NRAs for which the information is available use a lifetime of five years.

Figure 3.1: Average customer lifetime used by the NRAs that have already introduced ERTs

Country	Average customer lifetime used	Rationale
Luxembourg	Pre-filled in the model (which is not publicly available)	n/a
Malta	Five years	Calculated using actual data from the SMP operator and figure provides a better fit with the DCF approach used in the ERT model
Spain	To be announced by CNMC by 24 March 2017	n/a
Sweden	Three years	n/a

Country	Average customer lifetime used	Rationale
UK	Five years	The five-year figure reflected the experience in standard broadband of other major operators that purchase VULA from BT

Analysys Mason suggestion: AKOS should conduct analysis of actual churn rates on NGA retail products compared to basic broadband products before coming to any conclusion on the average customer lifetime.

Updated AKOS position and Analysys Mason comments

AKOS has not changed its position or provided any additional analysis or justification for its use of a 36-month period.

3.7 Product to be tested

Summary of AKOS's position

AKOS plans to incorporate a control panel in the ERT model to facilitate the selection of products (or bundles) and relevant NGA regulated wholesale inputs that need to be tested. The control panel should also allow for the addition of new retail products (through custom fields) and should allow the inclusion of the average revenue of a product and to specify different types of retail discounts (free installation, monthly discounts, vouchers, etc.).

Analysys Mason's comments

In Section 2.3.2 and 2.3.4 earlier we commented on the need to re-assess the level of aggregation (jointly with the definition of flagship products, increments and the reasonable share of common and shared costs).

AKOS's methodology document makes no reference to what revenue data to use in the ERT. A review of the pre-draft model indicates that AKOS intends to allow for out-of-bundle telephony revenue, but it does not make any allowance for a number of add-on revenue items (and costs) that are typically offered in the Slovenian market, such as:

- upgrades to TV content
- upgrades to bandwidths offered
- additional set-top boxes
- VoD services
- value-added services of different kinds.

However, the BEREC Guidance clarifies that "*all downstream revenues and attributable revenues to the bundle/standalone service should be considered in the assessment*".[85]

Figure 3.2 below outlines the choices made by the NRAs which have already introduced ERTs. All NRAs except the MCA (Malta) have decided to include the revenue from all bundled items. The MCA has decided to exclude a small sub-set of revenue (and cost) items that it considers premium.

Figure 3.2: Treatment of retail revenue by NRAs which have already introduced ERTs

Country	Retail revenue included
Luxembourg	All revenue, recurring and non-recurring, deriving from products/bundles tested
Malta	All revenue except for premium features such as HD TV, sports channels
Spain	*To be announced*
Sweden	Average historical revenue per user, including all revenue that is connected to the bundle (e.g. including add-on services such as pay per view, VoD, additional TV content not included in the basic package, e-books, music streaming)
UK	Revenue from all elements bundled with superfast packages

AKOS appears to want to use nominal prices in its model. Ofcom, however, highlights that it is difficult and can be inexact to use nominal prices instead of top-down revenue: "*the non-broadband elements (e.g. BT Cloud, virus-protection) are included as 'add-ons' and do not always have a readily identifiable price. As such, trying determine the 'price' of the superfast broadband component alone is difficult. This variable means that there is a risk that our VULA margin condition would be ineffective if we wrongly estimate the price of the superfast broadband component.*"[86]

We further note that AKOS intends to pre-define the revenue items and the types of promotions that the SMP operator will be allowed to use in the test. However, we do not consider that AKOS should be able to limit the types of pricing mechanisms and promotions that the SMP operator can engage in in the retail market, as this would limit its pricing flexibility. Allowing SMP operators (retail and wholesale) pricing flexibility is however one of the main objectives of the EC Recommendation (see Section 2.1). A potential intention of AOKS not to allow the SMP to use types of revenues or promotions that are different to those that it has pre-defined in the model this would therefore appear to be in direct conflict with the EC Recommendation. AKOS should therefore clarify that the model may need to be adapted if the SMP operator implements new types of revenues or promotions or alternatively find a more generic way to describe them (e.g. an average one-off or monthly value of the promotion or a generic revenue category called 'Other').

85 BEREC Guidance, p.36.

86 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 June 2014, point 5.85, available from http://stakeholders.ofcom.org.uk/binaries/consultations/VULA-margin/summary/VULA_Margin_Consultation.pdf.

Analysys Mason suggestion: AKOS should align the model with the appropriate level of aggregation of retail products. It should also ensure that the model can cater for all types of promotions and pricing structures of the SMP operator (and/or be adapted to do so) so as not to limit the pricing flexibility of the SMP operator in the future. All types of revenue tied to the bundles that are tested should be included. The most exact way to do this is to use revenue data provided by the SMP operator, rather than calculate it from nominal prices.

Updated AKOS position and Analysys Mason comments

AKOS has not clarified its position on these topics.

3.8 Own network infrastructure

Summary of AKOS's position

AKOS's model will be pre-populated to reflect the own network infrastructure of a hypothetical competing operator with a market share of 25%. AKOS will include the network infrastructure that it considers necessary for the hypothetical competing operator to provide technical replicability. This will typically include active and passive network elements for backhaul from the point of interconnect with the SMP operator's wholesale product up to the main Internet peering or transit points.

The infrastructure costs will include the network operating expenses and annualised capital costs. These will be estimated based on the costs of the SMP operator's own downstream business (using its reported results, if possible) and adjusted for the retail market share. Furthermore, AKOS indicates that, where needed, asset annualisation will be calculated on the basis of the price-tilted annuity formula.

Analysys Mason's comments

We note that AKOS again applies the confused definition of technical replicability that we have discussed at various points in this report (e.g. in Sections 2.2.4 and 2.3.6).

Our review of AKOS's model shows that the model, for network costs, is *de facto* a bottom-up model of a network of a hypothetical operator. We do however not believe the use of such a bottom-up model to be consistent with the EC Recommendation (even if it were to reflect the EEO cost standard). The EC Recommendation states that: "*NRAs should use the SMP operator's audited downstream costs, provided they are sufficiently disaggregated.*"[87] It does not foresee the use of any bottom-up model. The BEREC guidance does also not foresee the use of a bottom-up model for the downstream network costs. It should also be noted that AKOS has not requested the SMP operator

87 EC Recommendation, Annex II

to provide downstream costs for the flagship products. It is therefore not in the position to be able to verify whether these are sufficiently disaggregated or not.

The total costs derived through this bottom-up model are then allocated to the services on the basis of what can be described as a long-run *average* incremental cost (LRAIC) basis and not LRIC (see discussion in Section 2.3.2). In other words, the increment applied is the whole group of services that use the modelled network elements. This leads to a calculation of higher incremental costs than would be obtained if using the LRIC cost standard (with an increment consistent with the design of the test).

The allocation of costs to individual bundles is made on the basis of peak-hour traffic which is a common approach to use when allocating traffic in regulatory models between different types of services (e.g. between all voice, all broadband and all IPTV traffic). We are however not certain that it is appropriate to use when allocating traffic between different packages. The underlying costs are in fact not only driven by traffic but also by distances that need to be covered (for fibre connections) and number of sites that need to be inter-connected (and such costs will also not be incremental to the flagship or fibre-based products). There are thus multiple possible methods for allocating costs between individual bundles and it is not possible to say that one of these is correct and the others are not. AKOS has chosen to use then one that will allocate the highest costs to the fibre-based ones. We have done simulations based on the pre-draft model that indicate that a switch from traffic based to subscriber based allocation for broadband network costs would result in a 20% reduction of the costs allocated to a triple-play product with bandwidth between 30Mbit/s and 100Mbit/s (see Figure 3.3).

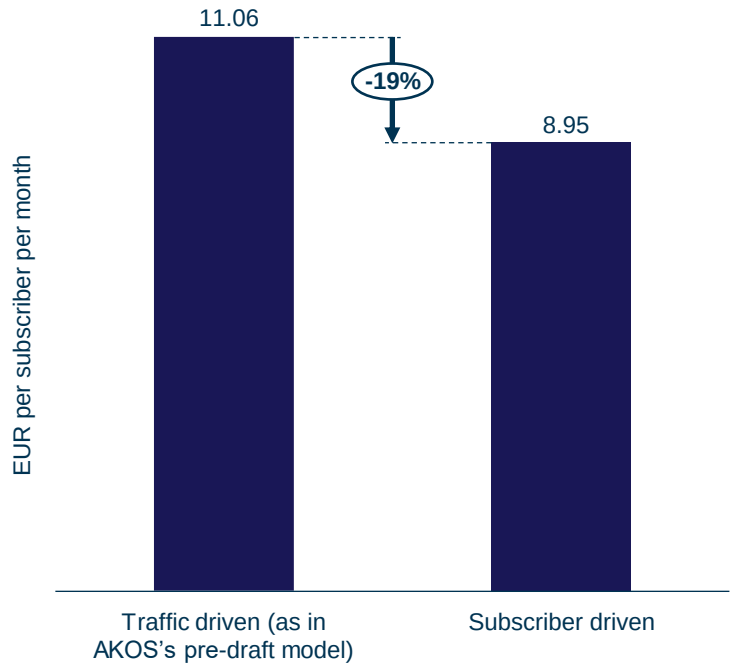


Figure 3.3: Illustration of impact of a switch from traffic-driven to subscriber-driven allocation on the broadband network costs allocated to a triple-play product with bandwidth between 30Mbit/s and 100Mbit/s [Source: Analysys Mason based on AKOS's pre-draft model,2016]

The methodology chosen by AKOS (regardless of the increment used) therefore risks to results in an overstatement of the costs allocated to fibre-based products which can potentially lead to a need to increase the retail prices for such products relative to the retail prices of the copper products. This

will hardly incentivise the take-up of fibre-based retail or wholesale products and would thus appear to be in conflict with the objectives of the EC Recommendation.

