

# About the National Broadband Network

Mal Bryce

CUSP Seminar

Fremantle

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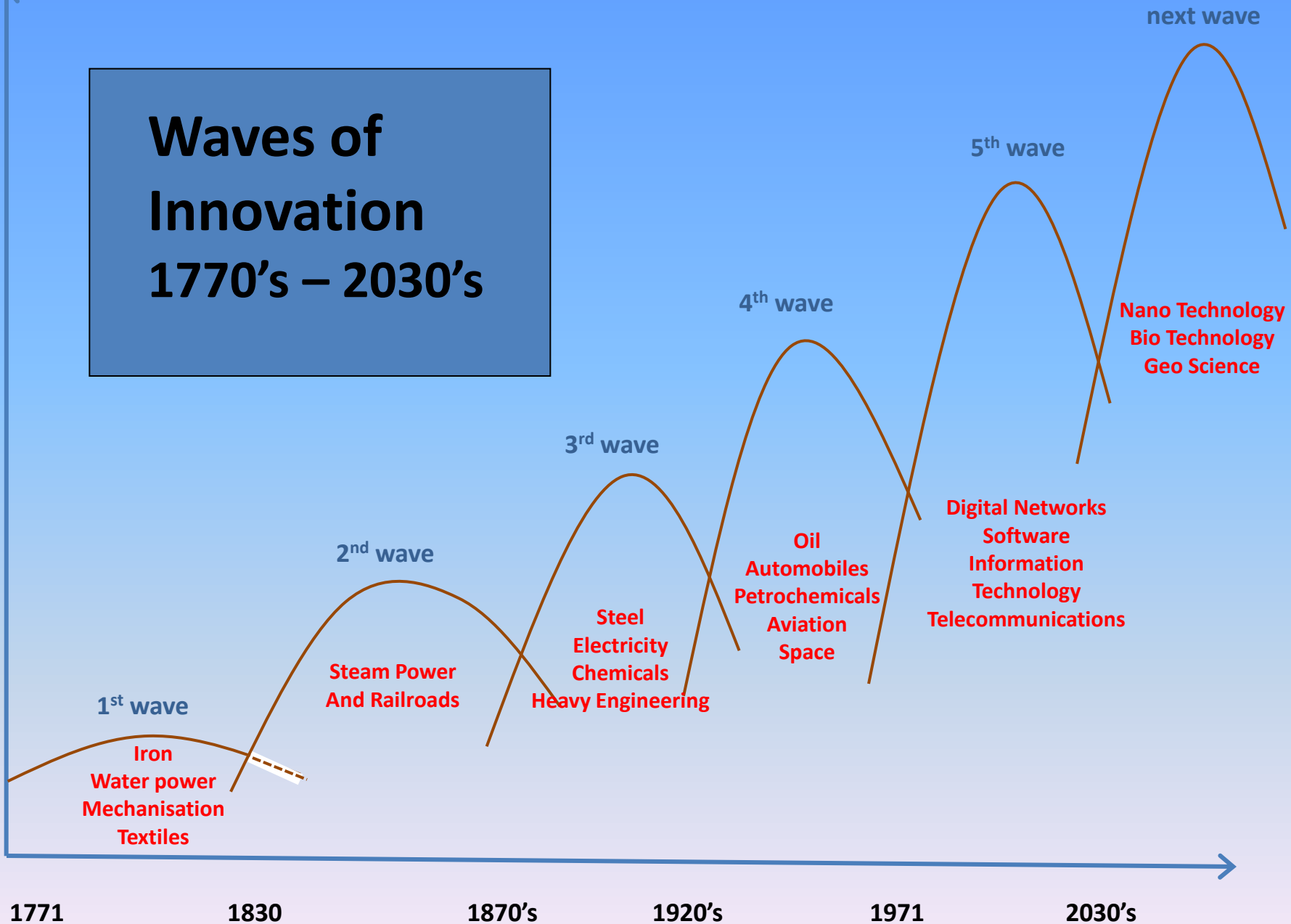
# The Context

The Long Wave Theory of Global Economic Development provides an interesting perspective.

