REPORT

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The Telstra Return on a National FTTN Network

Community impacts

Prepared for Competitive Carriers Coalition (CCC) Ltd

Centre for International Economics
Canberra & Sydney

June 2008

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Executive Summary

As part of its election commitments, the federal Government plans to build a national high-speed broadband network that delivers fast internet to 98 per cent of Australian homes and businesses. This network will support high quality voice, data and video services using FTTN (Fibre to the Node) technology.

On 11 April 2008, the Communications Minister released the Request for Proposals for the FTTN network's rollout and operation. Telstra has announced its interest in building and operating this network.

Sometime last year it was reported that Telstra would seek 'an internal rate of return on a FTTN network of 27 per cent'.[1] Recently, the Weekend Australian quoted Phil Burgess (Telstra's Group Managing Director, Public Policy & Communications), when he said "We need a return north of 18 per cent."[2]

This seems to be a high return relative to many other investments in the Australian capital market. Indeed, a rate of return of this size may be consistent with the abuse of market or monopoly power.

Alternative models to build the FTTN network that would not be open to the abuse of market power have been proposed by investors.

The key objective of this study is to provide evidence on the economic impacts of alternative models for the provision of a FTTN network. In particular, this study:

- identifies the difference between the expected capital returns from Telstra's FTTN national network and that of an alternative supplier that was not able to extract monopoly prices; and
- assesses the implications to the community and economy of this difference.

This difference is measured using the Weighted Average Cost of Capital (WACC) approach. This approach is the appropriate basis for comparing alternative models because, since the WACC is the 'expected rate of return on a portfolio of all the firm's outstanding securities',[3] by estimating it we can compare the additional revenue that needs to be extracted from customers under each model to meet each company's

1 Michael Sainsbury 2007, "Telstra revives fast net project", The Australian, April 03.

2 Jennifer Hewett 2008, "Telstra wants return 'north of 18pc'", The Australian, April 09.

3 Brealey, R., Myers, S., and Allen, F. 2006, Principles of Corporate Finance, McGraw-Hill Irwin, Eight Edition, p. 463.

targeted returns. Further, differences in the WACC would feed through directly and proportionately into differences in prices in capital intensive businesses. Hence, by using the WACC approach we are able to estimate the impact of the different models for the provision of the FTTN network on the cost of capital, revenue and prices.

Notably, the WACC plays an important dual role. Not only is it used as the discount rate to value capital investment projects, but it also plays a regulatory role. Indeed, the WACC is used by regulators to control the maximum prices charged for some services and assess the level of return proposed by companies. By calculating the efficient WACC, regulators can stop the regulated companies from charging inefficient prices and earning more than normal market returns.

Table 1 presents the WACC estimates for Telstra's FTTN network and an alternative supplier's network. This table also presents estimates of the revenue required by each network to achieve the targeted returns to capital on an indicative asset base of $4.6 billion, which is Telstra's estimated cost to build a FTTN network in the five major capital cities and the Gold Coast.[4]

Additionally, Table 1 shows the revenue estimates for a $9.3 billion national network, which includes Telstra's offer of $4.6 billion to build the network in major capital cities and the Government's investment of $4.7 billion to help build the network.

Importantly, there is currently no guidance from the Government about the return it will require on its $4.7 billion investment. In the absence of detailed information, the estimates in Table 1 assume that the Government would take the same equity risk as the private sector investor and hence would receive the same equity returns.[5]

Recently, Telstra suggested that the cost of the FTTN network would be up to $15 billion.[6] As such, the last column in Table 1 also provides estimates of the revenue needed to achieve the targeted returns to capital on an indicative asset base of $15 billion.

The key points are as follows:

- Telstra's expected return from the FTTN network is more than 2 per cent higher than the return that an alternative investor would expect from the same asset.
- This difference feeds through directly into differences in revenue that needs to be extracted from customers. Compared to an alternative supplier, the additional revenue that Telstra would need to achieve its targeted return to capital on an

4 Jennifer Hewett 2008, "Telstra wants return 'north of 18pc'", The Australian, April 09; Jennifer Hewett 2008, "$9bn fibre minefield for Conroy", The Australian, April 05.

5 This is not likely to be the case as the Government may seek to recover only a return equal to the risk free bond rate (or slightly above). Up to the time of writing, there has not been any announcement from the Government on this issue. However, this estimate is included here for illustrative purposes.

6 This figure includes the Government's investment of $4.7 billion to help build the network.

asset of $4.6 billion is on average $443 million per annum. If the network cost were $9.3 billion, the additional revenue that Telstra would need to obtain each year is $897 million. This is similar to having a telecommunications private tax.

- It was reported earlier that Telstra would lock in the price for broadband for 14 years if it builds the FTTN network.[7] An additional revenue of $443 million per annum over 14 years is equivalent to $6.2 billion. This is comparable to the following measures announced in the 2008-09 Budget:
  - the increase in alcohol tax (estimated to have a gain to revenue of $3.1 billion over 5 years); plus
  - the removal of the current exemption of condensate from crude oil excise (estimated to have a gain to revenue of $2.5 billion over 5 years); plus
  - the increase in the luxury tax rate (estimated to have a gain to revenue of $555 million over 4 years).
- Similarly, additional revenues of $897 million and $1 447 million per annum over 14 years are equivalent to $12.6 billion and $20.2 billion, respectively.
- Telstra's higher cost of capital would translate into higher prices for customers. If Telstra obtain its targeted return, consumers would paid on average 15 per cent more for the service than if the network was provided by an alternative supplier with a lower capital return. This price differential is the same under the three assumed asset costs.

1 **WACC and revenue estimates**

	WACC (per cent)	*Average annual revenue needed to achieve return to capital ($m)*		
		$4.6 billion asset	*$9.3 billion asset*	*$15 billion asset*
Telstra's FTTN network	12.95	3 321	6 715	10 831
Alternative supplier	10.68	2 878	5 818	9 384
Difference between Telstra and alternative supplier	2.27	443	897	1 447

Source: CIE estimates.

Notably, while higher prices would have adverse effects on the economy, the extra income that Telstra's shareholders would obtain from the FTTN network would offset some of these losses. The net effect of this is estimated using a Computable General Equilibrium (CGE) model of the Australian economy. A CGE model is useful to assess these effects because it captures the linkages of the telecommunications sector with upstream and downstream industries across the economy.

7 Fleur Leyden 2007, "Telstra price pledge", Herald Sun, June 08; Garry Barker 2007, "Telstra warns of G9 broadband price slug", The Age, June 08; and nowwearetalking 2007, "Why the G9 scheme won't work; Prices", http://www.nowwearetalking.com.au/ features/why-the-g9-scheme-wont-work-prices, Accessed 19 May 2008.

Chart 2 shows the average annual impacts of adopting Telstra's model under different asset costs, when compared to an alternative supplier's model. These results should be interpreted as permanent changes to the economy that will prevail after the construction of the FTTN network and all of the various flow-on changes have worked through fully. The key points are as follows:

- Telstra's return from the FTTN network on an indicative asset base of $4.6 billion would translate into an increase in the CPI of about 0.07 per cent, when compared with an alternative supplier's return. If the network cost were $9.3 billion or $15 billion, Telstra's high return on the FTTN network would translate into an increase in the CPI of about 0.14 per cent and 0.22 per cent, respectively.
- Higher prices for households and businesses would lead to a long-term decrease in GDP of 0.11 per cent if the network cost is $4.6 billion (equivalent to about $1.12 billion of annual GDP in 2006-07).[8] The effects on the economy would be larger if the costs of the network are higher. Indeed, as shown in Chart 2, if the network cost were $9.3 billion or $15 billion, Telstra's return on the FTTN network would translate into a decrease in GDP of about 0.22 per cent and 0.35 per cent, respectively. These costs include the direct impacts of Telstra's model (i.e. the increase in the cost of the service and the extra income of Telstra's shareholders), as well as the indirect effects that higher costs have on industries upstream and downstream the telecommunications sector.
- Another way in which the community would pay for Telstra's high return is via wages. Compared with an alternative supplier model and depending on the cost of the network, disposable wages under Telstra's model would be lower by up to 0.44 per cent.
- The best single measure of the impact of Telstra's FTTN network return on the community is consumption. Consumption is a better indicator of wellbeing than GDP. As mentioned before, the direct loss caused by Telstra's model on an indicative asset base of $4.6 billion is about $443 million per annum due to higher prices. There is also an offsetting effect due to an increase in Telstra's shareholders income. The economywide analysis shows that Telstra's return on a $4.6 billion network would reduce real private consumption by 0.06 per cent, when compared with an alternative supplier's return. That is, after considering the direct and indirect effects, Telstra's FTTN network return would cause a net real loss of $363 million in consumption.[9] Over the 14 years that Telstra would have locked in its price for its FTTN network services, this loss in consumption would translate

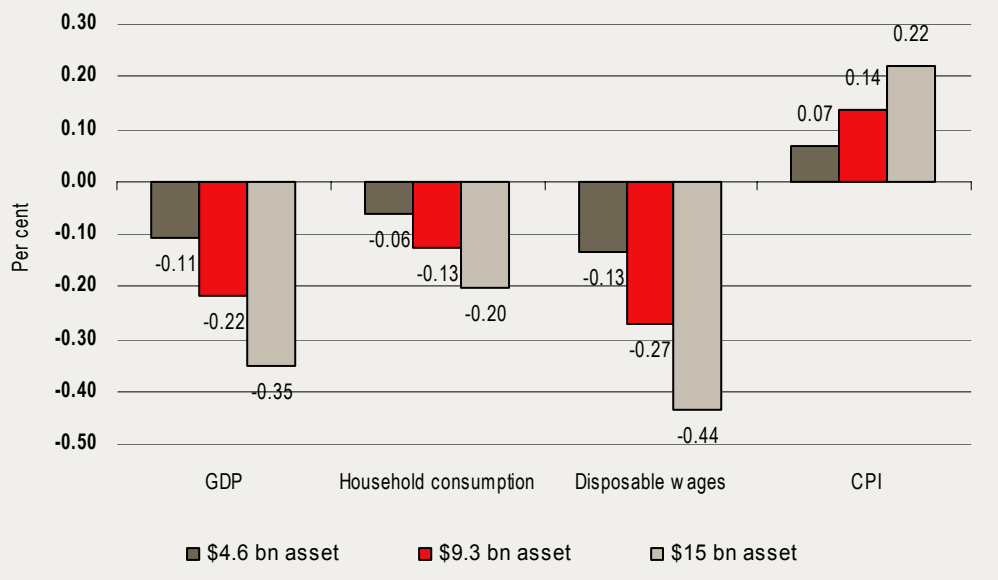
8 This estimate is based on nominal GDP figures for the 2006-07 year by the ABS (Catalogue No. 5206.0).

9 This estimate is based on nominal household consumption figures for the 2006-07 year by the ABS (Catalogue No. 5206.0).

into a net present value of about $3.4 billion.[10] This is roughly three quarters of Telstra's $4.6 billion expenditure on the FTTN network.

- Telstra's return from a $9.3 billion and a $15 billion FTTN network would reduce real private consumption by 0.13 and 0.2 per cent respectively, when compared with an alternative supplier's return. This would be equivalent to a net real loss of $733 million and $1.18 billion in consumption, respectively. [11]

2 **Modelling results (per cent deviations)**



Data source: ORANI model simulation.

A sensitivity analysis of these results using WACC estimates for broadly comparable assets was undertaken. This analysis shows that, while the economywide impacts vary in magnitude depending on the options being compared, the margin between Telstra's required return and the returns received for broadly similar assets translates into significant negative impacts for the Australian economy and the wider community. In particular, it consistently translates into lower output (GDP), higher prices (CPI), lower wages, and lower living standards (household consumption).

Conclusion

This report finds that the difference between the expected capital returns from Telstra's FTTN national broadband and that of an alternative supplier has a significant negative impact on the Australian economy.

10 Calculated using an interest rate of 6.04 per cent (Commonwealth 10 year bond as at March 2008).

11 This estimate is based on nominal household consumption figures for the 2006-07 year by the ABS (Catalogue No. 5206.0).

Notably, although the WACC estimates in this analysis are only broad indicators of the likely costs of capital under different models for the provision of the FTTN network, the evidence presented in this report indicates that there is a significant margin. This margin would introduce an economic distortion that would lead to a general contraction of the Australian economy and hardship for the community.

1 Introduction

As part of its election commitments, the federal Government plans to build a national high-speed broadband network that delivers fast internet to 98 per cent of Australian homes and businesses. This network will support high quality voice, data and video services using FTTN (Fibre to the Node) technology.

On 11 April 2008, the Communications Minister released the Request for Proposals (RFP) for the FTTN network's rollout and operation. Telstra has announced its interest in building and operating this network.

Sometime last year it was reported that Telstra would seek 'an internal rate of return on a FTTN network of 27 per cent'.[12] Recently, the Weekend Australian quoted Phil Burgess (Telstra's Group Managing Director, Public Policy & Communications), when he said "We need a return north of 18 per cent because that is the average return on other investments."[13]

This seems to be a high return relative to many other investments in the Australian capital market. Indeed, a rate of return of this size may be consistent with the abuse of market or monopoly power.

Alternative models to build the FTTN network that would not be open to the abuse of market power have been proposed by investors. An example of this is a recent proposal by a group of Telstra's major rivals known as the G9. [14] While the ACCC rejected some specifics of the G9 model, it indicated that it was generally comfortable with vertical separation where the network only provides access services and the network business would not itself participate in downstream retail markets. A feature of the G9 approach is that it would involve less scope for the abuse of market power by the operator, lower capital returns to investors, and therefore lower costs to consumers. With the prospect that the G9 would make an offer in the Government's tender process and the prospects of others also making proposals, there are grounds to suppose that there are alternatives to the Telstra model.