We would like to note that the current version of the model makes a number of assumptions that *de facto* result in a significant deviation from the adjusted EEO approach that AKOS defined in §2.3 of its methodology document. For example, in the scenario where the hypothetical competing operator interconnects with the SMP operator at a national level, the model allocates different costs to the core–core level from those it allocates when it interconnects with the SMP operator at the local or regional level. In the national-level scenario, the hypothetical competing operator only appears to own what the AKOS model defines as the "core–core" network and so it does not share any costs of the "core–core" routes with backhaul networks of different levels. This assumption is clearly not based on an EEO model adjusted for scale; rather, it is based on what network a greenfield operator only buying the wholesale service to serve its user base (i.e. something very far removed from the retail arm of the SMP operator) would build. Even worse, we would question whether AKOS's approach can even be considered reasonably efficient. There are three main operators competing with TS in the Slovenian market:

- All three have their own mobile networks (following the merger of Amis into Si.mobil) which share costs and routes with the core network
- Two (T-2 and Telemach) operate their own access networks (in some parts of the country) and thus by definition also operate backhaul networks (in those parts of the country) that share costs with their core network. T-2 also uses local loop unbundling (LLU) in some parts of the country and so also has a backhaul network in those areas
- The third (Amis) buys a combination of LLU and WBA from Telekom Slovenije and thus operates a backhaul network in those areas where it uses LLU.

AKOS assumed hypothetical competing operator therefore appears to be much less efficient (in terms of scope) than the three largest alternative operators existing in the market.

AKOS further expresses a desire for estimating the costs based on the costs for the SMP operator's own downstream business but adjusted for retail market share (as discussed in Sections 2.3.1 and 3.2). In this context we would like to note that the model makes a range of prescriptive assumptions (e.g. regarding the architecture, network topology and technologies/ protocols used) which make it difficult to use any data the SMP operator can provide. This difficulty arises not due to the level of disaggregation of data that the SMP operator can provide, but rather because of the design of AKOS's model.

We would also like to point out the inherent conflict between:

- AKOS's intention to base the model on the (historical) costs of the SMP operator (see Section 2.3.2), and
- its wish to use a price-tilted annuity depreciation formula.

The price-tilted annuity results in a change in the annuity value at the rate at which the (purchase) price of the asset is expected to vary.[88] In practice this results in:

- increasing annuities over time for items which have an increasing price trend (typically labour-intensive assets such as ducts or trenching)
- decreasing annuities over time for items which have a decreasing price trend (typically technology-intensive assets such as routers, switches, etc.).

The tilted annuity methodology is a useful and commonly used tool for regulatory cost models. However, it requires current-cost adjustments to be made to the asset base. This is e.g. clarified by BEREC: "*It incorporates a tilt which enables the calculation of annuities that evolve in line with asset price changes (this is therefore a current cost approach)*" (our underlining).[89] Annex B provides some numerical examples of the extent of the error that can arise when using a combination of tilted annuity and historical costs. To summarise, we believe that the use of tilted annuity with historical costs can lead to:

- false positives (i.e. false findings of a lack of replicability) for equipment with a negative price trend, as this approach artificially inflates the annualised cost

- false negatives (i.e. false findings of replicability) for equipment with a positive price trend, as this approach artificially deflates the annualised cost.

The extent of the risk of false positive or negative findings depends on factors such as:

- the difference between the historical and current costs, which is a function of:
  - the age of the estimates used
  - the size of the price trend

- the relative weight of the annualised capex (not the investment value) of items with different (negative or positive) price tilts. The more skewed this weight is towards items with a negative price trend, the larger the risk of false positives.

We have checked the second point above against the pre-draft version of AKOS's model. Figure 3.4 shows the total annualised network capex (excluding operating expenses) divided by the price tilt that is used in the model. It clearly shows that 57% of the annualised capex has a negative price tilt, compared to 33% with a positive tilt.

88 For further background see, for example, the BEREC Guidance, p.56.

89 *Ibid*.

Price tilt	Share of annualised capex
–5%	25%
–1%	32%
+/-0%	9%
+3%	33%

Note: further details of our calculations are provided in Annex B.

Figure 3.4: Share of annualised network capex per price tilt applied [Source: Analysys Mason based on AKOS ERT model v.0.25, 2016]

We recognise that AKOS's model has not yet been calibrated, and so at this stage our example is purely illustrative, but we still believe it demonstrates a real risk of false positives, due to AKOS's combination of historical costs and a current-cost depreciation methodology such as tilted annuity. Possible solutions to this problem could be to:

- use current costs with a price-tilted annuity
- use historical costs with a standard annuity (i.e. without a price tilt or with the price tilt set to 0).

Figure 3.4 lists the depreciation methods used by the other NRAs which have introduced ERTs. It is clear that none of the NRAs has chosen to use a tilted annuity approach. A more detailed explanation of the depreciation methods listed below is provided in Annex B.1.

Country	Depreciation method
Luxembourg	Standard annuity
Malta	Standard annuity
Spain	*To be announced*
Sweden	Not defined (taken from the SMP operator's accounts)
UK	Straight-line (current cost accounting (CCA)) method

Figure 3.5: Depreciation method used by NRAs which have introduced ERTs

Analysys Mason suggestion: AKOS should align its model from the currently used LRAIC+ model (with all core traffic as the increment) to a LRIC+ model (with an increment defined consistently with the level of aggregation of retail products) as it has itself defined in its methodology document. It should also ensure that only scale adjustments (if any adjustments at all) are made to the EEO costs, which means, for example, removing any changes to the cost base that derive from the interconnection level. The model should be built around the reporting structure and cost categorisation of the SMP operator and not on the basis of *ad-hoc* assumptions on the cost structure, scope or scale of the downstream operator. AKOS should also investigate the possibility of using cost data from the SMP operator before concluding on the need to build a bottom-up model. The approach used for cost allocation to individual bundles should be modified so that it is based on more appropriate cost allocation drivers than peak traffic. If peak traffic is used, then actual peak traffic usage of the SMP operator and not on overly complex and prescriptive bottom-up parameters that are not measured by typical operators. In addition, AKOS should use a consistent combination of on the one hand historical or current costs, and on the other hand the depreciation methodology.

Updated AKOS position and Analysys Mason comments

AKOS has now chosen to use the EEO standard and sourcing such cost data from the separated accounts of Telekom Slovenije. It has however not clarified the use of increments and LRIC+ vs. LRAIC+ cost standard. It has also not explicitly addressed depreciation methods and cost allocation methodologies although we would expect that the choice to use EEO standard based on Telekom Slovenije reporting clarifies that the depreciation and cost allocation choices made by Telekom Slovenije in its (already existing) separated accounts model will apply.

3.9 Retail costs and business-related operating costs (overheads)

Summary of AKOS's position

AKOS intends to pre-populate the model to reflect the retail costs and business operating costs (overheads) of a hypothetical competitor with a 25% market share. AKOS intends to estimate these costs based on the costs of the SMP operator's downstream business (using its latest reported results, if possible) and adjusted for market share. AKOS also highlights that these costs should be concentrated on the specific product (or bundle) being tested. It indicates that, where necessary, asset annualisation will be calculated on the basis of the price-tilted annuity formula.

AKOS also states that an SMP operator is permitted to replace the default values with specific inputs but that it must be able to justify these inputs.

Analysys Mason's comments

Earlier in this report (e.g. in Section 2.3.1) we have addressed AKOS's (in our view unjustified) intention to adjust downstream costs to a market share. We would also like to point out that the intended market-share adjustment appears to be very much in conflict with the aim of using inputs that are specific to a product or bundle and with the SMP operator adjusting these for a specific test. (The SMP operator will not know how to adjust such inputs for market share.)

AKOS's model treats the non-network downstream costs discussed in this section as pure inputs, and so it is not possible to understand whether the inputs should use a LRIC+ cost standard (and if so, which increment should be used). In Section 2.3.2 we discussed which cost standard should be used and what increment should be used for downstream costs.

It should be noted that AKOS has selected very specific cost categories to use in its model. These may be very different from the reporting structure used by the SMP operator, which may make it very difficult to populate the model. (It would not seem proportionate to suggest that the SMP operator changes its reporting structure and systems so as to accommodate AKOS view on how costs should be categorised.) Also, it should not matter what cost categories are used in the model; the crucial thing is that the relevant costs are captured.

We have already commented on the use of the tilted annuity formula for cost annualisation (in Section 3.8 above).

Analysys Mason suggestion: AKOS should align the model with the LRIC standard, with an increment that is consistent with the scope of the test (instead of the LRAIC standard which is currently used). The model should be built around the reporting structure and cost categorisation of the SMP operator. Furthermore, it should use a consistent combination of on the one hand historical or current costs, and on the other hand the depreciation methodology.

Updated AKOS position and Analysys Mason comments

AKOS has now chosen to use the EEO standard and sourcing such cost data from the separated accounts of Telekom Slovenije. It has however not clarified the use of increments and LRIC+ vs. LRAIC+ cost standard. It has also not explicitly addressed depreciation methods and cost allocation methodologies although we would expect that the choice to use EEO standard based on Telekom Slovenije reporting clarifies that the depreciation and cost allocation choices made by Telekom Slovenije in its (already existing) separated accounts model will apply.

4 Operation of AKOS's ERT model

In the previous version of this document this section commented on the AKOS draft ERT model at that time. That model has since been superseded and we have therefore decided to delete this section in order to avoid confusion.

5 Summary

In §5 of its methodology document, AKOS summarises the objective, definition and characteristics of its ERT. In this section we comment on whether the proposed methodology and model meet the stated objectives of the ERT according to the EC Recommendation, and highlight how the proposed main characteristics of the ERT (including those omitted by AKOS) should be amended to bring them in line with best practice as described in previous sections of this document.

5.1 Objective

Summary of AKOS's position

AKOS quotes two objectives of the ERT which that are stated in the EC Recommendation and which it considers to be the prime objectives:

> "*"to establish whether alternative access seekers can economically replicate a downstream offer provided by the SMP operator with the regulated wholesale input available, in cases where wholesale price regulation should not be imposed" [Recital 61]*
>
> *"to ensure, in combination with the other competitive safeguards introduced such as EoI, the technical replicability test, and a demonstrable retail price constraint resulting from a copper anchor or alternative infrastructures, that SMP operators do not abuse this pricing flexibility in order to exclude (potential) competitors from the market." [Recital 62]*"

Analysys Mason's comments

We would like to point out that the EC also recognised some other important objectives of the ERT (as opposed to *ex-ante* price regulation):

- to increase legal certainty and regulatory predictability[90]
- "*to allow those operators investing in NGA networks a certain degree of pricing flexibility to test price points and conduct appropriate penetration pricing*"[91] at the wholesale level but also at the retail level in order "*to foster penetration of very high-speed broadband services*".[92] This is based on the finding that there are demand uncertainties for NGA-based retail services and that SMP operators may need to "*use penetration pricing strategies in order to foster retail demand for such NGA-based retail services*".[93]

90 Recital 1 of the EC Recommendation.

91 Point 49 of the EC Recommendation.

92 *Ibid*.

