TELSTRA CORPORATION LIMITED

PRICING PRINCIPLES FOR FIXED LINE SERVICES
RESPONSE TO THE ACCC'S DRAFT REPORT

SCHEDULE 7

GEORGE SIOLIS, RBB ECONOMICS: *SERVICE LIVES FOR TELSTRA'S FIXED NETWORK ASSETS, OCTOBER 2010*

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Service Lives for Telstra's Fixed Network Assets

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1 Executive Summary

The Australian Consumer and Competition Commission (ACCC) recently recognised that its long held approach to pricing fixed line telecommunications services (TSLRIC+) may no longer be an appropriate way to set the price for access to Telstra's network and has indicated a preference towards a "building block" pricing framework[1] for regulating the prices for these services.[2]

RBB Economics has been asked to advise Telstra on the appropriate approach to determining service lives of new fixed network assets and remaining service lives for Telstra's existing fixed network assets to use in such a building block pricing framework. Under this framework, the service lives will determine the speed at which the regulated firm can secure the return of its capital (the depreciation). The shorter the lives of the assets in question, the shorter the period for that recovery. Conversely, the longer the service lives, the longer the period for recovery.

In an industry, such as telecommunications, which is characterised by technological change, choices made regarding service lives can have profound implications on the incentives of a firm to invest and on the migration of customers from older technologies to newer technologies. This paper presents the theoretical basis for our finding that service lives for depreciation purposes should reflect their *economic* life (which takes into account the economic value provided by the assets) rather than their *technical* life (which is simply aimed at allocating costs across an assumed design life for the asset).

In some regulated sectors, the difference between economic lives and technical lives may not matter. One reason for this is that technological change in those sectors is gradual and predictable. In the rail sector, for instance, regulators have often said that they believe that economic and technical lives are similar and so the debate about the appropriate service lives takes place for other reasons (such as to avoid sharp spikes in consumer prices by smoothing the impact of a concentration of assets becoming fully depreciated at the same time).

But in a sector such as telecommunications the difference between economic lives and technical lives does matter. Technological change can mean that assets are capable of providing economic value for longer or shorter than originally anticipated. The introduction of DSL technologies which enabled telecommunications operators to provide higher speed broadband services over copper cables is an example of a technological change which meant that the economic life of an asset was actually *longer* than initially anticipated.

It is not always easy to determine the economic life of an asset as this will be affected by a number of factors. The two most important of these in this sector will be technological obsolescence and changes in the commercial life of an asset. These factors are, of course, inter-related with the former usually leading to changes in the latter.

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[1] Also referred to as a regulated asset base (RAB) approach.

[2] See for instance ACCC (December 2009), *Pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS, 1 August 2009 to 31 December 2010*; ACCC (December 2009), *Review of 1997 Guide to telecommunications Access Pricing Principles for Fixed Line Services*, Discussion paper and more recently ACCC (September 2010), *Review of the 1997 telecommunications access pricing principles for fixed line services*, Draft report.

One way of determining the economic lives of assets is to set them by reference to the period over which the services that the asset provides will be needed. The NBN in Australia is an example of a technological change that will mean that the economic life of an asset will be *shorter* than its technical life. Under the recently announced non-binding heads of agreement (NBHoA) between Telstra and NBN Co, for instance, Telstra has announced that it would decommission its Telstra's copper network and cable broadband service over the next eight years. Such an agreement makes it possible to make recommendations concerning the period over which certain assets at least will provide services that the firm needs. Any building block pricing framework can, therefore, take the impact of NBN into account when setting the service lives of Telstra's assets.

Actual (and remaining) service lives that should be used in the ACCC's proposed RAB model could come from three sources.

First, the ACCC could rely on international benchmarks of service lives. In our view, relying on international benchmarking is useful when the international environment is similar to the situation you are assessing or if the assets in question are not subject to significant technological or commercial risks. But international benchmarking is less useful when trying to estimate the economic life for assets that will be affected by the NBN roll-out. This is because the pace, extent and nature of technological change associated with the roll-out of next generation (broadband) networks will differ across countries.

Second, the service lives to use in the proposed RAB model could be sourced from Telstra's Asset Service Life Review report. Our assessment on the 2009/2010 Review and our discussions with the relevant Telstra staff is that Telstra does try to set its service lives to reflect the economic life of assets. However, the roll-out of the NBN will mean that modifications will be needed to the service lives of some of Telstra's fixed network assets from Telstra's Asset Service Life Review in order to ensure that those service lives can be used in the near term in the ACCC's proposed building block pricing framework.

This study is the third way that service lives can be collected that can be used in the ACCC's proposed RAB model. The objective of this study has been to provide relevant, robust and reliable estimates of the economic lives of Telstra's fixed network assets taking account of the impact of NBN rollout. The study does this by:

- Making specific recommendations for service lives for those assets that will be affected by the NBN roll-out using Telstra's Asset Service Life Review process as a starting point and making assumptions that draw on the best available information in the public domain. These assumptions are set out in section 3 of the report and represent our view of how certain of Telstra's assets will be affected by technological change; they do not reflect Telstra's view of the impact of NBN on its network.

- Relying on Telstra's Asset Service Life Review for the service lives for those assets which will not be affected (at least in a significant way) by the NBN. For those assets, Telstra's Asset Service Life Review appears to us to be a reasonable attempt at determining the economic life of assets (including the use of international benchmarks where appropriate) and is, therefore, an appropriate source of service lives for those assets.

The service lives that we recommend should be used for the most significant of Telstra's fixed network assets are summarised in the table below.

C-I-C **Service lives in years for Telstra's fixed network assets**

Assets	Service life for new assets	Remaining Service life for existing assets
Copper cables (main)	[redacted]	[redacted]
Copper cables (distribution)	[redacted]	[redacted]
Pair Gains systems	[redacted]	[redacted]
Local switching	[redacted]	[redacted]
PDH transmission	[redacted]	[redacted]
Ducts and pipes (main)[1]	[redacted]	[redacted]
Ducts and pipes (distribution)[1]	[redacted]	[redacted]
Radio bearer equipment[1]	[redacted]	[redacted]
Network owned buildings[1]	[redacted]	[redacted]
Network huts and shelters[1]	[redacted]	[redacted]
Network power[1]	[redacted]	[redacted]
CAN radio (radio systems – customer concentrator)[2]	[redacted]	[redacted]
Optical fibre cable[2]	[redacted]	[redacted]
International submarine cable systems[2]	[redacted]	[redacted]
SDH transmission[2]	[redacted]	[redacted]
Support structures[2]	[redacted]	[redacted]
General purpose building[2]	[redacted]	[redacted]
Leasehold buildings[2]	[redacted]	[redacted]

1 *Modified from Telstra's Asset Service Life Review by RBB*

2 *Sourced from Telstra's Asset Service Life Review* C-I-C

The remainder of this report is structured as follows:

- Section 2 sets out the most appropriate way to set service lives from a theoretical perspective and the factors that affect the economic life of an asset in practice. It also explores the different sources that could be used to collect service lives.

- Section 3 investigates the impact of the NBN on Telstra's service lives and then makes suggestions regarding service lives for each of the major categories of fixed network assets that we have identified.

Finally we have reviewed the Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia and we have complied with those Guidelines in preparing this report.

2 Why Service Lives Matter

The ACCC's view appears to be that when setting access prices, regulatory certainty is promoted if the value of the assets used to provide the regulated services is locked in rather than continually re-valued at each regulatory re-set.

A RAB is a one way of ensuring that the access provider is compensated over the long run for the investments that it has made in its network. The return of capital (depreciation), the return on capital (the cost of capital) as well as the operating expenses incurred to maintain the RAB are then recovered through regulated prices over the relevant period. In subsequent regulatory reviews ("re-sets"), the amount of the RAB is increased by the amount of any new investment and decreased by the amount of depreciation.[3]

The objective of this paper is to advise of the appropriate lives to use in order to depreciate the values that are assigned to particular assets in the RAB.

2.1 Do service lives matter?

Service lives simply determine the period over which an access provider recovers the cost of their investment. Shorter service lives mean that the cost of the firm's investment is recovered over a shorter time frame, while longer service lives mean that the cost of the firm's investment is recovered over a longer time frame.

The types of assets held by the utilities that are usually subjected to a building block pricing framework – such as a RAB – are typically long-lived assets. Such assets, by definition, would be expected to have long service lives.

But long service lives can mean that there is a greater risk that those assets can become "stranded" if a change – such as a technological or regulatory change – means that new assets can be introduced to produce the same service more efficiently. Access providers may then find it difficult to recover their cost of their investment which could affect their incentive to invest in this industry. It may also affect the timing of any migration to new technologies (as the access provider may choose to wait until they recovered all of their costs over the long life of the asset based on the old technology).

In an unregulated industry, technological change may be a risk that is carried by shareholders in a competitive market. However, Kahn (1970) argues:

> *"It is their [stockholders'] function, not that of consumers, to bear the risks of unanticipated rapid obsolescence; their rate of return ought to be high enough to compensate for such risks. The argument would not be wrong, in principle. But by the same reasoning, the allowable rate of return of public utilities is kept typically below that in industry generally precisely because stockholders share*

[3] One major difference with a forward looking TSLRIC+ approach is that a TSLRIC methodology requires the asset base to be re-estimated and re-valued during each re-set whereas the asset base in a RAB model is "locked in".

> *those risks with consumers; what consumers would gain by a different treatment of depreciation in these circumstances they would lose by having to pay a higher return. Moreover, allowable depreciation is usually determined by the regulatory authorities: if it proves ex post to have been inadequate, it is not clear that the burden is properly borne by stockholders. Here again is reflected the conception that regulation should in the face of change and uncertainty permit public utility companies to cover their authorised revenue requirements – not more and not less – rather than treat them as they would be treated by a competitive market. Finally, there remains the basic problem that putting the burden on stockholders would discourage economically efficient replacement of obsolete assets."* [4]

In other words, the regulated company should be allowed to recover all of the costs of its investment so as not to give it an incentive to delay the introduction of the new technology. One reason why a regulator might not allow the regulated company to recover the costs of the firm's initial investment in the older technology may be that consumers may complain that they are being made to pay more than the marginal cost, or indeed the total cost, of serving them and that the company is being permitted to recoup from them fixed costs that should have been charged against customers in the past, as it was earlier consumers who actually benefited from the old technology.

To avoid this possibility, Kahn proposes that service lives should be set as close as possible to economic lives. This way, by the time new technology is developed and perfected, older assets have been fully depreciated and there is no need for future consumers to bear any of the costs of the older assets. An example of such an approach is presented in Annex A.1 of this study.

The next section presents the factors that we believe can be used to determine the economic lives of Telstra's fixed network assets.

