

Maintaining Australia's advantage: Management & Skills

Policy paper

*The Australian Council
of Learned Academics*

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1 Introduction

It is well documented by a variety of credible international and Australian sources that management capabilities, education and skills are important for productivity improvement and economic growth. In addition, these factors take on added importance in Australia as it confronts challenges and opportunities as a transitioning knowledge economy in the Asian century.

The OECD, UK Government, and International Labour Organisation, among others, emphasise that education, management, skills and leadership development are central to improving productivity, and economic and social development.¹

The importance of management capability and skills in Australia was highlighted in the *Enterprising Nation Report* ('Karpin Report') in 1995: 'better educated and trained managers will secure significant economic benefit through work place restructuring, improved business processes and increases in the productivity of Australia's human and capital resources'.² Since then a number of benchmarking and research studies have demonstrated that the calibre of management and leadership is associated with business success in Australia.³

However, there are concerns that productivity has been declining in Australia since the 1990s which has been masked by the gains from the mining boom. The main factor in productivity growth is innovation, which includes not just research and technological change but also non-technology innovation. A key element of non-technology innovation is management capability, which drives a large part of productivity improvement at the organisational level.

Australia's record in management performance lags behind world best practice, especially in **people management and 'instilling a talent mindset'** as shown by a number of benchmarking studies including 'The Australian Institute of Management's 2012 Australian Management Capability Index'.⁴

The OECD point out that employment in the knowledge-based economy is characterised by increasing demand for more highly-skilled workers. 'Changes in technology, and particularly the advent of information technologies, are making educated and skilled labour more valuable, and unskilled labour less so. Government policies will need more stress on upgrading human capital through promoting access to a range of skills, and especially the capacity to learn'.⁵

The CPA (Certified Practising Accountants of Australia) **agrees that Australia's reform** priorities must primarily focus on supporting the transition of Australia to a

¹ OECD (1); Burgoyne (2); International Labour Office (3)

² Australian Government (4) and (5)

³ Skills Connect (6)

⁴ Green (7)

⁵ OECD (1)

Introduction

knowledge-based economy to generate the high-paying jobs of the future. ‘Policies are required to transform Australia into a knowledge-based economy through productivity **growth and increasing Australia’s international competitiveness to ensure Australia’s** economy can better take advantage of the significant growth in Asia’.⁶

Australia in the Asian Century White Paper emphasises that Australia needs to extend its comparative advantage in Asia by ongoing reform and investment across the five pillars of productivity which include: skills and education, innovation, infrastructure, tax reform and regulatory reform. ‘Our greatest responsibility is to invest in our people through skills and **education to drive Australia’s productivity performance and ensure that all Australians** can participate and contribute’.⁷

The objective of this report is to describe and analyse the challenges and requirements for Australia to gain a comparative advantage and transition to a knowledge economy in the Asian century, with a particular focus on management, education, and skills. The issues examined in this paper are listed below.

- Understanding the current situation and trends, and how Australia benchmarks internationally. This includes assessing how well placed Australian managers are to meet future challenges.
- **Assessing Australia’s future comparative advantage by identifying trends and** possible future scenarios for Australia.
- Identifying gaps and what Australia needs to do over the next five to ten years to build a future where Australia has a comparative advantage in management, and the productivity advances that come with that.

⁶ CPA Australia (8)

⁷ Australian Government (9)

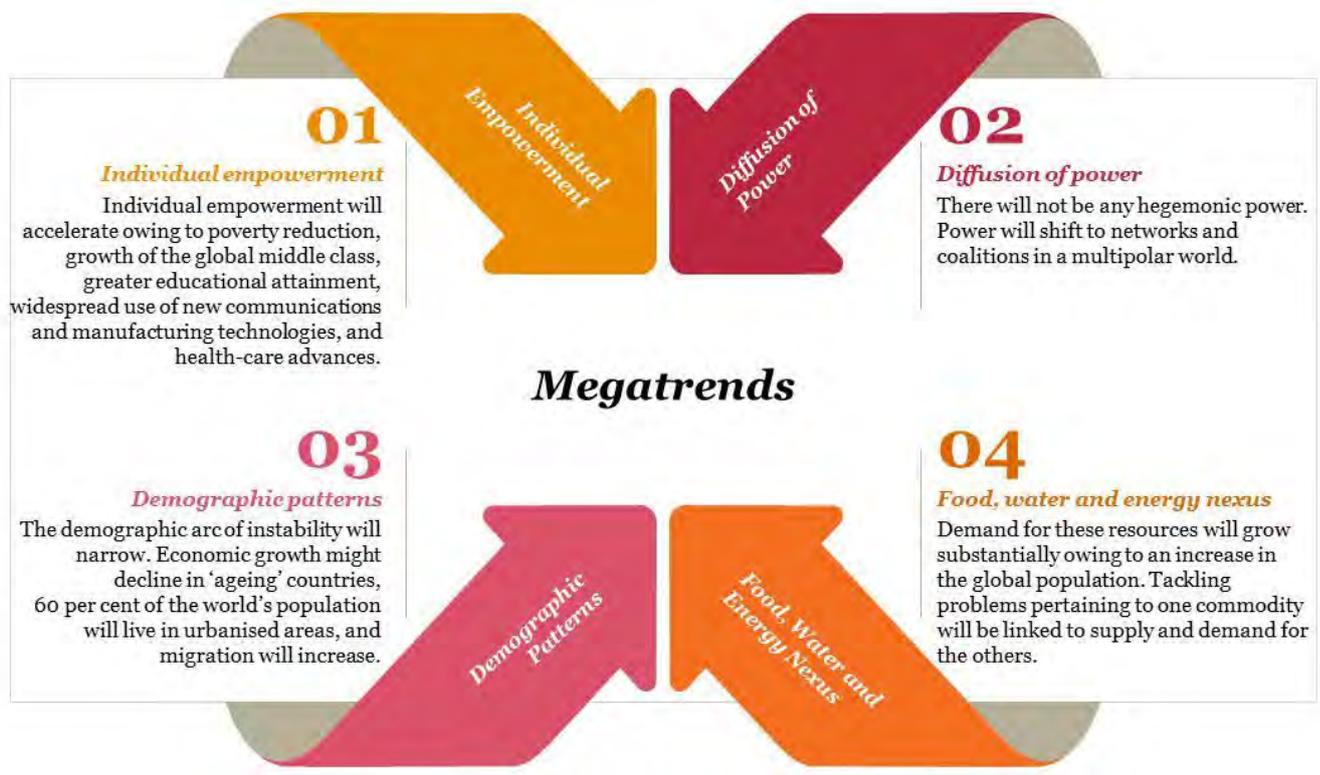
2 Future trends and challenges

This section describes the future trends which will shape the challenges that Australian managers will need to respond to both in Australia and globally. A particular emphasis is also on understanding the environment in which managers will operate, including the business environment.

2.1 Global trends

The National Intelligence Council (USA) has examined the environment and developed trends and scenarios until 2030.⁸ In these scenarios, no country will be a hegemonic power by 2030. Although megatrends existed at the time of that study (2012), during the next 15-20 years they will gain much greater momentum. These megatrends are identified in Figure 1. Underpinning the megatrends are tectonic shifts — critical changes to key features of the global environment that will affect how the world works.

Figure 1: Developing megatrends



⁸ National Intelligence Council (10)

Future trends and challenges

The underpinning tectonic shifts of the above megatrends include:

- **Growth of the Global Middle Class:** Almost everywhere in the developing world, middle classes are poised to expand substantially in terms of both absolute numbers and the percentage of the population.
- **Wider Access to Lethal and Disruptive Technologies:** A wider spectrum of instruments of war will become accessible, especially precision-strike capabilities, cyber instruments, and bioterror weaponry. Individuals and small groups will have the capability to perpetrate large-scale violence and disruption, a capability that was formerly the monopoly of States.
- **Unprecedented and Widespread Ageing:** In 2012 Japan and Germany were the only countries with a median age of 45 years or above. However, by 2030, most European countries, South Korea, and Taiwan will have entered the post-mature age category. Migration will become more globalised as both rich and developing countries suffer from workforce shortages.
- **Urbanisation:** Today approximately 50 per cent of the world's population lives in urban areas and this will climb to nearly 60 per cent, or 4.9 billion people, in 2030. Africa will gradually replace Asia as the region with the highest urbanisation growth rate. Urban centres are estimated to generate 80 per cent of economic growth.
- **Food and Water Pressures:** Demand for food is expected to rise at least 35 per cent by 2030 while demand for water is expected to rise by 40 per cent. **Nearly half of the world's population will live in areas experiencing severe water stress.** Fragile states in Africa and the Middle East are most at risk of experiencing food and water shortages, but China and India are also vulnerable.
- **Definitive Shift of Economic Power to the East and South:** The US, European, and Japanese share of global income is projected to fall from 56 per cent today to well under half by 2030. **In 2008, China overtook the US as the world's largest saver and by 2020, the emerging markets' share of financial assets is projected to almost double** where financial assets are households, institutional members (e.g. pensions, insurance), corporations (e.g. banks), and government (e.g. Central banks). Table 1 below emphasises changes such as the relative rapid increase of financial assets held by China, and the relative decline of USA, Western Europe and Japan. An exception amongst developed countries is the increase in smaller resource rich economies such as Australia and Canada.

Table 1: Relative changes to share of global financial assets – 2000 to 2020

	% Global financial assets		
	Year 2000	Year 2010	Year 2020
USA	35	29	24
Western Europe	34	27	22
Japan	19	14	9
Other developed (includes Australia, Canada)	5	9	9
China	3	10	17
Other emerging	3	11	19

Source: McKinsey Global Institute, "The Emerging Equity Gap: Growth and Stability In The New Investor Landscape" (2011)

Future trends and challenges

McKinsey has identified and are tracking 10 trends that are **changing the world's business** environment. 'Some trends remain on track, uncertainties are cropping up around others, and new forces are emerging ... The overall picture is of an altered business landscape'.⁹ The 10 trends identified are listed below.

- **Resources:** Resources will be affected by price increases, volatility and even shortages.
- **Globalisation:** There are still question marks over some aspects of global economic integration, including slowing trade liberalisation, and tightening restrictions on immigration affecting globalisation of talent.
- **Trust in business:** Trust of stakeholders has declined following the global financial crisis, and this is unlikely to be regained.
- **Government's role:** Government will have an increasing involvement in business.
- **Management as a science:** Management tools such as mathematical models will need to incorporate more realistic visions of human behaviour by drawing on behavioural economics. Companies will continue to seek ways to exploit the increasing amount of data and computing power.
- **Consumption patterns:** Consumption trends will include slower long term growth and an increasing shift to Asia and older consumers.
- **Asia:** Investment in Asia will increase, including working with carefully chosen local partners, fostering relations with government, and adapting products, services and supply chains to local markets.
- **Shape of industries:** Industries will take new shapes through mergers and acquisitions, changes to the supply chain and consolidation.
- **Innovation:** Commercial investment in innovation will continue but will become more efficient. Such efficiencies may include consolidating research facilities and outsourcing research investment to Asia.
- **Price stability:** Price instability will increase and require flexibility to manage in both low and high inflationary economies.

2.2 Australian trends

The Australian Attorney-General's Department identified future drivers and challenges for Australia to 2050.¹⁰ A major driver is demographic change, including an ageing population and a slowing rate of population growth. 'A major population ageing means that living standards in the future will grow at a slower pace than over the past 40 years. Real GDP per person is projected to grow at an average rate of 1.5 per cent per year over the next 40 years, compared with 1.9 per cent over the previous 40 years. Real economic growth is expected to

⁹ Beinhocker (11)

¹⁰ Attorney-General's Department (12)

Future trends and challenges

slow from 3.3 per cent over the past 40 years to 2.7 per cent in the future'. 'With the ageing population, productivity growth will be a key to driving future growth in living standards'.

It is also forecast that Australia's workforce need will change over the next 10 years. As Australia transitions to a knowledge-driven economy, the employment composition will shift towards jobs that are more highly skilled. As the Australian workforce becomes more highly skilled over time, the qualification requirements within particular occupations tend to rise. The demand for qualifications is driven by industry demand, the increasing size of the labour market, changing employment composition, retirements, skills deepening and skills broadening.

The Australian Workplace and Productivity Agency (AWPA) commissioned Deloitte Access Economics to undertake economic modelling. This work entailed the development of four growth scenarios for Australia to 2025 as **a basis for understanding Australia's workforce** needs and how these needs should be addressed.¹¹ The four scenarios outline possible and plausible futures for Australia and are listed below.

- The **Long Boom** is a scenario of sustained prosperity and a restructured economy.
- **Smart Recovery** sees uncertainty in Europe and the United States resulting in low growth to 2015 followed by a knowledge-based recovery.
- In **Terms of Trade Shock**, resource prices fall, resulting in a more balanced economy.
- **Ring of Fire** is a risky world with multiple shocks and ongoing lower growth.

The assumptions used are shown in Table 2.