Five major waves of innovation have shaped world economic activity during the last 250 years.

# Waves of Innovation 1770's – 2030's

Innovation



1771

1830

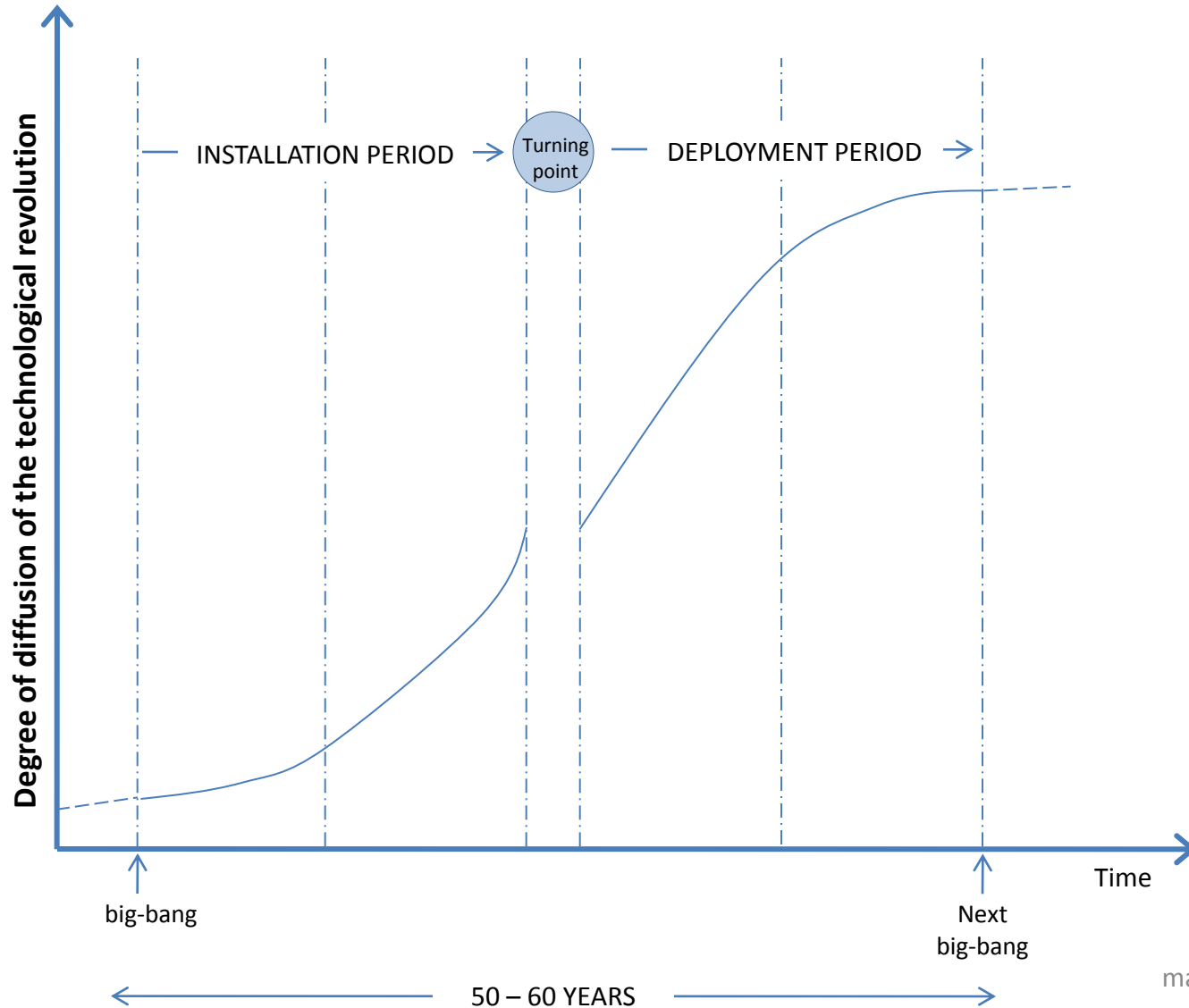