To provide evidence on the economic impacts of alternative models for the provision of a national FTTN network, this study aims to:

12 Michael Sainsbury 2007, "Telstra revives fast net project", The Australian, April 03.

13 Jennifer Hewett 2008, "Telstra wants return 'north of 18pc'", The Australian, March 22.

14 Telecommunication companies involved in the group include AAPT, iiNet, Internode, Macquarie Telecom, Optus, PowerTel, Primus, Soul and TransACT.

- identify the difference between the expected capital returns from Telstra's FTTN national broadband rollout and that of an alternative supplier that was not able to extract monopoly prices or abuse market power;
- identify the difference between the expected capital returns from Telstra's FTTN national broadband rollout and that of other broadly similar assets; and
- assess the implications to the community and economy at large of these differences.

This report is structured as follows:

- Chapter 2 analyses the return differentials of alternative models for the provision of a national FTTN network.
- Chapter 3 compares the economywide effects of the difference between the expected capital returns from Telstra's FTTN national broadband rollout and that of an alternative supplier.
- Chapter 4 provides a sensitivity analysis to examine the economywide impacts of the difference between the expected capital returns from Telstra's FTTN national broadband rollout and that of other broadly similar assets.
- Chapter 5 outlines the limitations of this study.
- Chapter 6 describes the conclusions of this report.

2 *Return differentials on a national FTTN network*

The first step in analysing the economic impacts of alternative models for the provision of a national FTTN network is to establish a basis of comparison. The appropriate basis for comparison of these alternative models is the return to capital provided by the calculation of the Weighted Average Cost of Capital (WACC).

Broadly speaking, a company's assets are financed by either debt or equity, or more likely with a mixture of both. The WACC is the average of the costs of these sources of financing, each of which is weighted by its respective use in the given situation. Since the WACC is the 'expected rate of return on a portfolio of all the firm's outstanding securities',[15] differences in this measure feed through directly and proportionately into differences in prices in capital intensive businesses. Hence, by estimating the different cost of capital (WACC) under each alternative model for the provision of the FTTN network we can compare the additional revenue that needs to be extracted from customers (or the price that needs to be charged) under each model, to meet each company's targeted returns.

Notably, the WACC plays an important dual role. Not only is it used as the discount rate to value capital investment projects, but it also plays a regulatory role. Indeed, the WACC is used by regulators to control the maximum prices charged for some services and assess the level of return proposed by companies. By calculating the efficient WACC, regulators can stop the regulated companies from charging inefficient prices and earning more than normal market returns.

The WACC should be calculated for a specific investment or asset. This calculation requires specific details about significant commercial facts such as how the asset is financed (i.e. the debt and equity proportions), the underlying level of risk, the cost of issuing debt, etc. Much of this information is kept by companies as a valuable commercial secret. Detailed published information about the FTTN network and about the companies' precise cost of capital for large specific projects is not readily available. To overcome this problem The CIE calculates and compares the likely WACC of broadly comparable assets using publicly available data.

15 Brealey, R., Myers, S., and Allen, F. 2006, Principles of Corporate Finance, McGraw-Hill Irwin, Eight Edition, p. 463.

There are also several approaches for calculating the WACC. For this report, The CIE estimates the WACC following a similar approach to that used by the ACCC or the Independent Pricing and Regulatory Tribunal (IPART) of NSW. This approach, referred to as "vanilla" WACC, uses the Capital Asset Pricing Model (CAPM) and data about the capital market to estimate the nominal post tax WACC.

In this report, we compare the likely WACC of the following assets:

- **Telstra's FTTN network WACC –** This estimate represents the overall return that Telstra would have to earn on the FTTN network to ensure that the return on its equity (i.e. the amount that it distributes to its shareholders) is the targeted 18 per cent. This WACC is calculated using financial data about Telstra available in the public domain.
- **Alternative supplier WACC-** This estimate represents the overall return that an alternative investor that was not able to extract monopoly prices would receive from the FTTN network. This WACC is calculated using the financial information of comparable telecommunication companies with broadly similar assets available in the public domain.

To provide a sensitivity analysis of our results, we have also calculated the WACC of other broadly comparable assets. These estimates and the economywide impacts of the WACC differentials between these assets and Telstra's FTTN network are presented in Chapter 4.

Table 2.1 presents the WACC estimates for Telstra's FTTN network and an alternative supplier's network. Importantly, while these estimates are not precise, obtaining precision is not the main objective of this analysis. The main point is to identify if there is a significant margin between the returns of different network providers. Indeed, as can be seen from Table 2.1, Telstra's overall expected return from the FTTN network is more than 2 per cent higher than the return that an alternative investor would expect from the same asset.

2.1 **WACC estimates for different assets (per cent)**

	WACC	*Expected return on equity*	*Expected return on debt*
Telstra's FTTN network	12.95	18.00	7.89
Alternative supplier	10.68	13.47	7.89

Source: CIE calculations.

A way to illustrate the direct impact that the different expected returns (WACC) would have on the community is to estimate the additional revenue that would need to be extracted from customers and the price that needs to be charged under each model, to meet these expected returns. The formula used to calculate the revenue needed to achieve the target return on capital from each asset is presented in Appendix A.

Table 2.2 presents estimates of the average annual revenue that needs to be obtained from the assets being compared to achieve the targeted return to capital under different asset costs. The first column presents estimates of the revenue that needs to be obtained to achieve the targeted returns to capital on an indicative asset base of $4.6 billion, which is Telstra's estimated cost to build a FTTN network in the five major capital cities and the Gold Coast.[16]

Additionally, Table 2.2 shows the revenue estimates for a $9.3 billion national network, which includes Telstra's offer of $4.6 billion to build the network in major capital cities and the Government's investment of $4.7 billion to help build the network.

Importantly, there is currently no guidance from the Government about the return it will require on its $4.7 billion investment. In the absence of detailed information, the estimates in Table 2.2 assume that the Government would take the same equity risk as the private sector investor and hence would receive the same equity returns. [17]

Recently, Telstra suggested that the cost of the FTTN network would be up to $15 billion. As such, the last column in Table 2.2 also provides estimates of the revenue needed to achieve the targeted returns to capital on an indicative asset cost of $15 billion.

2.2 Estimates of average annual revenue needed to achieve return to capital under different asset costs ($m)

	$4.6 billion asset	*$9.3 billion asset*	*$15 billion asset*
Telstra's FTTN network	3 321	6 715	10 831
Alternative supplier	2 878	5 818	9 384
Difference between Telstra and alternative supplier	443	897	1 447

Source: CIE estimates.

It is estimated that the annual additional revenue that Telstra would have to extract from its customers to achieve its targeted return to capital on an indicative asset base of $4.6 billion is $443 million per annum on average. If the network cost were $9.3 billion, the additional revenue that Telstra would need to achieve each year is $897 million. This is similar to having a telecommunications private tax.

16 Jennifer Hewett 2008, "Telstra wants return 'north of 18pc'", The Australian, April 09; Jennifer Hewett 2008, "$9bn fibre minefield for Conroy", The Australian, April 05.

17 This is not likely to be the case as the Government may seek to recover only a return equal to the risk free bond rate (or slightly above). Up to the time of writing, there has not been any announcement from the Government on this issue. However, this estimate is included here for illustrative purposes

It was reported earlier that Telstra would lock in the price for broadband for 14 years if it builds the FTTN network.[18] An additional revenue of $443 million per annum over 14 years is equivalent to $6.2 billion. This is comparable to the following measures announced in the 2008-09 Budget:

- the increase in alcohol tax (estimated to have a gain to revenue of $3.1 billion over 5 years); plus
- the removal of the current exemption of condensate from crude oil excise (estimated to have a gain to revenue of $2.5 billion over 5 years); plus
- the increase in the luxury tax rate (estimated to have a gain to revenue of $555 million over 4 years).

Similarly, additional revenues of $897 million and $1 447 million per annum over 14 years are equivalent to $12.6 billion and $20.2 billion, respectively.

To extract the additional revenue, Telstra's FTTN network would have to attract higher charges. Indeed, the modelling results show that if Telstra achieves its targeted return on the FTTN network, consumers would pay on average about 15.4 per cent more for the service than if the network was provided by an alternative supplier. The price differential is the same under the three assumed asset costs. These higher prices would reduce the benefits from the use of the new FTTN technology and translate into hardship for the economy and the community.

Notably, while higher prices would have adverse effects on the economy, the extra income that Telstra's shareholders would obtain from the FTTN network would offset some of these losses.

To assess the net effect of adopting Telstra's FTTN model on the Australian economy and the wider community, it is necessary to use an economywide framework. This economywide analysis is provided in the next chapter.

18 Fleur Leyden 2007, "Telstra price pledge", Herald Sun, June 08; Garry Barker 2007, "Telstra warns of G9 broadband price slug", The Age, June 08; and nowwearetalking 2007, "Why the G9 scheme won't work; Prices", http://www.nowwearetalking.com.au/ features/why-the-g9-scheme-wont-work-prices, Accessed 19 May 2008.

3 Community impacts

This chapter provides estimates of the net impacts of adopting Telstra's FTTN model. In particular it shows what the differences in capital returns between alternative models for the provision of the FTTN network mean for the Australian economy and the wider community.

To undertake this analysis we have used ORANI, a Computable General Equilibrium (CGE) model of the Australian economy.

The Scenario

The scenario simulated in ORANI provides estimates of the average annual impact to the Australian economy of the differences in capital returns between alternative models for the provision of the FTTN network.

The ORANI model

ORANI divides the Australian economy into about 100 sectors. The model captures the inputs into each industry (labour, capital and goods and services from other industries), and hence it captures the importance of telecommunications services for other industries and consumers. For this analysis, we have used the *Fiscal Horridge* version of the ORANI model. This version of the model differs from the standard ORANI in that it has a richer specification of taxes, allows the income earned by primary factors to go back to households and allows wealth accumulation.

ORANI has the following important features that make it well suited for the analysis in this project:

- It estimates the effects of industry changes on key economic variables such as GDP, exports, imports, CPI, exchange rate, and disposable wages.
- It provides valid measures of changes in living standards (wellbeing) based on household consumption.

Further, the use of a CGE model has the following key advantages over the simpler approach of using an input-output model:

- it takes into account that the structure of the economy responds to changes in relative prices and hence is not rigid; and

- it also takes into account the important long-run, national constraints on the economy - labour supply, budget balance, external balance and private savings.

This leads to results that are more conservative, but more credible, compared with input-output modelling. Interestingly, input-output models are often criticised for providing overly-optimistic economic impact assessments of industries in a way that CGE models are not.

The ORANI model is a comparative static CGE model. This means that it provides a snapshot at a future point in time of the economywide effects of some current change (called a 'shock' to the model). It does not provide the time path of the economy in response to a shock. Rather, it can be run with two different closures, that is, choices of which model variables adjust in response to the shock. There is a short-run closure (corresponding to an adjustment period of a couple of years) and a long-run closure (corresponding to adjustments that may take up to ten years).

The alternative scenarios modelled for this report are based on the standard long-run closure of the ORANI model. The long-run closure shows the long-term effects of industry changes, after the economy has fully responded. This is fitting because industry changes should be judged against their lasting effects on the economy, not just their effects in the first one or two years. Hence, ORANI provides a snapshot of the economy, at a particular point in time, showing the difference in the economy attributable to the change under consideration after the economy has fully adjusted to the change. That is, after the temporary impacts of the construction stimulus and other factors have passed. This will bring into clear relief the key effect of the difference in capital costs between Telstra's FTTN model, and that of alternative suppliers.

More information about the ORANI model can be found in Appendix B.

Modelling Results

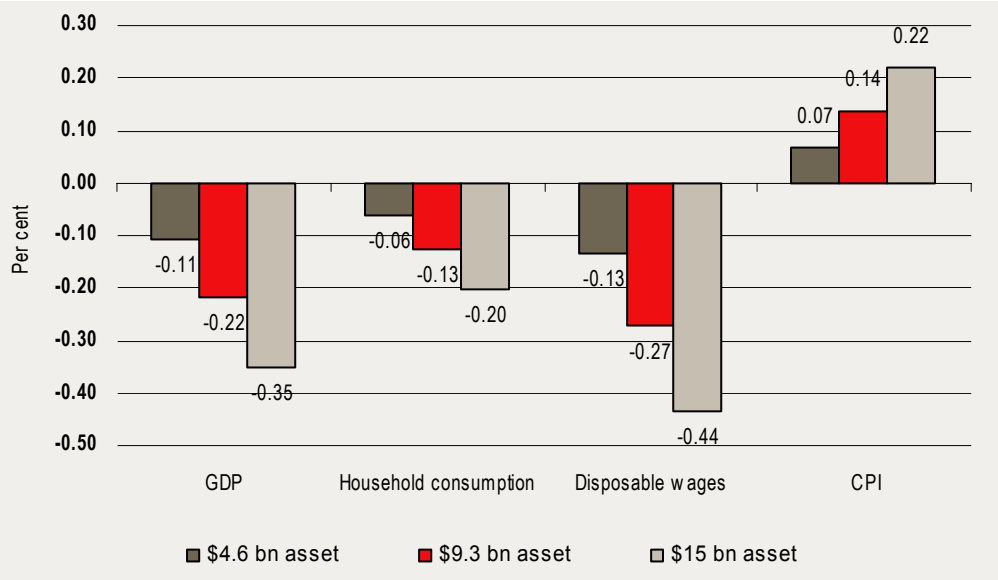
These results should be interpreted as permanent changes to the economy that will prevail after the construction of the FTTN network. Chart 3.1 shows the average annual impacts of the difference in capital returns that Telstra makes.

