WIK Consult's assessments regarding submissions of interested parties related to the Draft Standard Terms Determination regarding Mobile Termination Access Services

> Dr. Werner Neu Dr. Karl-Heinz Neumann

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Topics

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WIK's general position on using benchmarks (1)

Relative to which our comments need to be understood

- The use of benchmarks is a pragmatic approach to obtaining an approximate estimate for a variable of interest, here the cost of termination on a mobile network
 - It will provide a relevant range of values within which the cost figure searched for is likely to be found
 - The variation among the figures in the benchmark set can be large
 - The number of factors that cause the variation is likely to be large
 - Trying to compensate for the variation on all counts is not advisable, it would undermine the advantages of benchmarks
 - Ease of construction
 - Economical in the use of resources

It would risk to bring a bias into the benchmark sample



WIK's general position on using benchmarks (2)

Relative to which our comments need to be understood

- Nevertheless, some easily identifiable high-level factors, allowing to judge on comparability, could be used to make the country selection
 - Urbanisation is such a factor since it correlates highly with the division of the network area into the parts where cells are traffic and where cells are coverage driven
 - Shares of coverage and traffic driven cells are major structural cost drivers
 - Other high-level factors, for example income, are not useful because they can be counteracted by other variables (in a way that urbanisation cannot)
 - High income makes for large demand in European countries
 - Low prices make for large demand in countries where income is relatively low



WIK's general position on using benchmarks (3)

Relative to which our comments need to be understood

- A judgemental instead of a (seemingly) rigorous approach is called for
- This position is supported by
 - NERA who state that sticking with a non-rigorous benchmarking study is the most appropriate approach
 - Comment by Mr. Feasey of Vodafone as reported by the Commission:*

...I think generally what regulators do is to say what is a TSLRIC price likely to look like, and they start with a range. There is no single number that spits out, but they make a judgment within that

* Commerce Commission, *Mobile Termination Access Service Conference*, 2 September 2009, p.135, lines 11-13



WIK's general position on using benchmarks (4)

Relative to which our comments need to be understood

- An approach using techniques developed for rigorous statistical analyses is not appropriate because
 - Required probability assumptions are not fulfilled
 - Required information is not available
 - Is counterproductive in terms of the basic motivations for using benchmarks (ease of construction, economical of resource)
- A judgmental approach will take into account
 - The circumstances under which cost estimates were obtained
 - The development of estimates over time if the results from successive costing exercises are available
 - How arguments of interested parties relative to the benchmarks develop over time

- Whether the benchmarks selected give sufficient confidence wike on compassing the appropriate range of values

WIK's general position on using benchmarks (5)

Relative to which our comments need to be understood

- The development of benchmarks over time should explicitly be taken into account
 - This is in recognition that the corresponding changes in the benchmarks reflect
 - not only developments due to changing input prices and economies of scale
 - but also the fact that
 - the regulatory authorities may be subject to learning processes and later benchmark values express the avoidance of mistakes made earlier
- Changes proposed by interested parties, however, need to be carefully checked that they not introduce biases into the benchmark values



What factors to be used to select countries? (1) NERA (on behalf Telecom NZ)

NERA's position

- Sole criteria used by the Commission is urbanisation
- Better set of criteria would include
 - Network coverage area
 - Scale of operator
 - Purchasing power of the operator modelled
 - Whether the operator is integrated
 - Infrastructure sharing between companies
 - Prices paid for spectrum



What factors to be used to select countries? (2) Vodafone

Vodafone's position

- Urbanisation is not a key driver
- All relevant models tend to use
 - Geo-demographic parameters
 - Population density
 - Subscriber calling patterns
 - Proportion of voice vs. data
 - Proportion of 2G traffic vs. 3G traffic
 - QoS requirements
 - A whole range of other cost related issues



What factors to be used to select countries? (3)

