Collaborate, Communicate, Innovate

A presentation to the
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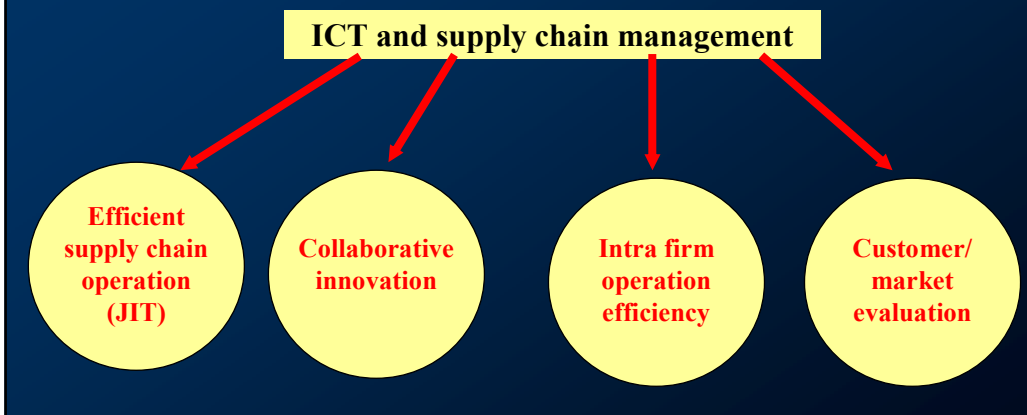
The 2005 NIEIR/ALGA "State of the Regions" report
Telecommunication/Internet infrastructure: the core issues/findings

- **Australia is falling behind in efficiency and access.**
- **The technology is a constraint on performance.**
- **The current regime is reducing performance for most users.**
- **The relative poor efficiency and lack of coverage is imposing economic costs on the nation.**
- **Practical universal broadband coverage can be provided for around $3 billion in infrastructure costs.**

Unless world class ICT infrastructure is available, membership of globalised supply chains will be difficult to be retained or gained.



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The anywhere, anytime, anyone office: the tool to build knowledge workers and limit offshoring

Technology	Technologies being developed in short term	Technologies taking longer time to dominate the office
Organisational system and rule	Guideline for eWork Management/evaluation systems/tools for project management	
Awareness and collaboration	Presence server Video conferencing	Alert system Contents syndication
Visualisation	Streaming	Virtual reality
Information retrieval	Retrieval system	Data mining Simulation
Middleware	Web service Enterprise information Integration	Access middleware Server based computing
Data storing	XML Know-who database Project management tool	Meta data technology Location finding technology
Security	VPN Hardware token Bio authentication	Federated authentication DRM
Information access	Wireless LAN	IPv6 protocol Ultra wide band access network
Human interface	Pen input device	Voice recognition and control
Device	Portable terminal Electronic book	Wearable computer IC tag/RFID

Source: JBMISIA 2004.

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Australia is falling behind:

World Bank ICT 2005 Survey: Internet speed per capita

	Mbps
Britain	13.0
France	8.4
South Korea	8.0
Germany	6.9
Canada	6.8
United States	3.3
Japan	1.0
Australia	1.0

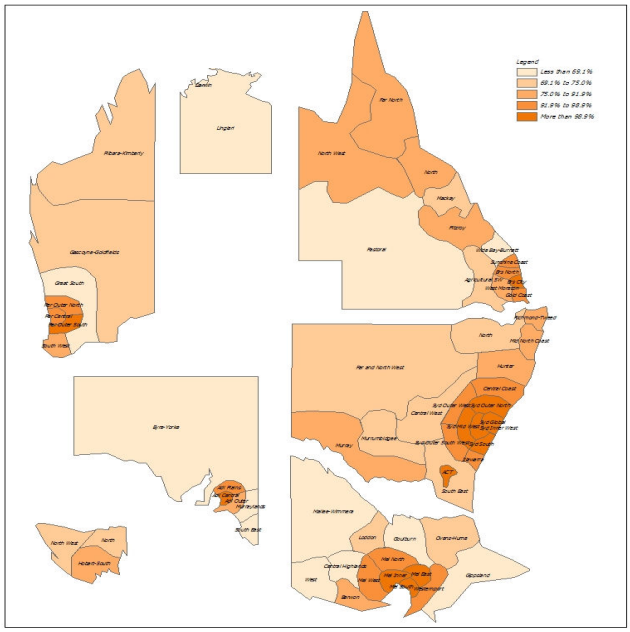
Australia is 20th out of 28 developed countries.

