How to get “true broadband”

A review of Australia’s position and of the options suggested to increase broadband availability.

Outline of Talk

- Broadband aspirations
  - International comparisons
- Current activities
  - FTTN plans and HSDPA
  - Broadband Connect
- Issues
- Options and principles

True Broadband

Only 1.1m of 3.9m non-dial-up customers had >1.5Mbps at Sep'06 (ABS 8153.0)

- Historically, broadband was defined as better than ISDN (128kbps). Currently,
  - 144=EU; 200=FCC, ACCC; 256=OECD, ABS
- Expectations are increasing, eg
  - Ten years ago, 56kbps modems were being introduced
  - Telstra now offers 1.5Mbps (and 17Mbps on cable) and 10-20Mbps in some areas
  - 1.1m >1.5Mbps at Sept'06 in 3.9m non-dial-up base
  - NTL (UK) started in 2003 with 128, 10Mbps in 2005 and announced 50Mbps in Nov'06
  - Orange (FT) has 500 FTTH customers in Paris now with 200k expected by the end of 2008
- IIA wants >10Mbps on 80% lines by 201[illegible]

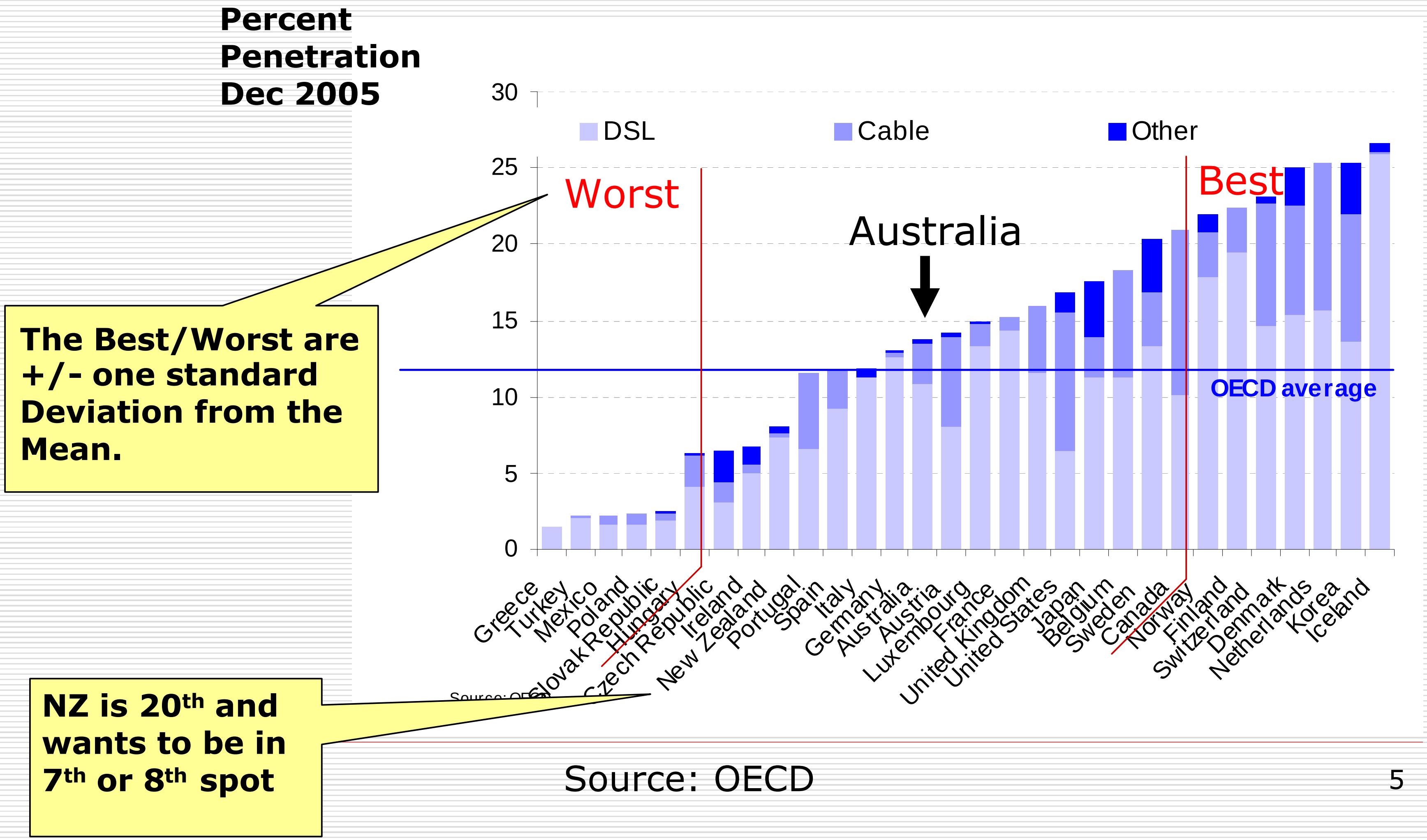
There are >20k people per sq km in Paris vs <500 in Melbourne or Sydney