93 Recital 62 of the EC Recommendation.

Furthermore, we believe that throughout this document we have demonstrated how AKOS's proposed implementation of the ERT does not respect the objectives set out by the EC or AKOS itself. AKOS has, for example:

- not taken any account of the objective to foster investment in NGA networks by the SMP operator, by arbitrarily and without any underlying analysis introducing scale adjustments to the EEO and even *de facto* also introducing adjustments to its scope and configuration
- not given any consideration to the competition problem in the market, and has imposed strict product-by-product tests for all NGA-based retail products of the SMP operator
- reduced regulatory certainty and increased the administrative burden on the SMP operator (and itself) by applying a very wide list of trigger events and retaining a right to object to submitted tests at any time.

Analysys Mason suggestion: AKOS should review its objectives for the ERT so that they are complete. It should also ensure that its actual implementation of the ERT reflects the objectives set out. Our view, as laid out in this document, is that AKOS methodology is currently overly skewed towards promoting competition and to a large extent ignores the other objectives, in particular the one related to fostering investment in NGA networks by the SMP operator.

Updated AKOS position and Analysys Mason comments

AKOS has decided to move from a REO to an EEO test. It has also decided to reduce the number of flagship products and trigger events to a much more reasonable set. Overall the new position appears much more in line with the objectives of the EC Recommendation.

5.2 Definition

Summary of AKOS's position

AKOS quotes the definition of the ERT as provided in Annex II of the EC Recommendation, that is: "*whether the margin between the retail price of the relevant retail products and the price of the relevant NGA-based regulated wholesale access inputs covers the incremental downstream costs and a reasonable percentage of common costs.*"

Analysys Mason's comments

AKOS correctly quotes from the Annex of the EC Recommendation. We note, however, that this is a highly selective quotation. For example, the EC provides a more complete definition in Recital 64 of the EC Recommendation:

> "*(64) NRAs should ensure that the margin between the retail price of the SMP operator and the price of the NGA wholesale input covers the incremental downstream costs and a*

reasonable percentage of common costs. Where wholesale price regulation for NGA wholesale inputs should not be imposed on the SMP operator when additional safeguards are implemented in accordance with this Recommendation, a lack of economic replicability can be demonstrated by showing that the SMP operator's own downstream retail arm could not trade profitably on the basis of the upstream price charged to its competitors by the upstream operating arm of the SMP operator ('equally efficient operator' (EEO) test). The use of the EEO standard enables NRAs to support the SMP operators' investments in NGA networks and provides incentives for innovation in NGA-based services.

(65) Where specific market circumstances apply, such as where market entry or expansion has been frustrated in the past, NRAs may make adjustments for scale to the SMP operator's costs, in order to ensure that economic replicability is a realistic prospect. In such cases, the reasonably efficient scale identified by the NRA should not go beyond that of a market structure with a sufficient number of qualifying operators to ensure effective competition.

(66) The NRA should set out and make public in advance in its adopted measure following a market analysis the procedure and parameters it will apply when running the ex ante economic replicability test. The NRA may run the test before the launch of a new retail offer by the SMP operator, e.g. if the NRA considers it appropriate to align the timing of the economic replicability test with the technical replicability test if also undertaken before launch. The NRA need not to run the test for each and every new retail offer but only in relation to flagship products to be identified by the NRA. An NRA may run the test at its own initiative, for example in the initial stages of the implementation of a measure that allows pricing flexibility on NGA networks, particularly where regulated wholesale access prices were imposed in the past, or to respond to changes in the structure of the market, for example as a result of technological developments.

(67) The economic replicability test set out by the NRA in advance should be adequately detailed and should include as a minimum a set of relevant parameters in order to ensure predictability and the necessary transparency for operators. NRAs should apply a LRIC+ model while taking into account the SMP operator's audited downstream costs and assess the margin earned between the most relevant retail products including broadband services (flagship products) and the regulated NGA access input most used, or identified, under a forward-looking approach, as the most relevant for delivering the retail products for the market review period in question. The design of the test, applying to the SMP operator's audited downstream costs and only for flagship products, aims to ensure that NGA investments and the effect of the recommended pricing flexibility are not hindered by this safeguard. In order to exclude cross subsidisation between different products in a bundle or portfolio, NRAs should conduct only a single-level test, i.e. between the retail services and the most relevant NGA access input for the access seekers (for example fibre access at the cabinet, virtual unbundling). However, a new NGA access input can in time become more prominent (for example fibre unbundling at the ODF) so the economic replicability test should be run with reference to this new input instead of the input initially most used. Should national competitive circumstances show a difference between geographic areas in terms of

the NGA access input used (for example in rural and densely populated areas) NRAs should vary the test based on specific inputs identified as the most relevant."

The BEREC Guidance also provides a more precise and longer definition of the ERT, in §2.1.1.

The combination of choices made by AKOS[94] lead to what we believe to be a disproportionate treatment of the SMP operator as its pricing freedom on both the retail and wholesale level and its freedom to choose how and from where to recover common costs are severely limited. Such treatment is also against basic economic theories for rational behaviour.

It should be noted that on a number of points the AKOS methodology and pre-draft model are in direct contravention of the definition as provided above. For example:

- The retail arm of the SMP operator should be the starting point, and adjustments for scale can only be made when certain circumstances have been proven. Adjustments that are not related to scale are not foreseen at all but are implemented by AKOS
- Only the incremental costs and a reasonable share of common costs should be covered. AKOS model instead assumes coverage of LRAIC with a large increment (all traffic in the core network) and an unknown share of common costs despite suggesting that each NGA product should be tested individually
- The test should not be run individually for each and every (NGA-based) retail offer of the SMP operator but only for a select subset (flagship products). This is discussed further elsewhere in this report (e.g. in Sections 2.3.4 and 3.7).

Analysys Mason suggestion: AKOS should ensure that its implementation of the ERT respects the definition provided by the EC. In particular, it should revisit its treatment of downstream costs to use a EEO standard and review its definition of flagship products.

Updated AKOS position and Analysys Mason comments

AKOS has decided to move from a REO to an EEO test and to reduce the number of flagship products to a much more reasonable set. It has however not addressed the issue of increments and the reasonable share of common costs (which need to be consistent with the level of aggregation).

5.3 Characteristics

Summary of AKOS's position

AKOS's methodology document provides a table with various characteristics of the ERT (see Figure 5.1 below).

94 product-by-product tests for all NGA-based retail products with an LRAIC+ cost standard on the basis of what is *de facto* a REO test

Analysys Mason's comments

Figure 5.1 contains our comments on the characteristics provided in AKOS's methodology document. Figure 5.2 then provides our comments on a number of key characteristics of the test that we consider sufficiently important that they should have been included in this summary section. In this case we have summarised AKOS's position based on material in other sections of its methodology document.

Figure 5.1: AKOS's own summary of its position on selected items, and Analysys Mason's comments on those positions [Source: AKOS, Analysys Mason, 2016]

Characteristic	AKOS's position	Summary of Analysys Mason's comments	Analysys Mason's position
Level of efficiency of the operator	REO/adjusted EEO based on a retail market share of 25% **Updated position: EEO**	The EC Recommendation does not foresee a REO test and only foresees an adjusted (for scale only) EEO in specific circumstances that need to be analysed and proven by the NRA. AKOS has conducted no such analysis. Our analysis strongly refutes the existence of such circumstances in the Slovenian market. This conclusion is confirmed by our analysis of decisions by NRAs which have already introduced ERTs.	EEO
Relevant cost standard	LRIC+ **Updated position: not addressed**	We agree with the overall cost standard but note that: • in the pre-draft model, AKOS is *de facto* applying a LRAIC cost standard (with all core traffic as the increment), not a LRIC one (and it has conducted no analysis on the appropriate increment) • AKOS undertakes no analysis of, and provides no guidance on, how large the "reasonable" share of common (and shared) costs is. The above parameters need to be set consistently with the level choice of retail products to be tested and the level of aggregation of the test.	LRIC+ with an increment and a reasonable share of common costs defined in accordance with the aggregation level of the test. The share of common costs should be less than EPMU
Depreciation method	Price-tilted annuity for assets annualised within the ERT model **Updated position: costs from audited accounts, depreciation methodology not explicitly addressed**	Price-tilted annuity is a current-cost depreciation methodology. Its use in combination with historical costs leads to a risk of either: • false positives (i.e. a false finding of not passing the ERT) • false negatives Our initial analysis indicates a higher risk of false positives than false negatives.	Standard annuities for assets annualised within the ERT model
Reasonable profit	A non-negative margin resulting from a dynamic multi-period DCF analysis **Updated position: not addressed**	n/a	Same as AKOS
Breakdown of retail costs	To the extent practical, estimated based on SMP operator's downstream costs	AKOS does not have any grounds for proposing market-share adjustments.	Estimated based on the SMP operator's downstream costs

Characteristic	AKOS's position	Summary of Analysys Mason's comments	Analysys Mason's position

	adjusted for a retail market share of 25%
	To be grouped under three main headings:
	• Customer acquisition
	  ○ marketing
	  ○ sales
	  ○ activation
	  ○ initial support
	• Customer management and retention
	  ○ invoicing/billing
	  ○ revenue collection
	  ○ ongoing customer care
	  ○ marketing
	• Contribution to central overheads
	  ○ licence fees
	  ○ central overheads
	Updated position: EEO from separated accounts of SMP operator
		The costs should be calculated according to the appropriate LRIC+ cost standard.
		The retail cost breakdown has been proposed by AKOS on an entirely outside-in basis, without any understanding of whether the SMP operator can provide data across those categories. It would appear to be disproportionate to force the SMP operator to change its reporting structure. Also it should not matter which cost categories are used in the model; the crucial thing is that the relevant costs are captured.
			(using LRIC+, as described above)
			The categorisation of costs should be based on the reporting systems of the SMP operator

Average user	Usage profile of an average customer of the relevant retail product, and thus the average revenues **Updated position: not addressed**	We agree with AKOS's statement in principle but note that this is not reflected in AKOS's pre-draft model (which omits a variety of revenue categories). The most exact way to include all revenue is to use revenue provided by the SMP operator and not calculate it from nominal prices.	Same as AKOS, but implemented based on actual revenue of the SMP operator
Relevant wholesale inputs	Each ERT on the most relevant regulated NGA wholesale input, and associated reference price.	We agree with AKOS that the model should be run for (only) the most relevant NGA wholesale inputs, but this should be reflected in the	Same as AKOS, but the model should only include the relevant NGA wholesale inputs