¹¹ Deloitte (13); Australian Workforce and Productivity Agency (14)

Future trends and challenges

Table 2: Assumptions used for scenarios to model Australia's workforce needs

Variable (average 2011-2025 unless stated)	History (average 2001-11)	Long boom	Smart recovery	Terms of trade shock	Ring of fire
Terms of trade (level in 2025 for forecasts)	87.5	88.0	85.0	67.0	73.2
Net migration (persons)	176,000	235,000	191,000	187,000	128,000
Population growth (%)	1.54	1.58	1.32	1.28	0.99
Labour force participation rate (%) (level in 2025 for forecasts)	64.8	69.2	66.9	67.3	63.6
Unemployment rate (%)	5.3	5.0	5.3	5.0	6.6
Employment growth (%)	2.32	1.99	1.52	1.59	0.75
Productivity growth (%)	0.72	1.86	1.30	1.61	0.59
Output growth (%)	3.06	3.89	2.85	3.23	1.35
Output per capita growth (%)	1.50	2.26	1.51	1.93	0.39
Nominal GNI per capita growth (%)	5.34	4.28	3.54	3.15	2.06
Real GNI per capita growth (%)	2.46	1.69	0.93	0.57	-0.55

Conclusions from the modelling include:

- there is a need for higher level qualification with demand for diploma level or higher qualifications in 2025 possibly exceeding supply by 2.8 million qualifications
- lifting labour force participation is required due to the ageing of the workforce
- industries with the highest projected increase to 2025 are knowledge and service- based sectors such as health care and social services; professional, scientific and technical services; and education and training
- professions with the highest projected increase to 2025 are professionals; managers; community and personal service workers
- managers and professionals will comprise 39 per cent of the workforce in 2025.

2.3 *Conclusions from Australian and global trends for management and skills*

The world is becoming more complex and uncertain for managers, including in both the private and public sectors. A 2010 survey completed by 971 business and government leaders and employees in Europe, Asia, and North America indicated that ‘leadership in the 21st century is more than ever a complex matrix of practices, which vary by geography, organisational level, and individual circumstances’.¹² ‘To succeed in the shifting business landscape of the 21st century, leaders must rethink their historical views and cultivate a new configuration of attitudes and abilities’.

The capability of Australia’s private and public sector to deal with this new dynamic and unpredictable environment is critical and education and training of managers to obtain the necessary skills is required. This needs to be accomplished in a future which is forecast to have major gaps in the availability of educated professionals.

Global challenges include:

- resource uncertainty in terms of price volatility, potential scarcity and availability
- obtaining talent in times of skills shortages, and uncertainty about immigration policies
- more demanding (and less trusting) stakeholders including government, shareholders, and consumers
- technological changes and discontinuities, including the widespread use of new technologies with increasing data and computing power, and the need to modify established management tools such as mathematical modelling
- demographic and regional changes, such as the rise of Asia, a growing middle class, and an ageing and more urbanised population.

These trends and challenges also apply to Australia, with an ageing population, dealing with global competition, skills shortages and gaps, and responding to the growth in Asia as examples of challenges that need to be addressed.

The Business Council of Australia indicates that ‘Australia has experienced a very successful growth period and we continue to have much intrinsic strength, but we are a small economy in a fiercely competitive global environment. We do many things well and lead the world in areas like mining, agriculture and various services industries. However, with a small local market we lack the scale and expertise needed to exploit opportunities in many sectors of our economy, particularly manufacturing’.¹³ ‘We are operating in a more complex and challenging global environment that finds Australia more interconnected, but also exposed to greater volatility’.

¹² Perrin (15)

¹³ Business Council of Australia (16)

Future trends and challenges

The Business Council of Australia¹⁴ as well as the Australian government¹⁵ believe that an important response to these challenges (along with others) is for the education and training system to produce the skills needed to service a changing economy and increase productivity. ‘The more we develop the skill level of each worker, the higher the potential productivity of the labour force. A highly educated and skilled workforce supports innovation, the implementation of technological advances and the accumulation of physical capital’.¹⁶

¹⁴ Business Council of Australia (16)

¹⁵ Attorney- General’s Department (12)

¹⁶ Attorney- General’s Department (12)

3 *Current situation in Australia*

This section describes how well placed Australia currently is to meet the future challenges and opportunities of the transition to a knowledge economy in the Asian century. This includes focusing on the importance, current status, and performance of Australian management, education and skills development. In addition, the characteristics of a knowledge economy and the requirements to succeed in the Asian century are described in an Australian context.

3.1 Management

Studies in both the manufacturing¹⁷ and service¹⁸ sectors in Australia conclude that the quality and skill levels of Australian managers affect the success of enterprises and have a major effect on important indicators such as productivity. There is also a correlation between the ability of managers to develop innovation capabilities and the performance of companies. The studies also indicate that although Australia has some managers who are world class, Australian management performance is no more than average against comparable countries.

In 1995, the ‘Karpin Report’¹⁹ which was a government appointed Industry Task Force on Leadership and Management Skills, emphasised the important role of management in innovation and firm performance. The report emphasised non-technical dimensions of management and the role of creativity and people management, communication and negotiation skills and change management. In its 28 recommendations, the report advocated a national approach to the **development of an ‘enterprising culture’ based on** entrepreneurship, leadership development, enhanced diversity management, the implementation of a management competencies framework and various improvements to business and management education.

A subsequent evaluation of the impact of the Karpin Report suggested that **implementation of its recommendations has been ‘patchy’ and it was notable that where progress had been made, it had typically been the result of ‘market forces’, rather than coordinated national implementation.**²⁰ This report indicated that many of the shortcomings in Australian management identified in Karpin are still relevant and have yet to be addressed.

3.1.1 How do Australian managers rate?

An international study by the London School of Economics and McKinsey in 2009 examined management skills and capabilities across 15 countries and found clear linkages between the

¹⁷ Boedker (25)

¹⁸ Innovation and Business Skills Australia (26)

¹⁹ Australian Government (4); Australian Government (5)

²⁰ Innovation and Business Skills Australia (26)

Current situation in Australia

quality of management and the performance of firms and organisations. However, this study did not include Australia. A study was then commissioned to extend this study to identify determinants of high performance and to benchmark 439 Australian manufacturing firms against the global best.²¹

The study found that while Australian management practices are not in the top rank of performance worldwide, they are also not among the worst. Australian management practices rate marginally above average when benchmarked internationally. Australia ranks sixth among the sixteen countries that have participated in this study to date. Australian management has statistical parity with France, Great Britain and Italy. However, Australia significantly lags behind the best performing country (USA) and does not match Japan, Germany, Canada and Sweden. The study has illustrated a strong relationship between management practices and organisational productivity, and improving management performance is a key opportunity for longer term sustainable growth for Australia.

A summary of results is as follows:

- size is an important factor in management performance, with larger firms scoring better than smaller firms
- ownership is also a factor with multinationals clearly outperforming domestic firms in management performance
- Australian publicly listed companies are also more likely to adopt modern management practices than other types of company ownerships
- family run businesses tend to exhibit inferior management performance
- international exposure is important as there is a significant positive correlation between the management score and share of exports
- flexible people management is a key element of successful management, and well managed firms tend also to exhibit superior innovation capabilities
- as in other countries, Australian management tends to overrate its own performance against the benchmarks.

The following are some key findings with regard to the determinants of management practices:

- level of education and skills among both management and non-management personnel impacts management performance
- high management scores are positively correlated with various measures of success including: sales, productivity, employee numbers and market valuation.

²¹ Boedker (25)

Current situation in Australia

The Society for Knowledge Economics in 2011 studied 78 service companies in Australia.²² The aim was to deepen understanding of the linkages between workplace productivity and how this is affected by management practices. Specifically, this project identified the attributes of high performing workplaces and tracked the culture, leadership and management practices that result in higher firm performance (as measured by workplace productivity, innovation, fairness and employee engagement).

The study found that Australian management have major gaps in developing high performing workplaces, with a major concern being ‘soft skills’ such as human resource management, and encouraging innovation. High performing workplaces have a number of identifying characteristics, in that they:

- prioritise people management as a key priority
- involve their people in decision making processes
- are more responsive to customer and stakeholder needs
- encourage a high degree of responsiveness to change and learning orientation
- enable their staff to fully use their skills and abilities at work.

As a result, high performing workplaces were up to 12 per cent more productive and three times more profitable than their peers, and performed better in many ‘intangible attributes’ such as encouraging innovation, leadership and a fair workplace environment.

3.2 Asian century

3.2.1 Why is Asia important to Australia?

Australia in The Asian Century White Paper places relations between Australia and Asia squarely in the political and economic mainstream.²³ High-level modelling conducted for Melbourne University Asialink Institute (by The Boston Consulting Group) suggests that, separate to the resources sector, Australia has the potential to lift economic performance in, and due to, Asia by up to \$275 billion over the next ten years. Improved Asia capabilities will drive better access to, and penetration of, those markets.²⁴

Collectively, Asian economies are the world’s largest and fastest growing, and they represent a major opportunity for Australian business. Asia’s share of world output has doubled in less than 60 years, from about 20 per cent in the 1950s to nearly 40 per cent in 2010.²⁵ Estimates

²² Boedker (25)

²³ Australian Government (9); PwC (17)

²⁴ Asialink (18)

²⁵ Asialink (18)

by the OECD predict increases in Asia's middle class, from 28 per cent of the global middle class in 2009 to 66 per cent by 2030 (3.2 billion people in Asian middle classes).²⁶

The bulk of Australia's trade is with the Asian region. North Asia alone accounts for over half of Australia's merchandise exports, with China and Japan being Australia's two largest trading partners.²⁷ However, the level of Australian investment in Asia is too low to make the most of future opportunities with only 6 per cent of all Australian overseas direct investment being in Asia.²⁸

3.2.2 *How is Australia currently engaging with Asia?*

Many Australian companies have developed Asian growth strategies, but evidence suggests that there is a clear lack of systematic engagement with the region on a long-term basis.²⁹

For Australian businesses, one of the biggest impediments to realising the Asian opportunity is the absence, or underdevelopment, of critical individual and organisational capabilities.³⁰ Asialink and the Australian Industry Group surveyed 380 businesses in 2011 to understand **their leaders' views on the factors that most support or are an impediment to success in Asia**. A summary of results is as follows:

- Asia is considered important to business success and that business believes the future prospects are good
- whether operating in Asia or not, 74 per cent of respondents indicated an interest in expanding into Asia, with almost 50 per cent actively planning expansion within 12 months
- of businesses currently doing business with or in Asia, more than half rated at least one of **their Asian operations as 'highly important' or 'extremely important' to their overall success**
- China features prominently in future business expansion plans, but so do 12 other Asian economies (including Malaysia, Singapore, Indonesia, India, Vietnam and Thailand)
- 55 per cent say they will employ more staff to support this planned expansion.³¹

The survey results emphasises the importance of Asian-relevant capabilities, skills and experience to contribute to business success. These include skills and experience, understanding the local culture, the legal and political hurdles, and having local knowledge.

²⁶ PwC (17)

²⁷ Australian Bureau of Statistics (56)

²⁸ PwC (17)

²⁹ PwC (17)

³⁰ Asialink (18)

³¹ Australian Industry Group and Asialink (19)

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However, the survey also highlighted many impediments to Australian businesses engaging optimally in Asia. A major impediment is the absence or underdevelopment of critical individual and organisational capabilities with more than half of Australian businesses currently operating in Asia having little board and senior management experience of Asia and/or Asia skills or languages. The higher the proportion of senior leaders who have cultural training, speak an Asian language, or have lived and worked in Asia for more than 3 months, the more likely business performance will exceed expectations. The survey respondents also nominated individual and organisational capabilities, including partnerships and networks, cultural and management understanding and legal and tax knowledge, as important to business success in and with Asia.

A common theme was that the culture of Australian business is rooted in Western, transactional models and that Australian business was not adapting to the different cultural norms in Asia. For example, ‘western’ managers tend to verbal communication and directness when making business decisions; ‘eastern’ managers focus on relationships and are comfortable with ambiguity.

Geert Hofstede conducted one of the most comprehensive studies of how values in the workplace are influenced by culture and developed the SD model which is now widely used. In the 2010 edition of the book *Cultures and Organizations: Software of the Mind*, information is listed for 76 countries. The model measures the dimensions of culture as outlined below.

- **Power distance** deals with the fact that all individuals in societies are not equal. Power distance is defined as the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally.
- **Individualism** is the degree of interdependence a society maintains among its members. It has to do with whether people’s self-image is defined in terms of “I” or “we”.
- **Masculinity:** a high score (masculine) indicates that the society will be driven by competition, achievement and success, with success being defined by the winner or the best in field. This value system starts in school and continues throughout organisational behaviour. A low score (feminine) on this dimension means that the dominant values in society are caring for others and quality of life.
- **Uncertainty avoidance** is the way that a society deals with the fact that the future can never be known: whether they try to control the future or just let it happen. It also reflects the extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these situations.
- **Pragmatism** describes how people in the past and present relate to the fact that so much that happens around us cannot be explained. In societies with a normative orientation, most people have a strong desire to explain as much as possible. In societies with a pragmatic orientation most people don’t have a need to explain everything, as they believe that it is impossible to understand fully the complexity of life.
- **Indulgence** is defined as the extent to which people try to control their desires and impulses, based on the way they were raised.