The first key effect that we observe from Chart 3.1 is that Telstra's high return on the FTTN network would translate into higher prices for the wider community. This is because, as mentioned before, to be able to achieve its targeted return on equity of 18 per cent Telstra would have to extract additional revenue from the network users through higher prices. Higher prices in industries will be passed on to consumers in the form of higher prices for consumer goods and services, leading to a general increase in the level of prices (CPI). Indeed, Chart 3.1 shows that Telstra's return on the FTTN network on an indicative asset base of $4.6 billion would translate into an increase in the CPI of about 0.07 per cent, when compared with an alternative

supplier's return. If the network cost were $9.3 billion or $15 billion, Telstra's return on the FTTN network would translate into an increase in the CPI of about 0.14 per cent and 0.22 per cent, respectively.

Further, Chart 3.1 shows that if Telstra achieves its FTTN network return, higher prices for households and businesses would lead to a long-term decrease in GDP of 0.11 per cent if the network cost is $4.6 billion (equivalent to about $1.12 billion of annual GDP in 2006-07).[19] The effects on the economy would be larger if the costs of the network are higher. Indeed, as shown in Chart 3.1, if the network cost were $9.3 billion or $15 billion, Telstra's return on the FTTN network would translate into a decrease in GDP of about 0.22 per cent and 0.35 per cent, respectively. These costs, include the direct impacts of Telstra's model (i.e. the increase in the cost of the service and the extra income of Telstra's shareholders), as well as the indirect effects that higher costs have on industries upstream and downstream the telecommunications sector.

3.1 **Modelling results (per cent deviations)**



Data source: ORANI model simulation.

Another way in which the community would pay for Telstra's high return on the FTTN network is via wages. Indeed, the modelling results show that compared with an alternative supplier model and depending on the cost of the network, disposable wages under Telstra's model would be lower by up to 0.44 per cent. That is, the decrease in wages caused by the increase in prices dominates the effect of the additional income received by Telstra's shareholders, resulting in a net decrease in disposable wages.

19 This estimate is based on nominal GDP figures for the 2006-07 year by the ABS (Catalogue No. 5206.0).

In addition to these effects, the capital return differentials cause further feedback effects on the economy (such as adjustments in the balance of payments and the exchange rate). Nonetheless, these effects are not enough to offset the negative impacts of the shock, and the economy still contracts.

As mentioned above, higher prices would reduce real GDP. In turn, this would mean a lower real national income than would be the case if an alternative supplier provided the service. The decrease in real income would result in both decreased consumption and investment. Consumers would adjust to the decreased real income by spending less on goods and services, while industries would cut back on expenditures in other areas. Overall, Chart 3.1 shows that Telstra's higher return on a $4.6 billion FTTN network would reduce real private consumption by 0.06 per cent, when compared with an alternative supplier's return. This is equivalent to subtracting about $363 million to real private consumption in the financial year 2006-07.[20]

Similarly, Telstra's return on a $9.3 billion and a $15 billion FTTN network would reduce real private consumption by 0.13 and 0.2 per cent respectively, when compared with an alternative supplier's return. This would be equivalent to a net real loss of $733 million and $1.18 billion in consumption in the financial year 2006-07, respectively. [21]

Notably, consumption is the best single measure of the impact of Telstra's FTTN network return on the community. This is because consumption is a better indicator of wellbeing than GDP. Chapter 2 identified a direct loss of about $443 million on an indicative asset base of $4.6 billion due to higher prices. It also identified that there is an offsetting effect due to an increase in Telstra's shareholders income. The economywide analysis shows that, after considering the direct and indirect effects, Telstra's FTTN network return would cause a net real loss of $363 million in consumption. Over the 14 years that Telstra would have locked in its price for its FTTN network services, this loss in consumption would translate into a net present value of about $3.4 billion.[22] This is roughly three quarters of Telstra's $4.6 billion expenditure on the FTTN network.

20 This estimate is based on nominal household consumption figures for the 2006-07 year by the ABS.

21 This estimate is based on nominal household consumption figures for the 2006-07 year by the ABS (Catalogue No. 5206.0).

22 Calculated using an interest rate of 6.04 per cent (Commonwealth 10 year bond as at March 2008).

4 Sensitivity analysis

To provide a sensitivity analysis of our results, this chapter presents WACC estimates of other assets broadly comparable to the FTTN network. In particular, this chapter provides WACC estimates of the following assets.

- **Competitive Telstra WACC –** This estimate represents the overall return that Telstra would earn on its FTTN network if it did not have market power (i.e. if it was not able to extract monopoly prices).
- **Bowman Telstra CAN WACC –** This is an estimate by Bowman (2007), who was commissioned by Telstra to estimate the WACC for all the services provided by its Customer Access Network (CAN) as of 1 July 2007. [23]This estimate is used to illustrate the return that Telstra receives for an asset broadly similar to the FTTN network.
- **Revised Bowman Telstra CAN WACC**- This estimate updates and revises Bowman's WACC to incorporate more recent financial data available in the public domain.

Additionally, this chapter provides estimates of the economywide effects of the difference between Telstra's FTTN network WACC and the WACC of the assets described above.

Sensitivity analysis of WACC estimates

The WACC of the assets described above is calculated using the same approach described in Chapter 2. For consistency reasons and to make the estimates comparables, for all the WACC calculations we have assumed that the asset being analysed is financed in the same proportion by debt and equity. For the Bowman Telstra CAN WACC estimate we have followed the same approach and used the same parameters as Bowman (2007), but we have replaced the author's debt and equity ratios for our assumption (i.e. 50 per cent debt and 50 per cent equity).

Table 4.1 presents the WACC estimates for the different assets described above. As can be seen from this table, there is a significant variation in the WACC range for the broadly comparable network assets. Still, the asset with the highest expected return to equity owners and debt holders (i.e. WACC) is Telstra's FTTN network. Even the

23 Importantly, Bowman's work is not necessarily used as an example of best practice, but as an illustration of WACC estimates and approaches endorsed or used by Telstra.

WACC calculated by Bowman for Telstra's CAN (11.68 per cent) is more than 1 per cent lower than the return that Telstra expects from the FTTN network. When this WACC is revised and recalculated using more recent financial information, the result is a WACC of 7.76 per cent. This means that the capital returns that Telstra requires from the FTTN network are more than 5 per cent higher than the return that it gets from the CAN. This difference is even more pronounced when Telstra's target capital return is compared with the overall return that Telstra would earn on the FTTN network if it was not able to extract monopoly prices (i.e. 7.58 per cent).

4.1 WACC estimates for different assets (per cent)

	WACC	*Expected return on equity*	*Expected return on debt*
Telstra's FTTN network	12.95	18.00	7.89
Alternative supplier	10.68	13.47	7.89
Competitive Telstra	7.58	7.28	7.89
Bowman Telstra CAN	11.68	16.02	7.35
Revised Bowman Telstra CAN	7.76	7.62	7.89

Source: CIE calculations and Bowman (2007).

To understand what the above estimates mean in terms of revenue extracted from customers, Table 4.2 presents estimates of the revenue that needs to be obtained from each of the assets being compared with achieve the targeted return to capital.

4.2 Revenue and price estimates

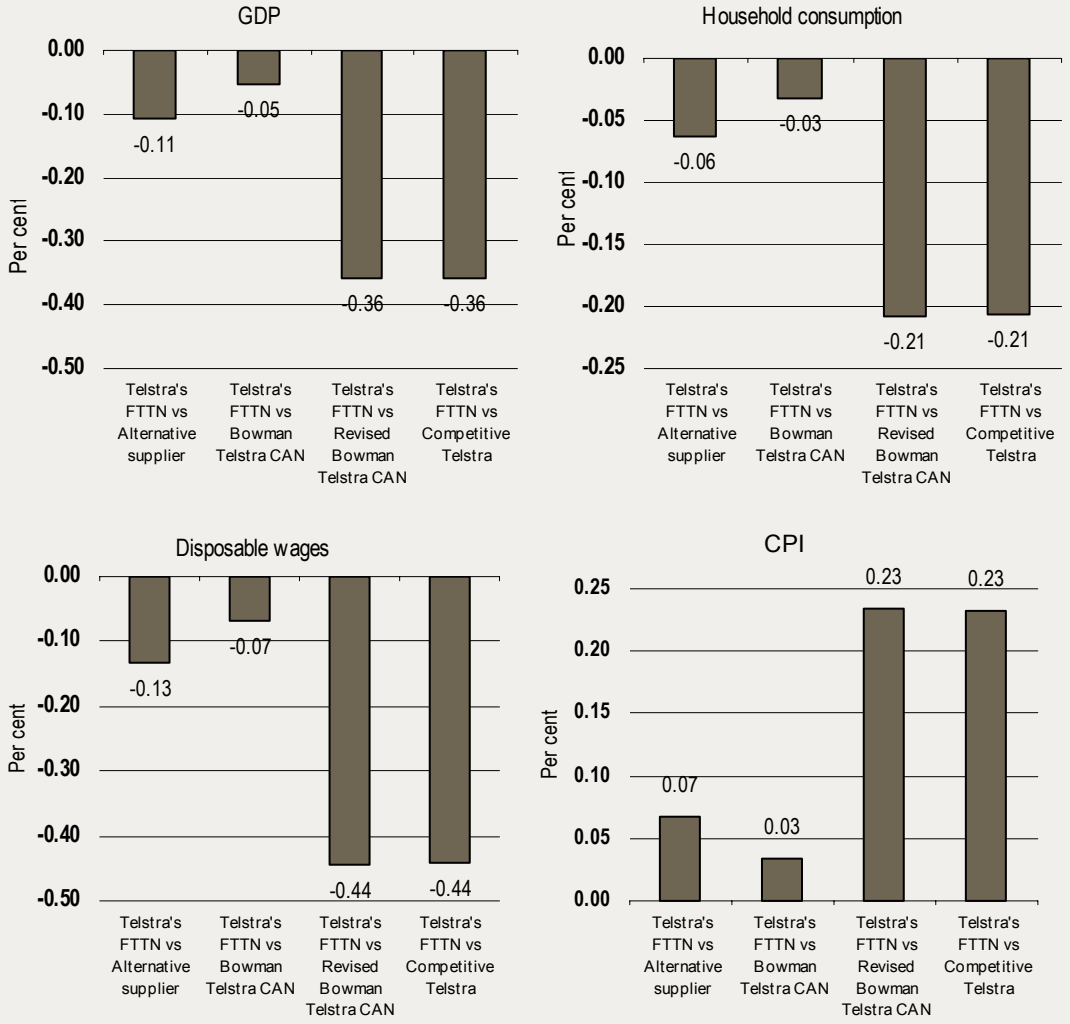
	Average annual revenue needed to achieve return to capital ($m)
Telstra's FTTN network	$3 321
Alternative supplier	$2 878
Competitive Telstra	$1 844
Bowman Telstra CAN	$3 096
Revised Bowman Telstra CAN	$1 923

Source: CIE estimates.

Sensitivity Analysis of Community Impacts

The series of charts in Chart 4.3 show the average annual impacts of the different capital return differentials on key economic variables in the Australian economy. Specifically, the chart shows the average annual cost of Telstra's FTTN network return to real GDP, private consumption, disposable wages, and the CPI, when compared with the capital returns from broadly similar assets.

4.3 **Sensitivity analysis (per cent deviations)**



Data source: ORANI model simulation

While the economywide impacts presented in Chart 4.3 vary in magnitude depending on the options being compared, the key point that these charts demonstrate is that the margin between Telstra's required return and the returns for broadly similar assets, translates into consistent significant negative impacts for the Australian economy and the wider community. In particular, it translates into:

- lower output (GDP);
- higher prices (CPI);
- lower living standards (household consumption); and
- lower wages.

In summary, the modelling results show that allowing Telstra to obtain better than normal market returns on its FTTN network would introduce an economic distortion

that would lead to a general contraction of the Australian economy and hardship for the community.

5 *Limitations of the study*

The findings presented in preceding chapters provide valuable evidence on the economic impacts of alternative models for the provision of a national FTTN network. Nonetheless, as with any modelling exercise, there are a few substantive risks in this analysis. The key limitations of this study are the following:

- There is a degree of imprecision about some of the key quantitative factors provided in this report. For instance, Telstra's precise cost of capital for a large specific project is a valuable commercial secret. Hence, the estimates presented in this report may not be precise. Further, the alternative network's cost is also uncertain as it depends on factors where strategic choices have to be made. As such, the estimation error in the WACC calculations presented in this report may be significant. However, obtaining precision is not the main objective of this analysis. The main point is to show that it is likely that a significant margin exists between Telstra's required return from the FTTN network and the return that an alternative supplier would require for the same asset, and this margin will translate into hardship for the economy and the community.
- The economic impacts of Telstra's FTTN network return have been estimated by comparing the difference between Telstra's WACC and the WACC of an alternative supplier. This comparison translates in more conservative estimates of the costs of Telstra's FTTN network, than if we compare it to the WACC of comparable assets which are significantly lower.
- Important specific attributes of alternative network proposals (such as the speed of the network, ability to carry voice calls, pace of roll out, etc.) have not been modelled in this report. However, as mentioned before, obtaining precision is not the main objective of this analysis. The whole point is to show that differences in the cost of capital will have large implications for our wellbeing, measured in ways that the ordinary person in the street understands.
- The estimates of the economic impacts under the indicative asset cost of $9.3 billion and $15 billion have additional limitations. For instance, there is currently no guidance from the Government about the return it will require on its $4.7 billion investment. In the absence of this information, we have assumed that the Government would take the same equity risk as the private sector investor and hence would receive the same equity returns. It is unlikely that the Government would require the same return from the FTTN network as the private sector. As such, the estimates of the losses caused by Telstra's return from these assets are likely to be at the high end.

