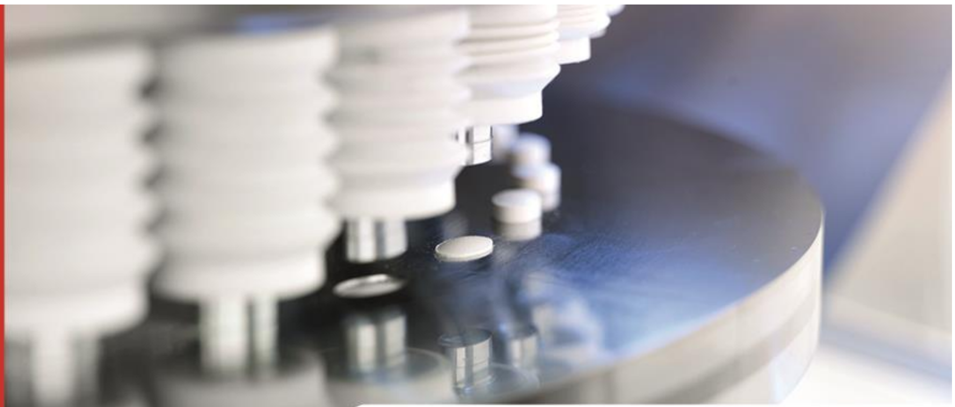
Ai Group Economics

Australian Digital Competitiveness in 2014



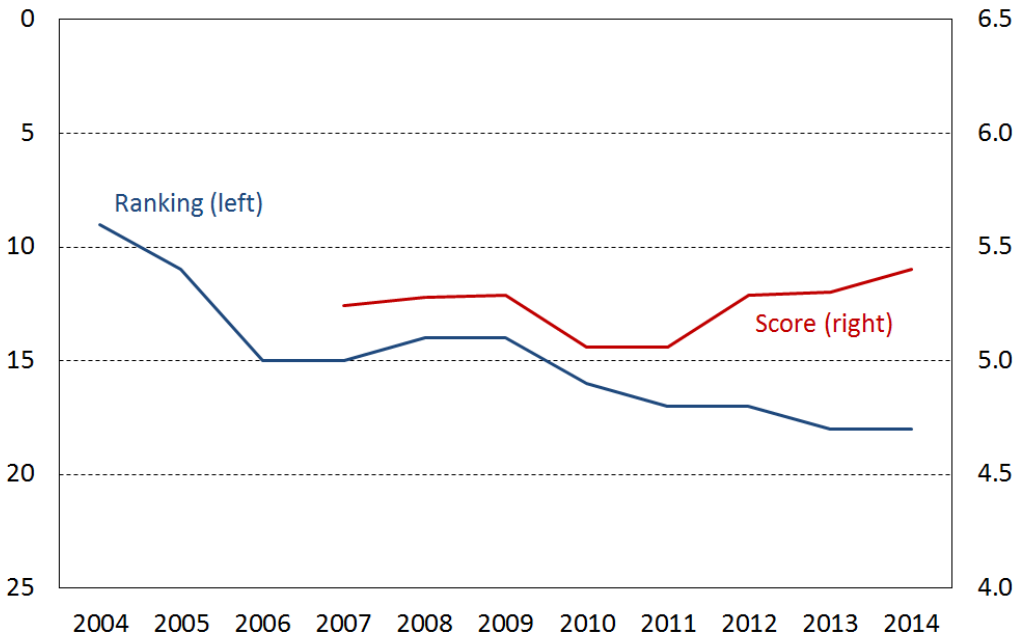
AUSTRALIAN INDUSTRY GROUP

23 April 2014

Australia's Falling Digital Competitiveness: findings from the World Economic Forum (WEF) *Global Information Technology Report 2014*

The latest World Economic Forum's (WEF) *Global Information Technology Report* shows that Australia's relative competitiveness in leveraging information and communications technologies (ICT) has deteriorated since 2004, slipping from a peak of 9th in 2004 to only 18th in 2014 – the same ranking as 2013 (see Chart 1).[1] Although Australia's **Networked Readiness Index (NRI)**, which measures its ability to use ICT to boost competitiveness and well-being, actually improved slightly after 2007, a number of other countries experienced greater improvement over this period. As a result, Australia's relative competitiveness with regard to our capability to leverage ICT has deteriorated.

Chart 1: Australia's Networked Readiness Index (NRI), scores and rankings*



* Methodology changed in 2007 compared with earlier years.

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1 The annual WEF *Global Information Technology Report* commenced in 2002. The methodology for constructing the indexes has evolved over time to reflect changes in ICT over this period.