Australia is falling behind:

Broadband connections per 1,000 people: World Bank 2005

Canada	165
Japan	146
United States	129
France	109
Britain	103
Germany	84
Australia	77

ADSL: Per cent of population covered: August 2005



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Where the quality infrastructure is, is where unemployment is low

Region	2005	Change 1996 to 2005
Rural	10.28	-1.70
Core Metro	5.23	-4.27
Production Zone	9.47	-2.57
Lifestyle	10.77	-4.60
Dispersed Metro	5.25	-2.25
Resource Based	10.20	+0.29
Australia-wide	7.87	-2.74

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In Australia there is a divide in access to quality employment

Real net flow of funds per capita – relative to Core Metro

	1999	2001	2003	2004	2005
Rural	0.73	0.68	0.75	0.73	0.74
Core Metro	1.00	1.00	1.00	1.00	1.00
Resource Based	0.81	0.74	0.80	0.79	0.76
Dispersed Metro	0.91	0.85	0.87	0.84	0.83
Production Zone	0.77	0.72	0.73	0.73	0.72
Lifestyle	0.73	0.67	0.71	0.70	0.69

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Expanded broadband coverage will create economic benefit because:

- **It enables a higher level of e-staging.**
- **There is a direct correlation between the level of e-staging and exporting.**
- **The regions with relatively poor broadband access are the most trade exposed regions.**

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Understanding the e-journey staging theory			
Stage	Technology use	Stage description	Use
0	Phone - No use of computer	None	Make and receive calls from customers and suppliers
1	Computer	Processing stage	Word processing, image and data processing
2	Internet	Communication stage	Research, e-mail, order product or services
3	Web site	Information stage	Online brochure, promotion, e-newsletter, simple Web metrics, receive orders etc
4	Intranet or Interactive site	Transaction stage	Sell products/services, online bookings, share resources within business etc
5	Extranet or integrated process	Integration stage	Supply chain management, share resources with customers or suppliers etc
6	Best practice involvement in networked economy	Transformation stage	Technology enabled customer and content focus to all business relationships

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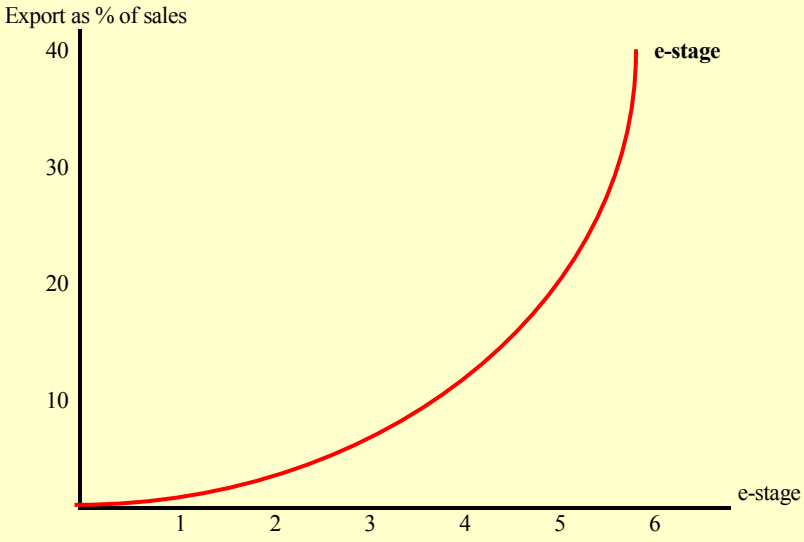
Indicative link between e-stage and export effort