Characteristic	AKOS's position	Summary of Analysys Mason's comments	Analysys Mason's position
and relevant reference prices	Separate ERTs run for different regulated NGA wholesale inputs where necessary, such as where relevance changes with geography or geotype **Updated position: ERT on four (geographically differentiated) wholesale inputs on market 3a and two on market 3b.**	model which currently aims to include all wholesale inputs (including non-NGA wholesale inputs). The most relevant wholesale inputs need to be selected based on the behaviour of third-party access seekers, not of the SMP operator. We note that throughout its methodology document AKOS does not appropriately distinguish between the upstream inputs (the regulated wholesale inputs in the market(s) for which the ERT is a remedy) and other wholesale inputs (regulated in different markets, at times with different SMP operators, or not regulated at all). However, AKOS's model appears to treat this correctly. In line with the EC Recommendation, the model should also take account of flexible wholesale pricing mechanisms (such as volume discounts or existing wholesale promotions). AKOS should also consider whether it is necessary to run separate versions of the model for different NGA wholesale inputs. It could instead follow the Swedish approach of using a national average wholesale input. **Comments on updated position: conduct test on both market 3a and 3b is not consistent with the EC Recommendation**	and these should be selected based on the behaviour of access seekers. Prices should be based on the SMP operator's reference offers and taking into account flexible wholesale pricing agreements where relevant Different wholesale inputs in different geographies should be dealt with using national average inputs for the wholesale items **Update: only one of market 3a and 3b should be tested in each geographic area.**
Regulated wholesale costs	Based on SMP operator's reference offers	It is not clear to us what AKOS refers to in this category as the regulated wholesale inputs are dealt with in the previous row of the table	*Row of the table should be removed*
Non-regulated input costs (incl. own network costs)	To the extent practical, estimated based on SMP operator's downstream costs adjusted for retail market share of 25% **Updated position: EEO**	AKOS does not have any grounds for proposing market-share adjustments. The costs should be calculated according to the appropriate LRIC+ cost standard and increment. The NRA should also use the SMP operators downstream costs but AKOS has built a bottom-up model without requesting any information related to these AKOS has also *de facto* introduced changes to the scope and network configuration, not just to the scale. Such adjustments are not foreseen by the EC and should therefore be removed.	Estimated based on the SMP operator's downstream costs (using LRIC+, as described above)

Characteristic	AKOS's position	Summary of Analysys Mason's comments	Analysys Mason's position
Time period	36 months	AKOS should conduct proper analysis of average lifetimes before coming to any conclusion. This analysis should take due account of the specific characteristics of NGA-based products.	To be defined following analysis of actual churn rates for NGA products

Figure 5.2: Summary of AKOS's position on important items that were not in its summary of the ERT characteristics, and Analysys Mason's comments on those items [Source: Analysys Mason, 2016]

Characteristic	AKOS's position	Summary Analysys Mason comments	Analysys Mason position
Definition of flagship products	All retail products offered by the SMP operator that use one or more of the relevant NGA-based regulated wholesale inputs **Updated position: two most important VDSL and two most important FTTH products in terms of subscribers and revenues in last 12 months. Products that are expected to become the most important ones (based on Telekom Slovenije forecasts or on advertising spend) also to be tested. Possibility to test also products that have grown in last three months**	The EC Recommendation clearly specifies that only a subset of retail products should be tested. AKOS approach is unprecedented. Some other NRAs (e.g. Ofcom) have chosen to test all NGA-based offers, but in those cases they have performed an aggregated test (see next point), with the objective of ensuring flexibility for the SMP operator to recover common and shared costs. **Comments on updated position: more reasonable set of flagship products but increments and reasonable share of common costs need to be aligned with flagship product definition**	AKOS should appropriately analyse and define the flagship products for the Slovenian market. The flagship products are likely to be triple-play (>50% of all broadband connections in Slovenia)
Level of aggregation	Test of each retail product or bundle individually **Updated position: not explicit**	AKOS should consider conducting a more aggregate-level test in view of the competitive situation in the Slovenian market, where there are four competing operators which all offer a full bouquet of services (including pay TV and mobile).	Aggregate of the flagship products

Characteristic	AKOS's position	Summary Analysys Mason comments	Analysys Mason position
		AKOS furthermore needs to ensure consistency between the level of aggregation and the definition of the incremental downstream costs.	
Retail revenues to be considered	Nominal monthly fees and some out-of-bundle revenues	All types of revenue tied to the bundles that are tested should be included. The most exact way to do this is to use revenue data provided by the SMP operator, rather than calculate it from nominal prices. The categorisation of promotions and revenues in the test should furthermore not limit the retail pricing flexibility of the SMP operator.	Use revenue data from the SMP operator including all relevant retail revenues Ensure that the model can handle all types of potential new pricing or promotion types that can be introduced in the future (and/or ensure that it can be modified if necessary)
Technical replicability	The SMP operator needs to show that alternative operators can technically replicate the retail offers of the SMP operator	AKOS is misrepresenting the technical replicability test to encompass more than the wholesale inputs that are regulated. The SMP operator can, however, not have any responsibility for ensuring that alternative operators have access to other inputs than those regulated in the market where it has been found to have SMP.	The SMP operator needs to show that the wholesale inputs are configured in a way that allows access seekers to technically replicate the retail offers of the SMP operator
Trigger events	Initially, when the regulation is passed. The SMP operator will then need to undertake a new ERT whenever any of the following trigger events are being planned or intended: • launch of new retail product • downwards revision of the retail price • upwards adjustment to the relevant wholesale price • launch of a promotion involving a relevant retail product or a change to an existing promotion	We note that AKOS has taken the examples listed in the BEREC Guidance document and concluded that all of them should apply simultaneously in Slovenia. This clearly appears both disproportionate and without precedent. The current definition of trigger events does not appear to serve any particular purpose, but rather increases the administrative burden on the SMP operator and on AKOS itself. **Comments on updated position:** • **Telekom Slovenije's pricing flexibility on its largest offers may be restricted if it is not allowed to launch new promotions or make minor modifications to pricing without asking for permission 30 days in advance. Such advance notice does not appear aligned with the pace and structure of the retail market where promotions are continuously launched and modified. It would appear more reasonable to agree standardised promotion allowances that Telekom Slovenije cannot exceed in**	Depends on the level of aggregation, but the SMP operator should have flexibility to modify promotions and product configuration if this does not have a material impact on the ERT outcome Six-monthly intervals instead of at pre-defined trigger events (backwards-looking test for the previous six-month period) appears to be a more proportionate approach **Update: provide mechanism that allows Telekom Slovenije to make minor**

Characteristic	AKOS's position	Summary Analysys Mason comments	Analysys Mason position
	• addition or amendments to any of the product components included in the retail products • modifications to the quality of a product / service component included in a retail offer **Updated position:** • **Publication of an amended NGA (wholesale) reference offer** • **Prior to launch of a new retail offer or revision of an existing one that is estimated to be or become important (by market share, revenues or based on advertising spend).** • **When a retail product that was not at launch estimated to become a flagship product has seen the highest growth in the preceding 3 months and therefore becomes a flagship product.**	**a given period but leave freedom for Telekom Slovenije to act within those set boundaries.** • **it should be made clear that there is no general obligation on Telekom Slovenije to submit all new retail products to AKOS for approval prior to launch. Any such (implicit or explicit) obligation would in fact be a severe restriction of Telekom Slovenije's retail pricing flexibility** • **the last trigger event foreseen by AKOS does not appear to satisfy any of the flagship product criteria of AKOS** • **growth can be measured in different ways and the measurement needs to be defined by AKOS upfront. The most reasonable measure appears to be absolute subscriber/revenue growth** • **the obligation to provide data within 8 days appears impractical and practically unfeasible as it often takes more than 8 days to close a financial month for reporting purposes.**	**modifications to its retail pricing of most important offers as long as it acts within pre-set boundaries.**
Procedure for conducting the test	SMP operator should conduct the test and submit the results to AKOS. If AKOS does not request modifications within seven working days, there is a	AKOS's ongoing right to raise objections however seems to invalidate the tacit approval concept as it means that AKOS could, through its own actions, create a situation which significantly damages the SMP operator, for example if it has to withdraw or modify retail products that have already been launched. We furthermore see a high risk for AKOS not being able to conduct reviews as required within the seven-day	AKOS should not be allowed to raise objections after the deadline for the tacit approval The tacit approval deadline could be extended somewhat (e.g. to 15 days) in order to

Characteristic	AKOS's position	Summary Analysys Mason comments	Analysys Mason position
	tacit approval but AKOS retains the right to review again **Updated position: AKOS to conduct test based on data provided by Telekom Slovenije. No obligation on AKOS or tacit approval mechanism**	window especially considering the frequency and amounts of tests that will be required under its proposed methodology. **Comments on updated position: obligation upon AKOS to conduct test to be included. Important that test is transparent to Telekom Slovenije in order to ensure regulatory certainty.**	ensure that AKOS has sufficient time to review the submitted ERTs.

Annex A Analysis of the competitive situation in Slovenia compared to other EU Member States

A.1 Comparison of retail products and pricing between Telekom Slovenije and its main competitors

Figure A.1 compares the pricing and other main characteristics of three FTTH triple-play bundles of Telekom Slovenije (TopTrio A, TopTrio B and TopTrio C) with equivalent offers (i.e. with similar bandwidths, number of TV channels, etc.) from its three main competitors in the market. Triple-play products are typically more difficult to replicate than single-play broadband or dual-play broadband and voice products, as TV content and network functionality can represent a barrier to entry.

This very basic analysis shows that Telekom Slovenije's competitors are already able to offer similar or superior offers (e.g. with higher bandwidth, more TV channels) either over their own networks (Telemach), through wholesale access to Telekom Slovenije's network (Amis) or using a combination of the two (T-2).