WIK relative to NERA/Telecom NZ and Vodafone

WIK's assessment

- The comments by NERA and Vodafone are besides the point
 - The set of criteria mentioned by them could not all have been filtered when making the initial selection
 - How should one have assembled a benchmark set compensating for differences in more than a dozen of parameters?
 - This approach would be contrary to the very idea of using benchmarks
 - NERA mentions the possibility of econometric analysis but then itself rejects it
 - In fact, those who are familiar with statistical analysis know that there would not be enough degrees of freedom to account for influence of more than a dozen different factors
 - In order to actually take account of all the factors, construction of an own cost model would have been necessary

Nik This would run counter to the requirements regarding the Initial Pricing Principle

What factors to be used to select countries? (4)

WIK relative to NERA/Telecom NZ and Vodafone

- The Commission uses the urbanisation criterion to guide it to the benchmarks that
 - Can be expected to be in the "same ballpark" and
 - Provide a range of values within which, in the words of the Commission, "the cost of supplying the MTAS in New Zealand is likely to lie"
- As discussed in our earlier methodological observations, the urbanisation criterion fully meets this objective



What factors to be used to select countries? (5) WIK relative to NERA/Telecom NZ and Vodafone

- Remember Mr. Feasey's comment already referred to above
 - ...I think generally what regulators do is to say what is a TSLRIC price likely to look like, and they start with a range. There is no single number that spits out, but they make a judgment within that
 - This is exactly what the Commission has done
- The Commission also used the criterion that the benchmarks be cost estimates from bottom-up cost models
 - This and the urbanisation criterion are sufficient for assembling a benchmark set fulfilling the stated objective
 - Use of (several) further criteria would eventually have led to an empty set



Additional countries in the benchmark set? (1)

Vodafone and Analysys Mason (on behalf of Vodafone)

Analysys Mason's position

- A number of additional countries meet the Commission's criterion of having determined the cost of termination according to TSLRIC and on the basis of a bottom-up cost model:
 - Macedonia
 - Romania
 - The Eastern Caribbean (ECTEL) countries
 - Slovenia
- Macedonia and Dominica of the ECTEL countries also meet the urbanisation criteria
 - Only Macedonia is added in Analysys Mason's recalculation of the statistics of the benchmark sample



Additional countries in the benchmark set? (2)

Vodafone and Analysys Mason (on behalf of Vodafone)

Vodafone's position

 The position of Anlaysys Mason is echoed with the added claim that Dominica be added to the benchmark set



Additional countries in the benchmark set? (3) WIK relative to Analysys Mason

- Macedonia
 - According to the source the Commission used, at the time the benchmark set was selected, the urbanization rate was below the threshold set by it
- Dominica
 - The relevant model was developed by the dominant operator in the ECTEL countries
 - This by itself is an exclusion criterion
- For the rest, we refer to our earlier methodological observations



Additional countries in the benchmark set? (4)

Network Strategies, on behalf of TelstraClear

Network Strategies' position

• A number of countries appear to meet the Commission's criteria:

Bahrain

Dominica

Turkey

- The inclusion of the these countries is not endorsed
- The risk of bias when setting criteria for selection is recognised



Additional countries in the benchmark set? (5)

WIK relative to Network Strategies

- Dominica (same comment as in response to Analysys Mason)
 - The relevant model was developed by the dominant operator in the ECTEL countries
 - This by itself is an exclusion criterion
- Turkey
 - At the time the Commission assembled the benchmarks, the one for Turkey was not yet available
- Bahrain
 - The model used is top-down and not bottom-up
 - A bottom-up model is only now being developed
- For the rest, we refer to our earlier methodological observations



Only European countries to be included? (1) Analysys Mason

Analysys Mason's position

 Most other regulators relying on benchmarks use only European information



Only European countries to be included? (2) WIK relative to Analysys Mason

- Above, we have already provided the justification for using the urbanization criterion
 - Given this justification, all countries fulfilling it are to be included
 - Use of judgment (Feasey) to identify those benchmarks that most likely encompass the value for New Zealand
 - Having benchmarks from a wide ranging set of countries provides the opportunity to learn from a greater variety of circumstances that influence the cost of termination
 - There is no a priori reason why relevant costs in NZ are only comparable to those in Europe