- A CGE economic framework is the most complete and transparent method of testing the impacts of different regulatory scenarios on Australia's welfare. The downside of being comprehensive is that the model is very complex, much as the real world is. However, the comprehensive results provided by a CGE model are a reasonable trade off for the loss of transparency for what happens inside the model. If fact, the model 'black box' is not really that opaque – CGE models are widely used by Government and many other analysts, and the ORANI model is the most widely documented model in Australia and probably the world. [24]
- As outlined in previous sections, the ORANI model allows for flexibility in the economy as well as long-term labour market and trade balance constraints. In the long-run, the labour market and external balance are assumed to attain equilibrium, so that economic shocks, such as changes in the rate of return to the telecommunications sector, have no lasting effect on total employment and trade balance. These assumptions in the model would, thus, lead to a conservative assessment of the cost of return differentials to the national economy. Further, for this analysis, it has been assumed that the increase in returns to Telstra's shareholders (i.e. the extra income that the owners Telstra's shares obtain from the FTTN network) stay solely in Australia. This assumption again leads to conservative estimates.
- Finally, it is important to note that the findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever using this information. This report only takes into account information available to The CIE up to the date of this report and so its findings may be affected by new information.

24 The standard ORANI model is described in Dixon et al. (1997) and Dee (1989). A non-technical description is provided by the IAC (1987).

6 Conclusion

This report finds that the difference between the expected capital returns from Telstra's FTTN network and that of an alternative supplier has a significant negative impact on the Australian economy. In particular, this report provides evidence that the 'return north of 18 per cent' required by Telstra on the FTTN network would introduce a distortion in the economy that would not be offset by the extra income received by Telstra's shareholders. This distortion would lead to a general contraction of the Australian economy.

Notably, although the WACC estimates in this analysis are only broad indicators of the likely costs of capital under different models for the provision of the FTTN network, the evidence presented in this report indicates that there is a significant margin and that this margin will translate into hardship for the economy and the community.

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A Estimating the WACC

WACC estimates in Australia are confused by the varying practices and assumptions made by the different Regulatory authorities. There are several different forms of the WACC formula, and results can be expressed in pre-tax or after-tax form, and in both real and nominal values. For this report, The CIE estimates the WACC following a similar approach to that used by for independent price regulators such as the Independent Pricing and Regulatory Tribunal (IPART) of NSW or the ACCC. This approach, referred to as "vanilla" WACC, uses the Capital Asset Pricing Model (CAPM) and data about the capital market to estimate the nominal post tax WACC.

The standard formula that we use in this report to calculate the WACC is the following:

$$WACC = Re\ (E/V) + Rd\ (D/V)$$

Where:

Re = cost of equity capital;

Rd = cost of debt capital;

E = market value of equity;

D = market value of debt; and

V = market value of the firm (E+D).

The formula used to derive the cost of equity using CAPM is the following:

$$Re = Rf + Be\ (Rm - Rf)$$

Where:

Re= expected return on equity;

Rf= risk free rate;

Be= equity beta factor;

Rm= expected market return; and

Rm – Rf= the market risk premium.

The formula used to de-lever the equity betas is the following:

$$Ba = Be * E/V$$

Where:

Ba = beta for the asset;

Be = equity beta; and

E/V= proportion of equity financing.

The formula used to calculate the revenue needed to achieve the target return on capital of each asset is the following:

$$\text{Required Revenue} = V*(Ra - g) / Ra*(1-Ta)$$

Where:

V = current market value of asset (equity + debt);

Ra = return on investment expected by all investors (debt and equity), or the WACC;

g = future growth rate in revenue that investors expect; and

Ta = Proportion of earnings before interest that is paid as company tax.

Further details about the WACC approach can be found in NSW's Treasury Guidelines for Financial Approval (NWS Treasury, 2007).

Table A.1 shows the various parameter values that were used to calculate the WACC and revenue estimates presented in this report.

A.1 WACC and revenue parameters

	Comment	*Telstra's FTTN network*	*Alternative supplier*	*Competitive Telstra*	*Bowman Telstra CAN*	*Revised Bowman Telstra CAN*
Risk free rate	Commonwealth 10 year bond as at March 2008 (except in Bowman Telstra CAN)	6.04%	6.04%	6.04%	5.96% (from Bowman, 2007)	6.04%
Market risk premium	From Bowman (2007)	7%	7%	7%	7%	7%

(Continued on next page)

A.1 WACC and revenue parameters (cont)

	Comment	*Telstra's FTTN network*	*Alternative supplier*	*Competitive Telstra*	*Bowman Telstra CAN*	*Revised Bowman Telstra CAN*
Debt proportion	Assumption	50%	50%	50%	50%	50%
Debt risk premium	Cost of debt that a company has to pay above the nominal risk free rate.	1.7%	1.7%	1.7%	1.24% (from Bowman 2007)	1.7%
	Assumption					
Debt issuance cost	Cost incurred to issue debt, annualised. From Bowman (2007)	0.15%	0.15%	0.15%	0.15%	0.15%
Cost of debt capital	Sum of the risk free rate, debt risk premium and debt issuance cost	7.89%	7.89%	7.89%	7.35%	7.89%
Tax rate	Statutory rate	30%	30%	30%	30%	30%
Franking credits	Assumption	0.0	0.0	0.0	0.0	0.0
Asset beta	Beta of a debt-free company. Also called unlevered beta.	0.06	0.5	0.06	0.75 (from Bowman 2007)	0.22
Equity beta [(a)]	Reflects both the operating and financial risks of a company. Also called levered beta.	0.18[(b)]	1.0	0.18[(b)]	0.96 (from Bowman 2007)	0.18[(b)]
Equity insurance cost	Cost incurred to issue equity, annualised. From Bowman (2007)	0.4%	0.4%	0.4%	0.4%	0.4%
Cost of equity capital	CAPM plus the equity issuance cost	18% (Telstra's required return on the FTTN network)	13.47%	7.28%	13.09% (from Bowman 2007)	7.62%
WACC	Nominal, post tax vanilla	12.95%	10.68%	7.58%	11.68%	7.76%

Source: The CIE and Bowman (2007).

(a) The equity beta estimates are highly sensitive to the measurement interval (daily, weekly, or monthly) and the estimation period. This results in a wide range of estimates for equity betas. For instance, Yahoo Finance (accessed on 30 April 2008) provided an estimate of Telstra's equity beta of 0.5. In contrast, Bloomberg provides the following estimates of Telstra's equity beta: 0.576 from May 2006 to May 2008 (daily), and 0.698 from May 2006 to May 2008 (weekly). Given that the FTTN network is a long term asset, for this report we have used an estimate of Telstra's equity beta calculated over a period of four years. This estimate is provided by the Risk Measurement Service of the Centre for Research in Finance (Australian School of Business, University of New South Wales).

(b) OLS Beta for the period December 2003 to December 2007, monthly observations. Source: Centre for Research in Finance, Australian School of Business, University of New South Wales.

B The ORANI Model

ORANI is a comparative static Computable General Equilibrium (CGE) model of the Australian economy. This report uses the Fiscal Horridge version of the ORANI model. This version of the model differs from the standard ORANI in that it has a richer specification of taxes, allows the income earned by primary factors to go back to households and allows wealth accumulation.

ORANI can be run with two different closures, that is, choices of which model variables adjust in response to the shock. There is a short-run closure (corresponding to an adjustment period of a couple of years) and a long-run closure (corresponding to adjustments that may take up to ten years). This report uses the long-run closure of the model. Some of the assumptions underlying the long-term closure of ORANI are as follows:

- Profit maximisation: the representative business in each industry chooses inputs and outputs to maximise profit subject to prices, and a production function exhibiting constant returns to scale. This involves choosing inputs of land, capital, labour and intermediate goods and services, and outputs for the local and export markets.
- Labour market equilibrium: in the long-run the labour market is assumed to attain equilibrium, so that an economic shock has no lasting effect on total employment. This assumption is implemented by fixing the level of total employment.
- External trade balance: in the long-run, external balance is assumed to be achieved, so that trade shocks have no lasting effect on the trade balance. This assumption is implemented by setting the trade balance equal to the cost of servicing payments on foreign-owned capital — the real exchange rate needed to achieve this outcome is determined by the model
- Budget balance: in the long-run, fiscal policy must be sustainable. Specifically, in ORANI the government budget is assumed to be in balance. It is necessary to designate a swing fiscal policy instrument to achieve that outcome. Generally, the rate of tax on labour income is used as the swing fiscal policy instrument.
- Private savings: in the long-run the level of private sector savings and associated asset accumulation must be accounted for. Further, as mentioned before, Fiscal Horridge version of the ORANI allows for accumulation of assets.

The ORANI model distinguishes about 100 sectors and describes:

- the demands by industries, households and exports for domestically produced and imported goods and primary factors (that is labour, capital and land);
- the supplies of commodities (for example crops and livestock, manufactures and services) by domestic producers;
- the balance between the demand and supply of commodities and primary factors; and
- macroeconomic outcomes (gross domestic product, balance of trade, etc.), which are the sum of their industry and commodity components.

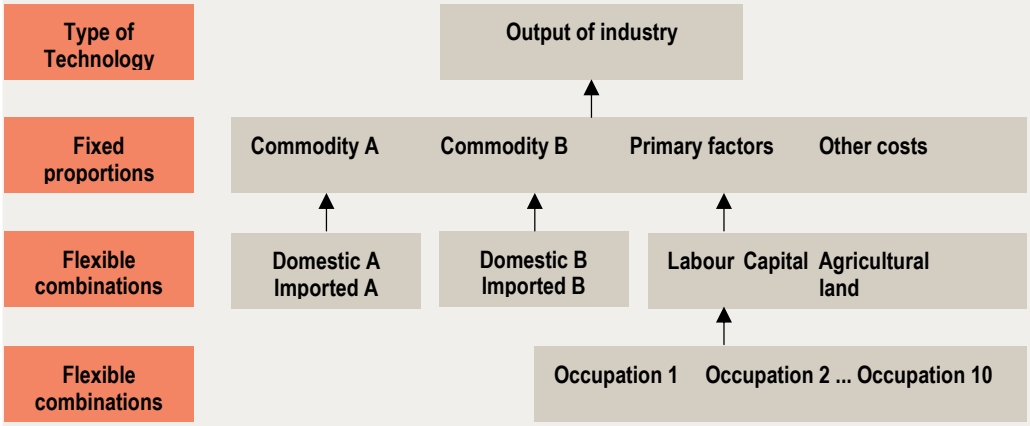
ORANI captures the linkages within an economy by modelling the economic behaviour and interactions of producers, consumers and governments. The in-built behaviour in the model is that consumers are assumed to maximise utility and producers to maximise profits. Markets are assumed to be competitive and there are constant returns to scale. The economy is composed of consumers and producers. Producers can purchase their inputs from any other industry in Australia as well as imports from overseas. Producers supply goods and services to consumers who have a choice about whether they purchase imports based on price and tastes. Producers also supply the export market. Producers have a degree of flexibility in how they combine inputs, using that combination which minimises costs. Technological change is exogenous.

The model reflects a combination of two key components: its database and the theoretical structure embodied in the system of equations of the model. A schematic representation of the production technology used in the ORANI framework is shown below.

Of key importance in this model is that workers can make choices between the occupations they engage in according to the wage they can earn in a particular industry. This labour can be used in varying proportions with capital and land. Also, producers can make flexible choices between the uses of imported or domestic varieties of each commodity from industries, such as motor vehicles. However, each commodity and primary factors in total are used in fixed proportions as given by the input/output structure.

Further information about the standard ORANI model is provided in Dixon et al. (1997) and Dee (1989) Chart B.1. A non-technical description is provided by the IAC (1987).

B.1 **Orani model**



Source: IAC 1987

Submission in Response to the Minister's Invitation for Comments on Telecommunications Regulation

June 2008

Introduction

The Competitive Carriers' Coalition is an industry association representing the interests of non-dominant carriers in telecommunications markets in Australia. The members of the CCC have collected invested in the order of $5 billion. They operate in fixed line, mobile, broadband, voice, corporate, residential and government markets. They have pioneered broadband via ADSL2+ and VDSL, and 3G mobile technologies.

The CCC welcomes the opportunity to respond to the Minister's call for submissions on telecommunications regulation in the context of the National Broadband Network process.

The CCC considers the decisions that will be made in the next year to be the most important in relation to communications markets for a decade. This is not because of the $4.7 billion of public money that could be contributed. Indeed, this is a matter of lesser long term importance than the implications for the policy and regulatory arrangements that will be considered and resolved through the process of determining who should build, own and operate a new network, and the conditions under which they will do it.

For this reason, the CCC discusses at some length the implications it sees as requiring careful consideration by the Government and the expert task force.

Further, the CCC would request the opportunity to meet with the expert panel to expand on several of the points raised in this paper that the CCC does not believe have been fully ventilated, or even discussed at all, in the public debate to date.

The CCC would be happy to make itself available to the expert panel at a time and place convenient to the panel.