2.2 What factors affect economic lives?

The discussion above and the example in the annex presents a theoretical justification for using economic lives in a building block pricing framework and examines the role that technological change could play in creating a divergence between the *technical* life of an asset (i.e. the length of time that an asset could function), and its *economic* life (i.e. the length of time that an asset will in practice provide economic value).

In some circumstances, the technical life of an asset and its economic life may be the same. In the rail sector, for example, regulators tend to argue that the absence of unanticipated technological change typically means that "economic" lives will usually equal "technical" lives. The telecommunications industry, however, is a clear example of an industry where there is a risk that technological advancement could result in the obsolescence of assets in such a way that is likely to create a divergence between the asset's technical life and its economic life.

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[4] Kahn, Alfred E, *The Economics of Regulation: Principles and Institutions*, Wiley, 1970-1971, page 120 (emphasis added).

It is important, therefore, to set out some of the factors that can affect the measurement of economic lives. These factors include:

- technological change;
- productivity of assets;
- commercial uncertainty; and
- changes caused by public policy.

These factors are of course interrelated to a certain degree. For instance, technological change may impact the productivity of assets, which impacts commercial uncertainty; changes caused by public policy (e.g. through changes in regulations) may decrease the asset's ability to provide services and lead to commercial uncertainty.

Incorporating these factors to determine the economic life of an asset is difficult because of the uncertainty involved. However, it is necessary to do so because of the need for the firm to recover the costs of its investment over an appropriate period of time. We have undertaken a review of how regulatory authorities in Australia and abroad have addressed these factors and the findings of this review are presented below. The review does not address the criteria that firms should use to address issues such as wear and tear or other environmental facts that affect service lives.

2.2.1 Technological change

Technological change will usually lead to a difference between an asset's economic life and its technical life and will usually mean that the economic life of an asset will be shorter than its design life.

One example of technological change *shortening* service lives in Australia is Telstra's decommissioning of its CDMA network in favour of Telstra's third generation network, resulting in *"an acceleration of depreciation and amortisation on certain CDMA network, switching and software assets."*[5] In that case, the design was made by Telstra, communicated to the various stakeholders, and a retirement date selected to "switch-off" the CDMA network.

Technological change can, however, be uncertain and will present challenges to regulatory authorities as well as to the affected companies themselves. In 2009, the Commission for Communications Regulation (ComReg) specifically examined the impact of the Next Generation Network (NGN) on regulatory service lives and noted that NGN was only at an early stage of development and that no change to service lives was required. The factors that ComReg took into account when deciding not to change service lives were that NGN was only slowly being introduced, traditional assets were being overlaid and not replaced, and that existing services would continue to be offered over the existing asset base.

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[5] Telstra 2008 annual report, page 28.

2.2.2 Productivity of assets

Technological change can also lengthen service lives by increasing the productivity of the assets.

An example of this can be found in the UK, where in 2005, Ofcom, the UK telecoms regulator, increased the service life of British Telecom's (BT) copper to eighteen years on the grounds that "*the useful life of the asset is likely to be near to the design life [...] particularly in light of the ever expanding use of the copper network for broadband services*".[6] (Similarly, Ofcom increased the service life for duct to a revised estimate of the useful life of this asset.[7])

The productivity of mines has been one of the factors that regulators in Australia have considered when assessing access undertakings by rail access providers on the basis that the remaining physical service life and future earnings potential from the mines is an important influence on the economic value of the assets.

2.2.3 Commercial uncertainty

Commercial uncertainty can affect service lives by affecting the ability of the assets to provide services that are needed.

Ofgem, the UK energy regulator, explicitly investigated the impact of commercial uncertainty on service lives of regulated firms and identified at least two factors which make it difficult to estimate the useful life of assets in this industry. Firstly, there is uncertainty around future global gas demand and supply: Ofgem believes the UK currently has very high per capita gas consumption compared to other countries because of the proximity of the North Sea but supplies from the North Sea are now in steep decline. Secondly, the need to move to a low carbon economy may require phasing out gas in domestic heating (which accounts for a significant proportion of both flows across the network and the UK's CO_2 emissions).[8] Ofgem has not yet announced how it intends to respond to these developments; however, it has indicated that it may consider shortening the assumed service lives.[9]

When Ofcom lengthened the service life of BT's copper network, BT challenged the copper decision on the grounds that technological changes such as the widespread deployment of wireless access may in fact reduce the useful service life for copper in the future. However, this argument was rejected by Ofcom on the grounds that further large scale access infrastructure construction to compete with BT (including wireless) was "*unlikely in the short to medium term*".[10] This suggests that if these types of technological development were considered to be likely, then they would affect service lives.

2.2.4 Public policy implications

Changes in Government policy or regulatory decisions can also affect the ability of the assets to provide services that are needed.

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6 Ofcom, *Valuing copper access*, 15 August 2005, paragraph 4.37.

7 Ibid., paragraphs 4.41 - 4.43.

8 Ofgem, *Regulating Energy Networks for the Future: RPI-X@20*, 20 January 2010, paragraph 2.8.

9 Ibid., paragraph 4.10.

10 Ofcom, *Valuing copper access*, 15 August 2005, paragraphs 4.34 and 4.35.

Ofgem noted that the useful lives of electricity transmission assets may become shorter in the future because measures to tackle climate change could have a profound impact on the size and shape of future energy networks.[11] This implies that the life time of assets are subject to changes in legislation and public policy, which is similar to the legal and other limits as identified in accounting standards (such as AASB 116).

2.3 How to actually measure an economic life

The key finding that emerges from the review of the factors affecting economic lives is the need to focus on the asset's ability to provide services that are needed. ComReg in Ireland was able to avoid making any changes to eircom's service lives because their NGN was at an earlier stage of development. Their argument was that the NGN in Ireland would allow existing assets to continue to provide services that are needed. The NBN in Australia is being rolled-out in a very different way to the NGN in Ireland and the factors that ComReg took into account in deciding not to shorten asset lives do not apply here.

One way of taking these factors into account is by aligning the service life of the asset to the period over which the asset will provide services that are needed by the firm (or its customers). The ACCC suggested such an approach in its Draft Statement of principles for the Regulation of Transmission Revenues:

> *"Assessing the life, or remaining economic life, of an asset may not be straight-forward. It will depend on the level of maintenance assumed and likely wear and tear it is subjected to. Perhaps more significantly, the useful economic life of an asset may have very little to do with the feasible technical life of the equipment. It may be more dependent on the period over which the service it provides will be needed. For example, if the infrastructure is designed to service a resource (e.g. gas field or generator) with a limited life that may be what determines the economic life of the asset. Alternatively, the downstream market for the end product may have a life limited by the nature of its market or anticipated technological developments."* [12]

We agree that the economic life of an asset can be defined as the period over which the service it provides will be needed.[13]

The next section explores the potential sources for such service lives.

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[11] Ofgem, *Regulating Energy Networks for the Future: RPI-X@20*, 20 January 2010, paragraph 2.9.

[12] ACCC (27 May 1999), *Draft Statement of Principles for the Regulation of Transmission Revenues*, page 46 (emphasis added).

[13] There are scenarios where the firm is willing to incur some losses on its assets before decommissioning it, for instance when a newer version of an asset is about to be introduced which would make production significantly cheaper. In such an event, a firm may decide not to replace its loss making asset but instead await the introduction of the latest version of the asset under consideration.

2.4 Sources of service lives

There are two main sources for service life information – Telstra's Asset Service Life Review Process and international benchmarking.

2.4.1 Telstra's asset service life review

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[redacted]

[14] Telstra, *2009/2010, Asset Service Life Review, Report 008 278 90F, Implementation: 1 July 2009*, page 9.

Is Telstra's approach to determining service lives appropriate for RAB purposes?

Telstra's approach to determining the life of its assets, in general, is aimed at deriving estimates that are consistent with their economic lives.

However, the challenges presented by the NBN are likely to mean that the service lives produced through the Telstra Asset Service Life Review process will need to be modified in order to produce service lives that can be used for the purposes of the ACCC's building block pricing framework. There are at least two reasons for this.

The two challenges listed above are not intended to be criticisms of Telstra's asset management processes; they simply reflect the way that Telstra sets its service lives, which in our view is appropriate for the business as a whole.

These challenges may, however, mean that while Telstra's Asset Service Life Review provides the starting point for any information about service lives, this information will often need to be supplemented by reasonable assumptions about the impact of the NBN roll-out on Telstra's assets. However, for those assets that are not significantly affected by the NBN rollout, Telstra's Asset Life Review process is capable of generating reasonable estimates of economic life without the use of any further analysis.

The distinction between these two types of assets is discussed further in section 3.

2.4.2 International benchmarking

Another way that regulated firms and their regulators either set or assess service lives is by undertaking international benchmarking. Telstra itself compares its service lives with the international median using Ernst & Young's survey into the management of fixed assets by global telecommunications operators.

In the framework we have presented above, international benchmarking is still a useful and appropriate way of determining service lives for those assets that are "less affected" by the NBN roll out. Indeed, for these assets, Telstra's internal processes would be an adequate source of service lives as they attempt to estimate economic life and use international benchmarking as a "reasonableness check".

Is the use of benchmarking to determine service lives appropriate for RAB purposes?

In our view, relying on international benchmarking is useful when the international environment is similar to the situation you are assessing. If not, then the benchmark is not applicable and conclusions can be misleading.

International benchmarking, is less useful when trying to estimate the economic life for assets that will be affected by the NBN roll-out either directly or indirectly. This is because the pace, extent and nature of technological change will differ across countries. Regulators in the UK and Ireland, for example, argued that the pace of the NGN roll out, and the nature of that roll-out means that the impact on the lives of certain assets in those countries is modest. However, in our view, the rapid roll-out of NBN and the impact in Australia is quite different to that in the UK and Ireland. This means that international comparisons or benchmarks of service lives for certain assets may produce misleading or irrelevant results or comparators.

For these assets, the correct approach is to assess how the factors presented above affect each network asset's ability to provide services and to make a recommendation based on the circumstances of each country, particularly with regard to technological change. In Australia, for example, the impacts and effects of the NBN roll-out are becoming clearer and these effects need to be incorporated into the economic lives of Telstra's fixed network assets for the purposes of the building block pricing framework under consideration by the ACCC.

2.4.3 A third source of service life information

As discussed above, Telstra's Asset Service Life Review process involves a forecast of the actual time for which the asset will contribute to the revenue earning capability of Telstra. In other words, it assesses the time period over which the asset will provide services that are needed. Telstra, therefore, attempts to measure the economic life of its assets. As part of that process it also reviews the international experience regarding service lives.

In our view, Telstra's Asset Service Life Review is an appropriate way to set service lives when assets are not significantly impacted by the NBN roll-out. Telstra's Asset Service Life Review process is also the most appropriate starting point for those assets that will be significantly impacted by NBN. However, for the latter category of assets, further analysis will be needed to ensure that technological and commercial risks are taken account in an appropriate manner. The findings from such an analysis are presented in the next section.