Only European countries to be included? (3) WIK relative to Analysys Mason

- Using only benchmarks from European countries would eliminate
 - Malaysia => elimination of a benchmark reflecting the impact of high demand due to low prices on the cost of termination
 - Australia => elimination of the benchmark of the country being most like New Zealand
 - Israel => elimination of a benchmark that has shown a dramatic value change due a new costing exercise based on a changed set of principles applied by the regulator
- Thus the elimination of these benchmarks would have deprived the Commission of the opportunity to take these insights into account for its informed judgement



2G-only models to be excluded? (1)

TelstraClear & Network Strategies (on behalf of TelstraClear)

TelstraClear and Network Strategies' position

- A network operator with only 2G network should not be considered efficient
- The Commission's set of benchmarks should only include results from models for combined 2G / 3G networks



2G-only models to be excluded? (2)

2 degrees and Lanigan (on behalf of 2 degree)

2 degrees and Lanigan's position

- 3G network costs tend to be significantly less than 2G network costs
- The Hungarian benchmark should be excluded because it comes from a 2G model while the situation in New Zealand is characterised by 2G and 3G networks



2G-only models to be excluded? (3)

WIK relative to 2 degrees/Lanigan and TelstraClear/Network Strategies

- The relative efficiency of 2G compared to 3G depends on the composition of the service portfolio
 - Depending on volumes of voice and data, a 2G, a 2G/3G or a pure 3G network will be efficient
 - 3G becomes the more efficient technology when data volumes become large
 - 2G may still be the efficient technology when voice is still dominant
 - For illustration, the benchmark for Australia, a cost figure from a pure 2G network, is among the lower of a set of benchmarks that includes results from 2G/3G networks



2G-only models to be excluded? (4)

WIK relative to 2 degrees/Lanigan and TelstraClear/Network Strategies

- Using a blend of the costs of 3G and 2G parallel networks may bias cost estimate upwards
 - This may occur when 3G equipment is still underutilised
 - Cost of 3G over-capacity may be rolled into the cost of 2G services
 - A telling example is provided in Figure 10 on page 15 of Analysys Mason's submission, showing that the cost of termination on a 3G network to be substantially higher than on a 2G network; the text under the figure suggests that a blended rate is used
 - There may be an inappropriate allocation of so-called transition cost
- Given the relatively low data volumes in NZ, the efficient cost for voice termination may still be represented by the cost of a 2G network



Exclude benchmarks with historical costs? (1)

TelstraClear and Lanigan (on behalf of 2 degrees)

Position of TelstraClear

 The benchmark for France should be excluded because it is based on historical cost

Position of Lanigan

 The Hungarian model is not consistent with the Commission's criteria since it relies on an historical input price, i.e. that of the concession



Exclude benchmarks with historical costs? (2)

WIK relative to TelstraClear and Lanigan

- Bottom-up cost models based on the TSLRIC standard are forward looking in spirit
- Implies that current costs are to be based on current prices of inputs
- In some cases, current prices of inputs cannot be obtained
 - In these cases historical prices may be used provided the relevant assets are not the dominant ones
 - Concession fees like in the Hungarian case belong in this category
 - As an another example: In the model for Australia constructed by WIK the value of spectrum to be converted into annualised costs is also based on its historical prices



Exclude benchmarks with historical costs? (3)

WIK relative to TelstraClear and Lanigan

- Regarding the case of France
 - The claim is that the benchmark derives from historical cost data
 - In its Final Report on the MTAS Investigation of 22 February 2010 (p.105), the Commission explains that
 - The difference between the results from the historical cost model and the bottom-up current cost model are only 2 % apart
 - The Commission has augmented the result from the historical cost model by 2 % to make it compatible with the current cost approach
 - WIK considers this as an appropriate response to deal with the situation and to justify the inclusion of France into the benchmark set



TSLRIC and LRAIC+ vs. pure LRIC (1) Laniganon (behalf of 2 degrees)

Lanigan's position

 Reference is to the definition of TSLRIC in the Telecommunications Act:

TSLRIC, in relation to a telecommunications service, (a) means the forward-looking costs over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service, taking into account the service provider's provision of other telecommunications services; and (b) includes a reasonable allocation of forward-looking common costs.

