

Communication Alliance  
Economic Impacts of Broadband for Australia and  
Globally  
February 2009  
Possibilities and opportunities in a digital world



*The assumed (and oft-touted) economic impacts of broadband are real and measurable...  
Broadband does matter to the economy. Broadband is clearly related to economic well-being and is  
thus a critical component to our national communications infrastructure.*  
MIT (2006)

Broadband is an enabling technology that has a significant impact on the economy. Our review has focused on studies which have sort to quantify the following benefits:

- Economic Growth
- Employment
- Productivity
- Welfare
- Investment

Competition is being driven by the reduction in both transactions costs and marginal costs for goods and services purchased over the internet, this reduction in costs is having a significant positive impact on consumer surpluses while at the same time reducing the role of the middle man, thereby increasing the available producer surplus.

## Key Findings

### Economic Growth

Our review of the available literature suggests that broadband infrastructure capable of speeds of 10 Mbps is likely to have a positive economic impact on the Australian economy of approximately 1 to 2 per cent of GDP per annum.

### Productivity benefits

Studies have suggested that productivity is likely to be approximately 1 per cent per annum higher than it would otherwise be without widespread broadband penetration.

### Welfare benefits

The welfare benefits are at least equal to the benefits available in terms of GDP growth. The ongoing and multiplicative impacts of these benefits will also be considerable and will lead to greater economic benefits than those stated.

### Estimates likely to be understated

The multiplier impacts are likely to compound the benefits stated in our paper, these benefits are best illustrated by the commuter example. This is not to say that structural changes will not be significant.

## Key Findings

### Broadband as a Force for Creative Destruction

The internet has turned business models on their collective heads  
Struggling business models include – Hollywood, music, newspapers

### What do they have in common?

Marginal costs of approximately zero, no more barriers to entry, intellectual property concerns

### Old versus New

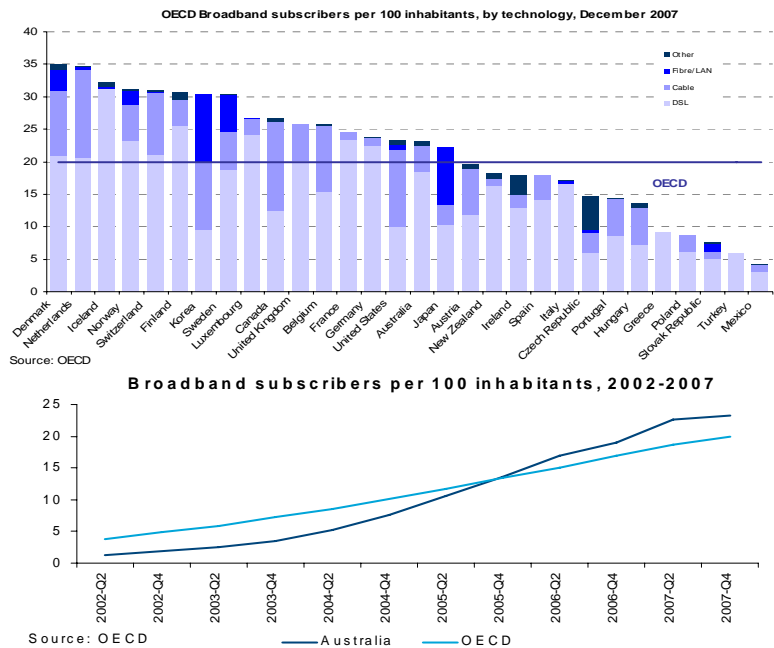
Craig's list versus the rivers of gold  
Google versus Microsoft/Yahoo

### Globalisation

Broadband fuels globalisation through greater interconnectivity between various economic participants, Globalisation increases the need for economies to become more agile, change is everywhere and everything

Increased substitutability inter country labour and transfer from labour to capital (all be that no one has any of that any more)

## International comparison



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## International comparison

As of December 2007 Australia was ranked 16th out of 33 OECD countries in terms of broadband subscribers per 100 inhabitants, which is above the OECD average. However, this only measures the take-up of entry level 256 Kbps broadband.

Australia is generally considered to be relatively fast at adapting to new technology

Growth in the uptake of broadband exceeding the OECD average between 2002 and 2007.

Australia appears to be constrained in terms of its access to an advanced broadband network.

In 2007-08, the World Economic Forum ranked Australia 14th in the world in terms of 'Network Readiness'

Australia was ranked 25th in terms of available broadband bandwidth and 53rd in terms of the Government's success in promoting Information Communications Technology.

Australia's broadband infrastructure lags behind that of many countries.

Investment is required to ensure that this situation does not continue to deteriorate.

Australia's vast distance provide a natural barrier to BB roll outs.

Without considerable investment, Australia will be further back.