Table 3 summarises the results in the SD model for China, Australia and the USA. The scores of Australia and the USA indicates how closely ‘western’ countries resemble each other. China however, scores very differently on power distance, individualism, pragmatism and indulgence.

Table 3: Cultural dimensions of Australia, China and the USA

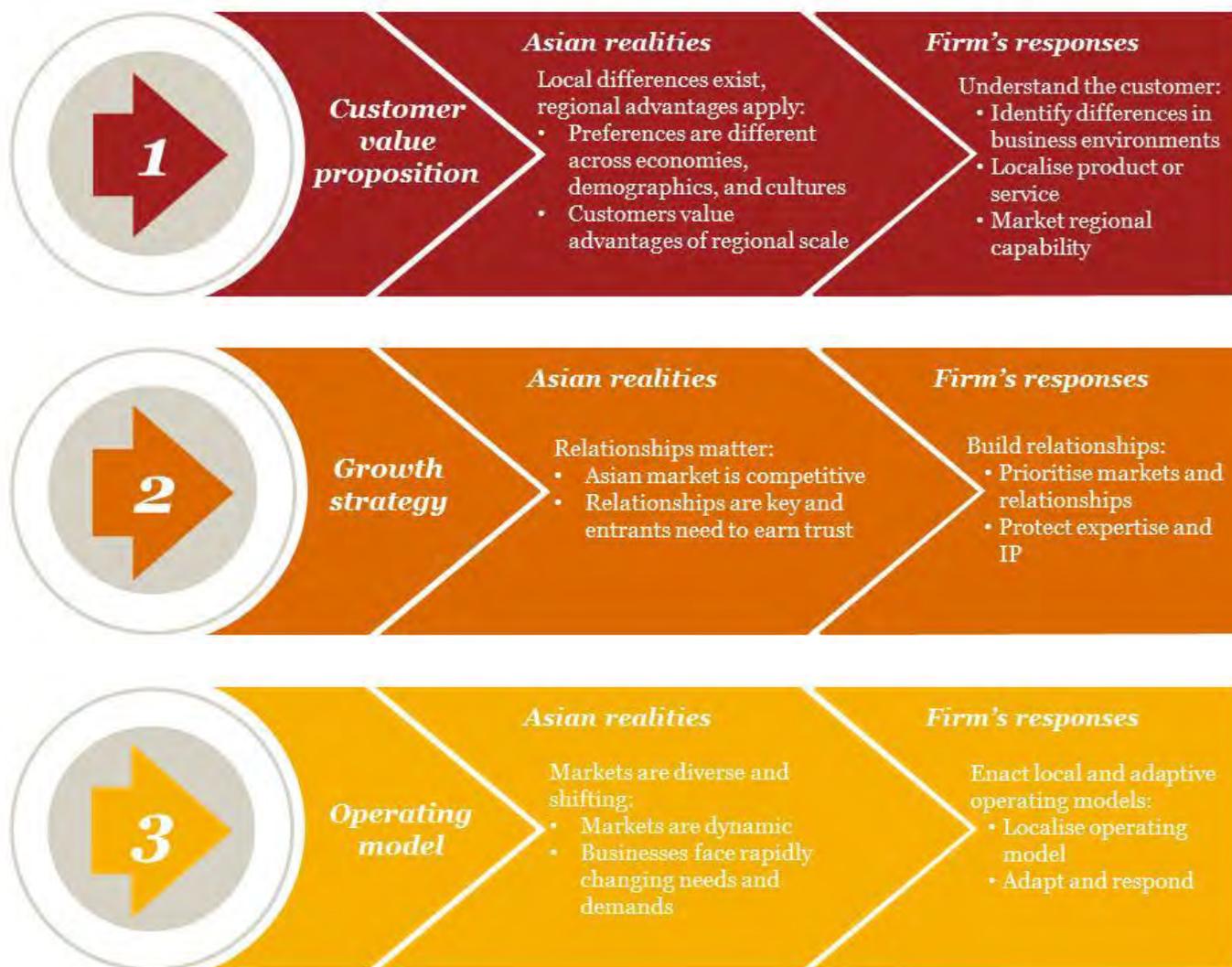
Dimension	Score (out of 100)		
	China	Australia	USA
Power distance	80	36	40
Individualism	20	90	91
Masculinity	66	61	62
Uncertainty avoidance	30	51	46
Pragmatism	87	21	26
Indulgence	24	71	68

Overall, large Australian companies are seen by business leaders and advisers as possessing **only 'average' Asia capabilities** when compared to international competitors. Australian SMEs are also seen (on average) to fall behind their international competitors on their understanding of, and experience operating in, Asian markets, cultural/language proficiency, and dealings with Asian governments and regulators. They also appear to be behind competitors (on average) in the customisation of their organisations, people and products and services to the context of each Asian market.

Having identified impediments to Australian businesses engaging effectively in Asia, it is also important to recognise that Australia has strengths which provide opportunities for Australian businesses to capitalise on Asian growth. Many organisations have demonstrated this ability. The Boston Consulting Group provides a number of case studies which include: ANZ Banking Group, RMIT University International, Hassell, Linfox Logistics, The Leighton Group, SEEK and Jetstar.³² These firms all see their Asian business as key to their success, and prove that Australian businesses can succeed in Asia. A number of common themes emerged from these case studies as shown in Figure 2. This figure indicates the high level of Asian-relevant management skills, experience, understanding and capability that is required to respond appropriately to Asian realities.

³² Boston Consulting Group (20)

Figure 2: Common themes from Asian case studies



3.3 Knowledge Economy

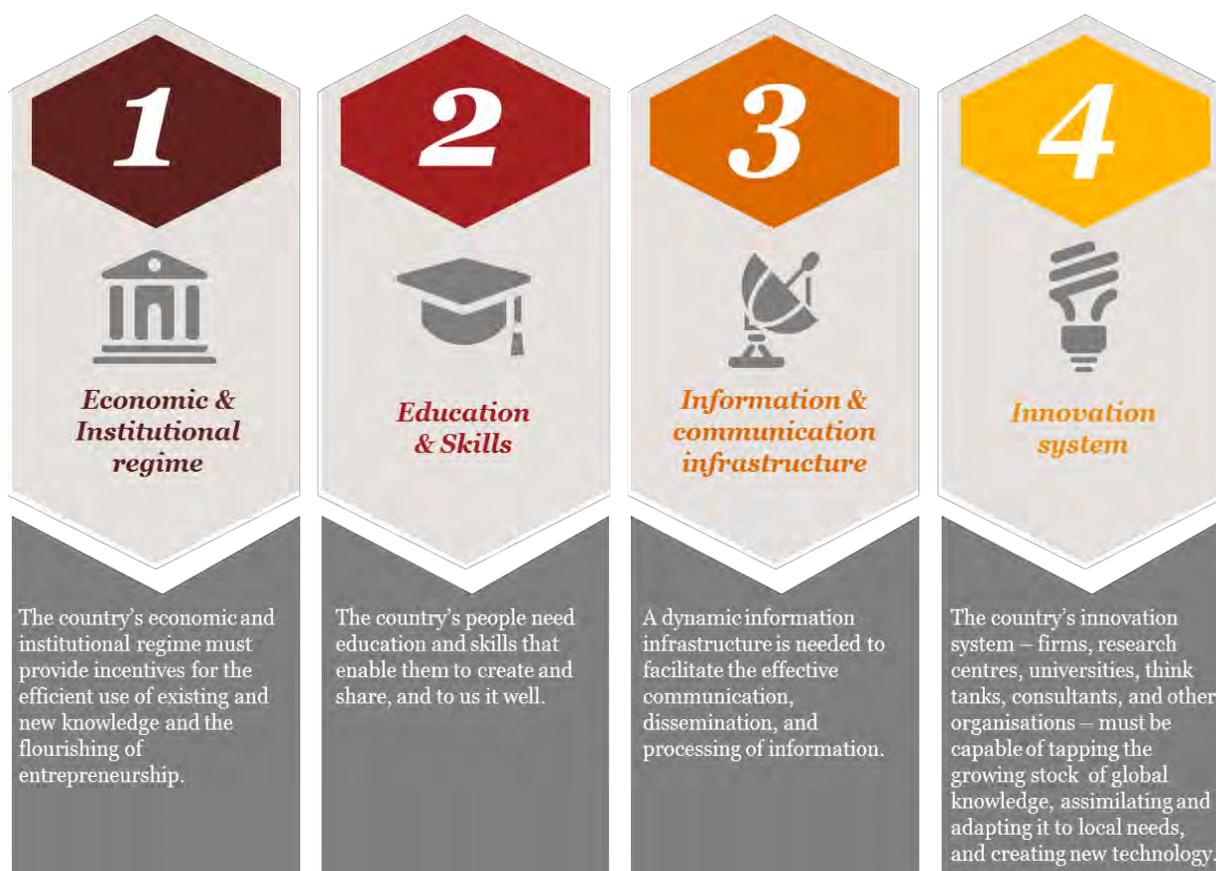
The World Bank³³ and OECD³⁴ indicate that application of knowledge is now recognised as a main driver of productivity and economic growth. Application of knowledge can be reflected in innovation and entrepreneurship, for example. This has led to countries - such as Australia - to focus on the role of information, technology and learning, and investment in research and development, education and training and new managerial work structures.

³³ World Bank Institute (21)

³⁴ OECD (1)

In order to capitalise on the knowledge economy, countries need to develop the World Bank’s ‘pillars’ of a knowledge economy,³⁵ as illustrated in Figure 3.

Figure 3: The four pillars of the knowledge economy



It is important to note that the conventional view of the knowledge economy based on high technology industries and frontier technologies, like biotech and nanotechnology, presents an incomplete picture.³⁶ In Australia, like most advanced economies, high technology or science-based industries and the technologies underlying them are important, but they only account for around 3 per cent of GNP in most OECD economies. It is also significant how innovation and growth occurs in the low and medium technology sectors which form the bulk of the economy in Australia and in the OECD. These sectors include food processing, metal products, chemicals, timber products, printing and publishing, transport, mechanical engineering, mining, the hospitality industry, financial services, health and the like. Innovation in such industries is not only based on investment in research and development, but also on learning by doing, learning by using technology and equipment and learning by interacting with others. It is thus critically important in a knowledge economy to not only

³⁵ World Bank Institute (21)

³⁶ OECD (49)

Current situation in Australia

have scientific and technical skills, but also ‘soft skills’ such as the ability to work in teams, communicate, network and collaborate.

It is critical for Australia to continue to transform to a knowledge economy if it is to succeed in Asia. Australia not only needs to compete with existing and emerging knowledge economies in Asia, but also with other advanced economy countries who also see major opportunities in Asia. At this stage, Australia ranks very well internationally and has a comparative advantage as a knowledge economy, according to the World Bank ‘Knowledge Economy’ 2012 rankings,³⁷ although Australia’s ranking has slipped since 2000 (Table 4). This ranking is based on a country’s performance against the 4 ‘Pillars of the Knowledge Economy’ shown in Figure 3.

Table 4: Knowledge economy rankings 2012 and 2000

Country (total 145 countries)	Knowledge economy ranks	
	2012	2000
Sweden	1	1
Finland	2	8
Denmark	3	3
Netherlands	4	2
Norway	5	7
New Zealand	6	9
Canada	7	10
Germany	8	15
Australia	9	6
Switzerland	10	5
Ireland	11	11
United States	12	4
Taiwan	13	16

³⁷ World Bank Institute (23)

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Even though no Asian country appears in the Top 10 (Taiwan is highest at 13th, and Japan 22nd), the Asian Development Bank³⁸ sees the development of knowledge-based economies (KBEs) in Asia as both an imperative and an opportunity. ‘Over the last quarter of a century, driven mostly by cheap labour, developing countries in Asia have seen unprecedented growth rates and contributions to the global economy. **Sustaining Asia’s growth trajectory, however,** requires developing economies to seek different approaches to economic growth and progress, especially if they aspire to move from the middle-income to the high-income level. KBE is an important platform that can enable them to sustain growth and even accelerate it’.

³⁸ Asia Development Bank (24)

4 *Capability development, skills and education*

In order for Australia to develop and strengthen its comparative advantage over the next 20 years it requires development in relevant capabilities and skills (among others areas). This effort is required at all levels of the education system, including schools, TAFEs, universities, government and the private sector. A number of reviews have been completed or **are in progress such as the ‘Bradley’ review of Australian Higher Education**³⁹, the ‘Gonski’ review of funding for schooling,⁴⁰ and the current review of the Australian curriculum.⁴¹ The scope of this report is to focus specifically on skills which are required to enable Australia to gain a comparative advantage in the Asian Century as a knowledge economy. The discussion in previous sections identifies the following gaps and priorities for skills and capability development within this context:

- closing the current gap in management capability needs an emphasis to be placed on the MBA degree and Vocational Education and Training (VET)
- developing Asia-relevant capability, such as sensitivity to cultural differences and how to manage these
- identifying and developing skills needed for the knowledge economy such as innovation and **‘soft skills’ to complement technical and scientific capability**.