 It is claimed that from this follows that LRAIC+ as used in the benchmark cost estimates does not correspond to the TSLRIC that ought to be used



TSLRIC and LRAIC+ vs. pure LRIC (2) Laniganon (behalf of 2 degrees)

- Instead it is claimed that a pure LRIC approach as recommended by the European Commission follows from the legal definition
- Quote from Lanigan's report:

The use of the term "pure LRIC" appears to simply be recognition that previous models did not actually implement a true LRIC methodology, but instead (as discussed above) used an average cost approach based on a broad increment of all mobile voice traffic



TSLRIC and LRAIC+ vs. pure LRIC (3)

WIK relative to Lanigan (on behalf of 2 degrees)

- The use of "incremental cost" in the determination of the cost of regulated services derives from the concern not to have allocated to such a service costs that are caused by other services
- If the service in question (here termination of calls on a mobile network)
 - is part of a group of services (here all voice traffic) that all use a particular network component (e.g. the radio access network) in the same way
 - that group of services is the relevant increment for which the incremental cost needs to be determined
 - which in turn is to be divided by the group's total minutes to get the incremental cost per minute due to that network element



TSLRIC and LRAIC+ vs. pure LRIC (4)

WIK relative to Lanigan (on behalf of 2 degrees)

- If as in the definition of "pure LRIC"
 - A counterfactual total network cost excluding termination is deducted from the total network cost including termination
 - It is implied that the capacity for termination is added to the network as if termination were the very last service for which the operator makes capacity plan
- If one were not to accept the second of above statements, pure LRIC would not make sense
 - The statement, however, is simply false
 - Operators plan capacity for on-net, off-net outgoing and off-net incoming (termination) services all in one integrated network planning
 - In the radio access network, no distinct network increment is planned to accommodate termination as distinct from on-net or outgoing traffic
 - Any and each minute of these services cause cost in the same way



TSLRIC and LRAIC+ vs. pure LRIC (5) WIK relative to Lanigan (on behalf of 2 degrees)

- In respect of achieving the goal of incremental costing
 - Capacity not used, for example in the radio access network, for either originating or terminating voice traffic, should not be charged to voice
 - All radio access network costs caused by voice traffic should be charged to voice traffic the same way, irrespective of whether it is part of the on-net or one of the off-net services
 - Since at the network component level, on-net traffic cannot be separated from off-net outgoing or from off-net incoming traffic, each of these are seen to cause cost in the same way
- Costs of network components installed for specific purposes other than the traffic in question (e.g. for data instead of for voice) should not be charged as "incremental cost" to voice traffic



TSLRIC and LRAIC+ vs. pure LRIC (6)

WIK relative to Lanigan (on behalf of 2 degrees)

- The average LRIC figure for a network component
 - where the total LRIC is caused by a given volume of traffic
 - being arrived at through division of that total LRIC by the given volume
 - is in recognition of the fact that no part of the total volume is somehow distinct from any other part

Hence, a minute of on-net is like a minute of off-net outgoing like a minute of off-net incoming (termination) in terms of cost causation



TSLRIC and LRAIC+ vs. pure LRIC (7)

WIK relative to Lanigan (on behalf of 2 degrees)

- Above description of the LRIC principle underlies both the TSLRIC and LRAIC+ concepts
 - Pure LRIC is a fiction
 - It does not correspond with the realities of network planning and roll-out
 - It leads to unjustified differentiation of services and inconsistent results
 - It artificially benefits termination in relation to other services



Appropriateness of a common cost mark-up (1) Laniganon (behalf of 2 degrees)