3 Impact of NBN on Telstra's service lives

Of the factors discussed in the framework in section 3, technological change – and its impact on the commercial viability of Telstra's assets – will have the largest impact on the economic life of Telstra's fixed network assets.

In this section we present our recommendations on the service life and remaining service life that should be applied to Telstra's fixed network assets and used in the building block pricing framework currently being considered by the ACCC. The assets for which service lives are provided were selected on the following criteria:

- They relate primarily to Telstra's fixed network, excluding Telstra's data networks (such as the switched data network and the digital data network);
- The assets are significant in terms of their written down value. We have defined "significant" to mean that these assets have a written down value of over $100 million in 2009/2010.

We have not made any recommendations on the service lives for assets associated with information technology equipment and software.

3.1 The current status of the NBN in Australia

The current plan to build a National Broadband Network (NBN) in Australia is the primary example of technological change in this sector. In short, the Federal Government has established a company (NBN Co) to deploy and operate the NBN, and rollout has commenced in some areas. The Government has indicated publicly that it intends to roll out to over 93 per cent of the Australian population within 8 years, from mid 2009.[15]

Unlike a number of countries where the next generation network is being rolled out by the incumbent operator, the NBN in Australia is being developed by a company that is a completely separate entity to the incumbent, Telstra. As a result, an NBN rollout will likely have a significant impact on future demand for Telstra's fixed network services.

In addition, the technological and commercial changes associated with the NBN are known with a reasonable degree of certainty. More importantly, the period of time that the roll-out will occur is known and this will determine when Telstra's copper and cable networks are decommissioned and when they are no longer able to provide services that are needed. In other words, the economic lives of a number of important assets are known with reasonable certainty. By contrast, the experience in the UK and Ireland discussed in the previous section shows that regulatory authorities in those countries were unwilling to change service lives when there was uncertainty about the nature of technological change.

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[15] See for instance the website of the Department of Broadband, Communications and the Digital Economy (http://www.dbcde.gov.au/broadband/national_broadband_network, last visited: October 2010).

The NBN roll-out in Australia will also mean for some assets at least, that Telstra's internal process and international benchmarks may not always provide reasonable and appropriate estimates of assert lives that can be used in a building block pricing framework methodology.

3.2 How technological change affects the economic lives of Telstra's fixed network assets

Under the recently announced non-binding heads of agreement (NBHoA) between Telstra and NBN Co, Telstra has agreed to participate in the rollout of the NBN. The transaction also means that Telstra will decommission its copper network and cable broadband service.

The decision to establish the NBN Co and the NBHoA will significantly affect the ability of some of Telstra's assets to provide services. The implications of this will be as follows.

- There will clearly be divergence between the technical life of some assets (such as copper cable, and access switching equipment) and their economic life. Specifically, the ability of those assets to provide services will cease when the copper network is decommissioned in line with the NBHoA. Those fixed network assets will be **affected directly** by the roll-out of the NBN

- The ability of a wide range of other fixed network assets to provide services will be affected, even though these assets will not be decommissioned. Some of Telstra's customer access network (CAN) and inter exchange network (IEN) assets such as ducts, pits and backhaul transmission would continue to be utilised by NBN Co for the purpose of the new fibre network, under long-term commercial arrangements with Telstra. Service lives for these assets will need to take into account that not all of the assets in these asset categories will be able to provide services that are needed. Those fixed network assets will be **affected indirectly** by the roll-out of the NBN.

- There will be other fixed network assets that are **less affected** by the roll-out of the NBN Co.

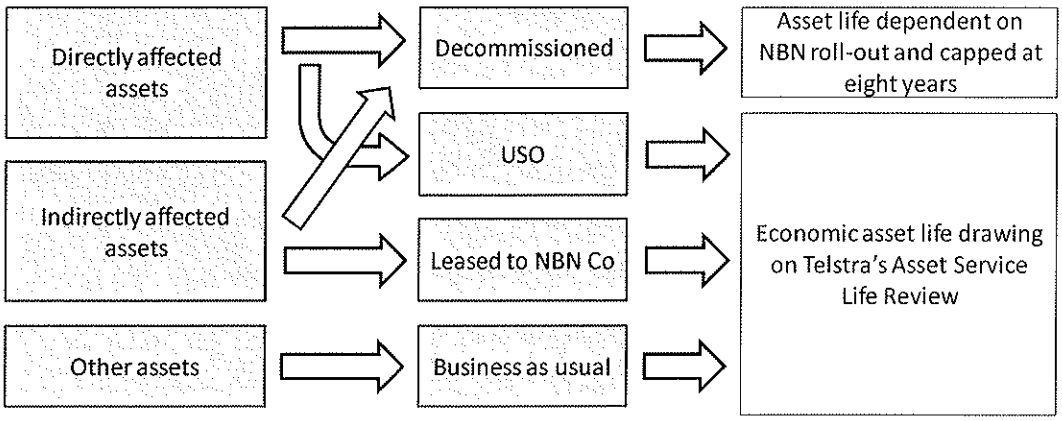
This classification does not alter the general approach to determining service lives. In each and every case, the economic life of an asset will depend on its ability to provide services that are needed.

The classification above does, however, affect the decision on how to determine the economic life of assets.

As we discussed in section 2.4, Telstra's Asset Life Review process is a starting point to determine the service lives for those assets that will be significantly affected – either directly or indirectly – by the roll out of the NBN although further analysis will be needed.

For those assets that will not be significantly affected by the NBN rollout, Telstra's Asset Life Review process can be relied upon to generate reasonable estimates of economic life. We classified these assets as "other assets" or "less affected" by the roll-out of NBN.

The figure below summarises the proposed approach for the three asset categories mentioned above and potential sources of estimates of economic life for these assets.



3.3 Directly affected assets

Assets that are directly affected by NBN and which will be decommissioned are likely to be:

- Copper cables (main and distribution);
- Pair Gains systems;
- Local switching;
- PDH transmission.

These assets can all be considered to be integrated with Telstra's copper network and will be directly affected by the decommissioning proposed in the NBHoA. The economic life of all of these assets will need to coincide with the ability of the assets to continue to provide services that are needed.

In our view, as the entire copper network (with the exception of a small proportion retained to meet the USO) is to be decommissioned, it is not necessary to undertake a review of each asset's ability to provide services. Instead, the assets can be considered in aggregate and the economic life determined by either of the two following approaches.

First, the service life for new assets should be capped at **eight years**. This represents the maximum period over which those assets will be able to provide services. Where the economic life of particular assets in this category is *below* eight years, the actual economic life should be used.

Second, the service life should be set in a way that relates to the actual period when the assets will be able to provide services. This approach would require information on the actual time that particular assets would be available to provide services before they were decommissioned. A

weighting would then be made across all of the assets in each category in order to provide a single weighted economic life for each asset category.

For the purposes of this study, we have assumed a particular (and simplified) NBN roll-out profile. We assume that half of Telstra's directly affected assets are decommissioned after four years because of NBN's roll-out with the remaining half being decommissioned in year eight. This would mean that the service life for any asset that is longer than eight years would be capped at eight years and that the remaining service live for such an asset would be capped at six years.[16] But where the actual service life or remaining service life is below the cap, we use the actual life.

C-i-C **Table 1: Service lives in years of directly affected assets that will be decommissioned**

Assets	Service life for new assets	Remaining Service life for existing assets
Copper cables (main)	8	[redacted]
Copper cables (distribution)	8	[redacted]
Pair Gains systems	8	[redacted]
Local switching	8	[redacted]
PDH transmission	8	[redacted]

C-i-C

In Table 1 above, the service lives for the directly affected assets are capped at 8 years and the (average) remaining service lives capped at 6 years. C-i-C [redacted]

Our understanding is that, in practice, not all of Telstra's copper network will be decommissioned as some of it will be required to meet the agreed USO obligations. For those assets, the economic life will be longer as the assets used in the USO areas will still be required to provide services that are needed. In order to estimate the economic life of those assets, it is reasonable to use Telstra's internal process supplemented with international benchmarking. The service lives for that subset of directly affected assets used to meet the USO obligations are shown in the table below.

[16] Assuming that half of the assets are retired after four years and half are retired after eight years.

C-i-C **Table 2: Service lives in years of directly affected assets that will be used to serve the remaining part of the population under the USO**

Assets	Service life for new assets	Remaining Service life for existing assets
Copper cables (main)	[redacted]	[redacted]
Copper cables (distribution)	[redacted]	[redacted]
Pair Gains systems	[redacted]	[redacted]
Local switching	[redacted]	[redacted]
PDH transmission	[redacted]	[redacted]

Source: Telstra accounting data C-i-C

We do not know how Telstra's or the ACCC's RAB models have been devised, but it unlikely that they can accommodate two categories of similar assets. The table below, therefore, weights the service lives for the directly affected assets using the assumption that 7 per cent of the relevant assets will be required to meet the USO obligations.[17]

Although the 7 per cent assumption is drawn from public information, it is not clear that it is necessarily the "correct" number to use when weighting asset lives. This is because there is no clear relationship between the percentage of customers served by the USO and the proportion of assets required to deliver that service. On the one hand, it could be argued that more assets are required to deliver the USO obligation in rural areas (longer cables, more (smaller) exchanges etc). On the other hand, it may be that the equipment used to provide the USO obligation is of an older vintage and already depreciated. But in our view, 7 per cent is a reasonable approximation to use in the absence of any technical information about the nature of the network in USO areas.

C-i-C **Table 3: Weighted service lives in years of directly affected assets**

Assets	Service life for new assets	Remaining Service life for existing assets
Copper cables (main)	[redacted]	[redacted]
Copper cables (distribution)	[redacted]	[redacted]
Pair Gains systems	[redacted]	[redacted]
Local switching	[redacted]	[redacted]
PDH transmission	[redacted]	[redacted]

C-i-C

The service lives in Table 3 are the lives we recommend should be used for directly affected assets in a building block pricing framework.

[17] E.g. the weighted service live for copper cables is 8 × 93% + C-i-C [redacted] × 7% = C-i-C [redacted]

3.4 Indirectly affected assets

A number of other assets will be indirectly affected by the NBN roll-out. These assets will not be completely decommissioned as a result of the NBN roll-out, although their ability to provide services will be significantly affected. These assets are:

- Ducts and pipes (main and distribution);
- Radio bearer equipment;
- Network owned buildings;
- Network huts and shelters;
- Network power.

The following two stages will be required in order to set the economic life of indirectly affected assets.

First, the assets that can be used by NBN Co – or will have an alternative use within Telstra – will need to be identified and a service life that reflects the economic life of those assets will need to be selected. The economic life in this instance is likely to coincide with the technical life of the particular asset category, and international benchmarking could be used to inform this decision.