Figure A.1: Comparison of triple-play offers with Telekom Slovenije's FTTH triple-play offers [Source: Analysys Mason, operator websites, 2016]

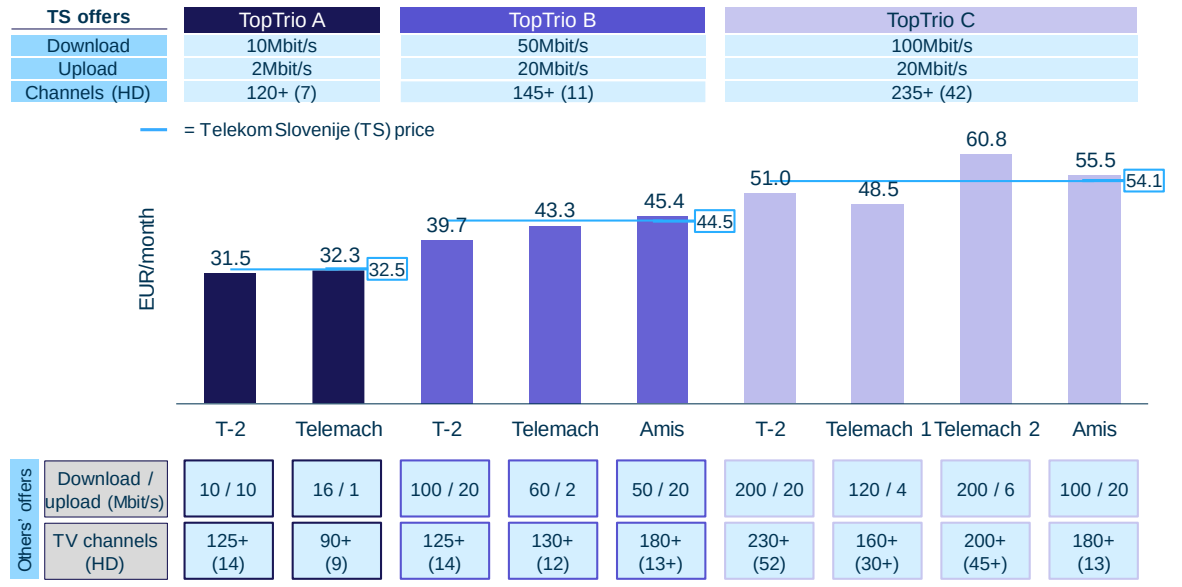
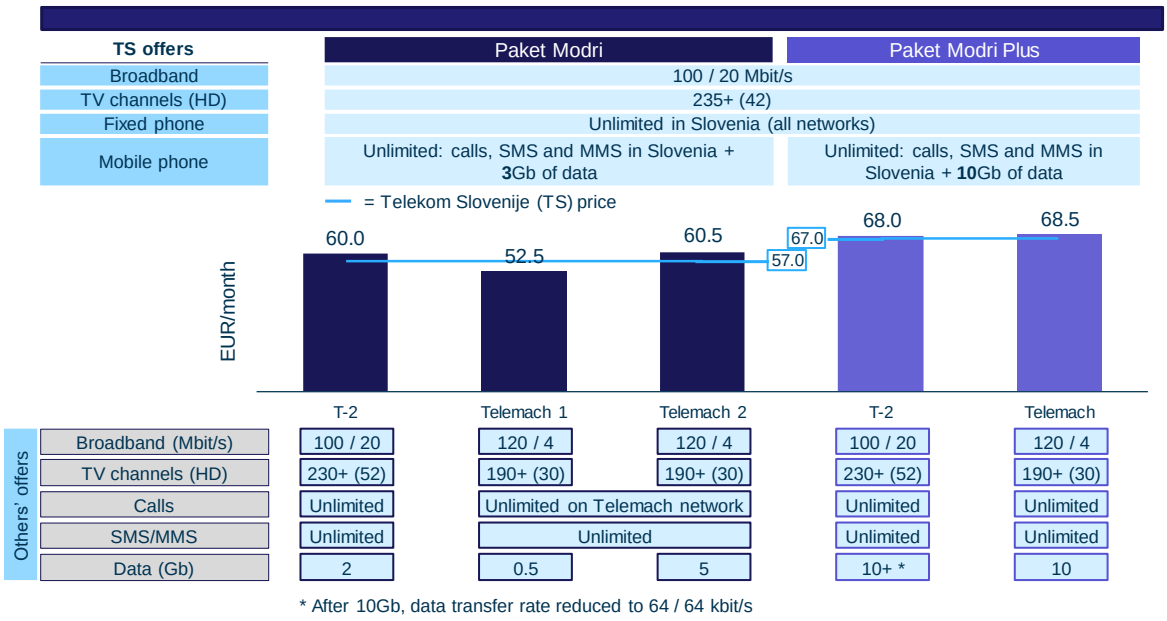


Figure A.2 shows a similar analysis for quadruple-play products (including mobile). T-2 and Telemach again offer similar services. The chart compares Telekom Slovenije's FTTH quad-play products (Paket Modri and Paket Modri Plus) with those offered by T-2 and Telemach. The outcome of the analysis is similar to that for triple-play offers. Amis does not yet offer any quad-play offers but its recent merger with Si.mobil clearly demonstrates that it should be capable of doing so.

Figure A.2: Comparison of quad-play offers with Telekom Slovenije's FTTH quad-play offers [Source: Analysys Mason, operator websites, 2`16]



A.2 Comparison of the broadband market in Slovenia with that in other European markets

Slovenia's retail broadband market is home to four main operators:

- Telekom Slovenije, the incumbent telecoms operator
- Telemach, a cable operator with its own hybrid fibre/coax (HFC) network covering 47% of households in Slovenia
- T-2, an alternative operator that uses a combination of its own proprietary FTTH network (which covers 34% of households) and wholesale access from Telekom Slovenije
- Amis, which mainly uses wholesale access from Telekom Slovenije (and was acquired by mobile operator Si.mobil (a Telekom Austria subsidiary) in 2015).

All four operators also own mobile operations.

As shown in Figure A.3, the incumbent, Telekom Slovenije, has been following a negative trend in terms of retail subscriber market share, and at the end of 2015 it had 34% of total market subscribers, compared to 61% in 2005. Telemach is the second largest operator in the market, with a 24% market share (up by 15% since 2005). T-2 is third at 19% and Amis fourth at 11%.

Figure A.3: Broadband retail subscriber market share by operator in Slovenia [Source: Analysys Mason Research, TeleGeography, 2016]

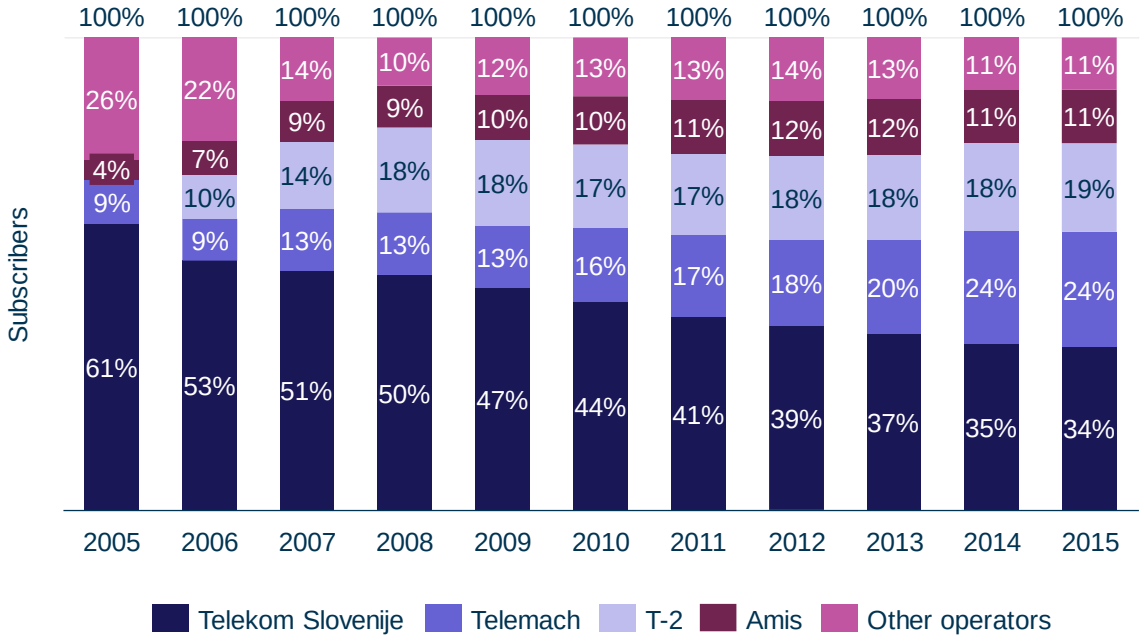


Figure A.4 shows the evolution of total broadband market subscribers between 2005 and 2015. It can be seen that:

- market subscribers have grown steadily (at a CAGR of 19% between 2005–2010 and 4% between 2010 and 2015)
- Telekom Slovenije's subscriber base only grew in the period up to 2008
- the alternative operators have captured all of the market growth from 2008 onwards, and so have significantly increased their customer base and scale.

Figure A.4: Broadband retail subscribers by operator in Slovenia [Source: Analysys Mason Research, 2016]