1870's

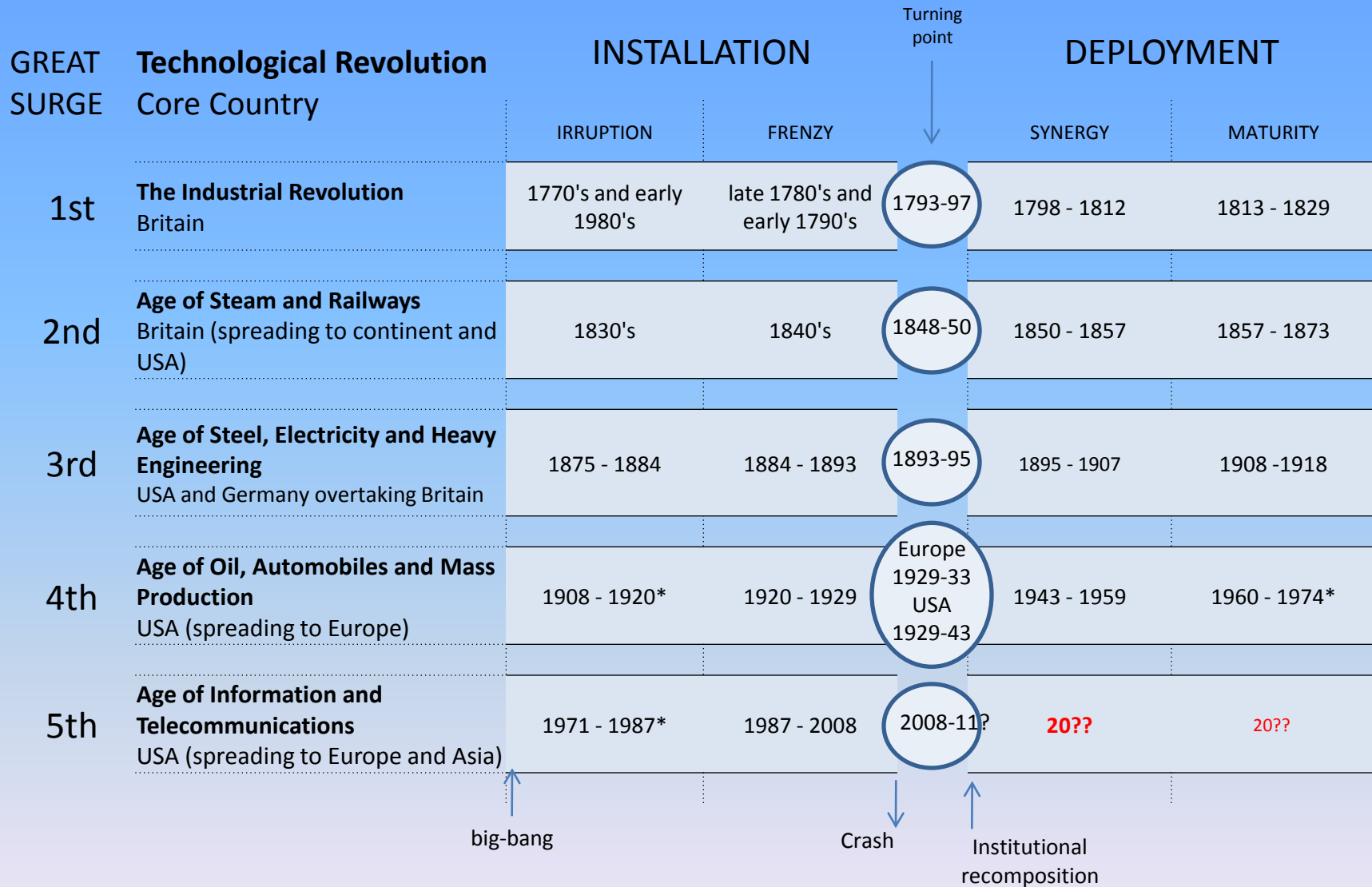
1920's

1971

2030's

# Two different periods in each great surge





The halfway mark of each Revolution is marked by a turning point featuring;