Second, the service life of the remaining assets in each of those asset categories will be capped at eight years (or will follow the decommissioning path over those eight years as discussed above).

The resulting service life will be a weighting of those two categories.

Stage 1: Identifying assets that will continue to provide services that are needed

Service lives for those assets that will be leased to NBN Co or which will find an alternative way to provide services for Telstra will be less exposed to the technological and commercial change created by the NBN roll-out. For those assets, Telstra's Asset Service Life Review – supplemented by the use of international benchmarking is an appropriate way to determine service lives. These are shown in Table 4 below.

C-I-C Table 4: Service lives in years of indirectly affected assets leased by NBN Co or finding an alternative use

Assets	Service life for new assets	Remaining Service life for existing assets
Ducts and pipes (main)	[redacted]	[redacted]
Ducts and pipes (distribution)	[redacted]	[redacted]
Radio bearer equipment	[redacted]	[redacted]
Network owned buildings	[redacted]	[redacted]
Network huts and shelters	[redacted]	[redacted]
Network power	[redacted]	[redacted]

Source: Telstra accounting data C-I-C

The challenge will be to determine how much of the relevant asset category will be leased by NBN Co or will find an alternative use within Telstra. This is an area that is uncertain, although assumptions will ultimately need to be made by Telstra and the ACCC in order to ensure that the service lives for this category of indirectly affected assets are appropriate for the purposes of the RAB.

In the meantime, the estimates contained below should be considered to be indicative; they are based on our views of how particular assets are likely to be affected by the NBN roll-out. The assumptions presented below have drawn on the information that is currently in the public domain, which at this stage is limited. The assumptions below also do not reflect Telstra's view on how the NBN roll-out may affect their network.

- We estimate that only 48-67 per cent of **ducts and pipes** will be leased to NBN Co.[18] The Implementation Study states that an estimated 100,000 to 140,000 kilometres of underground ducts could potentially be used by NBN Co.[19] We also assume that around 15 per cent of the duct network would find an alternative use by Telstra,[20] and so we assume that only **63-82 per cent of the duct network** will be able to provide services for Telstra going forward.

- The Implementation Study notes that a fibre network typically requires fewer exchanges due to higher premises to exchange ratios.[21] Telstra is likely to use many of these for other purposes, such as to store mobile switches and other inter-exchange network hardware. We therefore estimate that **50-75 per cent of network owned buildings** and **network power** will either be leased to NBN Co or find an alternative use. Our understanding is

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[18] Total length of duct is 208,424 km of trenched duct (Analysys Model Results (Costs.xls, v. 0.92, 27 June 2009). So: 100,000 / 208,424 = 48%. 140,000 / 208,424 = 67%.

[19] Implementation Study, page 22: *"Most obviously, Telstra has an estimated 100,000 to 140,000 km of underground ducts that NBN Co could potentially use to deploy its fibre."*

[20] For example, Telstra could use ducts and pipes for direct fibre connections to (business) customers. We assume that these connections ware most likely to be in urban areas. Using the PIARC estimates (see the World Road Association (PIARC) website: http://www.piarc.org/library/aipcr/1/A049gquLixvl7siV7Wq9qPI1.pdf, last visited: October 2010) of rural and urban local roads, we take the percentage of urban roads or total local roads: 84,845 / (600,725 + 84,845) = 12.4%. We have therefore assumed that up to 15 per cent of the duct network could be used for other purposes.

[21] Implementation Study, page 178.

that network owned buildings typically will house assets other than fixed line assets and will therefore continue to provide services for Telstra.

- We estimate that **25-50 per cent of network huts and shelters** will be by-passed by the NBN Co and will not find an alternative way of providing services. This is because this asset category is separate from "support structures" which was created to house all antennae, support towers, masts and poles which are used mainly by mobiles and customer access systems. Huts and shelters, therefore, are likely to be used primarily for Telstra's fixed network and are likely to be significantly impacted by the NBN rollout, particularly as a fibre roll-out will have a higher premises to exchange ratio.

- The **radio bearer network** is likely to be affected by the roll-out of the NBN and will face a reduction in its ability to provide services to Telstra. We do not, however, at this stage have enough information on the nature of those impacts to provide an estimate on the proportion of the radio bearer network that will be affected by the NBN roll out.

The table below gives an overview of indirectly affected assets and the proportion of these assets which will be used by NBN Co or find an alternative use in Telstra.

Table 5: Proportion of assets leased by NBN Co or finding an alternative use

Assets	Proportion used by NBN Co or which find an alternative use	Proportion that will be decommissioned
Ducts and pipes (main)	63-82 %	18-37%
Ducts and pipes (distribution)	63-82 %	18-37%
Radio bearer equipment	100%	0%
Network owned buildings	50-75%	25-50%
Network huts and shelters	25-50%	50-75%
Network power	50-75%	25-50%

Stage 2: Service lives for "decommissioned" assets

Those assets that will not be leased by NBN Co and which will not have an alternative use within Telstra will need to be "decommissioned" in the same way as the "directly affected assets" considered above. That is, the service life of these assets will be capped at eight years and the remaining service life capped at six years (assuming that half of these assets will be decommissioned after four years and the remainder after eight years).

Table 6: Service lives in years of indirectly affected assets that are by-passed and will be decommissioned

Assets	Service life for new assets	Remaining Service life for existing assets
Ducts and pipes (main)	8	6
Ducts and pipes (distribution)	8	6
Radio bearer equipment	8	6
Network owned buildings	8	6
Network huts and shelters	8	6
Network power	8	6

Such an approach is consistent with how a firm should handle service lives for such assets. In practice, a firm facing such scenario will – when it has a reasonable degree of certainty about the timing of the technological or commercial changes it faces – choose an appropriate service life for those assets that will reflect the period over which it expects the assets to provide services that are needed. Such a decision would be taken as soon as the impact is clear in order to avoid an impairment charge that could arise in response to an asset being written off prior to the end of its useful life.

The next table shows the results when we apply the weighting of the different categories of assets.

C-i-C **Table 7: Weighted asset lives in years of indirectly affected assets**

Assets	Service life for new assets	Remaining Service life for existing assets
Ducts and pipes (main)	[redacted]	[redacted]
Ducts and pipes (distribution)	[redacted]	[redacted]
Radio bearer equipment	[redacted]	[redacted]
Network owned buildings	[redacted]	[redacted]
Network huts and shelters	[redacted]	[redacted]
Network power	[redacted]	[redacted]

C-i-C

3.5 Other assets

The impact of the NBN roll-out on remaining asset categories is unclear although they are likely to be less affected than the assets that we have identified as being directly or indirectly affected by the roll-out. The asset categories that we believe fall into this category are:

- CAN radio (radio systems – customer concentrator);

- International submarine cable systems;
- Building SDH transmission;
- Support structures;
- General purpose buildings;
- Leasehold buildings.

For these assets, our view is that Telstra's Asset Service Life Review can be relied upon to produce reasonable estimates of service lives. This is because, as discussed in section 2.4, Telstra does attempt to estimate the economic life of its assets, and although it does not explicitly consider the impacts of NBN, this is unlikely to affect the assets considered here.

Our recommendations for these assets therefore draw on Telstra's 2009/10 recommendations, namely:

- **Customer concentrator radio** provides basic access service over radio for remote customers or areas where it is difficult or expensive to provide cable. Our understanding is that although Next G may be used to provide many of these services in the future, the NBN roll-out is unlikely to affect the ability of this asset to provide services. C-i-C [redacted]
- **Core transmission equipment.** This asset category contains a mix of different transmission technologies and each of these technologies will have a different economic life. That economic life will be impacted by technological change as well as some of the other factors discussed in section 3. Telstra has recognised this and has indicated that it may need to review the profiles of SDH equipment in the network to determine whether there is a need to set different service lives for different generations of this technology in future reviews. In our view, such a review may produce more detailed information for this asset category, although it is not clear that such detailed information is necessarily required for the purposes of a building block pricing framework. C-i-C [redacted]
- **Optical fibre.** Telstra currently applies a relatively high service life for optical fibre (C-i-C [redacted] C-i-C) and is of the view that the natural life of optical fibre has yet to be determined. Telstra's view is that it is important "*that the service life be extended to retain the historical value until a natural life has been established*".[22] The implication here seems to be that the economic life and the technical life are the same. However, it is not clear whether such a long life should necessarily be applied to the building block pricing framework and it may be that the NBN roll-out will mean that factors arise that create a divergence between the technical life and the economic life.

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[22] Telstra, *2009/2010, Asset Service Life Review, Report 008 278 90F, Implementation: 1 July 2009*, page 56.

- **International submarine cables** are typically based on the contract life of the asset and we believe this is a reasonable approximation of economic life. C-i-C [redacted]

- **Support structures** include poles, masts and towers. These assets are used mainly for the mobile network, although they may support customer access systems. To the extent that these are to be retained by Telstra for use by its mobile network or leased to the NBN Co, then an estimate will be needed of their economic life. C-i-C [redacted] As this asset category is subject to climatic and other environmental factors, the use of benchmarks may not necessarily be the best way to assess the reasonableness of the economic life of this asset category. We do, however, note that Telstra has indicated that due to changes in the equipment used and the growth of coastal installations, the physical life of these installations has been reducing and it expects the service lives to reduce as the newer installations increase as a proportion of the base. As a result, the service lives of the support infrastructure are likely to be closer to the international medium for poles, masts and towers.

- Our understanding is that **general purpose buildings** and leasehold buildings are less likely to be impacted by the roll-out of the NBN and, therefore, the service lives recommended by Telstra are appropriate.

C-i-C **Table 8: Service lives in years of other assets**

Assets	Service life for new assets	Remaining Service life for existing assets
CAN radio (radio systems – customer concentrator)	[redacted]	[redacted]
Optical fibre cable	[redacted]	[redacted]
International submarine cable systems	[redacted]	[redacted]
SDH transmission	[redacted]	[redacted]
Support structures	[redacted]	[redacted]
General purpose building	[redacted]	[redacted]
Leasehold buildings	[redacted]	[redacted]

Source: Telstra accounting data C-i-C

3.6 Summary

C-I-C **Table 9: Service lives for Telstra's main assets**

Assets	Service life for new assets	Remaining Service life for existing assets
Directly affected assets		
Copper cables (main)	[redacted]	[redacted]
Copper cables (distribution)	[redacted]	[redacted]
Pair Gains systems	[redacted]	[redacted]
Local switching	[redacted]	[redacted]
PDH transmission	[redacted]	[redacted]
Indirectly affected assets		
Ducts and pipes (main)	[redacted]	[redacted]
Ducts and pipes (distribution)	[redacted]	[redacted]
Radio bearer equipment	[redacted]	[redacted]
Network owned buildings	[redacted]	[redacted]
Network huts and shelters	[redacted]	[redacted]
Network power	[redacted]	[redacted]
Less affected assets		
CAN radio (radio systems – customer concentrator)	[redacted]	[redacted]
Optical fibre cable	[redacted]	[redacted]
International submarine cable systems	[redacted]	[redacted]
SDH transmission	[redacted]	[redacted]
Support structures	[redacted]	[redacted]
General purpose building	[redacted]	[redacted]
Leasehold buildings	[redacted]	[redacted]

C-I-C

A.1 Impact of technological change on service lives: an example

The importance of getting the choice of service lives right, and the challenges facing a regulator trying to deal with these issues, can be illustrated by the following example. Suppose that a firm called RegCo, which is the only firm providing a service that the regulator believes has become an "enduring bottleneck", purchased an asset for $1,000. This asset had a technical life of 10 years and could produce 100 units per year. We can assume for the purpose of this simplified example that depreciation is recovered in ten equal instalments of $100, the return on capital is set at 10 per cent and applied to the (declining) written-down value of the asset, and that operating costs increase gradually over time.