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## Government Investments in Broadband Infrastructure and Other Broadband-related Policy Interventions in Australia

Country	Investment (2007 AUD\$)	Network
Australia	\$4.7 billion	National Broadband Network in partnership with the private sector which will be a dedicated downlink transmission speed of at least 12 Megabits per second (Mbps) over each connection provided to premises, using FTTN or FTTP architecture, and that will be available to 98 per cent of Australian homes and businesses.
Australia	Approximately \$200 million over 5 years	Telecommunications Purchasing and Management Strategy (TPAMS) contracts have reduced telecommunications costs to the Victorian government
Australia	\$15 million has been allocated to provide seed funding for projects in strategic areas of government service provision, such as health and education, primary industries and the environment.	Broadband Innovation Fund (BIF) supports the innovative use of broadband in delivering public services.
Australia	\$21.5million in around 600 kilometres of fibre-optic infrastructure	VicTrack involves the investment of (for rail signalling and safety uses) to the Victorian regional centres of Geelong, Ballarat, Bendigo and Traralgon.
United States	Investing more than <b>\$5 billion</b> (SBS Communications) and <b>\$25 billion</b> (Verizon)	SBS Communications FTTP network will deliver broadband speeds of more than <b>25 Mbps</b> , with Verizon's FTTP network delivering speeds of up to <b>50 Mbps</b> .
Singapore	<b>\$5 billion</b>	Open access <b>100 Mbps</b> broadband network to every home and business in Singapore
Italy	<b>\$10 billion</b> (Telecom Italia)	A fibre optic network that will deliver broadband speeds of <b>100 Mbps</b> to two thirds of Italians by 2009
Germany	<b>\$5 billion</b> (Deutsche Telekom)	A national VDSL fibre to the node network providing <b>50 Mbps</b> to 50 German cities

### BUT – NBN, FTTP is just one option

- Copper telephone lines (e.g. ADSL type of connections)
- Wireless systems (e.g. 3G mobile connections)
- Hybrid fibre- coaxial (HFC) cables (as used in the US)

## Consideration of the various estimates of economic growth

Study	Range of economic returns (percentage figure are on a per annum basis)	Notes on the study
Broadband Advisory Group	1.2 to 3 per cent	\$12 billion to \$30 billion taken from <i>Broadband for Australia, An Economic Stimulus Package</i> a paper prepared by Accenture.
The Allen Consulting Group	2 per cent	Based on what it considered was poor access to affordable bandwidth (2.6 per cent if this improved, i.e. broadband is made more available through cheaper prices). Study assumed perfectly competitive markets and fully flexible labour markets. These are real world limitations which ultimately would reduce the economic benefits outlined.
ACIL Tasman Group	0.5 to 0.8 per cent	State based analysis of the rollout broadband as part of the Victorian Government's multimedia Victoria investment. Assumed that investment built on the roll out occurring by companies. Assessment closer to the scenario described where investment is incremental and building on existing infrastructure.
The Local Government Association	\$2.7 billion of the GSP of regional Australia	Looked at a 'inferior' internet access costing regional Australia. This impact is unlikely to occur given the Government's announced NBN.
The Allen Consulting Group	0.28 to 0.48 per cent	Assessment based on limited roll out in two major statistical division, does not included a scenario of roll out across the state. Rather the state assessment was based on the benefits which accrued in the two statistical division and the multiplier affect of these benefits across Queensland.
Gartner Dataquest	3.6 per cent	Assumes that GDP there is an incremental growth per capita of \$4,000 by 2010. Further assumes that there is 50 per cent penetration by 2010 if regulatory and financing conditions prove favourable. This figure is considered to be high compared to other estimates and reflects the population and market size in the US.
Information Society Commission	2.6 per cent	This report is based on a market failure which the commission believed required government investment. The returns available are based on a low base. While noting this the Commission effectively suggested that Ireland needed to invest to stay relevant in its markets. The 2.6 per cent is a high estimate which could be reduced in the Australian context.

## Key Findings

### Employment Growth

Australian estimates of annual employment growth 0.1 to 0.8 per cent  
Lower than overseas studies  
International estimates 0.4 to 1.4 per cent.  
Context of close to full employment economy these estimates may differ in an economy which is slowing.

### Productivity

Studies have suggested that productivity is likely to be around 1 per cent per annum associated with broadband penetration.

### Wages

Our review of wage growth suggests that there is no correlation with broadband and growth in wages.

### Here comes the multiplier

Avoidance of real costs such as commute time which may lead to greater social cohesion.  
Estimates of approximately 3.5 per cent of GDP potential impact on welfare.

## The Korean Example

One of the key drivers of the Korean success story has been:

The ability of the economy to switch between declining sectors towards growing sectors.

Korea has made significant investment in the infrastructure to support broadband services

Supported by considerable policy measures to ensure a consistent vision and strategy is employed across the economy.

Rather than play a role investing in infrastructure, the Korean government has become a role model for all businesses in adopting broadband applications in the delivery of services.

There has also been considerable emphasis on the development of specialised education programs

Targeted to ensure that SMEs are not left behind in terms of e-business opportunities.

Where necessary, changes made to the regulatory and legal framework for broadband to be effective.

The majority of these changes have been targeted to fostering the emergence of e-business and the removal of barriers which limit the digital economy.

Over the past five years Korea has focused on the emerging gap between large companies and SMEs. Despite this considerable focus the Korean Government continues to note this is a significant weakness in its ability to fully unlock the benefits associated with broadband infrastructure.

## Conditions for maximising economic benefits

Increased Broadband availability

Increased Broadband adoption and take-up curves

Priority needs to be given to encouraging the more effective use of broadband by government departments, service providers, households, businesses and community groups

Speeds of at least 10 Mbps

Investment in skills and training

Appropriate regulatory and competitive environment

Competition between infrastructure providers

## Questions?

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