- Manic behaviour
- A Financial Bubble
- The inevitable crisis and crash

# The Financial Bubbles that actually Burst



**1793-97**




**1848-51**



**1893-95**



**1929-34**



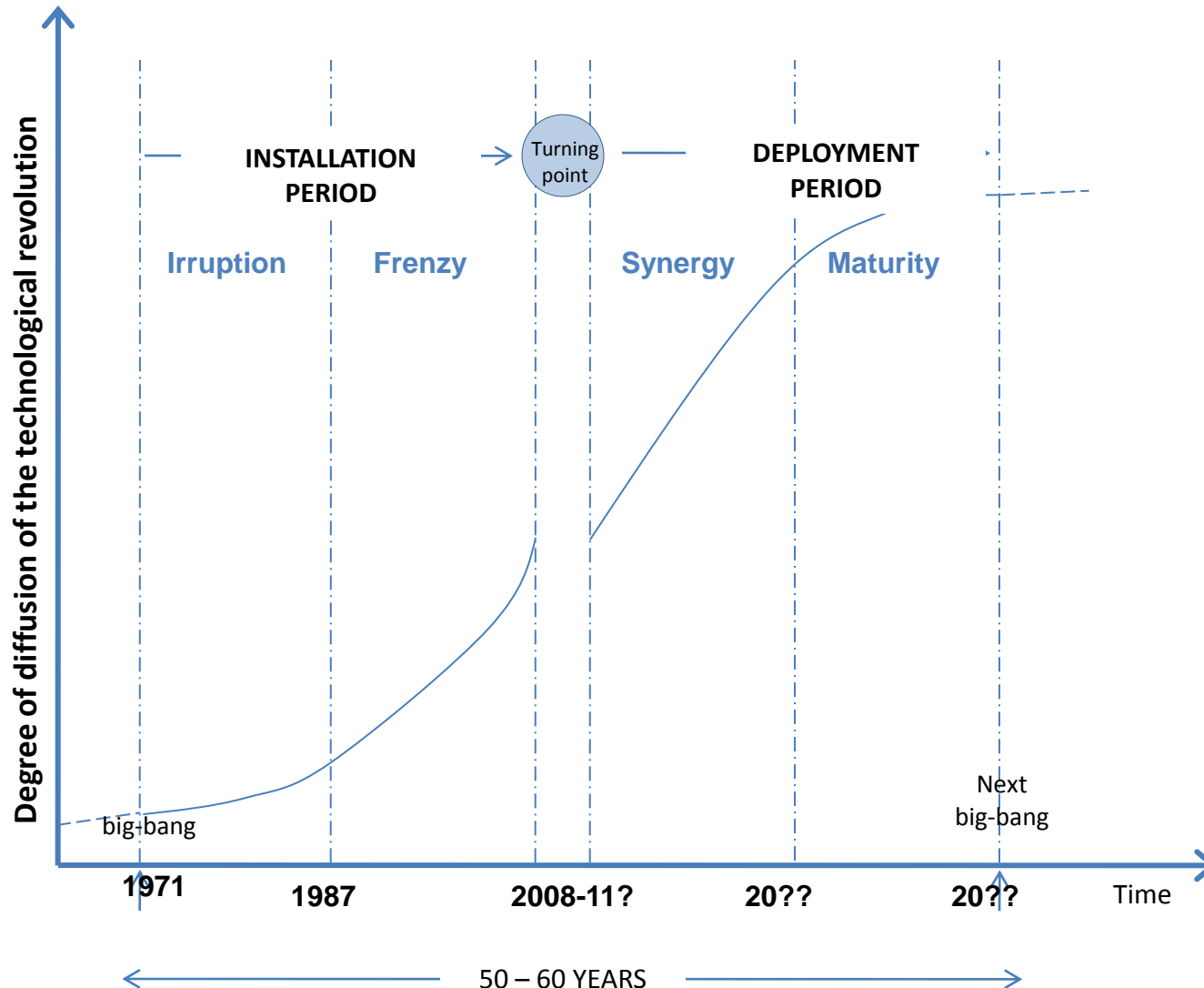
**2008-11**

During each Financial Crisis the world's financial systems were described as broken and discredited.

Governments of all leading nations developed strategies to ensure.....