The needs of SMEs are particularly important, and will be highlighted as appropriate.

4.1 *Management capability, education and skills*

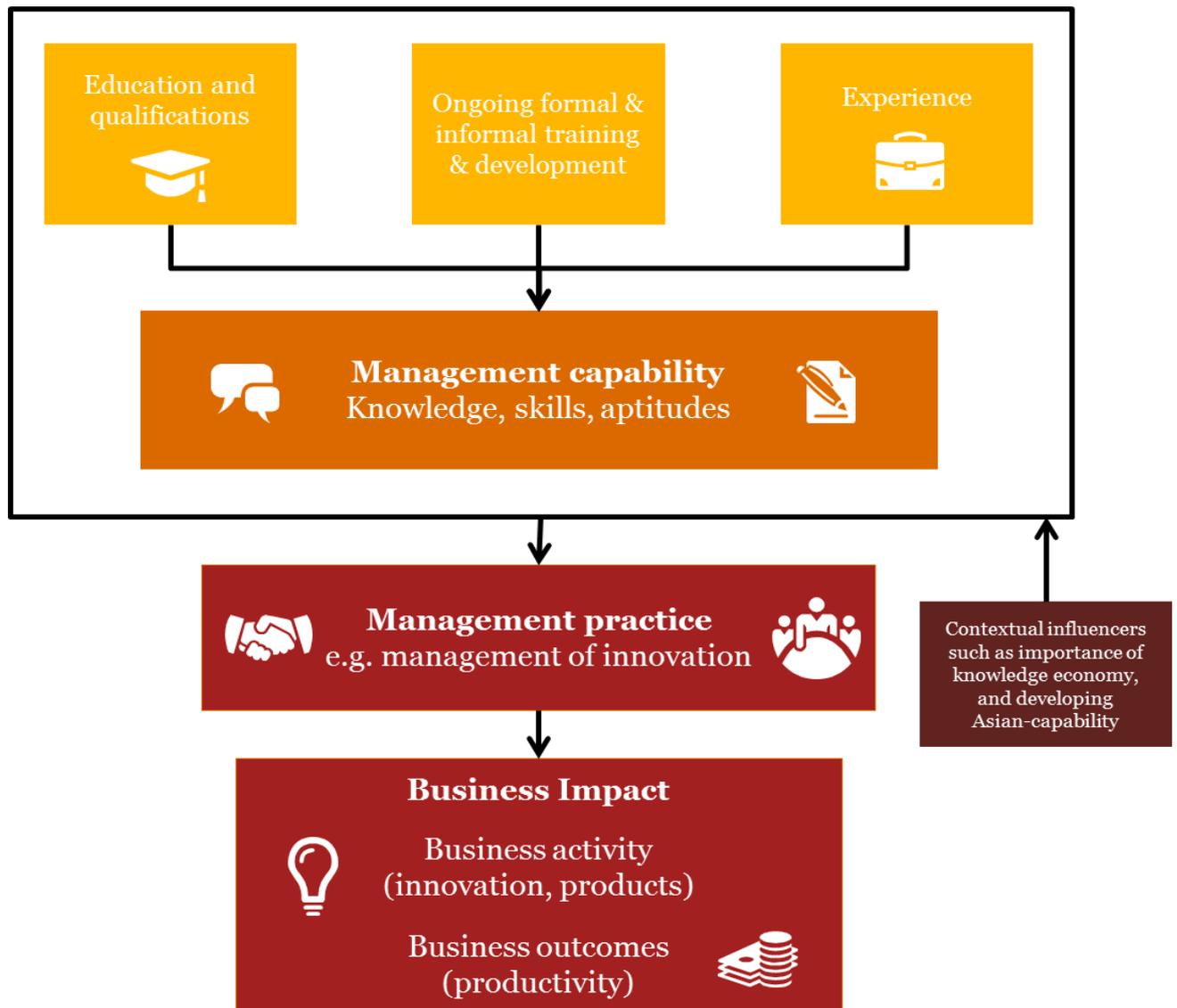
Managers require skills which include ‘administration’ which deal with stability and efficiency, ‘leadership’ for change and effectiveness, and ‘entrepreneurship’ with exploiting opportunities and innovation. Management capability is largely developed through education, ongoing training, and relevant experience. The effectiveness of this capability is influenced by the focus of the capability development, such as the need to develop Asia-relevant capability- this will require relevant experience, and (for example) training in language capability and cultural sensitivity. Management capability development will influence the organisations success or otherwise. This is summarised in Figure 4.

³⁹ Australian Government (27)

⁴⁰ Australian Government (28)

⁴¹ Australian Government (28)

Figure 4: Management capability development and outcomes



There are a number of providers of management education in Australia which include:

- Business Schools and equivalent faculties in universities, and their representative bodies such as the Australian Business Deans Council (ABDC) and international accreditation bodies such as EQUIS and AACSB
- private business colleges
- employer representative bodies, associations and institutes such as the Australian Institute of Management

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- the Vocational Education and Training (VET) sector, in particular TAFE and other colleges
- individual firms and management and professional development firms and consultancies.⁴²

The contribution of management education to the development of management capability and performance is a key factor in the productivity and competitiveness of economies and organisations.⁴³ 'All indications suggest that Australia's future lies in being able to translate ideas, highly developed skills and knowledge into a sophisticated and competitive business sector. This is the means by which Australian business must position itself in order to compete internationally, particularly against the growing technological and business innovation emerging from India, China, South Korea and other developing countries in the Asia-Pacific'.⁴⁴

4.1.1 Business Schools and MBA

The Australian management education system is well established and in general producing professional and other relevant graduates. However, there is room for improvement.

In recent years there has been extensive debate in Australia on the role of Business Schools and management education, particularly in relation to the relevance, value and purpose of the MBA. These debates have crystallised a number of recurrent themes. MBAs (and, to some degree, management education more generally) have been criticised for being:

- focused on technical skills to the relative exclusion of generic/soft skills and attributes
- focused on narrow views of the role of business (short-term profit maximisation and shareholder value) to the relative exclusion of social considerations
- fragmented or segmented into technical areas that are not sufficiently integrated
- universalist in the assumptions of the application of models, concepts and theories to diverse contexts
- theoretical and lacking in business relevance in the sense that what is taught is not sufficiently attuned to current and future business problems.⁴⁵

Many Australian managers lag their international counterparts in significant areas of management capability, and it is arguable that shortcomings in current management education offerings are contributing to this capability gap. For example, some have suggested

⁴² Australian Business Deans Council (30)

⁴³ Australian Business Deans Council (30); Hall (31)

⁴⁴ Australian Business Deans Council (30)

⁴⁵ Hall (31)

that management education needs to be more business relevant, better integrated around contemporary business problems and challenges and more directly attuned to contemporary innovation and productivity imperatives.⁴⁶

Australian Business Schools face many challenges and demands including responding to a **rapidly changing globalised environment; contributing to improving Australia’s economic** and productivity performance; responding to the needs of business, employers and the changing workplace; developing the quality, relevance, capability and capacity required despite funding constraints; and meeting the requirements of potential and existing students. These issues are summarised in Table 5.

Table 5: Challenges facing Australian Business Schools⁴⁷

Issues	Challenges
Responding to changes in global environment	<ul style="list-style-type: none"> • Australian Business Schools need to confront the inter-related challenges of digitisation (in the form of ‘Massive Open Online Courses’ or MOOCs) and globalisation (in the form of global business school brands). • The globalisation of innovation and the increasing geographic dispersion of knowledge, research and development require new organisational structures and managerial capabilities.
Contributing to Australia’s economy	<ul style="list-style-type: none"> • Demand for enhanced management, leadership and collaboration skills is a part of a broad approach to improving Australia’s productivity performance. • Management educators must prepare managers as leaders and decision-makers who are adept at dealing with uncertainty and constantly changing landscapes, and to succeed in a networked-knowledge economy. • It is not enough to create an economy that is ideas rich but execution poor; success resides in the application of breakthrough ideas.

⁴⁶ Hall (31)

⁴⁷ Australian Business Deans Council (30); Hall (31); Carrington Crisp (32)

Issues	Challenges
<p>Responding to the needs of employers</p>	<ul style="list-style-type: none"> • Several reports have recently documented employer dissatisfaction with Australian graduate skills. These claim that graduates lack employability skills, or generic skills, amounting to an inability to satisfactorily apply skills and knowledge in workplace and organisational settings. Communication, teamwork and problem-solving skills are routinely mentioned, as is the ability to manage change and demonstrate dexterity across different business contexts. • Much of the claim that business schools and their programmes are increasingly irrelevant to business is associated with the view that there is insufficient engagement between business schools and businesses. A deeper and more meaningful level of school-business engagement is needed. • The globalisation of innovation and the increasing geographic dispersion of knowledge, research and development requires new organisational structures and managerial capabilities. It also requires new forms of collaboration and levels of coordination. This is a management challenge where knowledge is dispersed across firms, industries, disciplines and countries. Managers need the skills and capabilities to exploit the valuable knowledge and they need to manage the innovation process which relies heavily on collaboration and creativity. Management education for innovation needs to be designed to produce world leaders and may involve a different approach to the curriculum.
<p>Responding to the needs of the changing workplace</p>	<ul style="list-style-type: none"> • Managers and employees require effective generic skills including communication, teamwork, problem solving, critical thinking, technology and organisational skills. These generic skills enable and equip individuals to build effective working relationships and undertake collaborative tasks and projects; fully utilise their discipline-specific knowledge and technical capabilities in the most effective way. • There have been calls for the Australian management education system to make a stronger contribution to developing the innovation capacity of Australian organisations, management and workers.
<p>Developing quality, relevance, and financial sustainability</p>	<ul style="list-style-type: none"> • There is a need for deeper engagement and knowledge exchange between educational institutions, business and government. • Educational institutions face a pressure to build quality and relevance in the face of funding challenges; capacity and capability constraints; a high dependency on international student fees; and changing incentives for the higher education sector. • Business schools are navigating an increasingly complex regulatory and competitive environment. • There is a need to embrace the key trends associated with integrated learning, design thinking and experiential learning • Management education providers now confront pressures associated with recent reforms to the higher education sector. These pressures, although still emerging, include: demands associated with new arrangements for the measurement and assurance of quality and standards (including TEQSA and the ERA); growing emphasis on outcomes-based learning and the assurance of learning implying the intensified assessment of graduates' workplace competencies; an increasing proportion of funding linked to accountability for a wider range of performance measures.
<p>Responding to the needs of students</p>	<ul style="list-style-type: none"> • One of the key elements students seek when choosing a school is its international reputation and its ability to develop a global mindset. • The main motivation for studying an MBA is career improvement and that career prospects are a key element of the choice of where to study.

Australian Business Schools need to continue to respond and adapt in areas such as:

- recognising the importance of Asia as a growing and important marketplace
- becoming flexible in allowing for part time study
- developing relevant specialist MBAs
- using technology such as MOOCs (Massive Open Online Courses)
- increasing engagement with business and potential employers
- adapting the curriculum and teaching methods to produce graduates who meet the needs of the changing global environment.

Management education providers have been asked to make a more explicit contribution to innovation through the development of closer and more responsive industry networks and collaborations. Building innovation skills implies the need for management education to better develop the following skills:

- **“communication, teamwork, problem solving, entrepreneurship and leadership” skills as well as “strong technical skills”**
- knowledge management skills including a capacity to stimulate knowledge management practices including knowledge sharing, strong incentives to retain talent, alliances for knowledge acquisition and the development of knowledge management policies.

4.1.2 VET Sector

A number of reviews and analyses of the Australian VET system have concluded that the VET system generally meets the requirements of its stakeholders. They find however, that reforms are necessary for the sector to contribute optimally in Australia in the future due to major trends such as the rise of Asia, low productivity in Australia, an ageing workforce and skills shortages.

The Productivity Commission⁴⁸ indicates that at an aggregate level, the current VET system largely meets the expectations of its clients. However, some clear deficiencies should be addressed such as more trainers and assessors with industry skills in demand, greater attention to meeting changing contemporary skills needs, and a wider base of the VET workforce that has at least basic educational capabilities.

In the medium to long term demographic, economic and policy factors will create challenges and uncertainty for the VET sector. These factors include:

- population ageing that will drive demand for specific skills, while also tightening the overall labour market

⁴⁸ Productivity Commission (53)

- immigration has the potential to affect both the demand for, and supply of, skills traditionally sourced from VET
- economic growth and structural change will require deeper skills and new skills, including green skills
- the business cycle (including more specific industry cycles such as in agriculture and the resources sector)
- policy targets will require delivery to a more diverse and challenging student population.