In 2014, the WEF ranked Finland as having the world's best 'network readiness', followed closely by Singapore. Other north European countries also featured heavily in the Top 10, as did the Asian technology hot spots of Hong Kong and South Korea, along with the US and the UK (see Tables 1 and 3).

Table 1: WEF Networked Readiness Index (NRI) 2014: the Top 20

Rank	Country / economy	Rank	Country / economy
1	Finland	**11**	Luxembourg
2	Singapore	**12**	Germany
3	Sweden	**13**	Denmark
4	Netherlands	**14**	Taiwan
5	Norway	**15**	Israel
6	Switzerland	**16**	Japan
7	United States	**17**	Canada
8	Hong Kong	**18**	**Australia**
9	United Kingdom	**19**	Iceland
10	South Korea	**20**	New Zealand

Among the four key areas that make up each country's capabilities to use ICT for growth, in 2014 Australia was ranked:

- 14th in the **"Environment"** sub-index from a peak of 8th in 2007. This indicator gauges the 'friendliness' of a country's market and regulatory framework in supporting high levels of ICT uptake and the emergence of ICT-related entrepreneurship and innovation.

- 9th in the **"Readiness"** sub-index from a trough of 26th in 2011, owing to a large improvement in mobile ICT affordability. This indicator measures the degree to which a society is prepared to make the best use of affordable ICT infrastructure and digital content.

- 19th in the **"Usage"** sub-index from a peak of 11th in 2008. This indicator assesses the efforts of individuals, businesses and government to increase their capacity to use ICTs, as well as their actual use of ICT in their day-to-day activities.

- 20th in the **"Impact"** sub-index from 16th in 2012.[2] This indicator measures the broad economic and social impacts accruing to each country from its transformation toward an ICT- and technology-oriented economy.

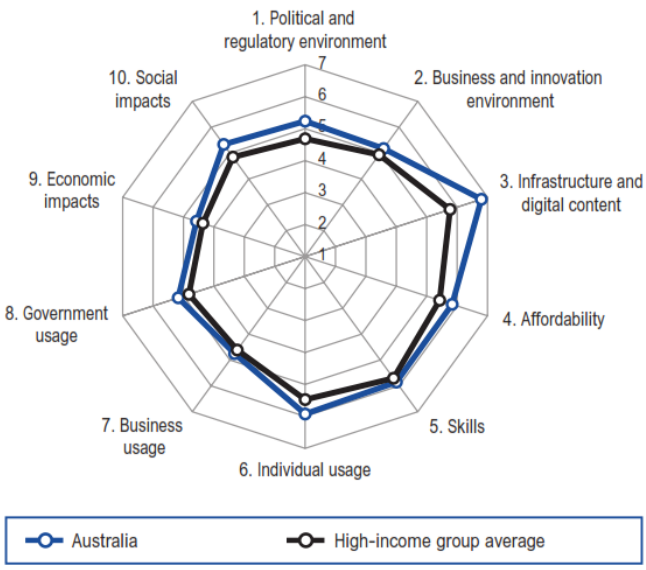
[2] The ICT 'impact' indicator was introduced in 2012, based on data that had been previously embedded in other sub-indexes.

2014 survey detail: Australia's Digital Competitiveness

Australia's results in the 2014 WEF *Global Information Technology Report* are summarised in Table 2. In general, Australia performed at or above average in each of the key pillars of the NRI relative to other high-income countries.

Table 2: Australia's NRI results in 2014: detailed sub-indexes

	Rank (out of 148)	Value (1–7)
Networked Readiness Index 2014	18	5.4
Networked Readiness Index 2013 (out of 144)	18	5.3
A. Environment subindex	14	5.2
1st pillar: Political and regulatory environment	15	5.2
2nd pillar: Business and innovation environment	21	5.2
B. Readiness subindex	9	6.2
3rd pillar: Infrastructure and digital content	8	6.8
4th pillar: Affordability	49	5.8
5th pillar: Skills	20	5.8
C. Usage subindex	19	5.3
6th pillar: Individual usage	15	5.9
7th pillar: Business usage	24	4.8
8th pillar: Government usage	21	5.2
D. Impact subindex	20	5.0
9th pillar: Economic impacts	23	4.6
10th pillar: Social impacts	15	5.3



One of the key reasons why Australia's relative NRI performance has worsened over the past decade has been that Australia's global ranking for the **"Environment"** sub-index has declined by 6 places, from 8th place in 2007 to 14th in 2014 (Table 2). A supportive environment is necessary to maximising the potential benefits of ICTs in boosting national competitiveness and wellbeing. Within the 'environment' group of indicators:

- Australia's global ranking for *'political and regulatory environment'*, which measures the facilitation of ICT penetration and the safe development of business activities, worsened from 7th in 2011 to 15th in 2014. Of particular concern, Australia's relative performance on intellectual property protection (including anti-counterfeiting measures) deteriorated from 10th place in 2009, slipping by 11 places to 21st in 2014. The relevant index for this variable has also declined over the past decade, suggesting intellectual property protection has worsened in Australia over time.