Telstra Position Summary

The CCC notes that in recent days there have been a number of comments by Telstra that the CCC interprets as representing Telstra's position with regard to appropriate regulatory arrangements for an NBN. The CCC understands the main points of this position to be claims that Telstra requires:

- the right to a new, unregulated monopoly,
- that Telstra alone be able to decide whether or not to provide access to this monopoly to any of its competitors,
- that Telstra will choose if Australians have a choice of telecommunications provider,
- that the Government reject the clearly necessary structural reforms that you and many others have called for over the past several years, and

- that the lessons of other countries and other industries be ignored in order to allow Telstra free rein in the Australian communications markets.

The discussion below addresses the underlying arguments to each of these points, which the CCC regard as wholly unacceptable. For any major investment of national significance to be sanctioned under such circumstances is beyond comprehension. That this investment is part-funded by taxpayers merely serves to make these demands obscene.

It is clear that Telstra intends to ignore the conditions set out in the national broadband network request for tender documents, and to ignore the overwhelming community demands for stronger competition rules in order to secure better choice, prices and services for all Australians.

The Government cannot allow this to occur.

Threshold Questions

- *Fibre-based Broadband when and how?*

It has been clear for more than a decade that the transition of access networks was toward a fibre-based architecture was inevitable. It has been simply a question of when it would happen, and what would be the catalyst.

There have emerged a number of different catalysts in recent years in different parts of the world. The most important are:

- Operating cost savings
- Competition from other industries moving into traditional telecommunications markets
- Demand and supply push for new products, especially broadband, and
- Political pressure to maintain the pace with other countries.

The latter two catalysts have frequently combined, especially in situations where incumbent telecommunications companies have determined that they can leverage regulatory advantage from promising to deliver new or more extensively available broadband services or, conversely, withhold those services unless they gain regulatory concessions.

Balanced against these imperatives is the risk that private sector proponents ascribe to the investment, which requires a judgment on their part about anticipated demand, and therefore available revenue, on the one hand, and the danger that another provider will build a network before them and capture the market.

The questions about the appropriate timing of fibre rollouts to allow broadband have been debated with more vigor in countries where competition has resulted in a relatively faster

and more affordable broadband service rollout than has been the case in Australia. This is especially true where there has been strong competition between providers using xDSL and cable technologies to deliver broadband.

In these countries, the debate about the timing of FTTx deployment has been more focused on the pace of development of demand because government intervention has not been required to drive broadband where competition has done the job to date. In the UK, for example, the rapid expansion of competitive xDSL services using the LLU service and the availability of 4-8mbps to all or almost all consumers has led BT to argue that there is not the necessary demand to pay for an expensive new network at this time.

The sense that there is a near term imperative for a deep fibre network in many European countries seems to owe more to political priorities than business conditions.

This has given rise in much of the world to questioning of the incentives necessary to promote a near term build of FTTx networks, and what role the Government has in creating these incentives. Internationally, this has been a debate about what is needed to create the catalyst for industry to invest in new fibre access networks in the absence of a compelling business case. In a sense, it has been a debate about how to get someone to "take the leap of faith" and invest ahead of clear evidence of short term demand.

That is, the incentive debate is a discussion about whether the Government has a role in making this "leap of faith" happen.

The OECD has recently considered the role-of-government issue and has identified three roles that governments can play:

1. Stimulator, which is removing barriers to investment,
2. Producer, which is actually investing and
3. Regulator, which is what the government does to create a competitive marketplace.[1]

The OECD notes, however, that the basis on which the Government intervenes and the points in the market where it does so must be clear and with defined objectives:

> "A well-defined policy, which is discussed with industry and other stakeholders, with clearly stated goals and timelines, can help identify where bottlenecks are and which areas may be unprofitable. On the basis of such a policy the government can base its decisions to stimulate or to intervene." [2]

Where does Australia fit in the incentive debate?

The "incentive to build" debate is irrelevant in Australia for one simple reason. The Government has acted in Australia to fulfill the three roles described above, and to answer the threshold question of when to build.

[1] OECD Developments in Fibre Technologies and Investments
[2] ibid

While there is disagreement about whether aspects of the processes put in place are adequate to achieve the best outcomes (e.g whether timelines are unrealistic and whether there is sufficient clarity about the Government's preferred outcomes in terms of industry structure) sufficient has been done to say that the issue of creating an incentive to catalyse the investment decision is no longer an issue in Australia.

It is important to understand, therefore, that when the term "incentive" is now used in Australia, it is discussed in a quite different context to that in which it is used in other places. In the Australian context, incentive is most often used specifically with reference to what Telstra refers to as its requirements for investment returns. This is not a matter requiring public policy changes to encourage Telstra to build because the Government, as discussed above, have established the conditions under which the decision to build will be made.

To put this another way, the hurdle that must be cleared for an investment is the risk associated with the investment, which affects the timing of the decision to commence. This timing issue in Australia is resolved, and an incentive to mitigate risk has been offered in the form of financial participation by the Government. Respondents to this offer will each price the value of these Government actions in their own requested rates of return.

Claims by Telstra about the rate of return it requires represent a business choice on the part of Telstra in an environment where the Government has defined and mitigated investment risk. That this is a business strategy choice is evidenced by comments from Telstra that it plans to be a "premium provider charging premium prices".[3]

The rate of return for any builder/operator will necessarily be regulated because the network owner will not be subject to a competitive market (see below). The appropriateness of the regulated rate of return being demanded should be subject to the normal scrutiny of the ACCC. To this point, the CCC refers the expert taskforce to its separate submission, consisting of an analysis of Telstra's public statements about its required rate of return.[4]

Again, this narrower definition of the incentive question is addressed in the Australian context through the mechanism of the competitive bidding process that the Government has implemented (although the ability of the process to adequately resolve these questions remains unresolved, see below)

- *Having answered the First Question about when and why to build, what responsibility does the Government assume when it takes these catalyzing roles?*

[3] Look Beyond Telstra to Avoid Broadband Price Hike
http://www.zdnet.com.au/news/communications/soa/Look-beyond-Telstra-to-avoid-broadband-price-hike/0,130061791,339284333,00.htm
[4] The Telstra Return on a National FTTN Network, CIE June 2008

The transition to a fibre-based access network inevitably raises many regulatory and policy questions. In countries where private participants in the market have come forward proposing to build a deep fibre network, the onus is on those proponents to satisfy existing regulatory arrangements or make a case for novel or new arrangements to be put in place.

However, in Australia the Government has called for investment proposals and it must take the responsibility for clarifying the questions that must be resolved, and setting the standard and the means by which these questions will be resolved. Again, many of the questions are common around the world, but the Australian experience lends itself to particular resolutions.

The Government must take a leadership role at an early stage of the process of resolving these issues. Several of these issues are discussed below.

It is important that the Government act quickly to clarify what it will require of bidders because this guidance will have implications in many domains where bidders will have to make choices, many of which are interrelated. For example, guidance that the new network will be required to be structural separate could encourage bidders to build a network that is more amenable to competitive access. This could have cost implications.

In choosing not to provide guidance, the Government risks creating dilemmas for itself later. For example, how does it balance the attractiveness of a structurally separated network designed to allow many forms of competitive access and to provide deeper fibre against a proposal that is designed with limited competitive access opportunities but which is substantially cheaper to build as a result? How do bidders make choices about network designs that offset build cost against competition?

Is it realistic to expect more than one NBAN to be economic?

The transition to a deep fibre network challenges one of the underlying philosophy of telecommunications regulation – that the ultimate goal of regulation is to create facilities based competition.

This assumes that there will be more than one access connection to all end users. It is notable that this assumption does not underpin regulation of power, water and sewerage services. These industries are regulated under a schema that recognizes that there are some parts of the network – such as the distribution elements – that cannot economically be duplicated.

Nevertheless, much of the debate internationally has focused on opening access to ducts – whether those are telecommunications ducts or for the supply of another service such as sewerage, for example – on the assumption that multiple infrastructure owners give the best means of creating competition for end users.

While there is a robust debate in Europe about what regulation and technology could make possible facilities-based competition in an FTTH world, the OECD recently presented a sobering analysis of the business realities of such a proposition.

The OECD examined the costs of a FTTH rollout proposal in the Netherlands, based on modeling by the Dutch Ministry of Economic Affairs and separate commercial sector analysis, and concluded: "that there is not a lot of scope in the market place for multiple networks to roll out a new all-fibre infrastructure."

> "If we assume a monopolist with a 100% market share (and no competition from hybrid-fibre networks), Table 2 shows the price per household in this model to be at EUR 57.66/month. When two networks roll out a network, without sharing costs, the average price for a subscription would have to be equal to the 50% marketshare subscription price of EUR 70.50/month. Adding more networks will decrease the average penetration rate and increase the average price per customer, if we assume all networks will make a profit. The increase in average price will also make it less likely people will subscribe and drive actual penetration rates down. Actual prices for a triple play offer over FTTH in the Netherlands currently range between EUR 45 and EUR 80."[5]

These prices lead inevitably to one conclusion – the cost of building a NGAN is such that it is unreasonable to expect that a second network will be built once a first has begun. The likelihood of more than two networks ever being built is so remote that it can be disregarded as a possibility under present conditions.

In Australia, the contribution of public money in the NBN process puts beyond doubt that there will be only one national network. The public funding is available because it has been concluded that is not commercial to build one national network without a public contribution. This subsidised network can safely assume it will have no competitor.

There is, however, one set of circumstances where this rational economic thinking will may result in inefficient network duplication that is unsustainable – if there is an integrated incumbent that does not win the NBN bid and is not precluded from overbuilding. In those circumstances the rational response by the incumbent will be to repeat exactly what Telstra did when Optus began building a potential competitor to its copper network in the 1990s. It will duplicate the competitive investment until the competitor simply stops building. While this means that there might be competing networks in limited locations for a short time, ultimately one network owner almost certainly exit the market and the incumbent will most likely regain its monopoly. This is even more likely given the unparalleled control Telstra has over content. (see below).

This is not to say that public policy should not make provision for the building of competing networks at some time in the future through putting in place today appropriate access arrangements to passive network elements. Advances in technology in the future might reduce costs to the extent that this is possible, but the appropriate regulatory

[5] Developments in Fibre Technologies and Investment, OECD, 3 April 2008

approach on the basis of the commercial realities of today is to regard an NGAN as an enduring natural monopoly and regulate it appropriately.

It also suggests that the Government should place a strong emphasis on network topography to ensure that the bottleneck monopoly elements are as contained as possible. The OECD has suggested that, in this regard, special attention should be paid to the aggregation points in FTTx network designs. If possible, aggregation points that are further upstream should be preferred because this is more likely to create an economically viable point of interconnection for access seekers wishing to unbundle fibre access lines.[6]

Australian experience with the conduct of Telstra in the 1990s underlies the importance of taking an approach that does not encourage or allow wasteful overbuild for anti-competitive purposes, despite the fact that this might appear to depart from the principles of encouraging facilities-based competition. In the 1990s, Telstra was allowed to build an HFC network in direct response to the initiative of Optus to build the first HFC network. Telstra's management at that time did not disguise the fact that this was a response intended to foreclose emerging facilities-based competition. Further, Telstra was able to enter and leverage market power in horizontal markets by its half ownership of the dominant content provider, Foxtel.

This experience would be seen by advocates of unregulated markets as a good example of competition. However, the outcome has been failed competition and poor outcomes for consumers. The Optus network rollout was terminated, and a decade and a half later, Australia has not only one of the poorest penetration rates for cable TV, it also has none of the competitive tension between cable and telco broadband that has been credited with driving consumer uptake in Canada, the US and many parts of Europe such as The Netherlands.

The guiding principle of market regulation in Australia – the long term interests of end users test – recognizes implicitly that principles such as facilities-based competition are means to an ends, not ends in themselves. It is clear that the Pay TV experience in Australia has been a resounding failure against the LTIE test. Again, this should guide policy and regulatory principles in relation to the NBN process in Australia to regard the networks as a natural monopoly.

Regulating Monopoly – Learning From Experience

Australia's approach to the regulation of the bottleneck elements of the existing Telstra network has been to regulate access to the bottleneck elements and to provide remedies against anti-competitive conduct by Telstra.

[6] Dr Taylor Reynolds, OECD, presentation to TellthetruthTelstra Seminar, June 5 2008. Fibre Investment Challenges and Opportunities.
http://www.tellthetruthtelstra.com.au/www/365/1001127/displayarticle/1003503.html

It is clear from the outcomes in terms of market disputation and consumer experience that these approaches have profoundly failed. Australia's experience in this mirrors that of the UK and New Zealand, both of which have in recent years concluded that access regulation alone is not enough and that structural remedies are necessary to deal with the problem of on going market power by their incumbent telecommunications companies.

There are many metrics that can be used to demonstrate the failure of competition to develop to the extent that it was expected and hoped. These include market share, shares of profits, relative speeds and penetration of broadband and geographically constrained services.

For the purposes of this report, consumer prices and industry disputation will suffice to demonstrate the failure of competition.