Skills Australia⁴⁹ identify the growth of China and India as the most significant economic development likely to have an impact on Australian industry - and hence on the demand for skills - in **Australia's economy over the next 15 years. In addition to responding to the rise of Asian economies, other challenges that need to be met are outlined below.**

- ***Demand for additional skills:*** projections indicate that there will be 9.3 million job openings in Australia over the coming years. This will result in demand for around 12 million additional qualifications among those employed over the next 15 years.
- ***Foundation skills:*** Australia has unacceptably low levels of language, literacy and numeracy. Close to half of Australia's **working**-age population (44 per cent) has low literacy skills as measured in the Adult Literacy and Life Skills Survey.
- ***Workforce participation:*** Australia's **workforce participation statistics compare poorly** with similar OECD countries. Australia also faces the dual pressure of an ageing workforce, and a large potential workforce on the margins of the labour force.
- ***Skill needs in critical areas:*** shortages exist in skilled trade areas and in many engineering and health professional occupations.
- ***Skill use skills and productivity:*** Australia's **productivity performance is of concern.** Better skill use across all occupations is an important contributor to workplace and workforce adaptability. Many jobs have become more complex and this demands greater workplace flexibility and resilience.

Australia needs a workforce in which more people have multiple and higher-level skills and **qualifications and use them well. Skills Australia concludes that "The role of skills and the VET sector's capacity to deliver them has to be factored into a comprehensive national response to these events."**

4.2 Asia-relevant capability and skills

A summary of actions required of Australian businesses and education/training institutions to succeed in Asia includes:

- recruit people with deep Asia experience and expertise

⁴⁹ Skills Australia (54)

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- build Asia networks, partnerships, and collaborations
- provide opportunities for staff and students to spend time working and studying in Asia
- build skills such as language proficiency and cultural understanding and sensitivity
- provide courses and programs to build Asia capabilities.

In developing and implementing these capabilities successfully, a partnership is required between government, business, and the education/skills sector. The following discussion provides commentary from representative organisations of these sectors.

The Australian Government’s *Asian Century White Paper* reaffirms the need for Asia-related human capital. ‘Much of the focus on people development has been framed as increasing language skills. Whilst fully supporting the importance of this element, the need to have real experience of operating in the business, political and social worlds of the various countries cannot be underestimated. To successfully capture the opportunity in Asia, organisations need to access Asia-relevant capabilities and embed them in their culture. This will increase **Australian’s understanding of the region, creating foundations for deeper and broader relationships and enriching our society and culture**’.⁵⁰

Asia relevant capabilities include adaptability, flexibility, resilience, creative and design thinking, and the confidence and readiness to interact with and operate in Asia. Businesses will require cultural and language skills to collaborate and partner in the region. **“Being Asia literate, or Asia capable, requires broader skills than language fluency, including the need for cultural understanding”**.⁵¹ They will need more staff who are flexible and responsive to customer needs.

The Asialink Taskforce for an Asia Capable Workforce at the University of Melbourne has defined a four-part strategy to develop an Asia capable workforce in Australia.⁵²

- 1 Advocate broadly the case for developing an Asia capable workforce. Businesses must cooperate to demonstrate the importance of developing an Asia capable workforce and Governments must ensure that policy development takes account of the need to accelerate into Asia and upskill the workforce.
- 2 Accelerate the development of Asia-focused strategies with Australian business taking the lead. Businesses must take account of the Asian opportunity, re-orienting strategies, developing frameworks to assess those strategies, and sharing learnings between functional and geographical silos.
- 3 Invest in developing Asia capability throughout the Australian workforce. Businesses **already engaged with or planning to do business with Asia must build employees’** skills, provide Asian experiences and build Asian networks. The business community must establish or utilise existing networks to share findings and strategies and Governments must support education, training and professional development bodies

⁵⁰ CPA (9); PwC (17)

⁵¹ Australian Workforce and Productivity Agency (33)

⁵² PwC (17); University of Melbourne (18)

to provide courses and programs to build Asia capabilities. All institutions should utilise existing talent pools, including Asian Australian communities, repatriates and international students, to drive their Asia-focused strategies.

- 4 **More effectively educate Australia's future workforce for the Asian century.** Businesses must work with education providers to provide internship and work experience opportunities for domestic and international students in Asia-focused businesses. Businesses should give a high priority to informing education and training institutions of current and emerging requirements for Asia capabilities. Universities, TAFEs and schools must incorporate Asia-relevant content across disciplines and curricula and in higher education, students must be encouraged to take up short-term study opportunities in Asia. Government must support the evolution of school, university and TAFE curricula towards Asia capability through funding and policy.

The Australian Industry Group indicates that managers and leaders of Australian businesses need to become more familiar with Asian cultures and ways of doing business to capitalise on potential benefits.⁵³ The Australian workforce will need to be equipped with the knowledge, cultural skills and networks to compete effectively in Asia.

The Australian Business Foundation provides an overview of emerging opportunities for Australian firms in the Asia-Pacific region in **the next decade. In their view**, 'relative to other Western economies, Australia is poorly represented in high-growth knowledge-intensive industries and has weak links into global production chains and networks. While Australia has developed links in the Asia-Pacific region, and has enhanced its exports to that region, there are emerging long term weaknesses that will challenge our ability to maintain a competitive position. A number of firms, particularly SMEs, lag in their adoption of knowledge management approaches and export orientation, and so, are not capitalising on opportunities available for knowledge-intensive organisations globally.'⁵⁴

In the education sector, there are major opportunities for Australian institutions to engage effectively in Asia. A number of universities already have campuses in Asia, such as RMIT **International in Vietnam (about 8,000 students). A further opportunity is to 'export' Australia's high reputation for educational standards. TAFE Directors Australia indicates that Australia's Technical and Vocational Education and Training (TVET) system is regarded as one of the best in the world. The pathways to employment, career and personal advancement and further education are well defined and supported. With a focus on industry engagement, competency-based standards, nationally recognised qualifications and quality assurance, Australian expertise is highly regarded and valued. 'Many countries in the Asian region look to Australia as a model on which to base their own development of a TVET system'**.⁵⁵

In addition to enhancing skills in the private sector, an additional priority is to focus on the Australian Public Service (APS). There are similarities and some differences between the private and public sectors and a number of skills are transferrable. Publications which focus on the differences between the private and public service were reviewed and analysed.⁵⁶

⁵³ Australian Industry Group (34)

⁵⁴ Langdale (35)

⁵⁵ TAFE Directors Australia (36)

⁵⁶ ESADE (55)

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These publications are indexed in the *Social Science Citation Index*, and published between 1989 and 2009. Differences between the public and the private sectors were found to be as follows:

- the public sector is characterised by a large number of formal processes which display more degrees of formalisation, rules, regulations and procedures
- public organisations have more ambiguous objectives and it is more difficult to calculate to what extent they are met
- public sector managers value consultative practices far more highly when making decisions related to budgets. Private sector managers, on the other hand, prefer to use analytical practices.

The main advantage of having an understanding of the differences between the public and private sectors is that it can facilitate the transfer of management practices from one sector to another. In the approach preferred by new public management, the public sector appears to be adopting practices that are often attributed to the private sector in order to achieve greater efficiency. Examples of this are: the importance of understanding marketing in the public sector; and the ability of managers in the private sector to understand how decisions are made in the public service.

The *Ahead of the game review* ('Moran review') of the APS conducted in 2010 concluded that although the APS has adapted to meet the various tests it has faced over time, 'it must change again to meet the challenges of a new century and stay ahead of the game'.⁵⁷ Recommended areas for reform include the need to 'invest in the capability of the public service workforce through improved recruitment and training processes, greater mobility and alignment of working conditions across agencies, and a new, more consistent approach to employee performance'.

The review found that the APS is underinvesting in skills development compared to the private sector. In the private sector, it is recognised that 'as much as 80 per cent of a **company's worth is now tied to its people**'. Most private sector organisations invest between three and six per cent of payroll on employee development, with an average expenditure of around four per cent. In the APS, 48 per cent of agencies report spending less than one per cent of their annual budget on learning and development.

In addition, there were reports of skills shortages such as ICT, high level policy and research skills, and other areas such as project management which pose significant risks to policy implementation. The quality of learning and development is also a problem. Fewer than one in three APS employees rated the effectiveness of their learning and development programs as high or very high in terms of helping them to improve performance. Future expertise needs were identified in a number of areas ranging from economic modelling to skills required to capitalise on trade opportunities with China and India.

An international benchmarking study by KPMG found that on most comparisons the APS performs soundly. 'At the same time the APS has some way to go if it is to realise the ambition to be the best in the world. Like the other comparator public services, the APS is challenged by persistent, complex and inter-related policy problems. It must manage high

⁵⁷ Australian Government (37)

expectations from the public and Government, facilitate a greater role for citizens and users in the design and delivery of services and adjust its operations to accommodate an ageing workforce and tight fiscal environment. A high performing public service of the future is likely to require a broader range of skills, ideas and tools'.⁵⁸ The OECD identified a number of challenges for the APS, which include developing adaptive leadership capability and developing enhanced capacity to work in the Asian century.⁵⁹

The Australian Public Service Commission (ASPC) has identified the range of skills required in the APS.⁶⁰ The management skills clusters (including the key skills with each cluster) are outlined in Figure 5.

Figure 5: Management skills required in the APS



⁵⁸ KPMG (38)

⁵⁹ OECD (39)

⁶⁰ APSC (40); APSC (41)

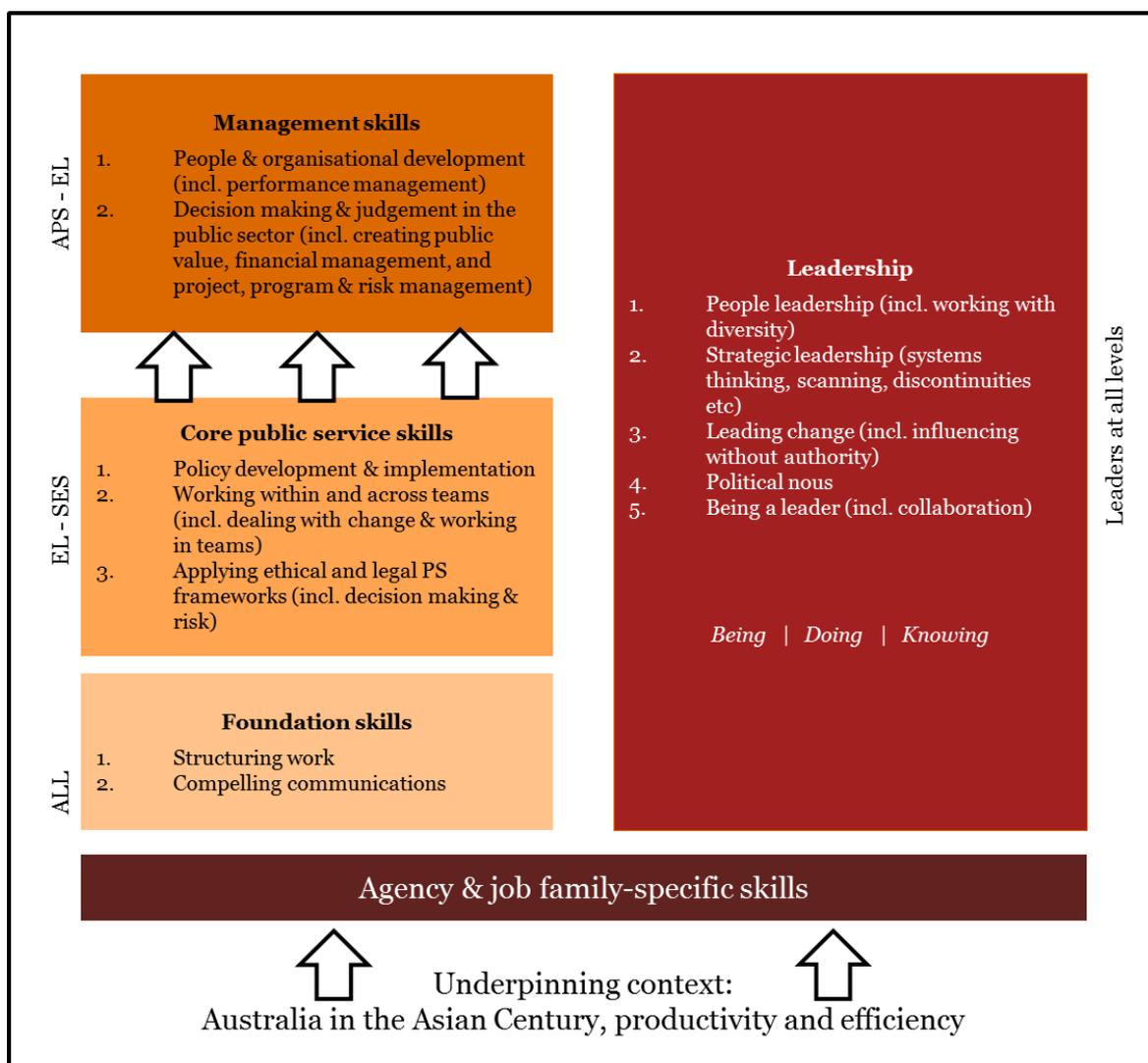
Underpinning the public sector-specific core and management skills, public servants require a firm grounding in foundational workplace (employability) skills that are common to the public and private sectors, including the following skills.