Broadband Technologies

- FTTH (Siemens PON claim)= 10Gbps
- FTTN (fibre + VDSL) =20-100 Mbps
- HFC (cable DOCSIS 3) = 100 Mbps
- WiMAX (eg Unwired)= 7-70 Mbps
- VDSL (on FTTN) = 8-50Mbps
- ADSL2+ (LSS or ULL) = 8-20 Mbps
- HSDPA (3G mobile) = 1.5-14 Mbps
- BPL (broadband over power lines)
- Microwave
- Satellite = 1.5 Mbps
- Compression

Current focus ADSL2+ (19 providers) and HSDPA with talk of FTTN

"Broadband" Take-Up



Source: OECD

Broadband Drivers

Exceptions in red ie "best" with "bad" deviations.

Australia on correct side of mean for all except weather and platform competition

Denmark has 4 "good" no "bad" and took 1st place in June 2006

Bad for Worst		Good for best
MEX,TUR,SVK,HUN	Price	KOR,FIN
TUR,MEX,SVK,POL,HUN	Income	NOR
TUR,MEX,SVK,POL	Education	DNK.FIN,NOR
MEX,GRC,KOR	Weather	ISL,NLD
TUR,MEX,SVK,POL,HUN	Saturation	DNK,NLD,NOR,CHE
GRC		
SVK,POL,GRC, FIN	Urbanisation	DNK,ISL
TUR,MEX,SVK,CHE	ULL Policy	DNK,FIN,NLD
TUR,GRC,ISL	Competition	KOR

Source: "Catching-up in broadband – What will it take?" de Ridder, 2007

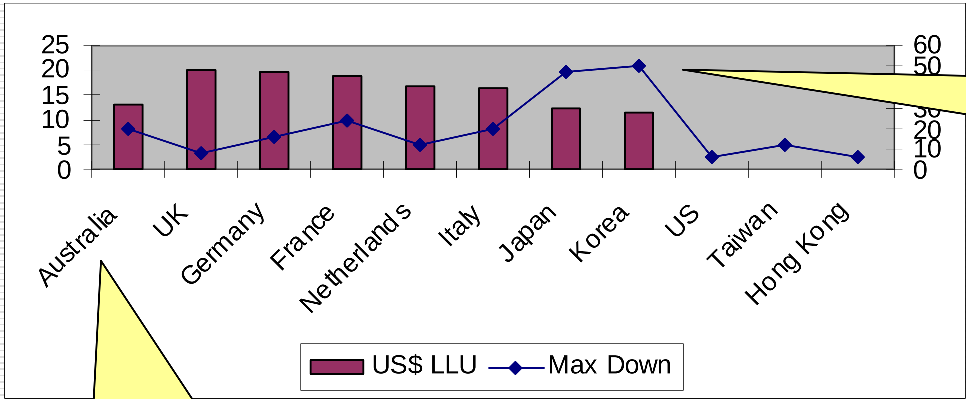
Band 2 A$17.70
Max down-speed 20Mbps

OVUM reports no ULL
for US, Taiwan, HK

Bandwidth & Pricing (DSL only)