The costs faced by RegCo can be shown in the table below. Assuming that RegCo can produce 100 units per year (each and every year), then it will require a regulated price of $4 per unit each year in order to recover its economic costs.[23]

Table 10: Costs and cost recovery profile for RegCo assuming investment in "old" technology

Year	Written down value	Depreciation	Return on capital[b]	Fixed costs[c]	Operating costs[d]	Total costs[e]	Regulated price
1	1,000	100	100	200	200	400	$4
2	900	100	90	190	210	400	$4
3	800	100	80	180	220	400	$4
4	700	100	70	170	230	400	$4
5	600	100	60	160	240	400	$4
6	500	100	50	150	250	400	$4
7	400	100	40	140	260	400	$4
8	300	100	30	130	270	400	$4
9	200	100	20	120	280	400	$4
10	100	100	10	110	290	400	$4

[a] The written down value is the cost (or value) of the asset less accumulated depreciation.
[b] The return on capital is the opportunity cost of the funds and is measured by multiplying the cost of capital (assumed to be 10 per cent) by the written down value.
[c] Fixed costs are the sum of the depreciation and the return on capital.
[d] Operating costs are the variable costs of maintaining the asset.
[e] Total costs are the sum fixed costs and total costs.

In this (highly simplified) example, the firm will produce 100 units each year until the end of year 10, by which time it will have received a regulated price that enabled it to recover the $1000 it had invested through the depreciation charge (the return of capital) as well as a return on capital on the written down value of its investment.

[23] The unit cost is derived by dividing the total cost by the number of units produced.

We now assume that there has been a technological development from year 6 onwards which meant that RegCo – or another firm that could become the sole provider of the enduring bottleneck service – could purchase a similar asset for $600 with a similar production capacity and a useful life of 10 years. The new costs that would then be faced by the firm can be shown below.

Table 11: Costs and cost recovery profile for RegCo assuming investment in "new" technology

Year	Written down value	Depreciation	Return on capital	Fixed costs	Operating costs	Total costs	Regulated price
6	600	60	60	120	120	240	$2.40
7	540	60	54	114	126	240	$2.40
8	480	60	48	108	132	240	$2.40
9	420	60	42	102	138	240	$2.40
10	360	60	36	96	144	240	$2.40
11	300	60	30	90	150	240	$2.40
12	240	60	24	84	156	240	$2.40
13	180	60	18	78	162	240	$2.40
14	120	60	12	72	168	240	$2.40
15	60	60	6	66	174	240	$2.40

The development of the new technology could enable the firm to produce the same amount of output at a lower cost. In year 6 of the first cost schedule, the costs of operating the old technology asset were $250 per year. Society would be better off if the new investment was made as the total costs of the new technology are lower than the variable costs alone of the old technology from year 6 onwards.

In other words, a regulated firm in a regulated industry will not introduce the new technology unless it can recover the costs it incurred by investing in the old technology. To that end, the regulator could allow RegCo to recover the fixed costs of the older technology as soon as it introduces the new technology. This would mean that fixed costs in years 6 to 10 in the first cost schedule would be added to the costs of the new cost schedule. The addition of the fixed costs of the "stranded" technology would in our simplified example, still lead to a regulated price below that of persisting with the old technology. These are shown below.

Table 12: Impact of allowing RegCo to recover costs of old technology through the price of the service produced using the new technology

Year	Total costs (new technology)	Fixed costs (old technology)	Total costs	Price per unit	"Smoothed" price per unit
6	240	150	390	3.90	3.05
7	240	140	380	3.80	3.05
8	240	130	370	3.70	3.05
9	240	120	360	3.60	3.05
10	240	110	350	3.50	3.05
11	240		240	2.40	3.05
12	240		240	2.40	3.05
13	240		240	2.40	3.05
14	240		240	2.40	3.05
15	240		240	2.40	3.05

Under this option, the regulator will allow the fixed costs of the old technology from year 6 to be recovered in the regulated charge of the service produced by the new technology. The regulated price would still be below the $4 price using the old technology and would decline as more and more of the old asset is written off. Alternatively, the regulator could choose to "smooth" the price in order to introduce consistency into the pricing for the service. In this case, the constant or "smooth" price that would allow RegCo to recover all of its fixed costs and introduce the new technology when it becomes available would be $3.05.

This option would mean that customers of the new technology end up cross-subsiding those customers of the old technology as the customers of the old technology are not paying the full costs of the assets that they consumed.

The regulator may, however, insist that the regulated price fall to the new average total cost as that would be sufficient to recover the costs of the new investment. In our example, that would lead to a fall from $4 from under the old technology down to $2.40 which is the total (unit) cost under the new technology straight from year 6 onwards.

If that were the case, then the firm would face the incentive not to introduce the new technology until it has recouped all of its investment from the older technology through the regulated price. That is, it would wait until year 10 before introducing the new technology. As mentioned in section 2.1, Kahn (1970)[24] addressed this issue and considered that one reason why the regulator might not allow RegCo to recover the costs of its initial investment was that consumers may complain that they are being made to pay more than the marginal, or indeed the total cost of serving them; that the company is being permitted to recoup from them fixed costs that should have been charged against customers in the past, as it was earlier consumers who actually benefited from the old technology.

[24] Kahn, Alfred E, *The Economics of Regulation: Principles and Institutions*, Wiley, 1970-1971.

To avoid this possibility, Kahn proposes that service lives should be set as close as possible to economic lives. This way, by the time new technology is developed and perfected, older assets have been fully depreciated and there is no need for future consumers to bear any of the costs of the older assets.

This would mean setting the service life at 5 years for the original technology so that the firm can recover its investment before the introduction of the new technology. The regulated price of the services using the old technology would be higher as shown in the revised cost schedule using a shorter economic life of 5 years.

Table 13: Costs and cost recovery profile for RegCo assuming service lives of 'old' technology were set correctly

Year	Written down value	Depreciation	Return on capital	Fixed costs	Operating costs	Total costs	Regulated price
1	1,000	200	100	300	200	500	$5
2	800	200	80	280	210	490	$4.90
3	600	200	60	260	220	480	$4.80
4	400	200	40	240	230	470	$4.70
5	200	200	20	220	240	460	$4.60

In this scenario, the regulated price of the service using the old technology would start at $5 instead of $4 in our first example and would decline to $4.60 by year 5 by which time RegCo would have recovered its costs and could introduce the new technology. This will mean that older customers will have paid more than if the technological change had not occurred, although the introduction of that technology will lead to savings for the consumers of the new technology. Consumers pay according to whether they benefit from an investment, resulting in consumption that is considered both fair and economically efficient. New technology is taken up whenever it is more efficient than alternatives.

Thus, if service lives are not set appropriately, the regulated company may not have enough time to recoup its investment and make a reasonable return on that investment. This may, in turn, lead to incentives not to facilitate the introduction of the new technology.

A.2 Team Members' CVs

GEORGE SIOLIS

George has worked as a micro-economist for 18 years. He has advised clients in Australia, Asia and Europe, including the European Commission on a wide range of policy issues. He has specialised in the application of economics to competition and regulatory issues around the communications sector. He has particular expertise in cost modelling, including the development of long run incremental cost models.

George has worked most recently in Telstra and has helped determine prices both in regulated wholesale markets as well as in competitive retail markets. Prior to joining Telstra, he was an economic consultant based in the UK for eight years where he developed and led the communications practice at Europe Economics. He has advised companies and regulatory authorities across Europe and Asia on a wide range of public policy issues, including pricing and cost determinations and assessments of anti-competitive behaviour by operators with market power.

George has also worked at the Industry Commission in their Canberra and Melbourne offices where he was awarded the Commission's first Overseas Development Award.

His project experience acting as an expert on economic issues covers the following:

COMPETITION EXPERTISE

- Provided expert advice to parties on a range of competition issues on matters in the financial services, resource, and professional services sectors in Australia and New Zealand.

- Project director in a study for **Jersey Competition Regulatory Authority** aimed at assessing Jersey Telecom's efficiency in comparison with other European and US operators, using industry-standard summary ratios and econometric techniques (SFA, DEA).

- Directed a study for **DG Competition at the European Commission** aimed at exploring the reasons for differences in prices for unbundled local loops across EU Member States and at identifying the best practice with regard to estimating costs and setting prices for these services. The study looked at the appropriateness of various costing methodologies, particularly the use of long run incremental cost (LRIC), and at how different methodologies can meet the Commission's policy objectives.

- Prepared a response for the **United Kingdom Competitive Telecommunications Association (UKCTA)** to Oftel's Consultation Document on Financial Reporting Obligations for Operators with Significant Market Power. The response looked at measures that could limit the market power of vertically integrated operators and for ways to strengthen regulations aimed at avoiding anti-competitive behaviour.

- Provided expert testimony on behalf of the Director of **ODTR (the Irish regulator)** in a High Court Judicial Review brought by Eircom regarding the price of unbundled local loops in Ireland.

- Directed a study **DG Enterprise, European Commission** to develop a set of analytical tools to help competition authorities take account of the innovation when conducting their investigations into the effects of a merger or anti-competitive behaviour in dynamic industries.

- Special advisor to the project team preparing a study to **DG Infosoc**, European Commission on the relationship between costs and prices in mobile networks. The project looked at some of the economic and technical reasons for the high prices of roaming and calls termination.

- Advised the **Independent Television Commission (ITC)** on the economic effects of bundling practices of the cable television operators. This work led to a part time secondment for six months to the Economic Regulation Division of the ITC reporting to the Head of Economic Regulation to advice on mergers, competition policy and other public policy issues.

- Advised the **Office of Electricity Regulation** in the UK on the separation of distribution and supply businesses.

REGULATORY EXPERTISE

- Led the Regulatory Accounting team at **Telstra**. The responsibilities included allocating all of Telstra's costs across all products. Also required an annual re-evaluation of the network to produce reports on a current cost basis.