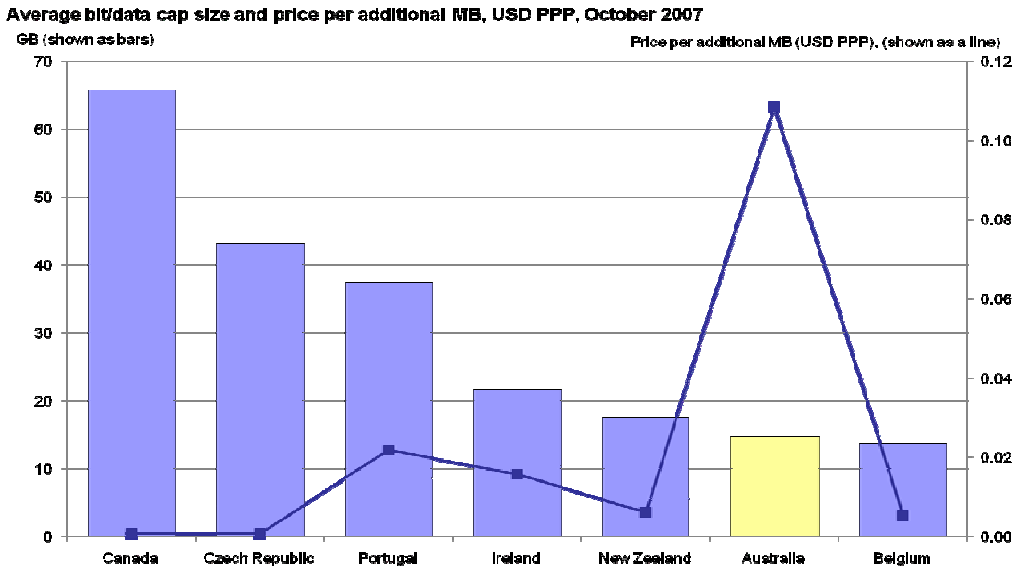
Again, data from the OECD demonstrates most persuasively the poor outcome for Australian consumers in terms of prices for services.

Figure 1 below shows the level of data caps in those countries where there is a download limit on consumer broadband plans and the price for data above those caps.

As can be seen from the bars, Australian consumers labor under the second lowest caps in the OECD. More troubling, however, is the "penalty" price Australian consumers pay when they go over these caps. It is five times more than the next highest.

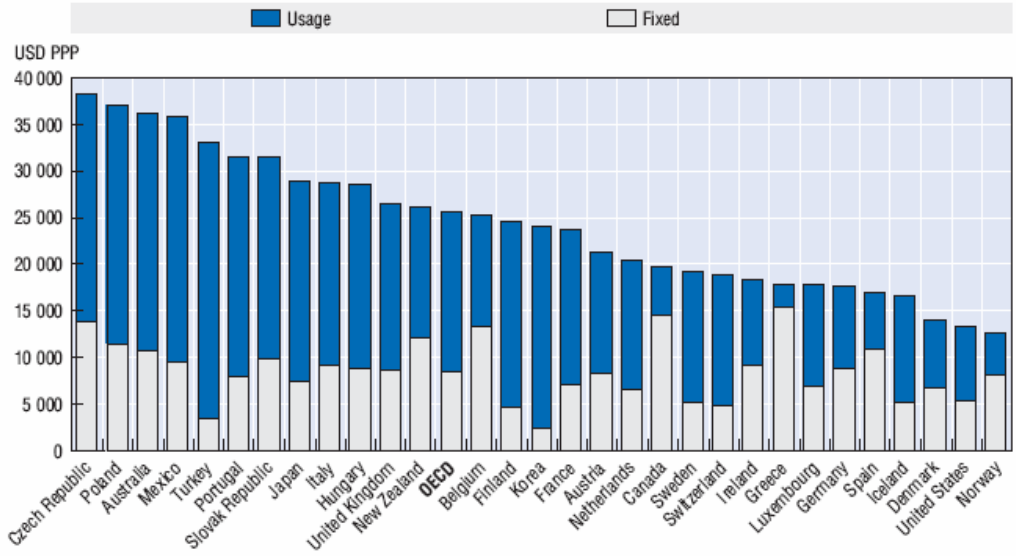
These two measures clearly demonstrate that Australian broadband users face serious price constraints to their usage of broadband services that are unique in the developed world.

Figure 1. Average Data Caps and Price of Above Cap Data: OECD Analysis



Figures 2 and 3 demonstrate that Australian business consumers also suffer higher prices for communications services relative to the rest of the OECD. Figure 2 shows that Australian SMEs pay the third highest prices in the OECD, more than 40 percent above the average. Australian SOHOs also pay the third highest price in the developed world, more than 35% above the average.

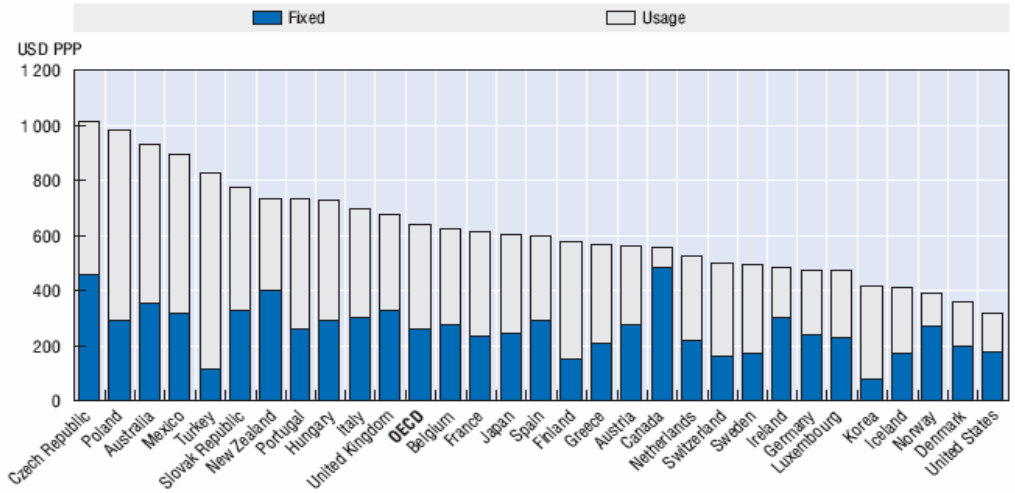
Figure 2. OECD Analysis of fixed line basket for SMEs.



Note: Discounts, if available, are subtracted from the usage charges.

StatLink http://dx.doi.org/10.1787/002258166760

Figure 3. OECD Analysis of fixed line basket for SOHOs.



Note: Discounts, if available, are subtracted from the usage charges.

StatLink http://dx.doi.org/10.1787/002234233571

Separate OECD analysis over many years and in relation to many services has consistently found that those countries with the most robust competition have the lowest prices and earliest rollout of services. Those with the weakest competition, conversely, have the poorest outcomes for consumers.

In relation to industry disputation, the experience in Australia has been completely contrary to what was expected when competition was first introduced in 1997. At that time, it was expected that the regulatory tools provided by the Parliament would over time encourage an increased use of commercial negotiation and less reliance on the intervention of the regulator to resolve disputes. This was intended to lead to the development of a more certain climate for investment.

The experience has been the opposite. As of the first quarter of 2008, there were a record number of disputes before the ACCC and the courts, numbering more than 40. Prices for services as basic as the Unconditioned Local Loop had been in dispute for up to seven years, with Telstra refusing to accept prices determined by the ACCC until it had exhausted all legal avenues to challenge the authority and decisions of the Commission.

These developments, however, cannot be said to be surprising. The ACCC examined the problems besetting competition in the telecommunications industry as far back as 2003.[7] The Commission concluded that the fundamental problem was that the integrated structure of Telstra – combining ownership and control of the ubiquitous access network with ownership of retail businesses – meant that it had both the ability and the incentive to discriminate against access seekers to disadvantage them in downstream markets. This is exactly the conclusion that has led to structural reform in the UK and New Zealand.

However, the situation in Australia is far worse from a competitive standpoint than in any other developed market. In 2003, the ACCC concluded that the level of integration of Telstra was unique in that it combined the vertical telecommunications businesses with ownership of the dominant cable TV network, half ownership of the dominant Pay TV content provider and ownership of the largest mobile network.

With the problem identified in 2003, it might have been expected that measures would be taken to resolve it.

However, the problem of increasing horizontal integration and the incentive for Telstra to leverage market power across horizontal markets has meant the market problems have only become worse in recent years. For example, Telstra has continued to pursue deals to secure exclusive content across platforms and used this to disadvantage competitors that do not and cannot match Telstra's ubiquity.

[7] Emerging Market Structures in the Telecommunications Sector. June 2003. http://www.accc.gov.au/content/item.phtml?itemId=337611&nodeId=bd7602ed351dadd8c069b69436b45231&fn=Emerging%20structures%20in%20the%20communications%20sector%20(Jun%202003).pdf

The chairman of the ACCC, Graeme Samuel, pointed to this problem in 2005 in the following terms.

> "(A) key function of the ACCC is developing, *to the best extent possible under the existing industry structure*, a truly competitive environment in all aspects of telecommunications. To this end, the ACCC has regulatory powers specific to telecommunications, set out in Parts XIB and XIC of the Trade Practices Act.
>
> These provisions exist because it is recognised that the networks over which telecommunications services are currently provided, and which in future may well be the conduit for a whole array of media services, often have bottleneck characteristics which differentiate these markets from the more traditional media. In this respect, it's absolutely crucial that existing network owners not be allowed to use their market power to close down new forms of competition. This could happen either through the roll out of new technologies and networks being impeded or through existing network owners obtaining exclusive control of the content that could be offered on the new networks." (Italics added)[8]

Mr Samuel went on to discuss the potential for the Commission to use Sections 45 and 47 of the Trade Practices Act (relating to exclusive dealing and substantial lessening of competition) but pointed out that the use of these provisions had limits. The fact that the Commission has never, to the CCC knowledge, sought to use either of these provisions suggests that it does not believe it can prove a breach and stop what it has identified as a problem for the development of effective competition.

Further, Telstra has recently been comfortable enough that it will not face sanction for its use of horizontal market power that it has taken to boasting of its unique control of the market. A recent example of this were reported comments from BigPond managing director Justin Milne in Cannes where he boasted that Telstra was able to bring together content and delivery platforms that no one else was able to match, thanks in part to Telstra's exclusive content arrangements.[9]

This would appear to be exactly the type of conduct that Mr Samuel warned against as being potentially harmful to competition, yet Telstra has continued to execute a business strategy built on extending and leveraging this market power.

The experience of the past five years has demonstrated that the present arrangements are unable to contain the continued expansion of Telstra market power. The fundamental weakness that has been exposed is that a regime that is based on managing behaviour in

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[8] Graeme Samuel, ACMA Annual Conference 10 November 2005. http://www.accc.gov.au/content/item.phtml?itemId=713959&nodeId=46345e11cff0892258d2bacf451cbca3&fn=20051110%20ACMA.pdf

[9] http://www.itwire.com/content/view/18785/1095/1/0/ For BigPond Read BigBrother, ITWire, 16 June 2008

order to prevent a business from responding to its fundamental incentives is doomed to fail. An integrated network owner/retailer will continue to push the limits of conduct in order to find a means to advantage itself and disadvantage competitors. Only by changing the incentives so that the network owner views downstream market participants not as competitors but as customers can this vertical anti-competitive conduct be effectively prevented.

The previous Federal Government recognized the failure of the access regime, as evidenced by its attempt to respond with a set of operational separation arrangements. However, the version of operational separation negotiated between the Department of Communications and Telstra failed to put in place any arrangement to address the problem of Telstra's incentive to discriminate against competitors, nor any effective remedy if it breached the provisions of the so-called operational separation regime, introduced from 2005.

The previous Minister has recently acknowledged that a stronger separation regime should have been introduced[10] and ACCC has recently confirmed that the arrangements have failed.[11]

The present Minister, as Opposition Communications spokesman and in recent speeches since becoming Minister, has indicated his commitment to structural reform and his view that the arrangements introduced in 2005 were inadequate.[12]

The experience of the past serves as clear warning that allowing the Australian NBN to be built by an integrated entity regulated through access arrangements will create a situation where the serial abuse of market power would be inevitable.

It is clear, therefore, that structural arrangements must be a pre-requisite for any future network. Further, the architecture of an NGAN means that the arrangements that have been put in place in the UK and New Zealand would fall short of what is now needed in Australia (see below). It must also be remembered that the functional separation arrangements in both of those countries were put in place after the prospect of full structural separation was invoked. The functional separation alternative was agreed to because it was seen as a quickly and something that could avoid the potential for legal conflict.

These countries, however, did not have the rare opportunity that Australia has. They were dealing with an existing network with established ownership and retrofitting separation arrangements. Australia is dealing with a new network with ownership arrangements that are not yet in place, but which the Government has acted to bring into being.

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[10] Communications Day, May 13 2008

[11] Senate Economics Committee Estimates Hearing
http://www.aph.gov.au/hansard/senate/commttee/S10864.pdf

[12] Senator Stephen Conroy. Speech to CommsDay Summit April 16 2008.

The opportunity to create separate ownership cleanly, quickly and from the start will not be repeated. Further, as discussed below, functional or operational separations arrangements used in other jurisdictions would be an inadequate remedy because of the nature of the proposed new network.

Why Not Separate?

In the face of the experience of the conduct of the integrated Telstra and its overseas peers and the near universal support for structural separation, the onus must be on Telstra and its supporters to demonstrate why separation should not be pursued.