US$

Mbps

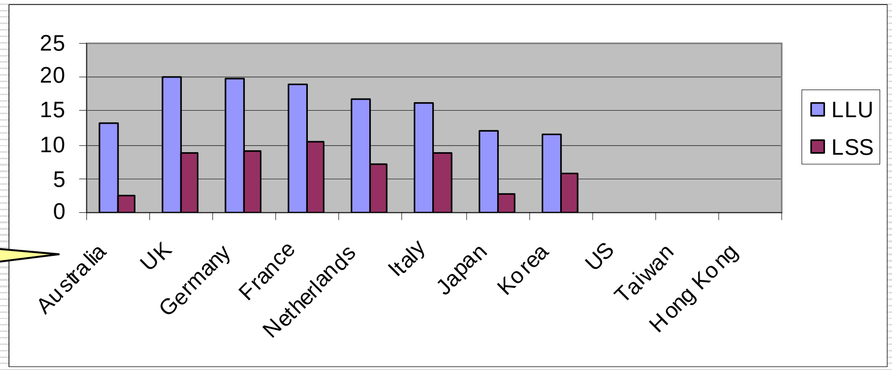


Japan & Korea are Using VDSL

OVUM reports no ULL For US, Taiwan, HK

Band 2 A$17.70
Max down-speed 20Mbps

US$



Australia has lowest LSS price; absolutely and relative to ULL

Source: "Benchmarking DSL" J Coham, OVUM January 2007 (except Australia)

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FTTN and HSDPA

But access-seekers limited to 1.5Mbps

- Aug'05 Telstra's Digital Compact
  - 98% availability of >6Mbps in 3-5 years
- Aug'06 FTTN talks break-down
- Oct'06 NextG turned-on (98% reach)
- April'06 SpeedReach announced
- Feb'07 Optus 3G announced

Broadband Connect

- Since “Networking the Nation” in 1997, over $4Bn subsidies announced
- Broadband Connect supplicants:
  - Telstra
  - Optus-Elders
  - AUSalliance (Austar, Unwired, Soul)
  - Many others but preference for “big”

A late entry with a welcome bargain: $600m vs $2.6Bn in Digital Compact provides 40% decrease in price of increased penetration and more speed.

My local ISP, Nelson Bay, is registered but its chances are slim

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Issues

NextG will not make FTTx redundant but it does not look so good for WiMax

Dual roll-out issue

The BAG said true B'band worth $12-30Bn pa

- Geography
- Technology
- The case for public policy
  - Market failure (eg monopoly & externalities)
  - Equity (eg uniform pricing, "digital divide")
  - Regional competitiveness (States)
- The risks of public intervention
  - Distortion of competition
  - May deter private investment
  - Duplicating investments private sector would make