“ The excesses of the last 5-6 years would never happen again”.

# Classic Phases of the ICT Revolution 1970's – 2030's



The current great wave of Innovation  
(ICT Revolution) has just passed the  
half way mark....

35 years into a 60 year phenomenon

# Key features of the ICT Revolution in Australia for the next 20 years will be:

- The Roll out of High Capacity Bandwidth..... the NBN
- A content revolution
- The devolution of supercomputing and cloud computing
- Grid services and data storage services
- Visualization technology and video collaboration.
- Serious convergence of technologies eg;  
(Bioinformatics, geoinformatics, nanotechnology and computational chemistry)

# How Bandwidth became an issue.

- 1876-1970's: Bandwidth not an issue for the telephone system.
- 1980's: Move from analogue to digital technologies and data becomes important.
- 1990's: Telecoms system expected to carry voice traffic, data, graphic intensive images, AND video traffic.
- 1997-8: In Australia the volume of data transmitted surpassed the volume of voice traffic for the first time.

# Background to a political stoush.

- The lost decade 1997-2007
- Political and commercial opportunism is normal
- The 2010 Federal Election.
- The Murdoch Media

# Just Some of the Great Furphies

**We can't afford  
\$34 Billion?**

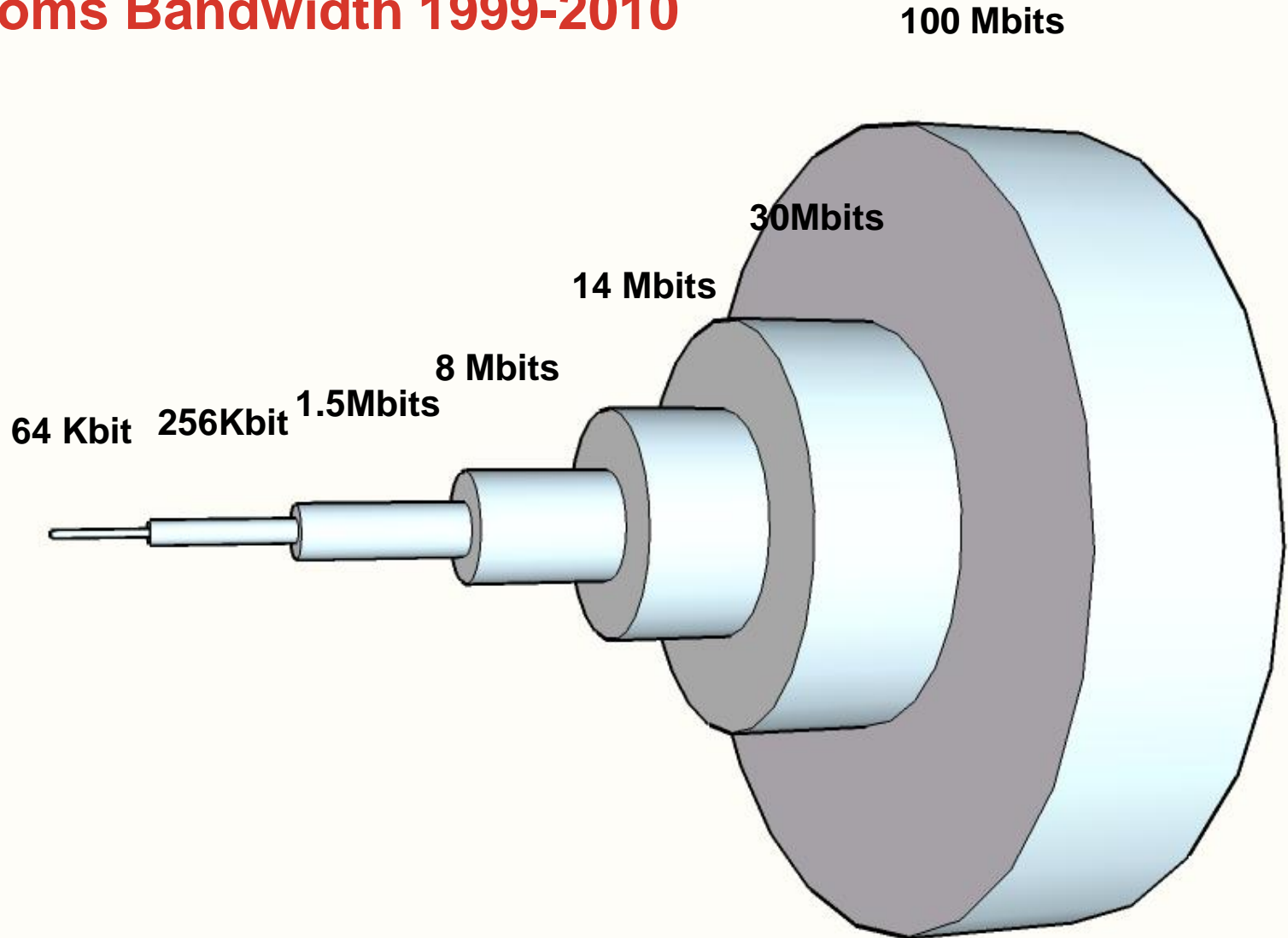
# Some Basic Numbers

- \$34Bill for NBN over 8 years (\$4.4 B Per Annum)
- 2011-12 Federal Budget = \$360 Billion.
- Federal Budget over 8 years = \$3.8 Trillion
- Australia's Public Debt Level < 9% of GDP
- NBN expenditure = 4% of Australia's GDP.
- Federal Government Tax cuts 2008-10 = \$47Billion
- cf: Rio's next expansion? Cost of Gorgon?

**Who on earth needs  
100mbps?**

- Australian household Internet Connectivity jumped from; 16% to 72% between 1999-2009
- Demand for bandwidth since 1994 has grown exponentially.
- Facebook/U Tube/MySpace/eBay are just the beginning.
- Telemedicine/eHealth.....killer app !!!
- Early take up rate expected to be slow
- Remember electricity, telephone and fax machines.

# Telecoms Bandwidth 1999-2010



**Leave it to the Private  
Sector.**