The arguments against separation presented by Telstra in recent public presentations do not bear on the public policy but refer to the impacts on Telstra's management and shareholders. There have been some economic papers presented on Telstra's behalf in the past, but it is notable that they are completely lacking in any attempt to quantify the benefits of integration.[13]

As discussed, the onus must be on Telstra to prove that there is a public benefit in allowing to continuation of arrangements that clearly are of financial benefit to that business. Former ACCC chairman Prof Alan Fels has succinctly described the test that policy makers should apply:

> Every business person has an interest in avoiding competition and acquiring monopoly power. That's not dishonourable – if it's not illegal – because the job is to make money for their firm. What's dishonest is claiming their monopoly power is good for the public.[14]

One recurring theme in Telstra criticism of separation proposals is that it would be harmful to investment. Telstra has repeatedly cited BT in making this argument, although without specifying any evidence to support this contention. BT has repeatedly rejected claims that its functional separation arrangements have deterred investment.[15] Further, Dr Chris Doyle argues that there was little compelling evidence on the investment issue but that a number of academics had found that separation did not appear to harm investment. Dr Doyle went on to say:

> "While coordination may confer benefits within an integrated vertical structure, these are likely to be offset by the economic costs associated with anticompetitive conduct arising from non-discriminatory practices."[16]

[13] Havyatt Assoc Submission to ACCC Draft Decision on FANOC Undertaking December 2007
[14] Prof Alan Fels Address to the National Press Club June 30 2003
[15] Functional Separation in the UK, Karen Northey, head of Regulatory & Government Affairs, Asia Pacific, Middle East and Africa, BT. June 2008
[16] Structural Separation and Investment in the National Broadband Network environment, Dr Chris Doyle

NGAN Architecture; Implications for Regulation

The philosophy that underpinned the functional separation arrangements in the UK was that there were physical elements of the access network that were an enduring bottleneck, and separation measures could be effectively focused on those elements.

Specifically, the local loop from the exchange was identified as the bottleneck point.

This is consistent with the existing network architecture in most of Australia today, but becomes irrelevant when the exchange is bypassed by fibre that runs either to the curb/cabinet/node or to the premises.

Further, as discussed above, there are network topography options that have direct implications for the type of competition that can be utilized on the network. A structurally separated network owner with appropriate incentives to encourage the maximum utilization of its asset will wish to encourage competitors to use the network. This interest will influence the architecture of the network it proposes to build.

A network owner with the incentives to which Telstra presently responds will be motivated to design a network that minimizes the ability for competitive access.

The bottleneck elements of a deep fibre access network will vary widely under different network architectures, but all make access to copper at the local exchange obsolete. The models of functional separation implemented in the UK and New Zealand are therefore no longer relevant in the Australian context. The "three part" functional separation models used in those countries are, in effect, compromise arrangements put in place to promote competition on a copper-based network that will soon no longer exist in Australia.

Because of the wide variations in possible architectures that respondents to the RFP will be required to consider, aligning incentives with competition policy objectives at the earliest possible stage is critical to the long term interests of the Australian community. Aligning these incentives will clearly require structural separation to avoid the persistent regulatory failure of the past, as discussed above. Therefore, bidders should be given this signal firmly and quickly before they lock in inappropriate network designs.

Post-Copper Networks and Boundary Issues

Given the wide variation of network designs possible, and the inappropriateness of models designed to apply to a copper-based access network architecture, the CCC submits that the "line" of separation should defined retail businesses and require separate ownership and control. The approach of working upstream from the end user to the physical point at which the bottleneck begins, as has been done with functional separation in the UK, cannot be applied in a FTTx environment.

Discussion in recent years have often been drawn to the three part (network, wholesale, retail) model that has been applied in the UK. But this model was a compromise intended to specifically address problems of access to the unbundled local loop that had slowed broadband development in the UK. In the past, discussions about structural separation tended to focus on the division between wholesale and retail businesses. This was because such a boundary directly addressed the incentive to discriminate problem.

The CCC submits that this incentive issue is the core problem in any integrated NGAN, just as it is in a copper-based network. Further, defining retail activity as the boundary point should allow for any proposed NGAN architecture to be captured within the definitions, avoiding the complication of trying to define what boundaries would apply in FTTH, FTTN or some other configuration.
This position is also proposed by Dr Chris Doyle of Warwick University in a recent paper on separation issues in Australia. Doyle writes:

> The form of structural separation considered most appropriate in the context of the NBN is along the lines of the NetCo model, where the wholesale network elements are separated from the downstream retail functions. The NetCo model is better suited for the NGN and NGAN environment, as there is less need to worry about identifying the boundary between 'access' and 'non-access' elements. As the boundary between access and non-access elements is likely to vary over time, determining a point of separation at one moment and forming a LoopCo carries additional risks. It is also likely that the channelling of market information for investment purposes between retail and network components will be easier in the NetCo model than in the LoopCo model.[17]

However, as discussed above, it is desirable to further separate the ownership and control of the passive infrastructure, such as ducts and access points, in addition to the separation of wholesale and retail activities. This has been adopted in Singapore in the NBN bidding process there.

This additional point of separation allows for later wholesale market entry if there is a point in the future if and when the cost of entry makes this form of competition viable. Further, the threat of entry might add some pricing discipline to the monopoly network wholesale services provider, who would otherwise be constrained solely by regulatory action on price.

Duct access, however, is not sufficient on its own. As has been pointed out by BT, duct access creates the possibility of entry for only a very small number of alternative suppliers at best. Even if it is available, the questions about how to ensure equivalence of access remain in the absence of parallel separation arrangements for the ducts and the wholesale businesses supplying services from them[18]. It is best seen as complementary and a safeguard underpinning separation of retail activities from the wholesale business of the network owner.

[17] Doyle Op cit
[18] Northey, op cit

Incentives, Product Development and Price Setting Methodology

As discussed above, creating the appropriate incentives on the network owner/wholesaler is necessary to finally resolve the anti-competitive issues that have bedeviled the telecommunications industry in Australia, and to ensure that the topography of any proposed new network is not designed with anti-competitive purposes in mind.

Appropriate incentives will also address the other issues that likely to cause a problem in some of the other crucial business design and process decisions that must be made by NBN proponents.

For example, the process to identify and develop responses to new product opportunities requires engagement with retail customers. However, the experience of competitors with Telstra to date has been most unsatisfactory in this regard.

Telstra develops products for its own retail businesses without contacting other retailers, and has recently even released products to the retail market before having any engagement with wholesale customers. This conduct has been the cause of complaints by competitors to the ACCC but Telstra continues with the behaviour even in the face of operational separation rules intended to stop it. This is a clear example of incentives overriding regulatory behavioral rules.

Clearly, the only way to ensure that the network owner does not systematically discriminate against some retailers to the benefit of its own retail business is to ensure that it has an incentive to treat all with equal regard. This, again, can only be achieved with certainty through structural separation.

Price setting methodology is more complicated but is a crucial element of public policy to be resolved before the NBN is built.

Structural separation alone does not guarantee that the prices set by the wholesale are not inflated. Retailers faced with inflated wholesale prices will have a motivation to have them reduced because they will wish to prevent the wholesaler misusing its market power to shift margins from the retail market to the wholesale business.

However, the pressing concerns of today for retailers are that one retailer – Telstra – enjoys significant and anti-competitive costs structures because it does not acquire the access to the network for which others must pay.

This concern should be removed by structural separation and there is therefore a risk that without the persistent and determined advocacy of retail competitors, there would be a drawn out debate between the regulator and the wholesaler that would delay appropriate pricing for end users.

The greenfields nature of an NBN build, however, creates an opportunity for this regulatory quagmire to be avoided. Actual build costs would be known and could be agreed between the regulator and the wholesaler in advance. Access prices would then be based on actual costs of build and established regulated rates of return.

There is established regulatory practice that can be applied in this instance reflecting the above in the National Gas Access Code.[19] This sets out the arrangements for establishing access prices to new facilities investments. The access prices are established by agreeing the value of the investment, based on cost, and the regulated rate of return for existing investments. Access prices reflect those two elements.

Reliance on theoretical network cost modeling to establish access prices to a new facility should be avoided. There is a long and inglorious history of debate surrounding cost modeling by Telstra that has simply served to demonstrate the inadequacies of this approach.

To the extent that existing assets are utilized in the NBN, these should be transferred at an agreed value to the structurally separated NBN owner. Again, the Gas Code provides a methodology whereby these could be value consistent with established regulatory practice.

NBN Access Product Definitions and Development

The issue of product development arrangements and the involvement of alternative retailers is an issue that assumes a high priority in the NBN process. Simply putting in place incentives to ensure the appropriate behaviour in future will not be adequate because the process of having competing NBN proposals for the right to build the national network means that bidders must develop basic access products as part of their bids.

Even with the best will in the world, proponents are unlikely to be able to fully anticipate the needs of all industry participants without being able to directly negotiate with them. Telstra, based on its history of antagonism to competition, is unlikely to be well motivated.

There is a tension between the need for bidders to have a clear understanding of the requirements of all access customers and the desire of the Department, in particular, to strictly limit communication between industry participants. The CCC, as discussed below, believes the Department is responding to this tension by creating an excessively secretive environment that will ultimately harm the process.

It must be remembered that there are some elements of the NBN project that are unique. Not least of these is that all fixed line industry participants will be customers of the winning bidder. This means that even those who bid and lose will be forced to buy services from the winning bidder.

[19] National Third Party Access Code for Natural Gas Pipeline Systems.

Industry participants who are given no insight into the proposals of bidders will inevitably and legitimately become increasingly tense about whether they be forced to completely change their business plans at short notice, with no opportunity to influence the rollout plans and access products that they will be forced to live with.

The CCC fully supports the Government's stated requirement that the wholesale access products provided by the new network owner allow maximum product and prices differentiation, and to allow them to deliver emerging services. But only wide industry consultation can identify what that will require of bidders. Will, for example, all industry participants be able to develop IPTV services based on the access products available? How will they be given comfort of this if they cannot see technical specifications for themselves before a preferred bid is selected?

On the other hand, the experience in The Netherlands where incumbent KPN is presently involved in both FTTC and FTTH rollouts demonstrates that it is entirely possible for transition measures to be put in place that limit disruption to access seekers, and develop products that allow access seekers to continue to have viable business options. But this requires deep engagement with access seekers and an appreciation of their needs.

KPN's FTTC transition arrangements offer access seekers options to remain in some capacity in existing exchanges, or to move their equipment to cabinets/nodes from the exchange to take sub loops, or to take alternative access products. KPN offers financial compensation arrangements for those "unbundlers" who choose to move from the exchange to take a wholesale access service. Most importantly, the access service to which they migrate is designed to allow them the maximum flexibility possible. It was described by KPN Chief Regulatory Officer at a Canberra seminar this year in the following terms:

> "Now what is exactly this service wholesale broadband access? That's basically a V-line between the platform and an end user. So it's a virtual pipeline that we offer. So if a wholesale customer wants to make use of this virtual pipeline he can determine, you know, the capacity and the quality of service, the redundancy, etc. So it's more or less, what a wholesale customer can do with it is more or less the same as what he can do if he is buying an unbundled line from us."[20]

Mr van den Burkel said that it was KPN's view that access seekers would conclude for themselves that the best long term arrangement was for them to take the "virtual pipeline" product which would allow the transition to be completed, but that KPN was not going to force them into the action.

The technical arrangements that allow this level of flexibility clearly need to be well understood. Consistent with the Government's desire to maximize competitive differentiation, the CCC submits that the expert panel must independent establish the technical minimum standards that it believes all bidders must meet, and that these

[20] Jilles van den Burkel, Chief Regulatory Officer, KPN. Presentation Canberra June 5 2008.

standards should be made public. This will require investigation of the products available today in Australia and other countries, including The Netherlands. This might have implications for network design and should therefore be a priority. Also, it is important that a consistent definition of bitstream, reflecting the definition used by KPN, is applied by all bidders.

Process failure risks

The commercial aspects of the NBN process have attracted much attention. However, the CCC submits that the implications for the public policy and regulation surrounding communications are more important. For the reasons discussed above, the decisions made in this process will shape the industry and consumer outcomes for a generation. The process will require the most fundamental changes in the policy and regulatory environment in the 11 years since competition reforms were introduced.

The CCC submits that the Department has become too focus on commercial issues and has lost sight of the need for decisions to be made in ways that are consistent with past and best practice processes for the development of policy and regulation. The proposed arrangements must be scrutinized publicly and open for examination.

It is crucial that no one loses sight of what is happening in this process. The proponent who ultimately builds the NBN will be sanctioned to own and possibly operate a monopoly on terms that might breach the provisions of the Trade Practices Act. And not just any monopoly. This is a monopoly that 98 percent of Australia will have no choice but to buy communications from.

This cannot happen under the existing laws in Australia without the opportunity for public input. Under the law of the land today, no proposed investment that seeks, through an undertaking to the ACCC, what is in effect a license to operate a monopoly on terms protected from the full force of the TPA would ever be negotiated in private. The NBN process has been initiated because Telstra refused to participate in the existing special access undertaking process because it did not want public scrutiny. The interests of Australian citizens must not be made secondary to Telstra's corporate ambitions.

Yet the Department has consistently placed its concerns about the commercial aspects of the NBN process above the need to ensure public scrutiny and input into decision-making around the regulatory issues.

This is not a minor matter in the view of the CCC. The responsibilities attaching to public officials engaged in these types of decisions was well summarized by Prof Alan Fels in 2003 in discussing the powers of the ACCC.

> The power to authorize is an extremely important one. If two firms seek to merge, it is the power of licensing a monopoly in perpetuity.[21]

[21] Fels Op Cit

Public processes around the making of these decisions have developed because it is recognized that a primary duty of the Government to protect the interest of citizens when faced with investment plans by private companies.

It would be a dangerous, if not abhorrent, precedent if this process were to jettison the past arrangements to facilitate public scrutiny of proposals simply because of the availability of Government financial support for part of a proposed monopoly piece of infrastructure. Especially as that new infrastructure will overbuild and replace existing network over which those public scrutiny processes do apply.