See "Public Broadband Schemes – A Best Practice Guide", DTI/Ofcom Feb'07

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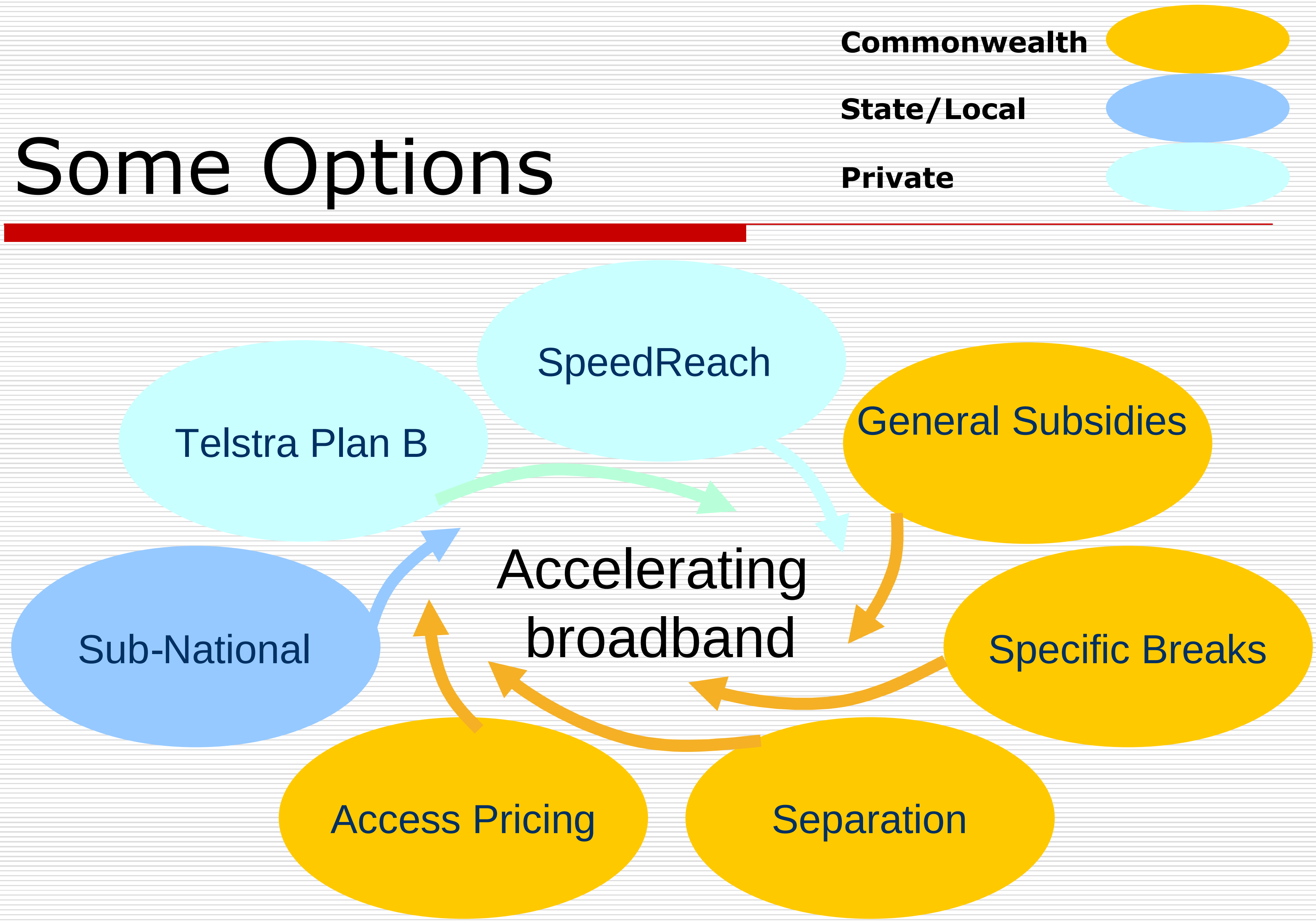
Some Options



Six goals/principles

Used to rank options

1. Do no harm (do not distort market)
2. Balance platform/service competition
3. Open access (service competition)
4. Uniform pricing (consistently applied)
5. National network (no "digital divide")

The last two are political and not economic principles

1 Do No Harm

- Ensure helping entrants
  - Does not make incumbent behave irrationally or inefficiently
  - Does not distort entrants' decisions
  - Is phased-out by a firm sunset date
- Regulators aim to replicate efficient market outcomes where there is a network
  - TSLRIC access prices do not encourage build
- Making technology-neutral policy also means treating all operators alike

Six goals/principles

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2 Balance Competition Bases

- Facilities-based competition better than service based competition; but where is the balance?
- To get facilities-based competition, you need investment in new technology to create new local access networks
- Will "quasi-facilities" investment in DSLAMs delay roll-out of FTTN?
- The ACCC has admitted disappointment in the level of investment in new infrastructure