Lanigan's position

- A reasonable allocation of common costs will most likely be close to zero
- Any non-trivial mark-up means that small network operators pay a disproportionate contribution to the common costs



Appropriateness of a common cost mark-up (2) WIK relative to Lanigan

- There is here a confusion between long-run and short-run costs
- TSLRIC is a long-run cost standard
 - In the long-run all inputs into the production process are variable
 - Also the resources used for the functions leading to common costs are in the long run variable
 - True, common costs cannot be traced to individual services; nevertheless, in a statistical sense each service – together with all others – contributes in the long run to causing common cost
- There should thus be a mark-up for common cost
 - The mark-up should be on an equal proportionate basis
 - It reflects the realistic assumption that an increase in each service has an equal chance of causing an increase in the common costs



Appropriateness of a common cost mark-up (3) WIK relative to Lanigan

- The regulatory reasons for applying a long-run instead of a short-run cost standard are
 - Short-run costs are very difficult to determine
 - They can change relatively quickly
 - Strategic price setting with reference to supposedly short-run cost developments should be prevented
 - Long-run costs provide a reasonably stable environment within which the costs of wholesale services can develop



Inflation adjustment (1)

Network Strategies (on behalf of TelstraClear)

Network Strategies' position

- A number of benchmarks used by the Commission were in real terms relative to some base year
- These rates were transformed into nominal rates on the basis of the target inflation rate sourced from the relevant central banks
- Actual inflation rates should have been used



Inflation adjustment (2)

WIK relative to Network Strategies

- Before responding to Network Straegies' observations, we note that the Commissions' benchmarks are for different years
 - We would have suggested expressing them all for the same year, i.e. 2011, by adjusting them according to the relevant cost path
 - If then the results from the model are in real terms, an inflation index also needs to be applied
- Network Strategies' observation applies to all benchmarks obtained from models that were constructed by Analysys
 - It is a defining feature of their models that all cost estimates, often determined for up to 50 years, are expressed in real terms
 - To obtain nominal results, inflation rates need to be taken into account



Inflation adjustment (3)

WIK relative to Network Strategies

- Given
 - the forward-looking character of bottom-up models and
 - the basic approach implemented through Analysys' models

it is natural to use predicted rates (like those from the central banks) and not actual rates

- It needs to be remembered that all cost figures determined by models are estimates
 - They need to be considered within the framework of the assumptions used to construct the models
 - As argued earlier, appropriate judgment needs to be applied when using the information conveyed by them



Blended FX/PPP vs. PPP only (1)

Network Strategies (on behalf of TelstraClear)

Network Strategies' position

- To convert benchmarks expressed in foreign currency into New Zealand dollars, the Commission uses an evenly weighted blend of Purchasing Power Parity (PPP) and the ten year market exchange rate
- There is no justification for 'blending' the result of PPP rates and market exchange rates, given that PPP already adequately reflect the effect of world market prices of imported products that are not subject to the PPP adjustment
- It is therefore recommended that the Commission applies unblended PPP rates as the method of currency conversion in its benchmarking exercise



Blended FX/PPP vs. PPP only (2)

WIK relative to Network Strategies

- PPP adjustments to an exchange rate are made to take account of the variation in the purchasing power of different currencies due to national differences (wages, prices of real estate) affecting the prices of non-traded relative to traded goods
- Network Strategies' claim is that
 - In PPP rates, the prices of imported telecommunications equipment are already properly represented at their values based on the unadjusted exchange rate
 - Prices of such equipment need not being given an extra weight by blending into the rate used for conversion the unadjusted exchange rate



Blended FX/PPP vs. PPP only (3)

WIK relative to Network Strategies

- We presume that the Commission used the blend of the PPP rate and the exchange rate because
 - Imported services and products play a larger role in mobile networks than in the composition of goods and services underlying PPP adjustments
- This would be a completely justifiable reason to use the blend as used by the Commission