Already there is a widespread view in the industry that the Department has created a process that is incapable of resulting in fully informed decision because of the constraints it has placed around its willingness to allow information to be provide directly to decision-makers. The Minister explicitly asked for submissions from all interested parties as a demonstration of his desire for a fully informed decision-making process, and noted that this is a completely separate process to the RFP to proponents. There cannot therefore be any constraint on respondents to the RFP in responding to the regulatory submissions request.

However, the Department appears to have given some participants in the RFP processes the impression that they are constrained in what they can provide by way of response to the call for regulatory submissions. This raises serious risks of legal challenge.

Given that, as described above, the business futures of every fixed line communications company in Australia is likely to be affected by this new network build, it must be assumed that the likelihood of legal challenges against any decision are high. That likelihood only increases as stakeholders' confidence that the Department is running a properly open and transparent process decreases.

The difficulties encountered in the Opel network exercise, both before and after the election and change of Government, should serve as a warning against excessive secrecy in the process, the exclusion of regulatory agencies, the unwillingness to engage the broader industry on crucial issues such as wholesale access arrangements, and the failure to properly inform the industry of what stages the process had reached. All of these factors in the Opel case contributed to wide dissatisfaction among the industry which went well beyond the much published legal actions by Telstra. Some of these issues, such as the failure of the Department to follow up its promise of consultation with stakeholders on wholesale arrangements, would have become a serious cause of conflict if the contract had gone forward.

Given the greater reach of the NBN network proposals, it could be expected that the readiness to take legal action in the NBN process will be much higher than the Opel decision.

The decision about who builds, owns and operates the NBN will be defining the future for all companies in the industry. There is little confidence in the industry that the

Department has an adequate understanding of the needs and motivations of non-Telstra businesses, based on years of unsatisfactory policy advice.

An example of this that remains fresh in the minds of the competitive industry was the development of the operational separation amendments in 2005. Warnings, both public and private, by the non-Telstra industry that the proposed arrangements would fail completely were ignored by the Department. These warnings have subsequently been completely vindicated.[22]

Conclusion

From the above discussion, the CCC hopes that it is clear that the implications of the decisions the the expert panel and the Government will make in the next 12 months are extensive and not all immediately evident. In many cases, acts of commission and omission by decision-makers along the way will have consequences that go well beyond what might be immediately apparent.

The CCC seeks an opportunity to meet with the panel to emphasise and discuss several points that it believes have not been adequately discussed in the public debate between Telstra and others to date. These include: the issue of the separation "boundaries" that are appropriate in a future, deep fibre network; the incentive debate and the importance of understanding the impact on this incentive issue of the Government's actions since its election, and; the transitional arrangements, alternative products and need for engagement with broader industry needed to ensure that disruption to the industry from the deployment of a new access network is minimized, for the protection of the interests of both the industry and consumers.

The CCC will make itself available to the panel at the time and place of its convenience.

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[22] ACCC evidence to Senate Economics Committee, June 5 2008

Pre-RFP Submission to the Expert Panel

March 2008

Introduction

The Competitive Carriers' Coalition represents the interests of non-dominant telecommunications carriers in Australia. Members of the CCC have been the pioneers of the delivery of true broadband and 3G mobile services. All members of the CCC have progressed on the so-called ladder of investment to the point where the collective investment of the members is about $5 billion.

Further, the CCC has been seeking to lead policy discussion in relation to the implications of the transition to a deep fibre network in Australia since it first organized a policy seminar on the issue in 2004.

The CCC welcomes the opportunity to contribute to the deliberations of the expert panel and the Government in relation to the proposed National Broadband Network and believes it has much to contribute.

The CCC believes that the primary issue of concern to policy makers in Australia should not be to preserve the current environment for telecommunications competition but to significantly enhance the conditions for competitive delivery of telecommunications services.

The CCC submits that it is beyond dispute that the Australian regulatory regime has failed to deliver competition comparable to that in those developed countries that are leading the world in service deployment and prices for telecommunications services. The evidence of this is in the prices consumers in Australia face for mainstream services compared to many other countries, including countries with similar demographic and geographic challenges, such as Canada. Australian fixed line services prices for small and medium sized enterprises are, for example, about 40% above the OECD average.

This situation stems from the current industry structure and the profit incentives that this structure presents to Telstra as the incumbent monopolist. The CCC believes that the transition to a deep fibre network must result in these fundamental market power issues being resolved.

1 Process for RFP Development

The RFP will be developed in a very tight timeframe yet will be the document that determines how much interest there will be among potential bidders for the NBN, especially overseas bidders.

The RFP will need to give sufficient clarity on a number of key issues before potential bidders will be willing to commit the substantial resources required to seriously participate in such a process. It is entirely possible, given the tight timeframes, that the RFP document might inadvertently omit necessary information, or inadvertently include requirements that lead to potential participants not proceeding to prepare a bid.

For this reason, the CCC strongly suggests that the Expert Panel release a draft RFP after March 30, and allow at least two weeks for responses to be received and considered before issuing a final RFP.

The CCC is conscious that the Government has advised the Panel that it wishes the processes to move quickly. However, we submit that the issuing of a draft RFP is prudent and will not necessarily delay bidders who are already committed to participating in the preparation of their documentation. Those bidders would be in a position to begin to prepare their response on the basis of the guidance provided by the draft RFP. Others who have some reticence, either because there is insufficient clarity provided by the draft or because the draft contains a condition that would preclude their participation, would be able to make representations to the panel on these matters before making a final decision not to go further.

2 Open Access Definitions

The CCC believes that the most important decisions in the NBN process will be those surrounding the requirement for open access.

The CCC considers this to be the fulcrum on which all future competition, and the possibility for the resolution of on going market failure in Australian telecommunications, will turn.

Further, the CCC believes that clarity around these requirements will be necessary before potential bidders that are now considering becoming involved in this process will go any further and commit to participating. It is crucial that the regulatory framework in relation

to the creation and promotion of sustainable competition is established when the RFP is released.

The CCC has for many years argued that structural reform of Australian telecommunications is necessary and overdue. Regulatory tools designed to provide competitors with access to the monopoly elements of the Telstra network have failed because Telstra's ownership and control of vertically integrated assets and businesses have resulted in it being an unwilling seller of this access.

The ACCC published in the so-called Emerging Markets report in 2003 that confirmed that it shared the concerns of the CCC. The Commission wrote that Telstra had the incentive and the ability to discriminate against competitors who required access to the monopoly network elements Telstra controlled, and that it did exactly that.

Developments in Australia and overseas since that time demonstrate that the verdict is in and that structural reform remedies to address these issues is a necessary part of any effective competition regime in telecommunications. The UK, New Zealand, Singapore and the European Union have all moved to introduce strong, effective structural reform. The US undertook structural reform some decades ago.

The ACCC, the European Regulators Group, the EU, BT (British Telecom) and others have all presented versions of the principles or key elements of functional separation, and a summary of many of the common elements appears below. [i]

Jurisdictions where competition can be said to be most effective are characterized by an going regulatory reform aimed at the incumbent operator and the market more generally. The recent international developments around structural remedies represent a "second wave" of reform of the legacy telecommunications network among those countries that have relied on regulated access in the past. It adds a structural reform element to the access regime – based in recent years on network element unbundling – that has underpinned regulatory measures to introduce competition.

A "third wave" of reform is beginning to emerge in response to the emerging investments or demands for investment, in fibre-based next generation access networks. While access to network elements is being pursued in many jurisdictions, it is clear that this is not substitutable for wholesale/retail separation. This third wave builds on wholesale/retail separation and reflects a more sophisticated understanding of what is necessary to create effective and sustainable retail competition to drive maximum consumer benefit.

It is clearly impractical and undesirable for multiple retailers to invest in their own deep fibre networks. But there is discussion about access to network elements in Next Generation Access Networks <u>in addition to</u> vertical structural separation measures to promote and protect future competition in these new broadband networks.

This approach is best illustrated by the instructions to participants in the Singapore NBN project. After more than a year of consultation and deliberation, bidding requirements

were released that seek to secure competition by requiring strict functional separation of wholesale and retail functions while promoting future market entry at the wholesale level by structurally separating ownership of passive network elements.[ii]

Singapore has mandated strict functional separation between wholesale and retail businesses along the line of the UK and structural separation of the ownership of the passive network elements. The rationale for this would seem to be that it anticipates that there is a need to control the market power of the wholesale business, which is a monopoly for as long as there is no ability for other entrants to build a rival wholesaler.

The owner of the structurally separated passive network elements would have an incentive to encourage an alternative wholesaler to enter the market by utilizing these bottleneck elements to counter the monopsony power of the wholesaler that it would face. But to make this wholesale entry viable, a robust retail market would in turn be necessary, and separation of wholesale and retail functions creates an incentive for the wholesaler to in turn encourage the development or robust retail competition and growth.

In the Australian context, the ACCC has already provided guidance about the level of ownership separation that it believes is the minimum required to support robust and sustainable competition in an NGAN context in its draft decision on the FANOC special access undertaking. While this is an opinion specific to the FANOC proposal, the principles underlying it can be applied broadly.

The FANOC undertaking anticipates some level of ownership of the network and wholesale business by retail telecommunications carriers. To satisfy the Commission that its previously stated concerns that vertical integration provides the network owner with the incentive and ability to discriminate against retailers in competition with its own retail business, FANOC proposed various controls over the way these FANOC shareholders could exercise their influence.

However, the Commission was not satisfied that these were sufficient[iii]. In its draft decision, the Commission said it was "not satisfied that the SAU provides a rigorous and unambiguous framework for sufficient separation between the ownership of the HFTP network and the downstream retail sector for the ACCC to accept FANOC's claim that its governance model prevents *effective* vertical integration".

The Commission went on to say that the most straightforward approach would be to prohibit ownership of the network by retailers. It suggested that as soon as any level of vertical ownership is allowed, the issue of establishing and monitoring safeguards against discrimination and cross-subsidisation, and providing a means of redressing such conduct, becomes crucial. It suggested that the FANOC undertaking required "greater safeguards to tighten ownership and control restrictions" and suggested that the provisions could have included:

- Setting out stricter control restrictions using specific triggers based on ownership or voting thresholds applying to both individuals and groups of access seekers so that non-compliance can be easily identified. Given the difficulties in identifying

maximum “safe” ownership thresholds, the ACCC would tend to take a cautious approach to determining these thresholds.

- Ensuring strict separation of directors, managers and employees of FANOC and the BAS manager as well as business and IT systems
- Requiring on going reporting on compliance with the Management Principles, including ownership interests and voting rights.

These comments set a standard that should guide the minimum requirements to protect competition for bidders in the RFP, providing consistency with the existing published opinion of the regulator. Given that the Government will require bidders to have their proposals accessed by the ACCC, the CCC submits that the RFP should include guidance for bidders that the preferred standard (as per the Commission’s opinion in the FANOC draft report) is that there is no ownership of the NBN by any participants in downstream markets. If there is to be some vertical ownership, the suite of controls over how that ownership can be exercised will be required to at least meet the standard described above, and reflect the established underlying principles of functional separation, as described below.

Further, the CCC submits that the expert panel should give serious consideration to replicating the requirement of bidders in the Singapore process that the underlying network elements be structurally separated from the wholesale business utilizing them. Such a provision would anticipate the undoubted regulatory conflict that will emerge in relation to pricing at the wholesale level, and encourage a network design that is forward looking and pro-competitive.

The CCC submits that the well understood and documented risk is that an NGAN is designed such that it makes network unbundling difficult. Further, it is also generally accepted that a fibre to the node/curb upgrade is a stepping stone to an eventual fibre to the premises access network, as has been encouraged by the Minister. The design of the FTTN can make such further upgrade difficult or easy. These risks can and must be ameliorated by the expert panel, and this could be affected by making clear in the RFP that the ownership and governance arrangements for the passive elements of the new network will be required to meet strict separation criteria. This would go some way toward removing the incentive for proponents to present a bid that uses technologies or architectures that make future competitive access difficult or impossible.

Contact

The CCC looks forward to contributing further to the NBN process.

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- System for reporting breaches (integrated/independent)
- Independent complaint handling committee
- Sanctions applied in the case of default
- Publication of performance indicators (by an independent body/third party certification)
- Submission to the regulator of contracts signed between A and the incumbent (and/or alternative operators)
    - Publication of compliance reports (by the regulator/by a third party)

Conditions of a Functionally Separate Unit – BT Principles

Source: BT Presentation to ATUG 2008

1. Network separation
2. Management separation
3. Restriction on intra company/group influence
4. Reorientation of staff rewards and management incentives
5. Restrictions on where employees can work
6. Restrictions on flow of commercially confidential info
7. Transparent coordination of FSU return on assets
8. Functionally separate unit can not enter retail markets
9. Rest of company can not self supply products of FSU
10. Compliance provisions: KPIs, independent oversight

[ii] Singapore NBN Project – Structural Requirements for Bidders

Singapore will require that the NBN is separated according to what it describes as the "NBN Concept Layers". These are the application layer (services such as voice, data and video that are acquired at the retail level), the transport layer (a wholesale data delivery service) and the network infrastructure layer (pipes, pits, fibres, buildings etc).

Source: Media Briefing - Next Generation National Broadband Network for Singapore (Next Gen NBN)
http://www.ida.gov.sg/News%20and%20Events/20071211184512.aspx?getPagetype=20

[iii] FANOC SAU draft decision
http://www.accc.gov.au/content/index.phtml/itemId/788471/fromItemId/356715