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3 Open Access

- FTTx probably a natural monopoly
  - Open access vital (not just Telstra)
- The FTTN <u>can</u> be unbundled
  - Telstra and ACCC agreed a virtual ULL
  - Sub-loop unbundling; costly/impractical?
- Future proofed open access and NGNs
  - NGNs make ULL and sub-loop quaint
  - Unbundling in an NGN is different

Six goals/principles

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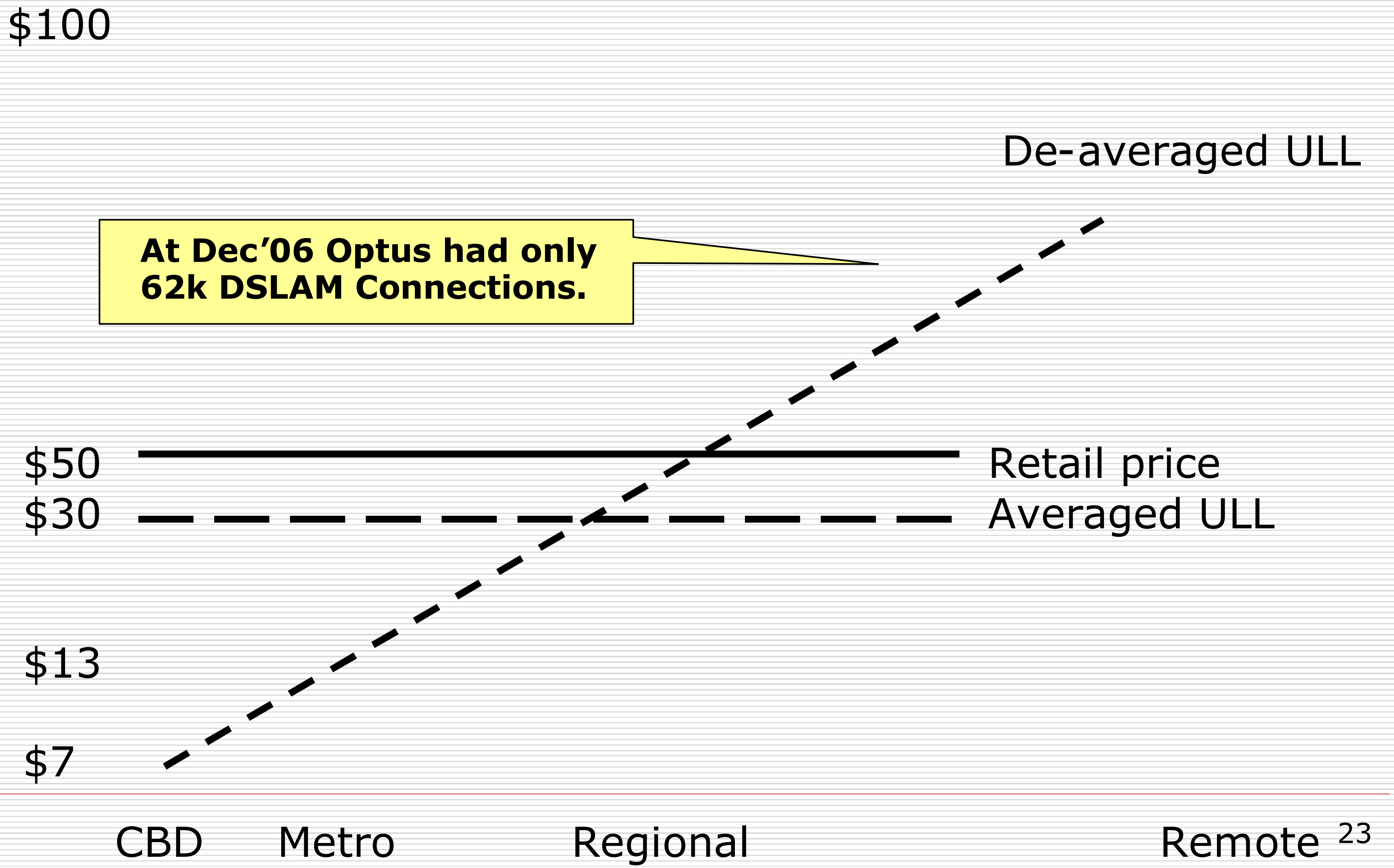
Bi-partisan political support for this