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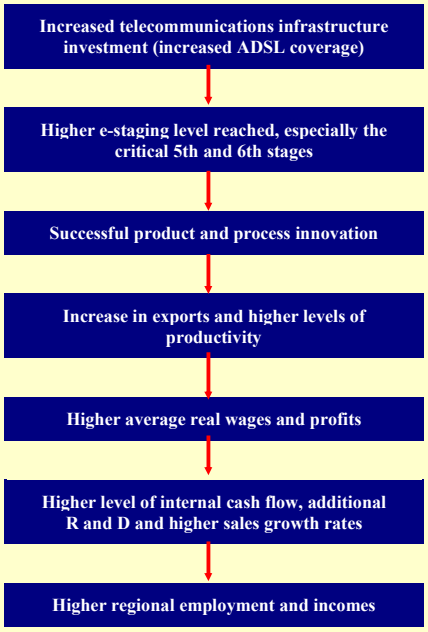
The steps from additional ADSL coverage and higher industry employment



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Direct and indirect SOR regional benefit of increased ADSL coverage

	Value added impact (2004 $m)	Direct and indirect value added as % of GRP	Total direct and indirect employment
NSW Central West	25.3	0.47	336
NSW Far and North West	21.5	0.51	287
NSW Hunter	20.9	0.11	237
NSW Illawarra	5.7	0.05	68
NSW Murrumbidgee	22.2	0.45	299
NSW Murray	12.3	0.34	163
NSW Mid North Coast	15.0	0.24	213
NSW North	26.1	0.50	363
NSW Richmond-Tweed	11.4	0.23	164
NSW South-East	15.3	0.33	225
NSW Central Coast	4.1	0.06	51
Global Sydney	0.0	0.00	0
Sydney Inner West	0.0	0.00	0
Sydney Outer North	1.3	0.01	13
Sydney Outer South West	4.6	0.10	59
Sydney Outer West	4.0	0.06	53
Sydney Mid West	2.8	0.01	34
Sydney South	0.2	0.00	2
Melbourne East	0.8	0.00	9
VIC Gippsland	49.9	0.48	423

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Direct and indirect SOR regional benefit of increased ADSL coverage (continued)

	Value added impact (2004 $m)	Direct and indirect value added as % of GRP	Total direct and indirect employment
VIC Barwon	10.6	0.15	136
VC Goulburn	33.5	0.59	447
Melbourne Inner	0.0	0.00	0
VIC Loddon	14.1	0.33	191
VIC Mallee-Wimmera	34.3	0.67	398
Melbourne North	3.5	0.02	44
VIC Ovens-Hume	11.8	0.41	161
Melbourne South	0.0	0.00	0
Melbourne West	2.8	0.02	35
VIC West	18.9	0.59	254
Melbourne Westport	7.5	0.04	103
VIC Central Highlands	9.7	0.26	137
QLD Pastoral	11.8	0.70	158
QLD Agricultural SW	22.7	0.36	329
QLD Far North	19.2	0.27	265
QLD Fitzroy	24.9	0.31	251
QLD Mackay	32.5	0.53	297
QLD North West	8.8	0.33	58
QLD North	9.6	0.14	122
QLD Wide Bay-Burnett	23.0	0.41	331
QLD West Moreton	9.6	0.23	131
QLD Gold Coast	9.2	0.05	125
QLD Sunshine Coast	4.3	0.07	60

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Direct and indirect SOR regional benefit of increased ADSL coverage (continued)