- Conducted a comparative review of economic regulation in EU Member States in order to develop recommendations for the **Finnish Communications Regulator, FICORA** to improve its effectiveness as a regulator.

- Prepared a response for **Kingston Communications** in response to an efficiency study conducted on the company by Oftel.

- For the **Office of Utility Regulation in Guernsey**, reviewed proposed charges submitted by the incumbent operator, Cable & Wireless Guernsey, and assessed the extent that these met the requirements set out by the Office of Utility Regulation in the legislation.

- Conducted a feasibility study and cost benefit analysis of the introduction of mobile number portability in Hong Kong for **OFTA**. The role included a major presentation to the telecommunications industry in Hong Kong outlining the methodology used to estimate the benefits of number portability and presenting the results of the study to the industry in Hong Kong.

- Project manager of a study for the **National Competition Council**, on Overseas Experience in reform of postal services. The study looked at the experience of the UK,

Sweden, Finland, Canada, New Zealand and the Netherlands and was used by the ACCC to inform their wide ranging review of Australia Post.

- Lead consultant for an economic impact study for a **consortium in Singapore** bidding for a fixed telecommunications licence in Singapore. The economic impact study measured the effect on Singapore's GDP of awarding the licence to the bidder.

COST MODELLING EXPERTISE

- Led a (long-term) project for **IT-og Telestyrelsen (the Danish regulator)** on the development of bottom up and top-down models in Denmark in order to produce interconnection charges for PSTN services and unbundled local loops. The study required the preparation of criteria and minimum requirements for both models, advice on the preparation of the models, a reconciliation of the bottom-up model with the top down model built by Tele Danmark, and the development of a hybrid model to set prices for 2003.

- Directed a detailed costing model for the fixed network in Spain (for the **Spanish Telecom Regulator, CMT**), in order to calculate the cost of interconnection with the incumbent's network (both circuit-switched and IP networks), and providing direct and indirect access to customers and other operators. We were later retained by CMT to update the cost model and compare the outputs with those obtained by the incumbent operator, Telefonica.

- Conducted a training session to the Cost Accounting experts at the **Romanian regulator, ANRC** and provided advice on how different costing methodologies can be used to determine interconnection charges and to assist the ANRC respond to responses to consultations on related issues. Was then retained by ANRC to develop a detailed bottom-up, long run incremental cost model in order to estimate the costs of RomTelecom's network.

- Directed a study for **AGCOM (the Italian regulator)** to verify the costs calculated by Telecom Italia (TI) in order to meet their universal service obligations (USO). The study assessed the appropriateness of the methodology used by TI, the accuracy of the algorithms in their model, and the reasonableness and reliability of the assumptions made by TI.

- Managed a project on the development of a bottom-up model to estimate the cost of leased lines in the UK for **Oftel in the UK**. The models calculated the cost of leased lines under different definitions of the cost increment including incremental costs, fully allocated costs and stand alone costs. The study also included a paper outlining the advantages and disadvantages of different costing methodologies, a number of presentations to the industry, and the reconciliation of the results of the bottom-up model with the results from BT's top-down model.

- Lead consultant on a project for **Singapore Telecom**, based in Singapore, to estimate, using top-down and bottom-up methodologies, the long-run incremental cost of different interconnection services. Costing models were developed for both the access and core network and were presented to the telecoms regulator TAS.

- For the **ACCC**, advised on the project team to build a bottom up model to estimate interconnection charges in Australia (until May 1998). The project involved the development of long run incremental cost model to estimate the costs of Telstra's network.

- Managed two simultaneous projects for **DG XIII of the European Commission**. One of these was a study to build an adaptable "bottom-up", forward-looking long-run incremental cost model for the purpose of calculating PSTN charges. The model has since been used in a number of Member States including France and Austria. The second was a study to provide a clear basis for the assessment and allocation of costs for number portability and call-by-call carrier selection/ pre-selection.

- For **ODTR**, conducted a high level review of the LRIC methodology developed by Eircom and recommended changes to their cost accounting system to ensure compliance with ODTR requirements.

CAREER DETAILS

2009 to date **RBB Economics (Melbourne)**

Partner

2005 – 2009 **Telstra Corporation (Melbourne)**

Regulatory Accounting & Cost Modelling Manager

Business Economics Manager

1997 – 2004 **Europe Economics and National Economic Research Associates (London)**

Managing multi-disciplinary teams (made up of economists, engineers, lawyers and accountants) to deliver detailed reports supported by sophisticated cost modelling, leading the communications practice at Europe Economics.

1992 – 1997 **Industry Commission (Canberra and Melbourne)**

Providing secretariat support to COAG and reviewed the current and alternative taxation arrangements for charitable organisations in Australia.

QUALIFICATIONS

1991 **BEc Hons Economics and Political Science**

Monash University

Simon Bishop

Simon Bishop is a Partner and co-founder of RBB Economics. He has been advising clients on competition policy issues for over 16 years. He has worked on over 100 cases primarily before the European Commission, the European Court of First Instance and the UK and German national competition authorities and courts. In addition, he has acted as an expert witness before the South African competition tribunal. He has advised on many of the leading merger cases, including over 20 Phase II merger cases before the EC Commission.

He has advised on major competition law investigations in a range of industries including satellite and cable television, telecommunications, newspapers, airlines, pharmaceuticals, sports, brewing, numerous industries with branded consumer products, steel, electricity and water. His clients for whom he has acted on more than one occasion include General Electric, Microsoft, British Airways, Bertelsmann, BASF, Cargill, BHP Billiton and Sony.

Simon is the co-author of *The Economics of EC Competition Law* published by Sweet & Maxwell (second edition published 2002). In addition, he has written a number of articles on the role and use of economics in competition policy proceedings. These include *"Market Definition in UK Competition Policy"* (1993), and *"The Role of Market Definition in Monopoly and Dominance Inquiries"* (2001) both published by the Office of Fair Trading Research Paper. He is the principal author of an internal manual written for the European Commission's Merger Task Force on the use of quantitative techniques as an aid to assess the competitive impact of mergers and teaches an in-house course on economics to DG COMP. In addition, he is also the co-editor of the *European Competition Journal*

Prior to entering economic consultancy, Simon was an academic economist at the Centre for Economic Performance at the London School of Economics and Visiting Lecturer in Business Economics at City University Business School.

SELECTED COMPETITION LAW ASSIGNMENTS

- Advice to GAME plc in relation to its acquisition of Gamestation. Despite the fact that these two companies are the only two specialist retailing chains of video games, the merger was cleared unconditionally following an in-depth investigation by the UK Competition Commission.

- Advice to Nike in relation to its acquisition of Umbro. This transaction was unconditionally cleared by the Office of Fair Trading.

- Continued advice to Sony and Bertelsmann in securing a second clearance of the Sony BMG music JV before the European Commission. This transaction was unconditionally cleared following an extended Phase II investigation.

- Advice and expert reports in relation to the acquisition of Worldspan by Travelsport. This merger was cleared in phase II without the issuance of a Statement of Objections.

- Advice to SvitzerWijsmuller A/S in relation to its acquisition of Adsteam Marine Limited throughout the UK Competition Commission investigation. Both companies were suppliers of towage services at UK ports and the key issues were the definition of the relevant

geographic market and the likelihood of entry. The merger was cleared subject to a divestment at one UK port.

- Advice to BA Connect in relation to its sale to Flybe. This transaction was cleared subject to minor divestments by the Office of Fair Trading despite the fact that several routes could be seen as involving the removal of the only competitor on a number of routes.

- Advice and expert testimony delivered on behalf of ONO, a Spanish cable operator in Article 82 proceedings concerning alleged price squeeze behaviour.

- Analysis and several expert reports on behalf of Mittal in relation to the proposed acquisition of Arcelor. This merger was cleared in Phase I.

- Analysis and several expert reports on behalf of tele.ring, an Austrian mobile network operator, in relation to its acquisition by T-Mobile Austria. This transaction is subject to a Phase II investigation by the EC Commission.

- Analysis and several expert reports on behalf of Bertelsmann and RTL in relation to the acquisition of sole control of n-tv, a German news television channel. This merger was cleared by the German Federal Cartel Office.

- Analysis and several expert reports prepared on behalf of BP in relation to its opposition to the proposed merger between Sasol and Engen, two South African oil companies. The contents of these reports were presented in oral expert testimony before the South African Competition Tribunal. The merger was subsequently prohibited.

- Expert oral testimony provided to the Court of First Instance in relation to a third party appeal against the Commission's decision to clear the Sony/BMG recorded music joint venture.

- Assistance and analysis provided to the FA Premier League in relation to its negotiations with the EC Commission and OFCOM concerning the sale of its broadcasting rights.

- Expert oral testimony provided to the Court of First Instance on behalf of Arjo Wiggins in relation to that company's appeal against a Commission decision fining it for alleged breach of Article 81.I

- Report and expert oral evidence provided on behalf of T-Mobile Deutschland in relation to the EC Commission's allegations that T-Mobile had abused a dominant position by charging excessive prices for international wholesale roaming services. The Commission subsequently closed its investigation against T-Mobile Deutschland.

- Analysis and several expert reports on behalf of Bertelsmann and Axel Springer in relation to the creation of a joint venture incorporating both companies' magazine printing activities in Germany. This transaction, which was notified in German, was cleared unconditionally after a detailed Phase II investigation.

- Analysis and several expert reports on behalf of Bertelsmann Music Group and Sony Music in relation to the creation of a joint venture incorporating both companies' recorded music activities. In marked contrast to the *EMI/Time Warner* transaction, this merger was cleared unconditionally after a detailed Phase II investigation.

- Analysis and several expert reports for General Electric in relation to their acquisition of Amersham, a supplier of *inter alia* diagnostic pharmaceuticals. In some respects this transaction raised similar concerns to those raised in GE/Honeywell i.e. potential concerns relating to the possible bundling of medical diagnostic imaging equipment and diagnostic pharmaceuticals. In marked contrast to the outcome of GE/Honeywell, this transaction was cleared without conditions in Phase I.

- Analysis and several expert reports for General Electric in relation to their acquisition of the medical systems business of Instrumentarium. This transaction was subject to a Phase II investigation by the EC Commission.

- Analysis and several submissions for Carlton, a leading UK advertising funded television broadcaster, in relation to its proposed merger with Granada, another leading advertising funded television broadcaster both before the Office of Fair Trading and the Competition Commission.

- Analysis and expert report prepared on behalf of a major Japanese supplier in relation to Commission proceedings concerning alleged cartel activities in the food additives industry.

- Analysis and expert report prepared on behalf of BPB in relation to Commission proceedings concerning alleged cartel activities in the plasterboard industry.