4a Uniform Pricing

- Australians want retail prices to be the same wherever they live & work
  - Not what economists would suggest
- Competition thrives on arbitrage
  - Telstra wants the Government to direct the ACCC to reflect social policy in wholesale pricing (FTTN and ULL)…

4b ULL Impasse



4c FTTN Impasse

- "the ACCC does not agree with Telstra claims that there is an irreconcilable conflict between government policy on universal services and the ACCC's approach to access prices" (ACCC, 7 August 2006)

- "As the FTTN was to be an upgrade of the existing network, the prices for FTTN access needed to take into account the cost of providing a services nationally, i.e. to support the existing cross subsidies that exist in order to provide telecommunications services to all Australians at the same price no matter where they live, or how much their services actually cost to provide" (Telstra,7 August)

Bottom line:
Does the cross-subsidy to 1m (Band 4) lines average $1.77 or $13.69 per month?

Six goals/principles

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5 National Network

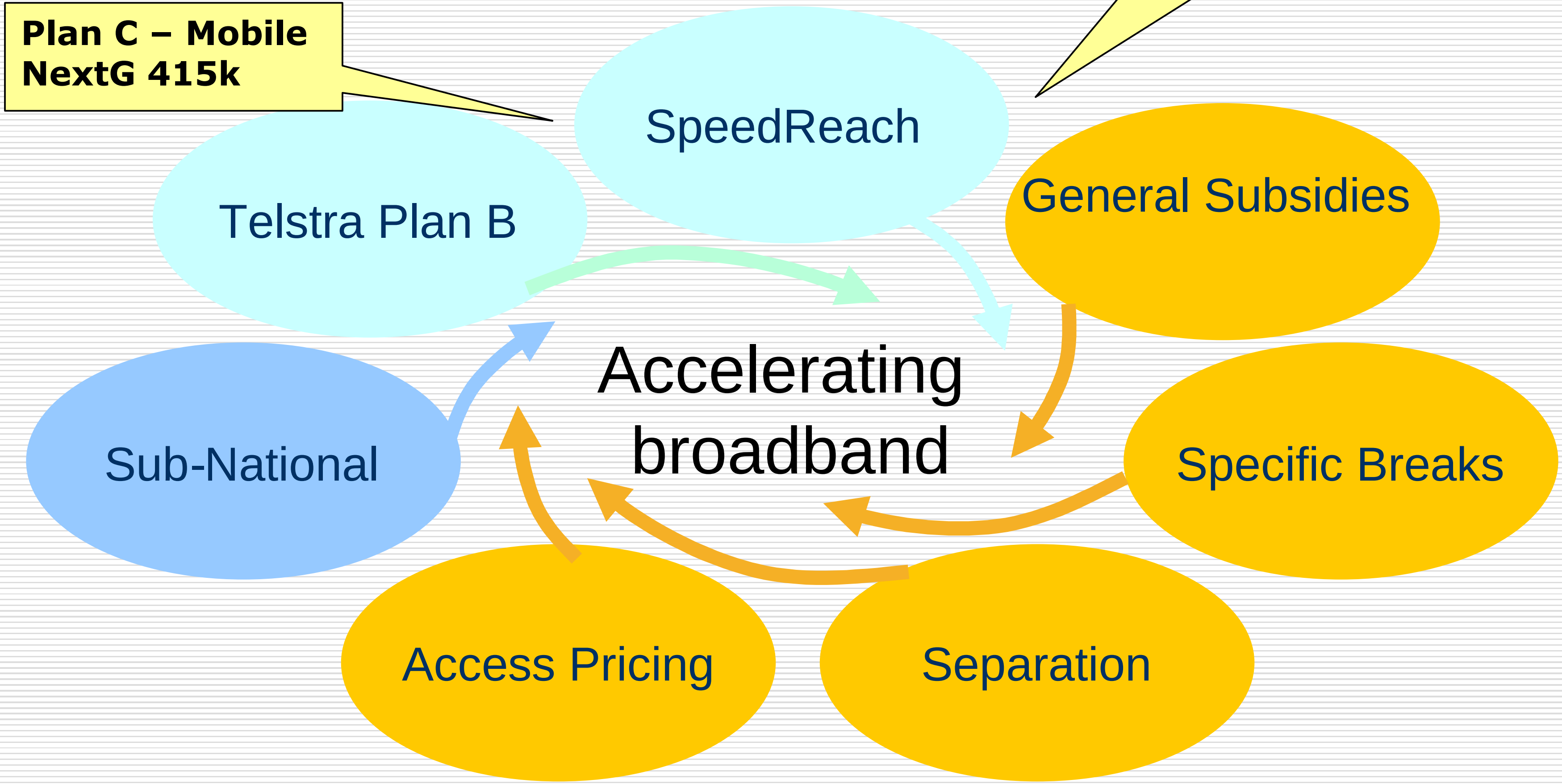
- The ACCC reports 13 carriers in Melbourne and Sydney have deployed local access networks
- "Telstra's competitors have (optically) wired about 45% of the buildings served by Telstra" (in cities)
- 5.8m of Telstra's SIOs are <u>non</u>-metro but competitor coverage averages only 4% compared with 82% in all metro areas