- **Structuring work.** In today's fast-paced environment, public servants need structured methods of working. This means having the skills to decompose a task into its constituent skills, planning and prioritising.
- **Compelling communication.** Communication skills are a key part of transacting business. APS employees require the ability to present an argument clearly, concisely and in a compelling manner, going to the heart of the issue with speed and clarity.
- **Building relationships and engagement.** Building relationships and engaging in meaningful consultation with citizens, stakeholder groups and working across teams, across agencies and across jurisdictions goes to the heart of public service work and are critical foundation skills across the APS.
- **Analytical thinking.** Applying analytical thinking is a critical part of public sector work. This means having the skills to define a problem, collect relevant data, identify bias in evidence, evaluate evidence, weigh up arguments and confirm whether the evidence supports a particular conclusion.

In 2012, the APSC validated and refreshed the leadership development needs and priorities, and expanded its focus to include the identification of core skills gaps and opportunities.⁶¹ The proposed priorities identified for the 2012-13 period are pictured in Figure 6.

⁶¹ APSC (41)

Figure 6: Priority core skills gaps and opportunities for the APS



The question then arises whether having separate post-graduate management training courses focused on the private and public sectors are appropriate. This is important when considering the challenges of creating a comparative advantage in Australia over the medium to longer term with pressures on costs and the need to better integrate and use knowledge to meet the challenges of a knowledge economy and the Asian century.

An analysis of the existing situation for private and public sector management training (using Business Schools and Schools of Government as examples) indicates the following two key points.

- Business Schools largely focus on private sector management training, and Schools of Government largely focus on public sector management training
- There is some overlap of disciplines covered in both Schools such as Accounting, Finance, and Economics. There are however, also core disciplines which are specific to each School such as Marketing, Entrepreneurship and New Venture Creation in Business Schools, and Public Policy, and Public Sector Management and Leadership in Schools of Government.

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Table 6 provides an initial assessment of the alternatives for private and public sector post-graduate education focusing on Business Schools and Schools of Government. The alternatives are:

1. existing situation where Business Schools remain for private sector management training (e.g. MBA) and Schools of Government remain for public sector (e.g. Master of Public Administration)
2. existing situation but with electives present in each school related to better understanding the other sector
3. combined school of management for both private and public sector management education
4. one school of management with a combined compulsory core curriculum, and electives for specialist courses for private and public sector managers

Table 6: Alternatives for private and public sector management training

	Positives	Negatives
Alternative 1 Existing situation	<ul style="list-style-type: none"> • Allows for course specialisation • Building networks of people in similar careers • Focused specialist research • Clear focus and positioning • Attract students who are wanting a career in either private or public sector management 	<ul style="list-style-type: none"> • Lack of understanding of graduates of the issues and challenges in the other sector • Some duplication between Business Schools and Schools of Government
Alternative 2 Existing with electives	<ul style="list-style-type: none"> • As per Alternative 1 (above) • Allow options for those interested to understand and learn from management and leadership issues in an important stakeholder area 	<ul style="list-style-type: none"> • Difficult to decide on electives and obtain specialist skills to deal with the available options • Some duplication between Business Schools and Schools of Government
Alternative 3 Combined	<ul style="list-style-type: none"> • Overlaps exist between management and leadership issues in the private and public sectors (finance, people management etc) • Students have greater career options as they are better equipped to move between the private and public sectors • Students develop broader networks and will have a greater understanding of management challenges in both sectors • Allows for broader research options 	<ul style="list-style-type: none"> • Difficult to prioritise additional subjects required outside the core overlap subjects • May not get depth of specialisation required to optimise career options in selected sector • Some confusion about the focus and positioning among potential students and employers
Alternative 4 Combined with electives	<ul style="list-style-type: none"> • As per Alternative 3 (above) • Allow options to specialise in specific areas of interest in either of the two sectors 	<ul style="list-style-type: none"> • Difficult to decide on electives and obtain specialist skills to deal with the available options • Some confusion about the focus and positioning among potential students and employers

This initial analysis of options suggests that alternative options have potential advantages over the existing situation.

4.3 *Skills for the knowledge economy*

Australia has experienced a productivity slowdown since the 1990s which has been masked by the windfall gains from the commodity boom. An important factor in productivity growth is innovation, which includes not just research and technological change but also non-technology innovation. There is now a significant body of research on the role of management techniques and capabilities in boosting productivity and creating value at both the enterprise and macroeconomic levels.⁶² It is increasingly recognised that productivity is determined not only by tangible technologies such as machinery and new products, but also intangible technologies such as management techniques and new processes. Indeed, in 2008 the Cutler led review of the National Innovation System identified management and workplace innovation as a factor in productivity performance.⁶³

4.3.1 *What needs to be done?*

The Australian ‘London School of Economics’ study found that Australian managers must give more attention to building their people management skills and the relationships within their organisations. The study suggests that the following require attention in Australia.

- Engaging better educated personnel both as managers and frontline workers, and constantly upgrading their skills through training and development initiatives, will contribute to enhanced management performance within firms.
- The fostering of capabilities in managing services innovatively, smartly and swiftly will **also translate into higher productivity, in turn with additional benefit for Australia’s long-term economic prosperity.**
- Public policy should pay greater attention to seeding and improving the productivity of the economy through initiatives and investments in management skills and capabilities. Investing in education and skills is a key requirement for those performing managerial roles now and into the future. Governments world-wide have a role not only in funding and guiding education systems, but also in the development of specific programs to develop management capability.
- **National debate about the productivity performance of Australia’s economy should include thinking about how effectively Australian firms and organisations are managed.** The openness of domestic and international markets, the role of infrastructure and the quality of training and education systems are all vital, but so are the management practices of organisations in adapting to and shaping future opportunities.⁶⁴

The Cutler review of Australia’s National System of Innovation argues that ‘many government workplace and innovation programs in Australia are directed at technological or

⁶² World Economic Forum (42)

⁶³ Culter & Company (43)

⁶⁴ Boedker (25)

scientific innovation while only a few are directed at strengthening innovation management inside organisations, including leadership and culture. The challenge is how best to promote successful adoption and diffusion of high performance work systems in both the public and **private sectors**'.⁶⁵ This is supported by Roy Green (University of Technology Sydney): 'public policy and industry leadership should focus on enhancing management skills and capabilities, as well as research and technology development. High quality management is a necessary condition for **reinvigorating Australia's productivity performance, competitiveness and long-term growth**'.⁶⁶

The Australian Academy of the Humanities point out that the humanities, arts and social sciences (HASS) are drivers of innovation, stimulating and supporting creativity and adaptability in the education system, across industries, and in communities. Training in these disciplines also helps deliver generic skills including problem-solving for complex issues, innovation, teamwork and communication. 'The **depth of Australia's linguistic and intercultural competence** is a determining factor in the future success of developments in innovation and technology, research capacity, international mobility, and economic competitiveness. Employer survey data signals a skills gap in graduates who are conversant in different legal and political processes, local and cultural knowledge and intercultural understanding. This is the domain of the humanities, arts and social sciences'.⁶⁷

A number of commentators reinforce the view that both STEM (science, technology, engineering and mathematics) and HASS skills are needed in the 21st century for technical graduates.⁶⁸ With reference to engineering (for example) 'just technical skills are not enough. Therefore soft skills are critical to make them employable. They have the technical background required for your job; to succeed they also must understand the non-technical skills and corporate dynamics **that are essential to success. It's the non-technical aspects – communications, relationships, your temperament, emotional intelligence, risk management – of engineering that is the difference between success and failure**'.⁶⁹ 'The purpose of Humanities and Social Sciences department in any technical institution is to develop an all-round personality of young engineers. An engineer without human values and social awareness may prove disastrous to any society'.⁷⁰

⁶⁵ Culter & Company (43)

⁶⁶ Green (7)

⁶⁷ Australian Academy of the Humanities (44)

⁶⁸ Mannan (45); Mishra (46)

⁶⁹ Mannan (45)

⁷⁰ Mishra (46)

5 Benchmarking Australia

A summary of Australia's global ranking in areas of importance to this report is summarised below in Table 7 (details in Appendix B). In general, Australia has a comparative advantage globally compared to similar countries in certain areas such as educational qualifications, quality of universities, ease of doing business, and evolving to a knowledge economy. Gaps exist in innovation, investment in education, management capability, and quality of business schools.

Table 7: Global benchmarking in Australia

Issues	Global ranking		Comments
	High	Average	
Ease of doing business	✓		In Top 10, except for infrastructure
Quality of universities	✓		5 or 6 universities in Top 100
Quality of Business Schools		✓	1 or 2 Business Schools in Top 100
Innovation		✓	Australia is relatively stronger at 'science/research' and weaker at the commercialisation end of the innovation process
Knowledge Economy	✓		In Top 10
Management capability		✓	Not in the top rank of performance worldwide, also not among the worst. Management practices rate marginally above average when benchmarked internationally
Educational qualifications	✓		Above OECD average, in Top 10
Educational investment		✓	Below OECD average, outside of Top 10

6 Analysis of the current situation and trends

Australia needs to build on and take advantage of its strengths and opportunities, and negate weaknesses and threats. A SWOT (strengths, weaknesses, opportunities and threats) analysis for Australia in innovation, skills and management (including research and education) is summarised in Figure 7.

Figure 7: Australian institutions and governance SWOT analysis



Analysis of the current situation and trends

Opportunities

Improving management performance is a key opportunity for longer-term sustainable growth for Australia. Management capabilities, education and skills development, innovation and entrepreneurship capability can increase productivity and economic growth in Australia.

- Australia has the potential to lift economic performance in, and due to, Asia by up to \$275 billion over the next ten years, with improved Asia capabilities driving better access to, and penetration of, those markets.
- Skills which are required to enable Australia to gain a comparative advantage in the Asian Century as a knowledge economy include closing the current gap in management capability; developing Asia-relevant capability, such as sensitivity to cultural differences and how to manage these; and identifying and developing skills needed for the knowledge economy such as innovation and 'soft skills' to complement technical and scientific capability.
- Management education needs to be more business relevant, better integrated around contemporary business problems and challenges and more directly attuned to contemporary innovation and productivity imperatives, and focus on improving 'soft skills'; and both STEM and HASS skills are required.
- Australian Business Schools need to continue to respond and adapt in areas such as recognising the importance of Asia as a growing and important marketplace; becoming flexible in allowing for part time study; developing relevant specialist MBAs; using technology such as MOOCs; increasing engagement with business and potential employers; and adapting the curriculum and teaching methods to produce graduates who meet the needs of the changing global environment.
- Australians need to build 'Asia-relevant' capabilities—both broad-based and specialised. This requires a long-term effort by all governments, in partnership with business and communities. Businesses, the public sector and national institution need to ensure they have the right mix of capabilities to seize the opportunities and make the most of Asia's rise.
- To build Asia capabilities, businesses must first look to their own strategies and processes but also work together on a national approach. Governments and the education sector also have a vital role to play in adequately preparing the workforce of the future. Developing an Asia capable workforce is a priority for Australia and requires broad change on a national scale, with a strategy primarily led by business while also working in collaboration with government and the education sector.
- In the education sector, there are major opportunities for Australian institutions to engage effectively in Asia. A further opportunity is to 'export' Australia's high reputation for educational standards, such as Australia's Technical and Vocational Education and Training (TVET) system.
- Developing a highly skilled workforce over the next 10 years with higher levels of capabilities and qualifications. Development of high performing workplace with high productivity, innovation, fairness, and employee engagement.
- Increase non-technology innovation programs to managers inside organisations.

Threats

- Australia can be left behind in responding to the Asian century challenge by nimbler countries with better capabilities.
- Australian productivity will not improve at a high enough level unless there is investment in skills such as innovation and entrepreneurship, with an additional focus on SMEs.
- Continued average performance of innovation, skills, and management will result in continuing low levels of productivity affecting firm performance and national prosperity.
- Declining rankings of Australia's educational and research institutes shows a loss of comparative advantage in this area (e.g. due to a decrease in investment by government).

7 Findings and conclusions

Key findings from an analysis of Australia's management and skills are as follows.

- 1 Australia is evolving to a knowledge economy and has comparative advantage and strengths in a number of areas. These include educational ease of doing business; quality of universities and research institutions; and educational qualifications.
- 2 Australia is committed to and sees Asia as important, but many organisations and institutions are not responding adequately, and do not have appropriate capability to take advantage of the Asian century. For the next 20 years or so, Asia will be the priority (although this does not exclude other regions) and Australian managers need to be globally competitive.
- 3 Australian management on average does not provide a comparative advantage even though many managers and organisations are world class. This applies to managers in both the private and public sectors.
- 4 Australia needs a comparative advantage in both western and eastern management capability, and STEM and HASS, soft and hard skills and cultural sensitivity. Even though a number of reviews have been done or are ongoing into management skills **and education in Australia, including the Karpin report, it is apparent that Australia's** management capability in both the private and public sectors can be improved to provide Australia with a comparative advantage.
- 5 It is also of concern that the majority of recommendations of the Karpin report were not implemented. It is appropriate timing with the challenges faced by Australia in transitioning to a knowledge economy and responding to the opportunities and challenges of the Asian century, to once again do a review similarly to the Karpin report. This review needs to examine management skills required in a new context and also revisit the original recommendations for applicability. New and important issues have emerged since the Karpin report such as the importance of Asia-relevant **capability and 'soft skills', the need to provide skills to SMEs such as entrepreneurship** and innovation, and the importance of skills in the public sector to develop and implement policy in a dynamic, competitive, global environment.
- 6 **A number of credible organisations indicate that although Australia's business schools** and VET sector are generally meeting the needs of their stakeholders, there is a concern that additional capabilities are required in the future due to trends such as an ageing workforce, low levels of productivity, and a lack of Asia-relevant capability. The timing is appropriate to review and assess the requirements and actions for these sectors to be relevant over the next five to ten years. In addition, it is appropriate to review the existing arrangements of separating the management education of private and public sector managers, and examine alternative arrangements for Business Schools and Schools of Government as an example.