- Analysis and expert report prepared on behalf of Arjo Wiggins Appleton Limited in relation to their appeal to the Court of First Instance against the magnitude of the fine imposed by the EC Commission following Article 81 proceedings.

- Confidential advice to third party intervener in the proposed GE/Honeywell merger.

- Advice and report for CVRD and Mitsui in relation to their successful joint acquisition of Caemi, an iron ore producer with interests in Brazil and Canada. This merger was subject to a Phase II investigation by the EC Commission's Merger Task Force. During Phase II, economic arguments were presented to rebut first collective dominance concerns and then, after the Commission had altered its case, single firm dominance concerns.

- Expert economic report prepared on behalf of UEFA in relation to the selling of television of broadcasting rights to the UEFA Champions League. This report was prepared in the context of an Article 81 investigation before the EC Commission.

- Advice and report for Aberdeen Journals in relation to allegations of predatory pricing.

- Advice and report on the economics aspects of the proposed merger between British Airways and KLM.

- Advice and reports on the economics aspects arising from Microsoft's acquisition of a shareholding in the UK cable operator Telewest. This transaction was subject to a Phase II investigation by the EC Commission's Merger Task Force. Presentations were made at the Oral Hearing.

- Advice and report on the economic aspects of the merger between Telia and Telenor. This merger was subject to EC Merger Control and an economic presentation was made to the Merger Task Force.

- Advice and preparation of reports for parties active in the steel industries in relation to two Article 81 cartel proceedings before the European Commission. Presentations were made at the subsequent Oral Hearings.

- Advice and preparation of three expert reports for the FA Premier League in the Restrictive Trade Practices case concerning the collective selling of television rights. Expert evidence was given to the Court.

- Report prepared for commercial broadcasters on the impact of a digital licence fee on the take-up of digital services

- Advice to and preparation of report for British Airways during the Competition Commission's investigation of their acquisition of City Flyer Express.

- Advice to and report for British Airways during the EC Commission's investigation of their agreements with travel agents.

- Advice on merger between two manufacturers of wound closure products. This merger was subject to EC Merger Control.

- Advice on the likely reaction of competition authorities to a proposed acquisition by a large supplier of baby food products of a competitor's product range.

- Advice on the likely reaction of competition authorities to a proposed acquisition by a games and toy manufacturer of a competitor's product range.

- Report and advice on the competitive consequences of freezer exclusivity on the market for impulse ice cream under Articles 85 and 86 of the Treaty of Rome. Evidence assembled was presented at an Oral Hearing in Brussels.

- As above but in relation to the Monopolies and Mergers Commission monopoly reference. Both studies involved the formulation and analysis of a cross country comparison.

- Preparation of a report before the European Court of First Instance on the competitive effects of the business practice of outlet exclusivity imposed by a cross country comparison.

- Advice and report on the economic effects of the terms on which cable companies are supplied with programming. This advice was sought to a complaint made by a number of

cable companies that the terms of supply contravened Articles 85 and 86 of the Treaty of Rome. A second report was also prepared in direct response to the economic arguments put forward by the complainants' own economic advisers.

- As above but in relation to an investigation by the UK Office of Fair Trading. Both reports involved a detailed analysis of the non-terrestrial television market including an assessment of the ease with which third party programming could enter this market.

- Advice on the competitive and economic aspects of the acquisition by a large UK defence conglomerate of a competing shipbuilding company. This advice was given in the context of a Monopolies and Mergers Commission investigation.

- Advice and report on the competitive effects of a merger between two funeral directors with operations in the UK, done in connection with an inquiry into the merger by the Monopolies and Mergers Commission.

- Economic and competitive advice on the nature of competition in the UK classified directories market in the context of a Monopolies and Mergers Commission investigation.

- Advice on the potential competition concerns raised by the acquisition by a regional newspaper group of a number of other regional titles.

- Advice and report on the creation of a joint venture between three European stainless steel tube manufacturers which was subject to the scrutiny of the European Commission's Merger Task Force. This report used a number of quantitative techniques to argue that the relevant market was wider than Western Europe - in other words, that Japanese and Eastern European suppliers provided effective competition in Europe.

- Economic advice and report on the impact which live television coverage has on attendances at football matches in the context of a complaint to the European Commission.

- Advice and report on the economic and competition effects of pharmaceutical patents following a complaint under Article 86 of the Treaty of Rome. In particular, the report addressed the issue of whether prices could ever be said to be excessive during the lifetime of the patent.

- Advice and report on the likely competitive effects of the acquisition of a float glass manufacturer by another. This acquisition was subject to scrutiny by the Merger Task Force in Brussels.

- Advice and report on the pricing policy of a float glass manufacturer following a complaint made under Article 86 of the Treaty of Rome.

- Advice and report on the economic and competitive effects of collective licensing agreements. This report argued that the economic benefits flowing from such arrangements outweighed any adverse effects and therefore did not contravene Article 85.

- Advice and report on the impact which the granting of state aid to an ailing European airline would have on competition in the European aviation market. This report was submitted to the European Commission in the context of Article 92 proceedings and before the European Court of First Instance.

- Advice to counsel on the creation of a joint venture between two European manufacturers of aircraft landing gear. This advice was given during the completion of Form CO which notifies mergers and acquisitions to the European Commission.

- Advice and report on the appropriateness of ceding airport landing and take-off slots as a condition for allowing two European airlines to form a joint venture. This joint venture was investigated by the European Commission under Article 85.

- Advice and two reports on the economic and competition characteristics of the satellite transponder market. The first report considered the supply of analogue transponder capacity and the second, the supply of digital transponder capacity. Both reports were written in the context of Article 86 proceedings.

- Advice on how a large supplier of branded consumer products should respond to allegations made under Article 86. This included in particular a claim that the supplier in question was engaging in predatory pricing.

- Internal report for the European Commission's Merger Task Force on the use of quantitative techniques as an aid to assess the competitive impact of mergers. Each member of the Merger Task Force was distributed with a copy of this report.

- Report for South Western Electricity Board on the procedures and implications of an Electricity MMC reference.

- Economic advice on the definition of the relevant market in jeans market. This advice was sought in response to a claim to the UK courts by a retailer that Levi Strauss was dominant.

- Economic advice and report on the competitive implications of the Irish forestry commission, Coillte Teoranta, signing long-term supply agreements with panel mills. This advice was sought in response to litigation brought by an Irish sawmill before the Irish High Court that such agreements contravened both domestic competition law and Articles 85, 86 and 92 of the Treaty of Rome.

- Advice and report to large telecommunications company on the principles which underlie the definition of the relevant market.

- Advice to counsel on the competitive effects of long term supply agreements between brewers and tenant landlords in response to litigation before the UK courts.

- Advice and report on the definition of the relevant geographical market for tyres. This report was prepared to assist in the acquisition to two Polish tyre manufacturers by a

leading US tyre manufacturer which was subject to investigation by the Polish Anti-Monopoly Office.

- Advice and report to a large UK brewer on the economic and competitive effects of exclusive licensing agreements. This report was prepared in context of possible investigation by the European Commission under Article 85.

- Advice to counsel on the nature of competition in the contact lens solutions market during a monopoly investigation by the Monopolies and Mergers Commission.

- Advice and report on the likely impact of a merger between two large airlines. This report included an analysis of the appropriate definition of the relevant market in the airline industry.

- Advice and assistance in the preparation of Form CO for a proposed merger of the operations of two European pay-TV companies.

PUBLICATIONS

"Turning the tables: Why vertical and conglomerate mergers are different", *European Competition Law Review*, 2007 *(*with Andrea Lofaro and Francesco Rosati)

"The Article 82 Discussion Paper: A Missed Opportunity", *editorial in European Competition Law Journal, April 2006*

"Delivering benefits to consumers or per se illegal? - Assessing the competitive effects of loyalty rebates" *Pros and Cons of Price Discrimination, Swedish Competition Authority December 2005*

"Assessing unilateral effects in practice: Lessons from GE/Instrumentarium", *European Competition Law Review*, 2005 (with Andrea Lofaro)

"Selective Price Cuts and Fidelity Rebates", *Office of Fair Trading Research Paper OFT 804, July 2005 (with Adrian Majumdar, Simon Bishop, Iestyn Williams and Ugur Akgun)*

"Alice Through the Looking Glass: The Use and Misuse of Economics in EC Merger Control", *Current Competition Law, Volume II, 2004*

"A legal and economic consensus? The theory and practice of coordinated effects in EC merger control", *The Antitrust Bulletin, Spring/Summer, 2004 (with Andrea Lofaro)*

"The Commission's Draft Notice on Horizontal Mergers: An Opportunity for Change", *Lawyers' Europe (with Mette Alfter and Eric Mahr) 2004*

"Prometheus Unbound: Increasing the Scope for Intervention in EC Merger Control", *European Competition Law Review, Volume 24, Issue 8, and August 2003 (with Derek Ridyard)*

"Economists' Analysis: The European Union's New Horizontal Merger Guidelines", *Antitrust, Volume 17, Number 3, summer 2003 (with Simon Baker, Derek Ridyard and Philip Nelson)*

"Pro-Competitive Exclusive Supply Arrangements: How Refreshing", *European Competition Law Review, Volume 24, Issue 5, May 2003*

"The Economics of EC Competition Law: Concepts, Application and Measurement" *Sweet & Maxwell, Second Edition, 2002 (co-authored with Mike Walker)*

"Unfinished Business: The New Approach to Assessing Vertical Restraints", *Intereconomics: Review of European Economic Policy, Vol 37. No. 1, 2002*

"EC Vertical Restraints Guidelines - Effects-Based or per se Policy?", *European Competition Law Review Vol 23, Issue 1, 2002 (with Derek Ridyard)*

"Disregarding History: The European Commission's Pirelli/BICC Decision", *European Competition Law Review, 2001 (co-authored with Andrea Lofaro)*

"The Role of Market Definition in Monopoly and Dominance Inquiries", *Office of Fair Trading, Economic Discussion Paper No. 2, 2001 (co-authored with Simon Baker)*

"Modernisation of the Rules Implementing Articles 81 and 82", *European Competition Law Annual 2000: The Modernisation of EC Antitrust Policy, eds. Ehlermann and Atanasiu 2001*

"Calcio e televisione: un binomio complesso" *Mercato Concorrenza Regole, 2000*

"Oscar Bronner: Legitimate Refusals to Supply", with Derek Ridyard, *European Economics and Law, 1999*

"The Economics of EC Competition Law: Concepts, Application and Measurement", *Sweet & Maxwell, 1999 (co-authored with Mike Walker)*

"Power and Responsibility: The ECJ's Kali-Salz Judgment", *European Competitive Law Review, January 1999*

"The European Commission's Policy toward State Aid: A Role for Rigorous Competitive Analysis", *European Competitive Law Review, March 1997*

"Reforming Competition Policy: Bundeskartellamt - Model or Muddle?", *editorial in the European Competition Law Review 1996*

"When Two is Enough?", *editorial in the European Competition Law Review, 1996 (joint with Bill Bishop)*

"State Aid: Europe's Spreading Cancer", *editorial in the European Competition Law Review, 1995*

"Quantitative Techniques for Assessing Mergers", *unpublished handbook prepared for the Merger Task Force of the EC Commission, 1994*

"Market Definition in UK Competition Policy", *Research Paper No. 1, Office of Fair Trading (joint with D. Ridyard and M Klass), 1993*

"Breaks in Monetary Series", *Bank of England Technical Series Discussion Paper (joint with S. Topping), 1998*

JEROEN ALGERA

Jeroen joined RBB Economics in October 2005 after completing his masters at Erasmus University Rotterdam. Since then Jeroen worked on several European and national competition cases in a wide range of industries, such as energy, retailing, health care, post and telecoms for both private clients and the Dutch Government.