Cost of transit (1) WIK's opening observations

Opening observations

- We follow here Vodafone (pp. 57-59 of its submission)
 - Transit needs to be differentiated from transport within a network
 - Transit involves using a third network to convey traffic from the originating to the terminating network
 - It is not part of the MTAS
 - Transport in contrast is conveyance of traffic within a network, e.g. when a call to be terminated is carried from the point of interconnection to the radio cell in which the receiving party is located
 - WIK's understanding is that transport is part of the MTAS
 - To WIK's knowledge, all bottom-up models determining the cost of termination include a cost for transport within the mobile network



Cost of transit (2)

Network Strategies (on behalf of TelstraClear)

Network Strategies' position

- The Commission's benchmarking analysis should use countries in which the service definition of the mobile termination service is similar to that in New Zealand
- For example, in Australia transit calls are not explicitly excluded (so it is implicitly suggested that there might be a transit charge included in the termination rate)
- The Commission should consider adjusting its benchmarks downwards if these include the cost of transit



Cost of transit (3)

WIK relative to Network Strategies

- As known to WIK, there is no cost model determining the cost of termination that includes the cost of transit through a third network
- This is certainly true for the cost model that WIK constructed for Australia
- For the rest, see the opening observations regarding this specific topic



Cost of transit (4) CallPlus and Kordia

CallPlus and Kordia's position

- The STD service definition should include "transited" traffic, being calls that
 - have originated on the network of a particular operator and
 - have been handed over to another network for transit to the Access Provider
 - to be terminated on the Access Provider's network
- Here, the argument appears to involve transit through a third network which then becomes the Access Seeker to the Access Provider's mobile network
- By implication the cost of transit through the Access Seeker's network should be included in the cost of termination



Cost of transit (5) WIK relative to CallPlus and Kordia

- To WIK's knowledge, termination service refers exclusively to the delivery of a call through the network of the terminating network
 - This does not exclude that transit traffic FTM may be a regulated service such that transit and termination are both regulated
- For the rest, see WIK's assessment regarding Network Strategies' position and WIK's opening observations regarding this specific topic



Benchmark is low compared to NZ model results (1) Vodafone

Vodafone's position

- A cost model from Vodafone Group that has been used in several markets worldwide has been calibrated for New Zealand conditions
 - The model is consistent with world-best TSLRIC cost modeling practice and reflects approaches adopted by many European regulators
 - The results show that an efficient operator in New Zealand faces a cost for termination of 7.4 cents in 2011



Benchmark is low compared to NZ model results (2) WIK relative to Vodafone modeling results

- Vodafone in its submission of 28 July 2009 to the Commission (relative to the then on-going MTAS Investigation) maintains that a benchmark of 14.3 cents should be used as a proper representative of TSLRIC for NZ and be used to set the termination rate as per 2009
 - Allowing for a cost decrease of 4.7 per cent per annum this would have implied a rate of about 13 cents per minute as per 2011
 - By now presenting results from a cost model of 7.4 cents,
 Vodafone at least implicitly recognizes that its claim in the
 2009 submission was a bit too high



Benchmark is low compared to NZ model results (3) WIK relative to Vodafone modeling results

- Also as regards the present model result
 - It is presented by a party with a stated interest in high termination rates
 - Thus there is a natural tendency that the result be biased upwards
- The difference between the claim in 2009 (14.3 cents) and the present model result (7.4 cents) underlines one of the observations that we have repeatedly made, i.e. that
 - In successive costing exercises, the later estimates tend to be substantially lower than the earlier ones
 - They are lower than would be accounted for by intervening decreases in input prices or economies of scale



Benchmark is low compared to NZ model results (4) WIK relative to Vodafone modeling results

- On the strength of this observation
 - One should expect that in any future costing exercise, based on a bottom-up cost model, the result would again be lower, i.e. lower than the estimate reported above by Vodafone





WIK-Consult GmbH Postfach 2000 53588 Bad Honnef Germany eMail info@wik-consult.com www. wik-consult.com