- Australia is ranked 21st in 2014 on *'business and innovation environment'*, which indicates the ability to boost entrepreneurship. Of particular note, Australia's ranking in 2014 dropped to:

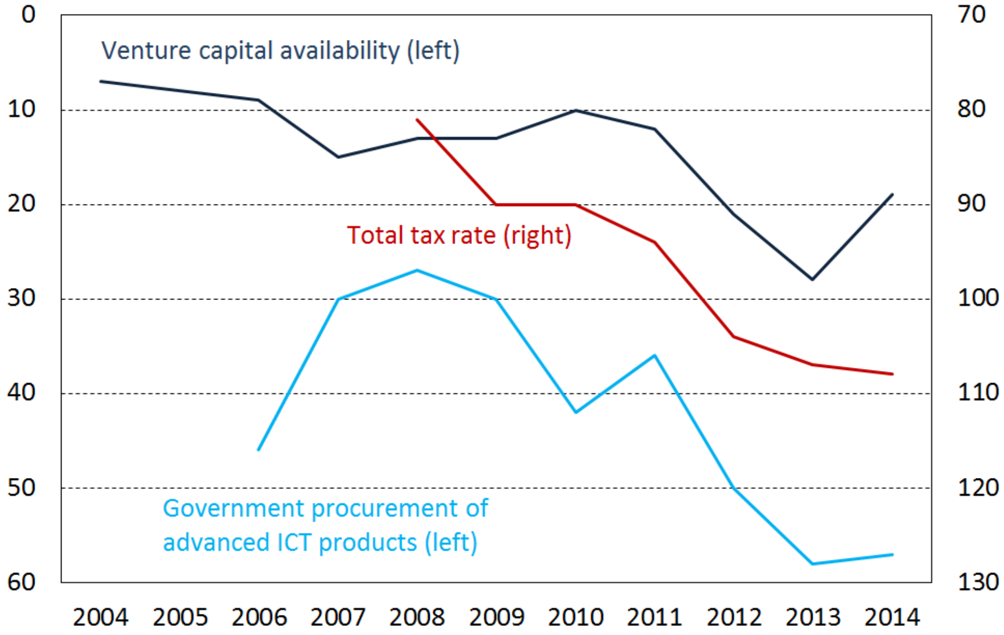
  - 108th on "total tax rate", from 81st in 2008 (see Chart 2). This variable measures the sum of a country's taxes (including company tax, labour tax and GST) as a percentage of total commercial profits. Despite the total tax rate as a percentage of profits declining from 50.6% to 47% from 2007 to 2013 in Australia, governments in a number of other countries have lowered their tax rates further to facilitate ICT adoption and investment. In Australia's case, the drop in total tax as a percentage of total corporate profits since 2007 is probably more driven by changes in its economic structure (and hence its tax base) than intentional policy decisions.

  - 19th on "venture capital availability", which indicates the availability of finance for entrepreneurs with innovative but risky projects, from a peak of 7th in 2004.

- 57th on “government procurement of advanced technology products”, from a peak of 27th in 2008. This measure indicates that Australian Governments’ purchasing decisions have become relatively less helpful in fostering ICT-related innovation than those in other countries.

Australia’s ranking in the “availability of latest technologies” pillar has been broadly stable since 2007, sitting at 23rd in 2014.

Chart 2: Total tax rate, venture capital availability and government procurement of ICT products, Australian ranking*



* Rankings for “total tax rate” only available from 2008 and “government procurement of advanced ICT products” from 2006.

Rather more positively, Australia improved its relative performance in the **“Readiness”** sub-index to 9th place in 2014, from a low of 26th place in 2011. This suggests that Australia has become better prepared to make good use of affordable ICT infrastructure and digital content. With regard to ‘digital readiness’:

- Australia improved significantly on its “mobile cellular affordability”, from a low ranking of 128th place in 2012 to 26th place in 2014. The WEF Report estimates that the average per-minute cost of different types of mobile cellular calls in Australia decreased significantly, from US$0.46/min in 2008 to US$0.10/min in 2012 (adjusted for purchasing power parity or PPP).[3] The decline in these costs in Australia is greater than has occurred in other countries.