	Value added impact (2004 $m)	Direct and indirect value added as % of GRP	Total direct and indirect employment
Brisbane North	0.7	0.02	11
Brisbane City	0.0	0.00	0
Adelaide Central	0.2	0.00	1
SA Eyre and Yorke	45.7	0.76	327
SA Murraylands	30.5	1.40	271
Adelaide Plains	4.7	0.04	40
SA South East	15.1	0.72	117
Adelaide Outer	12.9	0.19	108
WA Pilbara-Kimberly	56.5	0.41	145
WA Gascoyne-Goldfields	39.3	0.57	319
WA Wheatbelt-Great Southern	41.1	1.02	532
WA Peel-South West	27.6	0.41	317
Perth Central	0.0	0.00	0
Perth Outer North	2.8	0.03	41
Perth Outer South	1.6	0.01	21
TAS Hobart-South	9.4	0.13	121
TAS North West	10.1	0.39	153
TAS North	10.6	0.29	150
Darwin	13.2	0.28	137
NT Lingiari	34.1	0.58	204
ACT	0.1	0.00	1
Total	**921.8**		**10,047**

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The cost of connecting Australia

- 68% market penetration per catchment.
- Connecting about 70% of remaining exchanges with optic fibre.
- Mixed underground/electric cable infrastructure.
- Total cost about $3 billion.

Remote customers' satellite solution most viable.

Internal rate of return to nation 26%.

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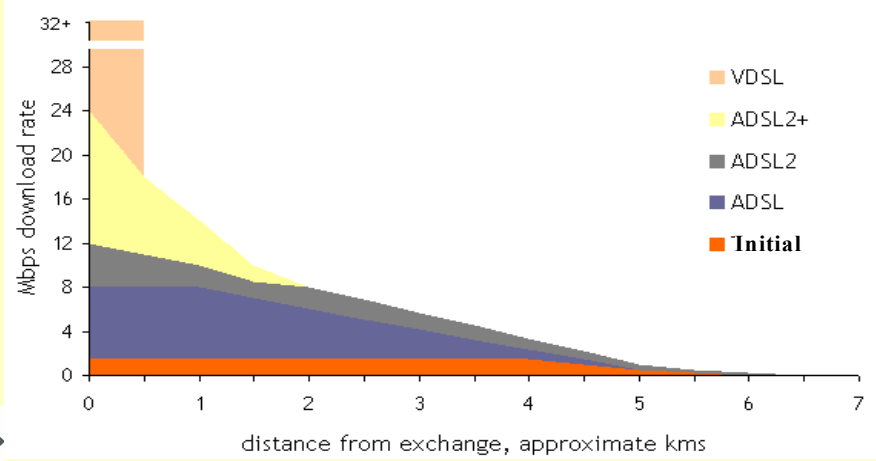
Core Australian Broadband service: xDSL modem linked via copper wires to DSLAM in exchange

Performance falls off sharply as distance from exchange increases.



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The efficiency of broadband capacity is constrained by existing regulation regimes.
(Basic/Premium service – 0.5/1.5 mbps)

The relationships between different broadband technologies

Distance from exchange (km)	Population	Customer utility outcomes[(a)]							
		ADSL		ADSL2/2+		VDSL + ADSL2/2+		Catchment expansion	
		Capped	Uncapped	Capped	Uncapped	Capped	Uncapped	Capped	Uncapped
0 – 5	6,413	7,124	11,044	7,709	14,303	7,709	15,424	7,851	17,262
5 – 5.5	776	0	0	555	555	555	555	947	1,770
5.5 – 10	2,811	0	0	0	0	0	0	2,689	3,427
Total	**10,000**	**7,124**	**11,044**	**8,264**	**14,858**	**8,264**	**15,979**	**11,487**	**22,459**
Efficiency index per capita		1.00	1.55	1.10	1.91	1.10	2.00	1.10	2.10

Notes: All capped services based on 1.5 Mbps contract.
(a) Customer utility is the square root of the download speed available to each customer and summed.

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