Some Options

Start & Stop with:

- **Public ownership**
- **Structural Separation**

Plan C – Mobile NextG 415k



Some Options – "Carrots"

Capital grants – by open tender
Tax concessions
Soft loans

General Subsidies
- Broadband Connect
- Korea, France

	Subsidies	Breaks
No harm	🟢	🔴
Platform	🟢	🟢
Open	🟢	🔴
Uniform	🟢	🟢
National	?	🟢

Bundesrat passed Law in defiance of EU on 15 Dec'06

Specific Breaks
-Germany (VDSL)
- Telstra Plan A

Access holiday
Govt. anchor tenant

eg WA's $100m pa business for 10 years

Green if non-metro

Some Options

Not TSRLIC !

	Separation	Access
No harm		
Platform		
Open		
Uniform	?	
National	?	

With "equivalence", does it Matter who builds/owns the Network?

PPPs in access networks
Operational separation
Accounting separation

TSLRIC+
ECPR
Fudge

Access Pricing

- FTTN

Separation

- BT model

Some Options -

Local Council issue (Gans)?
Queensland
WA (Alberta model)

Sub-National

	Sub-National
No harm	
Platform	**?**
Open	
Uniform	
National	**?**

Depends: QLD Brisbane vs WA state-wide

Some Options - Private

SpeedReach

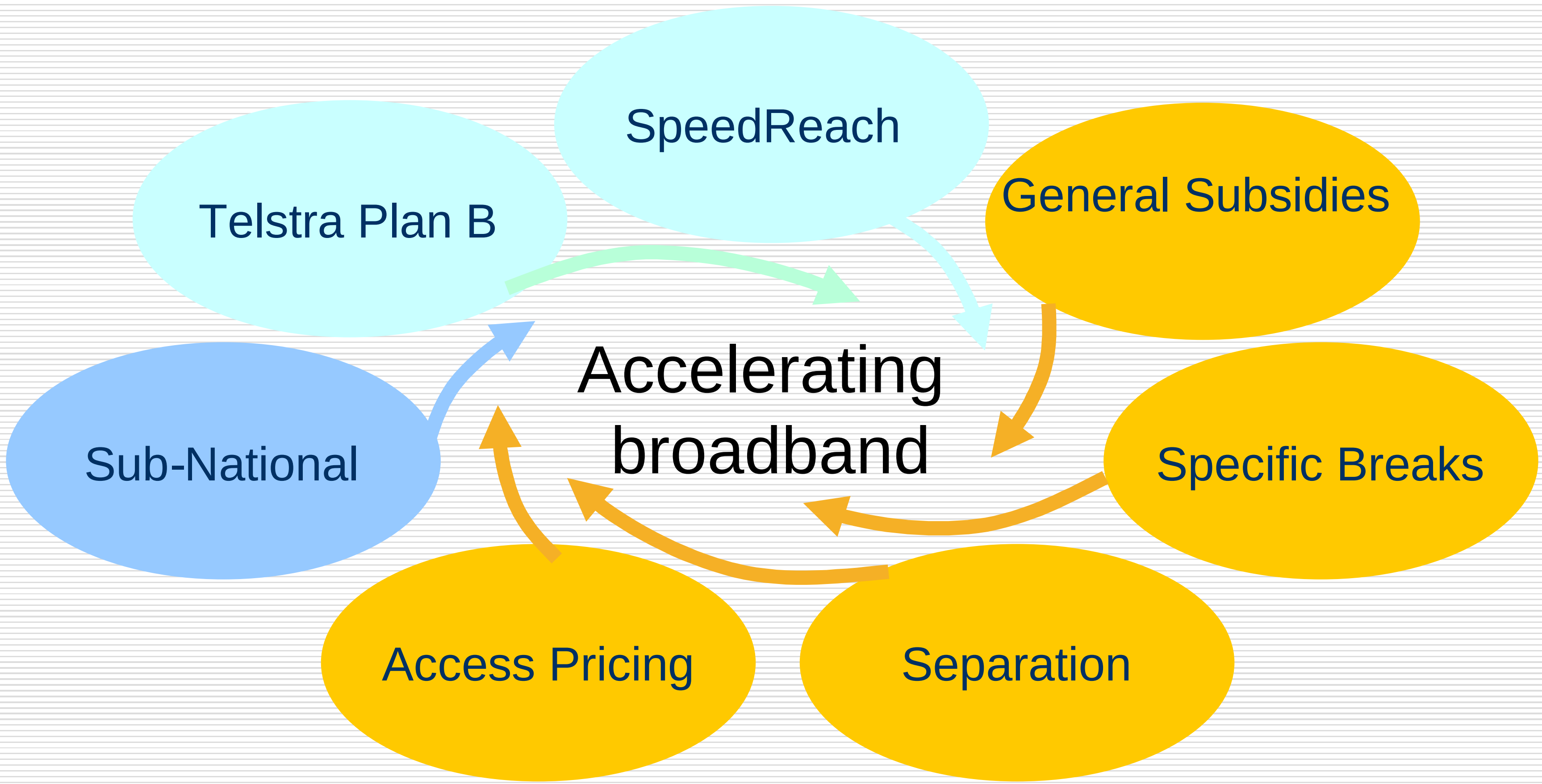
But only replaces one monopoly with another!

Telstra Plan B

Put in abeyance in Aug. 2006

	Plan B	**SppedReach**
No harm		
Platform	**?**	
Open		
Uniform		
National		

Some Options



Summary

	Subsidy	Breaks	Separate	Pricing	Local	Plan B	G9
Do no harm	🟢	🔴	🟢	🟢	🟢	🟢	🟢
Balance Platform	🟢	🟢	🔴	🟢	?	?	🔴
Open access	🟢	🔴	🟢	🟢	🟢	🟢	🟢
Uniform pricing	🟢	🟢	?	🟢	🟢	🟢	🟢
National network	?	🟢	?	🟢	?	🔴	🔴

Questions?

John de Ridder
Telecoms Economist

Tel: 02 4981 0953

www.deridder.com.au