- Australia dropped from 10th place in 2010 to just 101st place in 2014 for “fixed broadband internet affordability”, as its average monthly subscription charge for fixed broadband internet service (i.e. connections at downstream speeds of at least 256 kilobits per second, using DSL) rose from US$20.98/month in 2008 to US$41.30/month in 2012 (WEF estimates adjusted for PPP).[4] Many other countries experienced smaller increases or even a decline in fixed broadband internet charges compared to Australia over this period. For example, the average monthly fixed broadband subscription charge in the UK declined from US$22.51/month in 2008 to US$19.68/month in 2012 while that in the US has remained stable.

[3] Most recent data available.
[4] Most recent data available.

- In terms of the ability of each country to make effective use of ICTs, Australia is still lagging behind other countries due to the relative quality of its overall “education system” and in particular, the quality of its “math and science education”. Australia’s ranking on the former has dropped from 7th place in 2005 to 23rd place in 2014 and the latter from 9th place in 2004 to 37th place in 2014. The relevant indexes for Australia for these variables have declined over the past decade and not just the relative rankings, suggesting the absolute quality of these aspects of our education system, have, on average, worsened over time.

The **“Usage”** sub-index indicates efforts by people, businesses and government to increase their capacity to use ICTs and their actual use of ICTs in their day-to-day activities. In this indicator, Australia dropped to 19th place in 2014 from a peak of 11th in 2008. The detail shows that:

- Australia’s ranking on *‘individual usage’* of ICTs sits at 15th in 2014 and has fluctuated over time (see Chart 3). More Australian individuals however, have access to and are using ICT products and services (e.g. mobile phones, fixed and mobile broadband subscriptions) compared to a decade ago. For example, the number of mobile phone subscribers has increased from around 72 per 100 people in 2003 to 108 per 100 people in 2012.

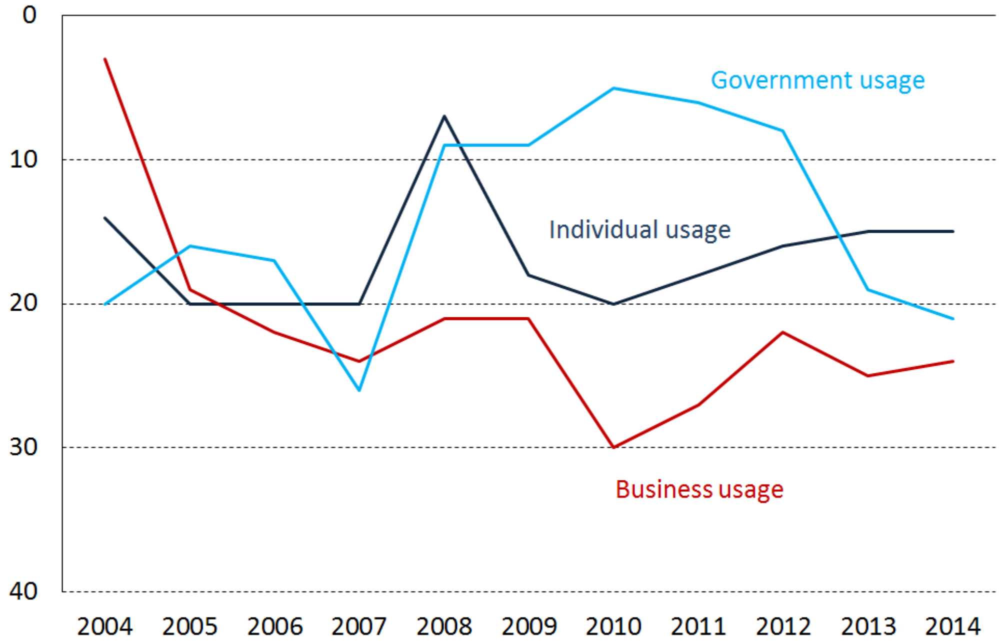
- Australia was ranked at an historical high of 14th place for “firm-level technology absorption” in 2014. This indicates that Australian businesses are increasingly adopting new technology in their day to day operations. Related to this, businesses’ capacity to innovate has improved over the past decade, with Australia’s ranking on “capacity for innovation” in the latest WEF survey improving to 23rd place in 2014, from 35th in 2007. This indicates that Australian businesses have stepped up their efforts to integrate ICTs into their day to day operating environment in order to help drive innovation and generate productivity gains.