PROJECT WORK

- Working for **Merck** on its proposed acquisition of **Schering-Plough's** human and animal health pharmaceutical businesses (ongoing).
- Working for **Oracle** on its proposed acquisition of **Sun Microsystems**.
- Working for a **major household products maker** regarding its alleged participation in price collusion (ongoing).
- Working for **a major Dutch Bank**.
- Working for a **major FMCG producer** regarding its alleged participation in price collusion.
- Advise to **British Airways, American Airlines and Iberia** on the proposed cooperation on transatlantic services.
- A report for **Aon** in the Dutch competition authority's investigation of Aon's participation in a risk sharing pool.
- Working on the **Friesland Foods/Campina** (dairy) merger.
- Developing a model for **GAME** plc with the purpose of predicting sales of new game releases.
- Working for **Statoil** on its acquisition of **JET**'s petrol station networks in Sweden, Denmark and Norway.
- Advising one of the major **bathroom fittings and fixtures companies** in the European Commission's investigation into an alleged cartel.
- Working for two **housing corporations** in Dutch competition authority's merger investigation.
- Assessment of the Portuguese ice cream market for **Unilever**.
- Assessment of the welfare effects of the regulation of mobile terminating call charges (MTA tariffs) for **Orange**.
- Advising on a number of cases involving the leading **Dutch cable operators**.

- Analysis of the competitive impact of volume discounts for **Rockwool**, a major producer of stone wool.

Jeroen worked on several cases for regulators and the Dutch Government, such as:

- Study for **Dutch Ministry of Economic** Affairs how to regulate TNT's prices for its universal postal service.
- Project for the **Dutch Healthcare authority** (NZa), in which the care market was investigated: different relevant markets were delineated and the optimal market model (e.g. regulation or competition) was established.
- Developed a framework so that the **Dutch Healthcare authority** (NZa) can establish how parties with market power should be regulated.
- Study for the **Dutch Ministry of Economic Affairs** in which we investigated possibilities for (cross-border) market power on the Dutch electricity market.
- Postal market review for the **Dutch Telecoms Regulator** (OPTA).
- Study for the **Dutch Ministry of Economic Affairs** regarding price regulation on the Dutch postal market.
- Project for the **Dutch Competition Authority** (NMa) investigating the possible welfare effects of price discrimination applied by performing rights organisations.

PUBLICATIONS

- Concurrentie op de markt voor levensverzekeringen: meten is weten? (Competition on the market for life-insurance), *Actualiteiten Mededingingsrecht*, No. 9/10, 2005 (with Christian Ehmer).
- Juiste marktdefinitie blijft essentieel voor het (de)reguleren van markten voor elektronische communicatie (Proper market definition remains essential for the (de)regultion of the markets for electronic communications), *Markt en Mededinging*, No. 8, December 2006 (with Iestyn Williams and Matthijs Visser).
- The Dutch competition authority rejects claim of unlawful tying on the digital music markets (Apple-iTunes), *e-Competitions*, No. 15037, 6 September 2007.

A.3 Federal Court Witness Guidelines

Guidelines for Expert Witnesses in Proceedings in the

Federal Court of Australia

Practice Direction

This replaces the Practice Direction on Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia issued on 6 June 2007.

Practitioners should give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **- Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).

M.E.J. BLACK

Chief Justice

5 May 2008

Explanatory Memorandum

The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence (footnote #1), and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

Ways by which an expert witness giving opinion evidence may avoid criticism of partiality include ensuring that the report, or other statement of evidence:

(a) is clearly expressed and not argumentative in tone;

(b) is centrally concerned to express an opinion, upon a clearly defined question or questions, based on the expert's specialised knowledge;

(c) identifies with precision the factual premises upon which the opinion is based;

(d) explains the process of reasoning by which the expert reached the opinion expressed in the report;

(e) is confined to the area or areas of the expert's specialised knowledge; and

(f) identifies any pre-existing relationship (such as that of treating medical practitioner or a firm's accountant) between the author of the report, or his or her firm, company etc, and a party to the litigation.

An expert is not disqualified from giving evidence by reason only of a pre-existing relationship with the party that proffers the expert as a witness, but the nature of the pre-existing relationship should be disclosed.

The expert should make it clear whether, and to what extent, the opinion is based on the personal knowledge of the expert (the factual basis for which might be required to be established by admissible evidence of the expert or another witness) derived from the ongoing relationship rather than on factual premises or assumptions provided to the expert by way of instructions.

All experts need to be aware that if they participate to a significant degree in the process of formulating and preparing the case of a party, they may find it difficult to maintain objectivity.

An expert witness does not compromise objectivity by defending, forcefully if necessary, an opinion based on the expert's specialised knowledge which is genuinely held but may do so if the expert is, for example, unwilling to give consideration to alternative factual premises or is unwilling, where appropriate, to acknowledge recognised differences of opinion or approach between experts in the relevant discipline.

Some expert evidence is necessarily evaluative in character and, to an extent, argumentative. Some evidence by economists about the definition of the relevant market in competition law cases and evidence by anthropologists about the identification of a traditional society for the purposes of native title applications may be of such a character. The Court has a discretion to treat essentially argumentative evidence as submission, see Order 10 paragraph 1(2)(j).

The guidelines are, as their title indicates, no more than guidelines. Attempts to apply them literally in every case may prove unhelpful. In some areas of specialised knowledge and in some circumstances (e.g. some aspects of economic evidence in competition law cases) their literal interpretation may prove unworkable.

The Court expects legal practitioners and experts to work together to ensure that the guidelines are implemented in a practically sensible way which ensures that they achieve their intended purpose.

Nothing in the guidelines is intended to require the retention of more than one expert on the same subject matter – one to assist and one to give evidence. In most cases this would be wasteful. It is not required by the Guidelines. Expert assistance may be required in the early identification of the real issues in dispute.

Guidelines

1. **General Duty to the Court** (footnote #2)

    1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.

    1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential (footnote #3).

    1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

2. **The Form of the Expert Evidence** (footnote #4)

    2.1 An expert's written report must give details of the expert's qualifications and of the literature or other material used in making the report.

    2.2 All assumptions of fact made by the expert should be clearly and fully stated.

    2.3 The report should identify and state the qualifications of each person who carried out any tests or experiments upon which the expert relied in compiling the report.

2.4 Where several opinions are provided in the report, the expert should summarise them.

2.5 The expert should give the reasons for each opinion.

2.6 At the end of the report the expert should declare that "[the expert] has *made all the inquiries that* [the expert] *believes are desirable and appropriate and that no matters of significance that* [the expert] *regards as relevant have, to* [the expert's] *knowledge, been withheld from the Court.*"

2.7 There should be included in or attached to the report; (i) a statement of the questions or issues that the expert was asked to address; (ii) the factual premises upon which the report proceeds; and (iii) the documents and other materials that the expert has been instructed to consider.

2.8 If, after exchange of reports or at any other stage, an expert witness changes a material opinion, having read another expert's report or for any other reason, the change should be communicated in a timely manner (through legal representatives) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court (footnote #5).

2.9 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report (footnote #5).

2.10 The expert should make it clear when a particular question or issue falls outside the relevant field of expertise.

2.11 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports (footnote #6).

3. Experts' Conference

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

footnote #1

As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676]

footnote #2

See rule 35.3 Civil Procedure Rules (UK); see also Lord Woolf "Medics, Lawyers and the Courts" [1997] 16 CJQ 302 at 313

footnote #3

See *Sampi v State of Western Australia* [2005] FCA 777 at [792]-[793], and *ACCC v Liquorland and Woolworths* [2006] FCA 826 at [836]-[842]

footnote #4

See rule 35.10 Civil Procedure Rules (UK) and Practice Direction 35 – Experts and Assessors (UK); *HG v the Queen* (1999) 197 CLR 414 per Gleeson CJ at [39]-[43]; *Ocean Marine Mutual Insurance Association (Europe) OV v Jetopay Pty Ltd* [2000] FCA 1463 (FC) at [17]-[23]

footnote #5

The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

footnote #6

The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240

A.4 Telstra's asset service lives

C-i-C **Table 14: Service lives for Telstra's fixed network assets (2009-2010)**

Assets		Total acquisition costs (AU$)	Total written down value (AU$)	Weighted average service life (months)	Weighted average remaining service life (months)
XN	Ducts and pipes (distribution)	[redacted]	[redacted]	[redacted]	[redacted]
BO	Optical fibre cable	[redacted]	[redacted]	[redacted]	[redacted]
XD	Copper cables (distribution)	[redacted]	[redacted]	[redacted]	[redacted]
1123	Network owned buildings	[redacted]	[redacted]	[redacted]	[redacted]
SD	SDH transmission	[redacted]	[redacted]	[redacted]	[redacted]
XC	Ducts and pipes (main)	[redacted]	[redacted]	[redacted]	[redacted]
XP	Pair Gains systems	[redacted]	[redacted]	[redacted]	[redacted]
IC	International submarine cable systems	[redacted]	[redacted]	[redacted]	[redacted]
DP	Network power	[redacted]	[redacted]	[redacted]	[redacted]
SL	Local switching	[redacted]	[redacted]	[redacted]	[redacted]
XU	Copper cables (main)	[redacted]	[redacted]	[redacted]	[redacted]
BD	Radio bearer equipment	[redacted]	[redacted]	[redacted]	[redacted]
ZS	Support structures	[redacted]	[redacted]	[redacted]	[redacted]
XR	CAN radio (radio systems – customer concentrator)	[redacted]	[redacted]	[redacted]	[redacted]
1121	General purpose building	[redacted]	[redacted]	[redacted]	[redacted]
ZT	Network huts and shelters	[redacted]	[redacted]	[redacted]	[redacted]
1120	Leasehold buildings	[redacted]	[redacted]	[redacted]	[redacted]
PD	PDH transmission	[redacted]	[redacted]	[redacted]	[redacted]

Source: Telstra accounting data C-i-C