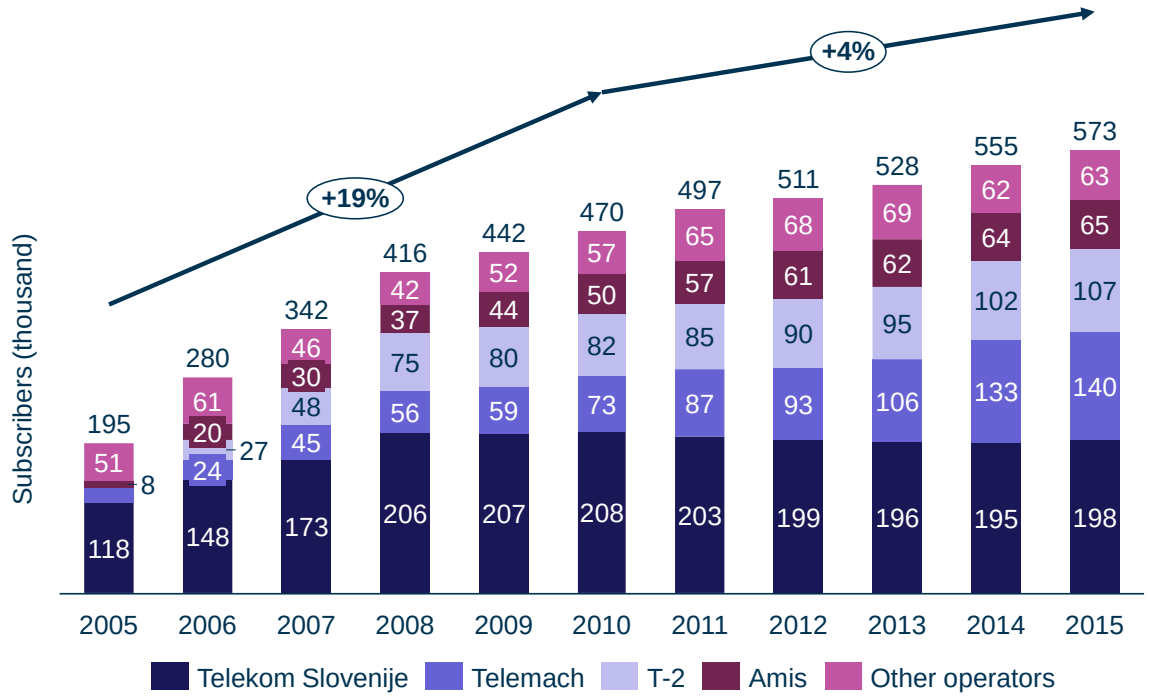
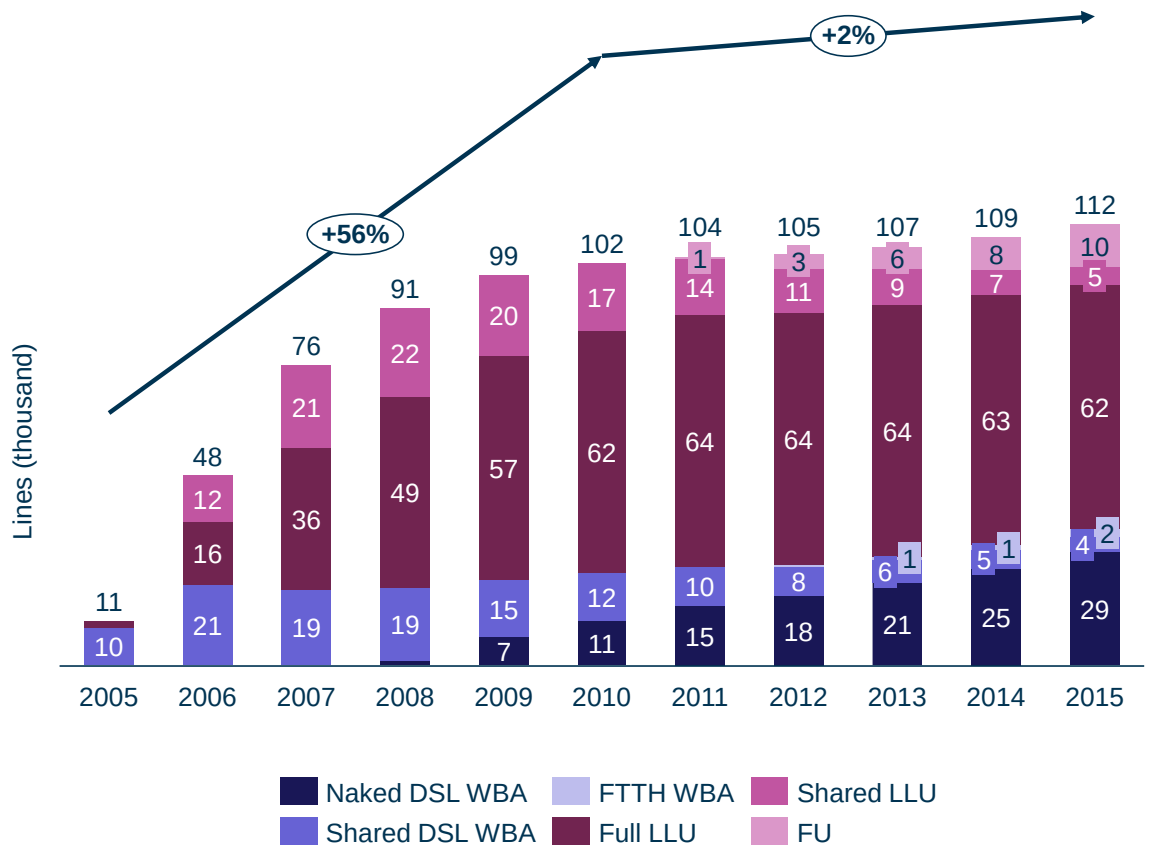


Figure A.5 shows the growth of wholesale connections used to supply broadband sold by Telekom Slovenije, the SMP operator in the previous (and current) regulatory periods. Wholesale connections grew at a CAGR of 56% between 2005 and 2010 (almost three times the market growth) whereas they have slowed to a 2% CAGR between 2010 and 2015 as Telemach and T-2 have focused on selling connections on their own networks.

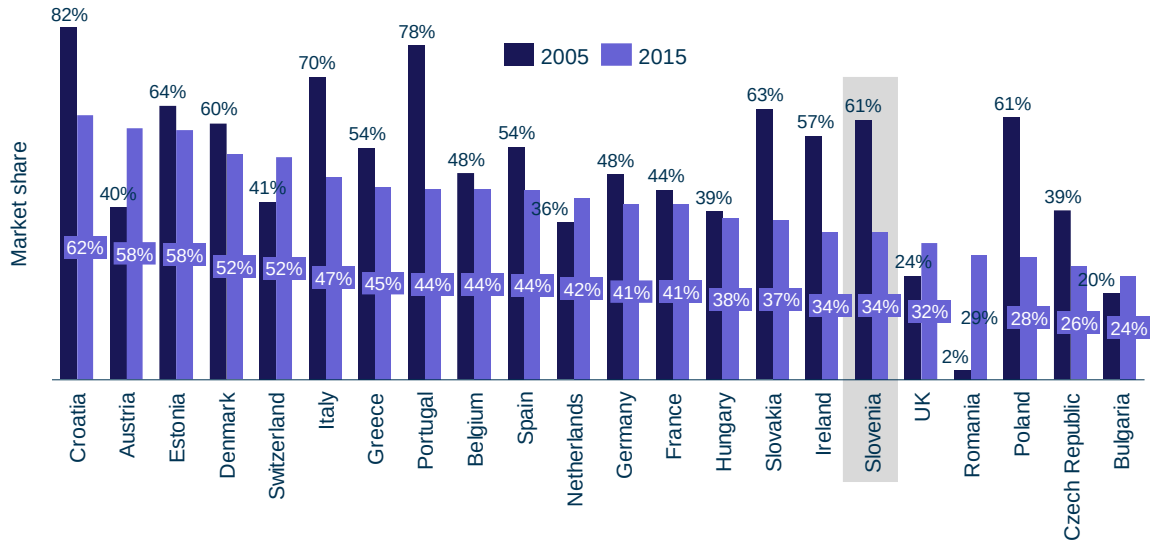
Figure A.5: Wholesale connections provided by TS on markets 4 and 5 [Source: Analysys Mason Research, 2016]



Note: excludes OSO lines

Figure A.6 shows how the market shares of incumbent operators in Europe evolved between 2005 and 2015. It can be clearly seen that Telekom Slovenije has experienced one of the most significant declines in terms of retail market share across Europe. At the end of 2015 it had the sixth lowest retail market share among the 22 incumbents compared here.

Figure A.6: Incumbent's share of retail broadband subscribers, 2005 vs. 2015 [Source: Analysys Mason Research, 2016]

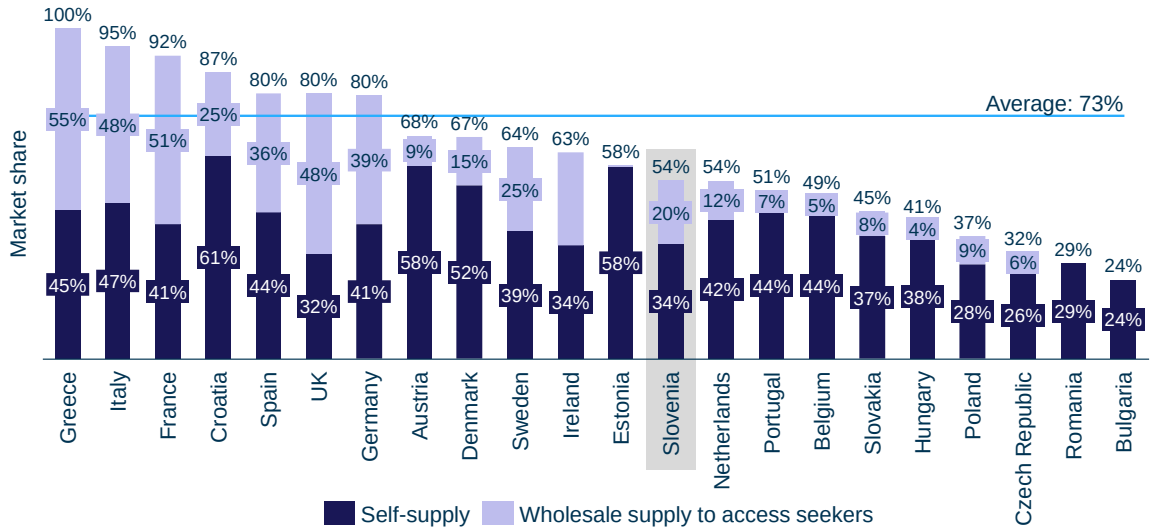


Note: For Cyprus, Finland, Latvia, Lithuania, Luxembourg, Malta and Sweden, data was either not available or the country has more than one SMP operator (e.g. Finland).

Figure A.7 illustrates the retail and wholesale market shares of incumbents in 22 EU Member States. Telekom Slovenije has the tenth lowest wholesale (including self-supply) market share among the incumbents in these 22 countries and is 20 percentage points below the weighted (for population) average. The figure also highlights how Slovenia is one of the few countries where the SMP operator is subject to strong competition from both:

- other infrastructures, which hold a 46% market share in Slovenia (the complement to Telekom Slovenije's wholesale market share), compared to an average figure of 27% across Europe
- operators buying access from Telekom Slovenije; 20% of the broadband lines in Slovenia are supplied in this way, compared to an average of 33% across Europe.

Figure A.7: European incumbents' retail and wholesale market shares in 2015 [Source: Analysys Mason, 2016]



Note: Cyprus, Finland, Latvia, Lithuania, Luxembourg, Malta and Sweden have been omitted from the benchmark, either because data was unavailable or because the country has more than one SMP operator (e.g. Finland).

A.3 NGA coverage

Figure A.8 compares the NGA coverage levels in Slovenia with 27 other European countries. Slovenia ranked 15th for NGA coverage in 2014, with 78% of total households, 9% above the European average.