- Australia’s ranking on ‘*government usage*’ fell from a peak of 5th place in 2010 to just 21st in 2014. According to this year’s WEF Report, although Australian Governments have a clear implementation plan for utilising ICTs to improve Australia’s overall competitiveness (with the relevant ranking improving from 47th in 2006 to 25th in 2014), they are less successful in promoting the use of ICTs and is only ranked 48th for this measure in 2014.

Australia’s ranking on the **“Impact”** sub-index, which measures the broad economic and social benefits accruing from ICTs, deteriorated from 16th place in 2012 to 20th place in 2014.[5] When measuring the extent to which governments are becoming more efficient in the use of ICTs and provide increased online services to their citizens, Australia has become relatively worse over time compared to other countries, dropping from a peak of 26th place in 2009 to 51st in 2014.

[5] The ICT ‘impact’ indicator was introduced in 2012, based on data that had been previously embedded in other sub-indexes.

Chart 3: Individual, business and government usage of ICTs, Australian ranking



Appendix: About the WEF *Global Information Technology Report 2014*

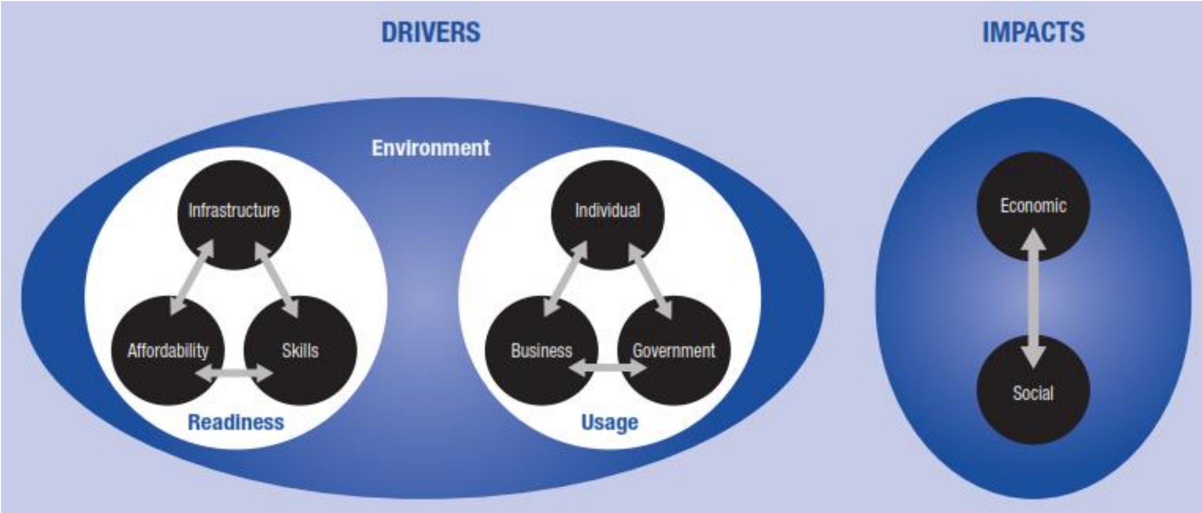
The *Global Information Technology Report 2014* is published by the World Economic Forum within the framework of the Global Competitiveness and Benchmarking Network and the Industry Partnership Programme for Information and Communication Technologies. Research for the Report is conducted by the WEF and its network of over 160 Partner Institutes, which help administer the Executive Opinion Survey around the world. The Survey is used in conjunction with many other data sources in the production of this Report. Ai Group is the WEF's Partner Institute in Australia. The full list of Partner Institutes is available at http://wef.ch/partnerinstitutes2013.

Further information about the WEF and the *Global Information Technology Report 2014* is available at:
http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf

Table 3: WEF NRI Sub-indexes 2014: the Top 10

Rank	*Environment*	*Readiness*	*Usage*	*Impact*
1	Singapore	Finland	Sweden	Singapore
2	New Zealand	Iceland	Finland	Finland
3	Finland	Sweden	Korea, Rep.	Netherlands
4	Hong Kong	Norway	Singapore	Sweden
5	United Kingdom	United States	Netherlands	South Korea
6	Netherlands	Singapore	Norway	Israel
7	Norway	Taiwan	Denmark	Taiwan
8	Sweden	Germany	Luxembourg	United States
9	Switzerland	**Australia**	Japan	United Kingdom
10	Canada	Switzerland	Switzerland	Hong Kong

Chart 4: The WEF Networked Readiness Index (NRI) framework



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