- The Private Sector can't and won't deliver a NATIONAL Broadband Network.
- The private sector had the chance and failed to deliver... .if only it was possible to pick the cherries.
- Remember the “Brisbane Line”.
- Universal pricing has little appeal to the PS.
- Government ownership is important for quality, security and reliability of key infrastructure.

# Wireless not Fibre Cable?

- Not either but BOTH
- Capacity of Wireless is seriously limited.
- The spectrum is already crowded.
- Wireless is ideal in certain applications.
- Fibre Cable is future proof in basic terms (147 colours etc)
- There is no magical alternative infrastructure around the corner in the medium term.
- ref: Reed Hundt.

# The basics of a hard wired community?

- 10 – 100 Mbps at home
- 1-10 Gbps at work
- Wireless all around.

Ref: Reed Hundt 2003 (Former Chair US Communications Commission)

**Surely, not without a cost  
benefit analysis??**

- Nation Building Infrastructure V Business Case for a Telco
- KPMG and McKinsey Report May 2010. Strategy for Implementation
- NBN Corporate Business Plan Dec 2010
- Where was the CBA for;
  - Snowy River Scheme
  - Man on the Moon
  - Introduction of Electricity
  - Infrastructure Investment for the Pilbara
  - Kalgoolie Pipeline
  - The national road and rail network.

- for a CBC to work. Costs AND Benefits must be clearly identifiable
- Immediate short term (certainties) V long term (guesswork)
- Great subjectivity with intangibles.
- Arguments about assumptions normally abound.

The call for a CBA ....is a delay mechanism.

# The US v Australia comparison.

# Conclusion

For decades to come;  
High speed networks will continue to  
change the way we live, work, study,  
take our leisure and relate to each  
other.

High Capacity Bandwidth will play a vital role in  
unleashing the **6<sup>th</sup> Wave** and harnessing the  
awesome potential of

Nanotechnology

Geoinformatics

Bioinformatics.

New sustainable industries

The REAL CHALLENGE now;  
is to harness the power of the high  
speed networks and build the  
New Economy?

Soft Infrastructure  
V  
Hard Infrastructure