Figure A.8: NGA coverage as a % of households in 2014 [Source: European Commission, Telekom Slovenije, 2014]

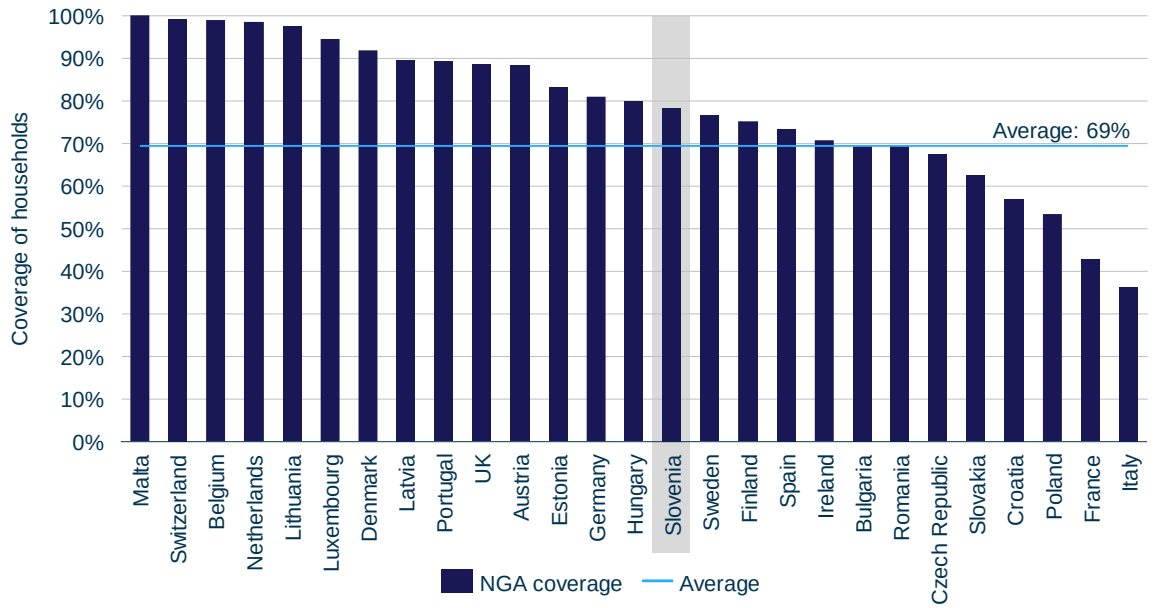
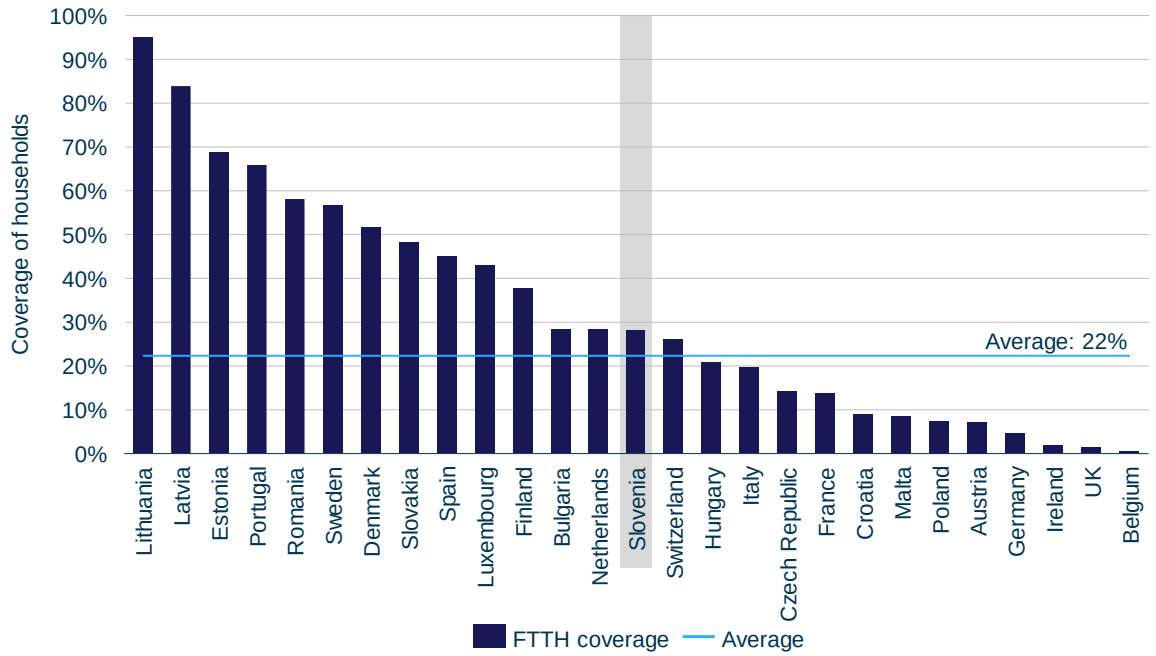


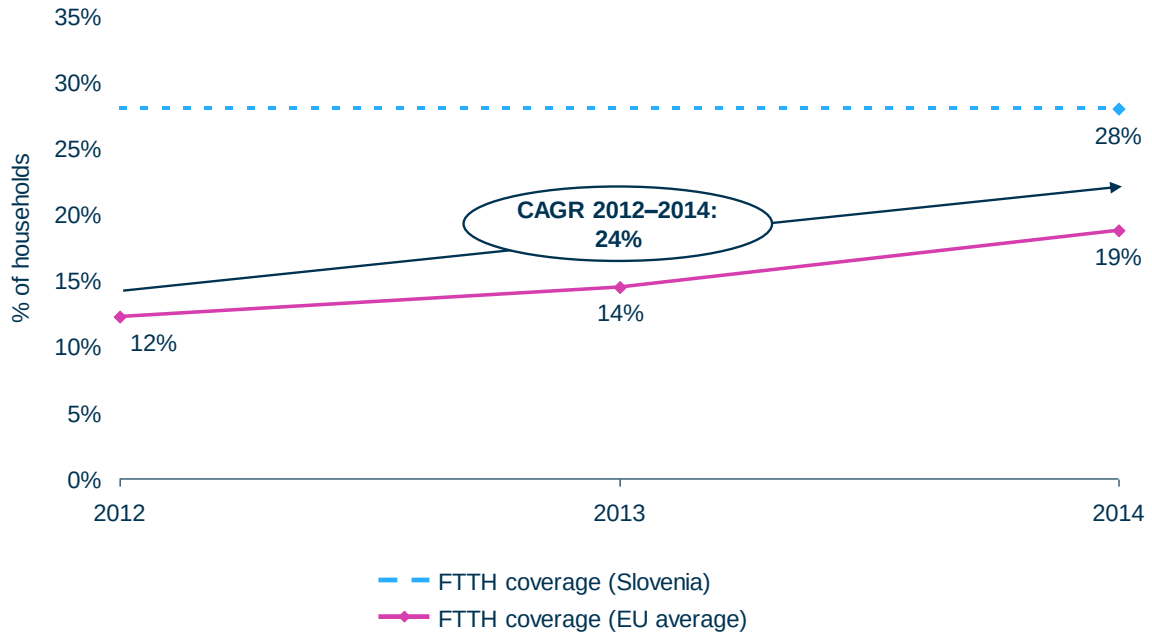
Figure A.9 provides a benchmark of FTTH coverage as a percentage of households across European countries in 2014; Slovenia was again slightly above average, with 28% of FTTH coverage.

Figure A.9: FTTH coverage as a % of households in 2014 [Source: European Commission, Telekom Slovenije, 2014]



Although FTTH coverage is Slovenia is above the EU average, the evolution of FTTH coverage over time in the country has stalled noticeably in recent years, remaining flat at 28% since 2012 (see Figure A.10). By contrast, the EU average grew from 12% to 19% over this period.

Figure A.10: FTTH coverage as a % of households, Slovenia vs. EU [Source: Analysys Mason, 2016]



Annex B Illustration of potential error when using tilted annuity with historical costs

In this annex we provide an explanation of the depreciation methods used in ERT models (Annex B.1), illustrate the potential errors that can arise when combining tilted annuities with historical costs (Annex B.2) and provide further details on our check of relative weights in AKOS's pre-draft model (Annex B.3).

B.1 Explanation of depreciation methods used by NRAs in ERT models

Other NRAs have used a range of depreciation methods in their ERT model. To illustrate how each method works, below we provide a numerical example of a hypothetical investment of EUR100, assuming a ten-year asset lifetime and a WACC of 10%.

Straight-line method

The straight-line method is the simplest depreciation method, where an investment is evenly written off over the asset's lifetime, and so the depreciation cost remains constant each year. It is the methodology which is typically used in standard accounting. The cost of capital of the investment is, however, not included in the standard calculation.

In order to include the cost of capital, the net book value (NBV) is multiplied by the WACC. Thereafter, the total annualised cost is calculated by adding the depreciated amount to the cost of capital. Figure B.1 provides an example of the straight-line method.

Figure B.1: Example of straight-line depreciation, with a WACC of 10% [Source: Analysys Mason, 2016]

Year	**Net book value** (NBV)	**Depreciation** (investment / years)	**Cost of capital** (NBV_{N-1} * WACC)	**Annualised cost** (depreciation + cost of capital)
0	100	-	-	-
1	90	10	10	20
2	80	10	9	19
3	70	10	8	18
4	60	10	7	17
5	50	10	6	16
6	40	10	5	15
7	30	10	4	14
8	20	10	3	13
9	10	10	2	12
10	0	10	1	11
TOTAL		**100**		**NPV = 100**

The net present value (NPV) can then be calculated by discounting the annualised costs for each year (using the WACC). When using the straight-line depreciation method, the NPV corresponds to the initial investment cost.

Annuity method (standard)

The standard annuity method provides a constant annual cost, which in this case includes both depreciation and cost of capital, and an NPV equal to the initial investment. This method calculates the annualised cost as follows:

$$Annualised\ cost = Investment\ x \left(\frac{WACC}{1 - \left(\frac{1}{1+WACC}\right)^{N}} \right)$$

Where *N* is the total lifetime of an asset.

Figure B.2 provides a numerical example of the annuity method. It shows how the annualised cost remains flat but the breakdown of that annualised cost between cost of capital and depreciation changes over time. The annuity method is essentially the methodology used to calculate mortgage repayments.