8 Policy Solutions

Lifting productivity is one of **Australia's top long term economic challenges**. **Australia's** capacity to improve productivity and sustain economic growth however, is partially **dependent upon Australia's** workforce management capabilities, education and skill level. Consequently, Australia must maintain its comparative advantage in these areas to ensure productivity is harnessed and Australia transitions to a knowledge-based economy. **To sustain and improve upon Australia's advantages in these areas, there are tangible policy steps** that can and should be taken by government to proactively shift the economy.

The **experience of the world's most successful knowledge-based economies** tells us that effective managerial activities and enhanced skill levels of the workforce are most likely to occur in a supportive public policy environment. In considering the information contained within this report, the following sections identify policy areas where Government could tangibly support **and improve Australia's skill base and general management capabilities**. The policy areas put forward align with the body of the report and include:

1. Management capabilities
2. Education and skills

Potential policy ideas are now discussed in turn.

8.1 Management capabilities

Policies regarded in this section are largely those that concern the improvement of **Australia's current management setting**. Improving the management capabilities of **Australia's leaders in both the public and private sectors may have the flow through impacts** of more efficient work practices and processes, a higher performing workforce, a more flexible and agile business environment, and a more innovative culture all resulting in greater output and productivity.

8.1.1 General improvement

A good manager is a leader who acts as a catalyst to mobilise employees, strengthen their skills and channel those skills to meet workplace goals. Studies have shown that productive workers can be a result of an effective manager. The productivity level of a worker is a direct “result of the training, development and encouragement they receive from their manager – and how **productive the manager is as a worker**”.⁷¹ As such, a capable management team as well as effective individual managers are critical to the success of individual organisations and the economy as a whole.

⁷¹ Business Insider (57)

As noted in section 4.2, Australia's current capabilities regarding management in both the private and public sectors can, and should be, improved upon if Australia is to move to a knowledge based economy with a comparative advantage on the global stage.

Solution: Government should consider undertaking a review similar to the Karpin review, or revisit the Karpin Report and its recommendations to determine exactly where weaknesses lie in the Australian management workforce (ie are particular sectors facing greater managerial shortcomings than others?). This review should investigate the leadership/management skills required to drive productivity in light of the current and expected future context surrounding the Australian economy including the rise of the Asia region and the emerging digital economy.

8.1.2 The public and private management nexus

Section 4.2 discusses the issues facing the APS and notes two critical points:

1. a high performing public service of the future is likely to require a broader range of skills, ideas and tools than it currently holds
2. public servants require a firm grounding in foundational workplace skills – ie employability - that are common to both the public and private sectors

In contemplating these points the core take away is that a number of skills are transferrable between the sectors. Further, an understanding of the differences between the public and private sectors can aid in the facilitation of the transfer of effective management practices from one sector to another (**effectively applying 'lessons learned' or best practice between the sectors**). These considerations have taken hold and continue to gain momentum in the public sector space under the auspices of 'new public management'

Given the similarities and the lessons learned through identifying differences, there is the potential for management training to cover, or be relevant for, both public and private managers (refer page 32-33 for further detail). That is, the need for different programs to cover the two sectors is under question. By having available a program that is suitable for both private and public sector managers, with certain courses within the program focused or tailored on each of the sectors, it would:

- allow for the better integration and leverage of management knowledge
- provide best practice information and learnings from a breadth of situations
- teach effective management practices from both sectors.

These factors are important when considering the challenges of creating a comparative advantage in Australia over the medium to longer term with pressures on costs and the need to better integrate and use knowledge to meet the challenges of a knowledge economy and the Asian century. The initial analysis of options (Table 6) suggests that alternative options have potential advantages over the existing situation.

Solution: Review the existing arrangements and justification of separating the management training of private and public sector managers. Examine alternative arrangements for educational providers (such as Business Schools and Schools of Government) of combining such courses or offering electives to ensure managers can leverage the breadth of techniques, policies and practices available across both sectors.

8.1.3 *Asia confident*

Whilst government and business alike have stated the growing importance of Asia to Australia, many organisations and institutions are not responding adequately, and do not have appropriate capability to take advantage of the Asian century. The critical nature of this is further enhanced within the context of the Asia region becoming a priority *globally* and thus Australian managers need to be globally competitive. That is, Australian businesses are not just competing with each other to gain a foothold in Asia, but also businesses from all around the world.

Solution: Government should consider implementing incentives and/or create avenues for easier access to critical Asia relevant information for business (through their executive level managers) to become more Asia literate and confident.

8.1.4 *Region leader through aid program*

The Australian Government should consider leveraging its bilateral aid program to socialise **the Government's public sector** management frameworks and associated policies, processes and systems. Through Australia's aid programs, the Government could institutionalise **Australia's management frameworks and practices** (or type thereof) in neighbouring countries under the banner of institutional capacity building. Provided the systems are adjusted to suit the context, this could assist in the improvement of governance in developing countries to deliver services, improve security, and enhance justice and human rights for poor people.

Importantly though, this policy would also **enhance Australia's global positioning in terms of** management frameworks (and thus competitive advantage) in the region as it would mean Australia would become one of the dominant players, or market leaders, in this area. These countries may then turn to Australia for further capacity building or development as the frameworks and their needed capabilities change over time further improving upon our competitive advantage and standing on the global stage.

Further, by successfully assisting developing countries adopt a similar management system to Australia, it would strengthen the nexus between the two countries and provide an opportunity to develop a close bilateral relationship. This would facilitate trade (particularly in the services sector) as well as further enhance the possibility of the neighbouring country adopt other areas of policy or process from Australia, again further strengthening ties.

This policy would be aligned with the Government's new performance framework for the Australian aid program. From the 10 strategic targets the Government has announced, it would support the following:

1. **Promoting prosperity** – it would assist the receiving nation develop their administrative capacity and ability to implement needed government policies to improve economic development

2. **Combating corruption** – new management systems will assist in the cessation of fraudulent government activity.⁷²

This policy could also meet all **four of the government's tests that guide the choice of which aid projects to conduct and inform the aid allocation as part of the Government's annual aid budget process**. These four tests include that aid:

- pursues **Australia's** national interest and extends **Australia's influence**
- impacts on promoting growth and reducing poverty
- **reflects Australia's value-add** and leverage
- makes performance count.⁷³

Assisting developing countries through supporting them implement a cohesive and Australian based management system and framework would support reform initiatives underway in many countries. For example, as part of their reform agenda Vietnam has noted the following as being desired objectives:

- improved management of SOEs
- better systems to ensure accountability of management for performance are required, along with mechanisms to monitor and enforce performance contracts
- streamlining and strengthening of the public administration to increase efficiency and reduce corruption
- strengthened national planning capacity.⁷⁴

This policy however, should not impinge or negatively impact any other objectives of the bilateral aid programs. It should be coherent and aligned with current programs and should rather seek to improve current arrangements. This policy would have the added benefit of **not only furthering Australia's** advantage in management systems and practices, but could further enhance current practices around the region leading to better governance, improved government processes and more efficient outcomes for the developing country. This would combine into greater regional integration and prosperity of which is likely to enhance political stability and economic growth of the region.

Solution: Government should consider institutionalising Australian based management systems and frameworks in neighbouring developing countries through bilateral aid.

⁷² Department of Foreign Affairs and Trade (63)

⁷³ Department of Foreign Affairs and Trade (64)

⁷⁴ CIE (62)

8.2 Education and skills

Skills will be fundamental to Australia's future. This is particularly important in the context of the Asia Pacific region as one of Australia's comparative advantages relative to Asia is in production activities that are intensive in high skilled labour. The key to a skilled workforce starts with an effective, high quality and world leading education system. Policies that incentivise participants to undertake further education and those that increase the quality of education will have wide-ranging benefits for individuals, standards of living and social cohesion. Not only will a higher level of education offer a range of benefits for the individual worker (ability to realise potential, secure meaningful work and achieve a higher income level) but it will also result in benefits for the entire economy through a greater level of workforce participation and national productivity.

Indeed studies have found that:

- If Australians had one further full year of extra schooling, this would boost economic growth by 0.3 per cent and boost productivity growth by at least 0.3 per cent every year.⁷⁵
- 'An increase of 1 per cent in a country's literacy scores relative to the international average is associated with an eventual 2.5 per cent relative rise in labour productivity and a 1.5 per cent rise in GDP per head. These effects are three times as great as for investment in physical capital.'⁷⁶

8.2.1 Skilled labour shortages

If Australia is to be competitive and move to a knowledge based economy, a highly skilled workforce that is able to drive productivity growth is required. However, among the significant challenges in achieving productivity is Australia's lack of skilled workers and its ageing population. In the years ahead, reports state that there will continue to be a shortage of skilled labour and given current trends, "the education system will not be making the contribution that it could be to reduce this shortage".⁷⁷

Consequently, Government should investigate and place a priority on policies that accelerate the development and participation of a skilled labour force here in Australia. Training and further education is central to this being achieved. Providing high quality education and training to Australians thus needs to be an imperative of the Australian Government.

Solution: Investigate and conduct a cost benefit analysis on policies that will accelerate the level of skilled labour in Australia with the ultimate objective being having as many people as possible participating not only in the workforce but in development activities as well.

Solution: Review skills demanded by employers to determine the supply gap in the employment market (particularly those sectors where Australia holds a

⁷⁵ Dowrick (59)

⁷⁶ Coulombe and Tremblay (60)

⁷⁷ Business Council of Australia (58)

competitive advantage). Use the results of the review to transform the education sector to a forward looking and proactive system that will meet the future needs of industry within the context of changing global needs.

Finally, educational offerings should be more flexible and responsive to industry needs to ensure that efforts and resources aren't being wasted and directed towards actions or courses that will not meet a skilled labour gap. Greater attention is required to create policies that increase **local autonomy, flexibility and** responsiveness of educational bodies to student and industry needs. This could be achieved through a number of mechanisms including giving more buying power to individual participants (as well as employers), or requiring/providing **information that is publically available regarding provider's performance relative to others.** Further, another avenue which may increase the responsiveness of education providers is the **reduction in** "regulatory requirements on educational institutions to encourage diversity of offerings within agreed standards and frameworks."⁷⁸

Within this context, it is also the duty of employers or employer group representatives to better articulate or convey employer requirements and labour needs to the training sector as a flexible education sector means very little if providers are not aware of changing needs.

Solution: Consider increasing the degree and/or opportunity for competition in the education sector by building on current reforms. The increase in carefully designed competition is the lever most likely to stimulate a more flexible and responsive education sector that retains both quality of training and equity in access.

8.2.2 Specific skill shortages

There is a very real potential to improve the performance of the Australian workforce by increasing the quality of education through making it more relevant to the dynamic and changing requirements of government and employers alike. Namely, as highlighted throughout this report, current training appears to lack in the following areas as evidenced by the dearth of graduates/employees who employers state have these skills.

Basic skills - language, literacy and numeracy (LLN)

Basic skills in language, literacy and numeracy are the foundation of a productive worker. Indeed the Productivity Commission has established links between literacy and numeracy skills and labour outcomes with an improvement in LLN skills increasing the likelihood of labour force participation, income levels, and productivity.⁷⁹ Further, Australian workplaces **are constantly changing and morphing in today's growing globalised** world. This means that employees need to respond and adjust with it. What this means is that there is a progressively higher level of LNN skills required due to new technology, new work practices and changing regulatory and compliance measures.

To help employees/employers meet this need, the Workplace English Language and Literacy (WELL) program was established by Government. However, as found in the recent evaluation of the program, the reach of the program is well short of the required need with

⁷⁸ Ibid.

⁷⁹ Australian Industry Group (61)

only just over 7 per cent of employers having used the WELL program.⁸⁰ The reasons provided were a lack of employer awareness about the program (with the evaluation reporting that more than 80 per cent of surveyed employers were unaware of the WELL program), and a high cost of participation in the program. The high cost of participation is particularly relevant for SMEs who have lower levels of human development funding and who may find it difficult to release staff for training.

Solution: Government should strengthen its WELL awareness campaign to reach both employees and employers and consider the cost of the program and its potential barrier for employer/employee access.