Figure B.2: Example of annuity method of depreciation, with a WACC of 10% [Source: Analysys Mason, 2016]

Year	Net book value	Annualised cost	Cost of capital (NBV_{N-1} * WACC)	Depreciation (annualised cost – cost of capital)
0	100	-	-	-
1	93.73	16.27	10	6.27
2	86.82	16.27	9.37	6.90
3	79.23	16.27	8.68	7.59
4	70.88	16.27	7.92	8.35
5	61.69	16.27	7.09	9.19
6	51.59	16.27	6.17	10.11
7	40.47	16.27	5.16	11.12
8	28.25	16.27	4.05	12.23
9	14.80	16.27	2.82	13.45
10	0	16.27	1.48	14.80
TOTAL		**NPV = 100**		**100**

Both straight-line and standard annuities are based on historical cost accounts (HCA), where the annualised costs for all years are based on the assets price for year 0. However, both methods have variations that take into account price differences in the asset between years. These variations involve the use of CCA. These variations make it possible to take account of the fact that another

player would pay a lower/higher price for the same asset in a subsequent year. In order to do this, the yearly NBV must be adjusted by the asset price difference (in terms of %).

Tilted annuity method

The tilted annuity method is calculated independently of the historical NBV of the underlying asset and takes into account the cost of capital. Furthermore, this method makes it possible to address changes in underlying production costs that a new entrant would experience; in other words, it allows a price trend to be added to the annualised cost.

The tilted annuity formula is based on the standard annuity formula which is then adjusted as follows:

$$Annualised\ cost_{\text{-}year^1} = \left(Investment\ x \left(\frac{WACC}{1 - \left(\frac{1}{1+WACC}\right)^N} \right) \right) \times (1+\alpha)$$

$$Annualised\ cost_{year^i} = Annualised\ cost_{year^1} \times (1+\ \alpha)^i; \text{ with } i > 1$$

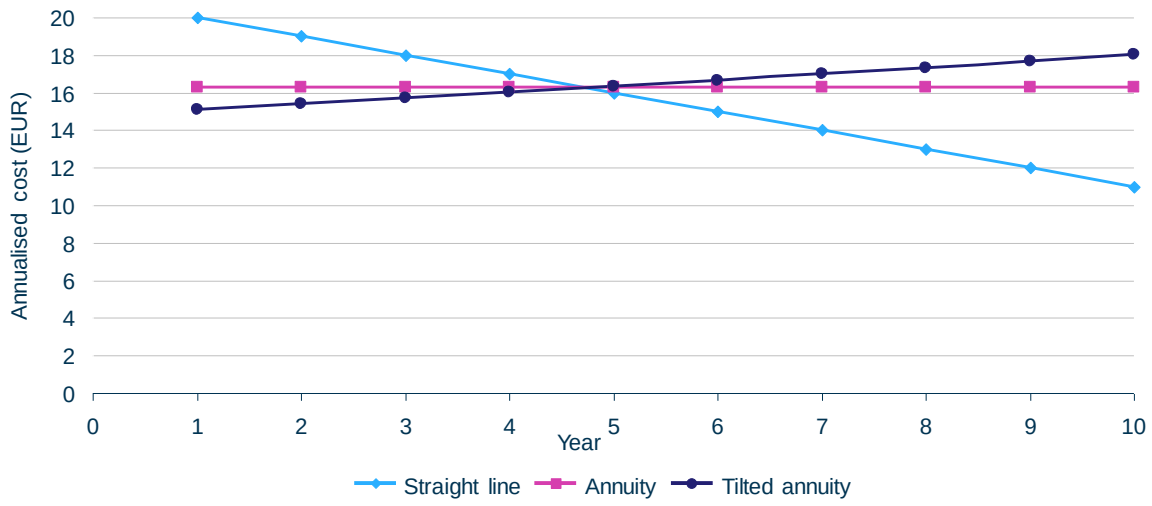
Where α is the price trend. Figure B.3 provides a numerical example of the tilted annuity method.

Figure B.3: Tilted annuity depreciation method example, WACC at 10% [Source: Analysys Mason, 2016]

Year	Net book value	Price trend	Annualised cost (adjusted with trend)	Cost of capital (NBV_{N-1} * WACC)	Depreciation (annualised cost – cost of capital)
0	100		-	-	-
1	94.91	2%	15.09	10	5.09
2	89.00	2%	15.40	9.49	5.90
3	82.20	2%	15.70	8.90	6.80
4	74.40	2%	16.02	8.22	7.80
5	65.50	2%	16.34	7.44	8.90
6	55.39	2%	16.66	6.55	10.11
7	43.93	2%	17.00	5.54	11.46
8	39.98	2%	17.34	4.39	12.94
9	16.40	2%	17.68	3.10	14.59
10	0	2%	18.04	1.64	16.40
TOTAL			**NPV = 100**		**100**

A graphical comparison of the annualised cost between the three methods is provided in Figure B.4. In this example the tilted annuity has an upwards tilt, but a negative price trend would result in a negative one.

Figure B.4: Comparison of how the annualised cost trend varies with depreciation methodology [Source: Analysys Mason, 2016]

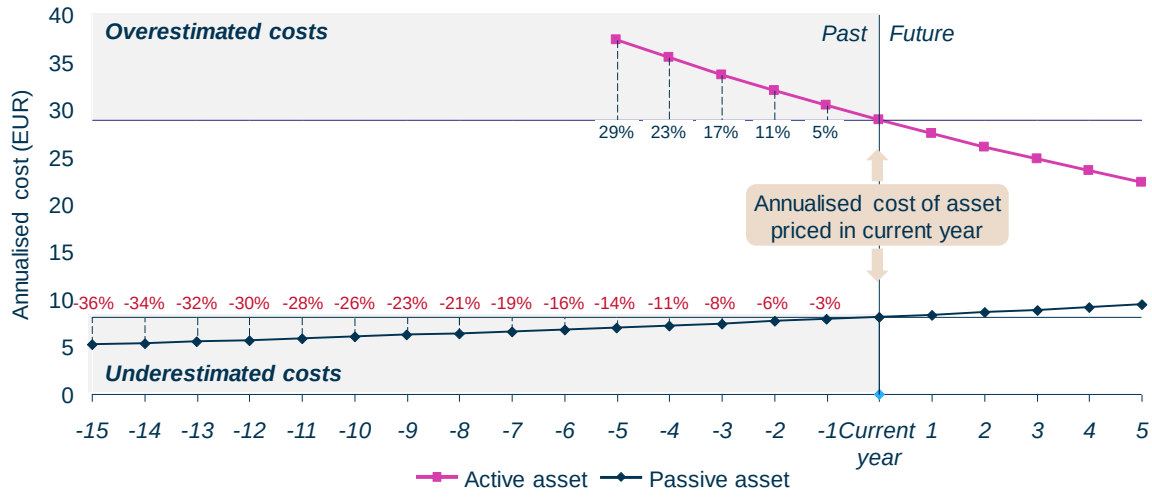


B.2 Illustration of potential errors when combining tilted annuities with historical costs

AKOS plans to use the tilted annuity method. When this method is used with historical costs, there is potential for errors to arise in calculations, leading to misleading results.

As previously mentioned, when using historical asset prices the annualised costs are based on past investments, which might be cheaper (or more expensive) if they were undertaken today. Hence, a new player which enters the market some years later may be able to purchase an asset for a lower (higher) investment, and so the prices used to estimate the annualised costs would be misleading in AKOS's case. Figure B.5 illustrates an example of the time effect on the annualised cost used in the year for which the tilted annuity is applied. It uses the price trends which AKOS plans to use in the model with a hypothetical asset which is currently priced at EUR100.

Figure B.5: Illustration of potential error in the annualised cost when using historical costs in combination with a tilted annuity formula [Source: Analysys Mason, 2016]



Active assets (router, switches, etc.) have a lifetime of approximately five years, and have a decreasing price trend, meaning that an active asset would have been more expensive five years ago than it is now. AKOS plans to use a price trend of –5% p.a. for some active assets, leading to a possible overestimation of costs in the model. In our example, the error is an overestimate of between 5% and 29%, depending on the year taken into consideration.

Passive assets (core, ducts, etc.), are usually depreciated over longer periods and often have increasing price trends, mainly driven by increasing labour and material costs. AKOS assumes an increasing price trend of 3% p.a. for some assets; by using historical costs, this could cause underestimation issues. In the example shown above, ten years ago an investment in a passive asset would have been 26% cheaper than a passive asset priced at EUR100 in the current year. In our example, the underestimation error lies between –3% and –36%, however, this figure could be even more misleading if the asset has a longer lifetime.

B.3 Further details on our check of relative weight in AKOS's pre-draft model

In this section we analyse the total annualised network cost divided by the price tilt used in the pre-draft version of AKOS's model. In Figure B.6 Column A provides a list of the assets included in AKOS's model, column B provides the corresponding estimated lifetime of the asset, while column C shows the relative price trend assigned to the asset by AKOS. Columns D and E provide the annualised cost and share (in percentage) of total cost, respectively, of each asset.

Figure B.6: Share of the annualised cost from each asset category as per AKOS pre-draft model [Source: Analysys Mason based on AKOS pre-draft model, 2016]

A: Asset	B: Lifetime	C: Price trend	D: Annualised cost	E: % of total cost
Core trench and duct	30	3.0%	6 733 063	33%
Core fibre	20	0.0%	1 916 604	9%
Routers & aggregation switches	5	–5.0%	4 950 357	25%
MSAN	7	–1.0%	6 527 048	32%
BRAS	5	–5.0%	8 891	0%
DNS	5	–5.0%	8 129	0%
IPTV server	5	–5.0%	7 789	0%
VoD server	5	–5.0%	7 789	0%
VoIP server	5	–5.0%	24 216	0%
Total			**20 183 886**	**100%**

By grouping the price trends into three categories (positive, null and negative), we can (Figure B.7) see that 57% of the annualised capex has a negative price trend, compared to 33% with a positive one. As mentioned in Section 3.7 and illustrated in Figure B.5 above, this can lead to an overestimation of the annualised costs.

Figure B.7: Annualised cost by price trend category in AKOS pre-draft model [Source: Analysys Mason based on AKOS pre-draft model, 2016]

Price trend category	Cost per trend category	% of total cost represented by category
Positive	6 733 063	33%
Null	1 916 604	9%
Negative	11 534 219	57%
Total	**20 183 886**	**100%**