Solution: Continue to support initiatives such as the National Foundation Skills Strategy and Workplace English Language and Literacy program to continue to provide an avenue for up-skilling the existing workforce.

Skills growing in importance

Section 4 of this report highlighted skill sets or capabilities that are growing in importance and relevance for organisations here in Australia. However, it has been noted within reviews and reports, as well as employers themselves that often employees are lacking in these needed skills. The below list identifies core areas of particular relevance to the current Australian context where employees are often lacking:

1. **Soft skills** - soft skills are pivotal for the effective functioning and delivery of a majority of job roles. Soft skills include the ability to work in teams, communicate, network, collaborate, and encourage innovation.
2. **Asia capable** - to ensure Australia's workforce is Asia confident (where relevant) the education system needs to ensure that training is provided – or at least available - to more effectively educate Australia's future workforce for the Asian century. Being Asia capable requires not only language fluency but cultural understanding and an ability to be flexible and responsive to customer needs.
3. **Ageing population** - it is well known that for Australia to remain productive and strengthen its economic growth, the impacts of the ageing population need to be considered. Within the educational space, this means that business schools and the VET sector should provide additional courses, or at least consider the different needs, for an older demographic. Not only do appropriate courses need to cater for older attendees, but management courses should also educate on managing an older workforce and the potential difference in styles required.

The education sector needs to provide appropriate avenues to facilitate and provide the needed training for the changing skills sets required of employees. Should the current practices proceed of failing to fully cater for these needs, it is most likely that rather than aiding Australia improve its comparative advantage through becoming a skilled, knowledge based economy, it will hinder it. More courses need to account for, or provide training in, soft skills, Asia relevant skills, and the ageing workforce.

⁸⁰ Ibid.

Solution: Under the current environmental, economic and political context, it appears an appropriate time to review and assess the educational and course requirements and actions for the above highlighted areas (soft skill training, Asia training, and training catering for both the aged, and those who manage the aged) to ensure they are relevant over the next five to ten years.

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Appendix B Benchmarking Australia internationally

European Business School⁸¹

Australia is classified as one of 27 ‘**high income, full democracy**’ countries when benchmarked among 131 countries.

With regard to total innovation capacity, Australia ranked 17th among all 131 countries and 17th among the 27 ‘**high income, full democracy**’ countries. In Asia-Pacific, Australia is 4th (Korea, New Zealand, Japan ahead).

In human capital, training and social inclusion Australia ranked 13th. In overall research and development Australia ranked 19th and in R&D infrastructure Australian ranked 15th.

⁸¹ European Business School (47)

World Economic Forum (WEF)⁸²

Australia is about average among the 37 wealthiest ('innovation driven') countries (out of 148 countries where GDP per capita is at least US\$17,000). For the total Global Competitiveness Index Australia is 21st of 148 countries. Table 8 explores Australia's ranking in specific areas of competitiveness in the WEF rankings.

Table 8: Australia's global competitiveness rank on WEF scale

Area	Australia's rank (out of 148 countries)
Higher education and training	15
Secondary education enrolment	1
Tertiary education enrolment	11
Quality of the education systems	23
Quality of math and science education	37
Quality of management schools	29
Internet access in schools	17
Availability of research and training services	23
Extent of staff training	30
Labour market efficiency	54
Pay and productivity	113
Reliance on professional management	22
Country capacity to retain talent	37
Country capacity to attract talent	17
R&D innovation	22
Capacity for innovation	23
Quality of scientific research institutions	8
Company spending on R&D	30
University-industry collaboration in R&D	15
Government procurement of advanced tech products	57
Availability of scientists and engineers	34

⁸² WEF (42)

Insead⁸³

Insead's Global Innovation Index for 2013 measures 142 countries against a range of categories directly and indirectly related to innovation (such as research, knowledge and technology outputs, and creative outputs). Overall, Australia is 19th, and is 19th out of 45 'high income countries.'

Table 9: Australia's global competitiveness rank on Insead scale

Area	Australia's rank (out of 142 countries)
Human capital and research	11
Education	47
Current expenditure on education	48
Public expenditure per pupil	60
Tertiary education	29
Tertiary enrolment	9
Graduates in science & engineering	65
Research and development	7
Gross expenditure on R&D	13
University ranking (average score top 3)	4
Knowledge workers	3
Knowledge-intensive employment	7
R&D performed by business	15
R&D financed by business	9
Innovation linkages	36
University/industry research collaboration	12
State of cluster development	34
R&D financed by abroad	74

⁸³ Insead (48)

OECD⁸⁴**Table 10: Education indicators on OECD scale**

Indicator	Australia's score	OECD average	OCED top 5 average	Australia's ranking against OCED average
Total expenditure on educational institutions as a percentage of GDP (%)	6.13	6.26	7.68	18
Expenditure on tertiary education institutions as a percentage of GDP (%)	1.63	1.61	2.49	11
Public expenditure on education as a percentage of GDP (%)	5.15	6.26	7.876	22
Public expenditure on tertiary education as a percentage of GDP (%)	1.15	1.38	2.24	19
Expenditure on primary, secondary and post-secondary (non-tertiary educational) institutions as a percentage of GDP (%)	4.35	3.92	4.93	8
Percentage of 25-34 year olds with bachelor degree or higher (%)	35.0	29.5	40.2	8
Proportion of population aged 25-64 attaining tertiary education (%)	38.3	31.5	45.4	9
Proportion of population aged 25-34 with tertiary education (%)	44.6	38.6	54.7	10
Proportion of population aged 25-64 attaining upper secondary or post-secondary non-tertiary education (%)	35.7	44.0	67.2	28
Proportion of population aged 25-64 attaining below upper secondary school education (%)	25.9	25.2	9.8	21
Australia's share of international tertiary education market (%)	6.1	2.3	9.6	5

⁸⁴ OECD (39); OECD (49)

Vocational qualifications: an asset for employment

If current patterns of graduation continue, a young person in Australia will have a 51 per cent chance of completing an upper secondary level vocational qualification in his or her lifetime. Programme orientation can make a significant difference when it comes to finding a job. Upper secondary vocational education and training (VET) offers young people the chance to acquire the skills, knowledge and practical experience relevant for specialised occupations, and helps to prepare them for entry into the labour market. In Australia, graduates of upper secondary or post-secondary non-tertiary education with a vocational orientation do particularly well in the labour market compared with their peers in other countries. 86 per cent of 25-34 year-olds with this level of attainment were employed in 2011, the sixth highest level among OECD countries (the OECD average being 79 per cent), while employment rates for graduates from a general programme were 8 percentage points lower.

Australia is the preferred destination for many international students

The most significant feature of the tertiary education landscape in Australia is the large proportion of international students. Australia is a key destination for students from around the world, hosting more than 6 per cent **of the world's foreign students**. This figure places Australia as the third most popular destination after the United States (16 per cent of international students worldwide) and the United Kingdom (13 per cent). One in five of the students enrolled in tertiary education in Australia in 2011 were international students, the highest proportion among all OECD countries, against an OECD average of 7 per cent. Australia receives almost 20 times more international students than the number of Australian students who choose to study in tertiary programmes abroad.

Increasing investment in education, mostly from private sources

Australia's total expenditure for all levels of education relative to GDP in 2010 was 6 per cent, the same as the OECD average. This is despite significant increases in government investment between 2008 and 2010. **Australia's spending increased by 24 per cent**, more than four times the OECD average increase of 5 per cent. In 2010, Australia devoted about US\$10,825 per student each year at all levels from primary to tertiary education, compared with the OECD average of US\$9,313 per student.

In 2010, 74 per cent **of Australia's total expenditure on educational institutions came from public sources**, which is lower than the OECD average of 84 per cent. In fact, at 26 per cent, Australia has the sixth largest proportion of private expenditure in the OECD for all levels of education compared with an OECD average of 16 per cent. The share of private expenditure on pre-primary education was 44 per cent, way above the OECD average of 18 per cent. At tertiary level, 54 per cent of all spending came from private sources, again much higher than the OECD average of 32 per cent.

Enrolment rates in pre-primary education are lower in Australia than the average for the OECD countries

Participation in early childhood education is low in Australia compared with other OECD countries. Only 13 per cent of Australia 3-year-olds are enrolled in early childhood education programmes, an insignificant proportion when compared with the OECD average of 67 per cent. The proportion of 3-year-olds who were enrolled in early childhood education in Australia actually decreased by 4 percentage points between 2005 and 2011, compared with an average increase of 4 percentage points for OECD countries. Enrolment rates for 4-year-olds (at pre-primary and primary level) are also behind the OECD average, with only 67 per cent of 4-year-olds are enrolled in early childhood education programmes in Australia against an OECD average of 84 per cent.

Australia's expenditure on pre-primary education relative to GDP is also relatively low at 0.1 per cent versus the OECD average of 0.6 per cent. Out of the total expenditure on early childhood education in Australia in 2010, only 56 per cent came from public sources and 44 per cent came from private sources. This is against an OECD average of 82 per cent for

early-years expenditure coming from public sources and 18 per cent from private sources. Nonetheless, in 2010, Australia spent US\$8,899 a year on each pre-primary student, more than the OECD average of US\$6,762.

Other findings

Educational attainment is high in Australia with 74 per cent of 25-64 year-olds holding at least an upper secondary qualification (OECD average of 76 per cent). The proportion of adults completing upper secondary education has increased significantly across generations with 84 per cent of 25-34 year-olds holding an upper secondary qualification compared to 61 per cent among 55-64 year-olds. Overall, tertiary attainment rates are well above the OECD average with 38 per cent of working age Australians holding a university degree compared to the OECD average of 32 per cent. This proportion rises to 45 per cent among 25-34 year-olds (OECD average 39 per cent).

Teachers' salaries are above OECD average and have risen steadily. Overall Australian teacher salaries have risen by around 13 per cent since 2000 at all education levels, although this is below the OECD average salary rise of 17 per cent. As a proportion of the earnings of other tertiary-educated, 25-64 year-old full-time workers, **teachers' salaries are above the OECD average.** In 2010, teachers in Australia at all education levels, earned about 91 per cent of the earnings of other workers of a similar age and education level, compared with an OECD average of between 80 per cent and 89 per cent, depending on the level of education they teach.

In Australia, international students have a marked impact on estimated graduation rates. Due to the high proportion of them, graduation rates are artificially inflated. For example, **when international students are excluded from consideration, Australia's graduation rates** for first-time tertiary-type A (i.e. theoretical university-based programmes) courses drop by 17 percentage points, and first-time tertiary-type B (shorter more vocationally oriented programmes) graduation rates drop by 3 percentage points.

Information Technology and Innovation Foundation (ITIF) ⁸⁵

The ITIF measures innovation and competitiveness across 44 countries. This encompasses the EU countries, NAFTA countries (USA, Mexico, Canada), the BRICS countries (Brazil, Russia, India, China, South Africa) and other key countries such as Singapore, South Korea, Japan, Malaysia, Argentina, and Australia.

On the overall innovation and competitiveness scale Australia ranks 11th. For education Australia is 9th, while we are 12th for researchers, 7th for publications, 12th for business R&D, 4th for government R&D, 6th for venture capital, 5th for new firms and 15th for productivity.

In human capital, Australia ranks 12th for higher education attainment, with Korea and Japan ranking higher amongst the Asia-Pacific countries. Australia also ranks 12th for science and technology researchers with Singapore and Korea having a higher ranking amongst the Asia-Pacific countries.

⁸⁵ ITIF (50)

***The Economist (UK)*⁸⁶**

In the Economist's ease of doing business global ranking for 2014, 82 countries were examined and the top ten were as follows.

- 1 Singapore
- 2 Switzerland
- 3 Hong Kong
- 4 Canada
- 5 Australia
- 6 Sweden
- 7 USA
- 8 New Zealand
- 9 Finland
- 10 Denmark

Asia's best performers have several factors in common: a favourable policy environment – particularly for finance and foreign investment – with competition policies that encompass international best practice.

Infrastructure remains a relative weak point for Asia, with only Singapore ranking among the **world's top 10 in this category**, in 7th place (which was relatively poor compared with **Singapore's ranking in the** other areas of the business environment). Australia, Japan and New Zealand trail in joint 14th place, with Hong Kong coming in at 18th. While some of the **region's infrastructure is excellent, particularly in telecoms and air transport, other areas** require investment to improve distribution networks and utilities provision, as well as lower office rents.

⁸⁶ The Economist (51)

Ranking of Australian Universities and Business Schools⁸⁷

Table 11: Australian University Ranking in the Top 100

University	Rankings in Top 100		
	Times 2013-14	QS 2013	Jiao Tong 2013
University of Melbourne	34	31	54
Australian National University	48	27	66
University of Queensland	63	43	85
University of Sydney	72	38	97
Monash University	91	69	
University of NSW		52	
University of WA		84	91

Table 12: Australian Business School Rankings in the Top 100

Business School	Rankings in Top 100	
	Economist	Financial Times
University of Queensland Business School	14	
Melbourne Business School	27	62
Macquarie Graduate School of Management	55	
Australian Graduate School of Management		48

⁸⁷ Australian Government (9)

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