



THE FUTURE

REVISITED

A review of
**Alternative Futures: Scenarios for
Business in Australia to the year 2015**

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Contents

AUTHORS AND ACKNOWLEDGEMENTS	4
ABOUT SUSAN OLIVER	5
ABOUT THE AUSTRALIAN BUSINESS FOUNDATION	5
INTRODUCTION	7
PART 1 THE FUTURE ARRIVED QUICKLY	11
FIRST GLOBAL NATION	15
SOUND THE RETREAT	19
BRAVE OLD WORLD	25
GREEN IS GOLD	31
PART 2 SNAPSHOT TO 2020	37
ENERGY AND RESOURCES CONSCIOUS 21ST CENTURY	39
CHANGING GLOBAL ECONOMIC GEOGRAPHY	45
CHANGING PATTERNS OF WORK AND DEMAND FOR SKILLED PEOPLE	51
UNLEASHING INNOVATION AS A PRESCRIPTION FOR PROSPERITY	59
AN OUTWARD-LOOKING AUSTRALIA	67
CONCLUDING THOUGHTS: 'THE FIERCE URGENCY OF NOW'	77
APPENDIX	79
EXPERT GLOBAL PANEL	79
FUTURES WORKSHOP PARTICIPANTS (September 2007)	79
REFERENCES AND ENDNOTES	81

Authors And Acknowledgements

This report is a review of the Australian Business Foundation's project undertaken in 1999/2000 entitled *Alternative Futures: Scenarios for Business in Australia to the year 2015*.

This report was written for the Australian Business Foundation primarily by Susan Oliver, with a significant contribution to the report's content by Narelle Kennedy.

The report benefits from critical input by an expert global panel and participants in a futures workshop held in September 2007, both of which are acknowledged in the Appendix to this report.

They contributed from perspectives from within Australia, with views influenced by their involvement in mining and investment. From outside of Australia, they contributed challenging perspectives of changing geo-politics, emerging opportunities and an international perspective on what it is to be Australian. These contributions are valued and valuable.

This report has also been shaped by the contribution of the Australian Business Foundation's community of interest, particularly input and insights from Dr Richard Bawden, Narelle Kennedy and Oliver Freeman and with considerable assistance from Clint McGilvray, Phillip Allen and Dr Matthew Steen.

Sincere thanks goes to all these contributors for their insights.

ABOUT SUSAN OLIVER



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Susan has held senior management positions in the public and private sectors. She has authored and advised on government policy in arts, innovation and information technology, and was a significant contributor to the National Innovation Summit in 2000. She researched and was principal author of the Australian Business Foundation scenarios study of the future for business in Australia published in 1999.

She was Managing Director of the Australian Commission for the Future, was one of the three founders and founding Directors of The Big Issue in Australia and was Chair of the National Screen and Sound Archive. Susan was a British Council scholar in 1986 and was awarded a Prime Minister's Centenary Medal for services to business.

ABOUT THE AUSTRALIAN BUSINESS FOUNDATION

The Australian Business Foundation is an independent organisation undertaking evidence-based research to deliver fresh insights and practical intelligence to boost Australia's capabilities and global competitiveness.

The Foundation is a connection to leading intelligence and forward-thinking people. It operates as an active and diverse community of interest, with a research agenda that matters.

For the past decade, the Foundation's research has focused on business innovation and sustainability, new models of competitiveness and opportunities arising from a knowledge-based economy.

The Foundation undertakes its research in partnership with expert scholars and practitioners from around the world. This has established the Foundation as a leader in bridging academic research with realities and challenges of everyday business experience.

The Australian Business Foundation's research is an antennae for the 'soft signals', detecting emerging issues likely to be impactful on Australia's business competitiveness into the future. Its research seeks to investigate those issues that set a new agenda for business and the community.

Never has this been more important than in the current global economic crisis. The Foundation's research seeks to reframe the agenda with new thinking for turbulent times.

Introduction

The future arrived quickly... that's a key conclusion from the soundings taken today of the project on *Alternative Futures: Scenarios for Business in Australia to the year 2015* produced by GBN Australia for the Australian Business Foundation and first published in September 1999.

Two years in the making, that scenario building project from a team of skilled futurists led by Oliver Freeman, researched and consulted widely to answer the question:

What are the alternative plausible scenarios for the future of business in Australia, and in light of these, what are the most robust strategies for creating wealth and jobs, integrating into global markets and enhancing living standards for the Australian community as a whole?

That foresight study was one of the earliest commissioned projects by the then newly formed independent business research think tank, the Australian Business Foundation. The intention was to make sense of how the future might pan out for businesses and to canvas the most productive responses, so as not to be caught unprepared.

In 1999, the future scenarios project reported on four alternative pictures of the future for businesses in Australia to 2015. These four scenarios were:

First Global Nation – describes a successful Australia which adapts with flair and flexibility to the globalisation of world business and the challenges of an online knowledge economy.

Sound the Retreat – sees a world in which geopolitical instability and cultural and social backlash override the benefits of economic globalisation, forcing Australia to revalue its bilateral business relationships as multilateral ones become impossible.

Brave Old World – is a picture of Australia where comfortable lifestyles, economic performance, adequate social security systems and a laconic approach to the future conceal the need for strategic and concerted effort to make the transition to the global knowledge economy until it is too late.

Green is Gold – looks at how global agreements and environmental regulations, eco-catastrophes, feasible clean technologies and trends to more environmental activism and information play out to create problems, imperatives and opportunities for Australian business and the community at large.

Over 2007 and 2008, the Australian Business Foundation commissioned Susan Oliver, one of the expert futurists responsible for the 1999 scenarios project, to sound out how our pictures of the future were unfolding and to refresh them for the next decade.

This 'alternative future scenarios revisited' project was assisted by the original project leader, Oliver Freeman and was informed by both desk research and by consultations with selected authoritative thought leaders and several key members and stakeholders of the Australian Business Foundation.

The findings presented in this report, *The Future Revisited*, have been prepared as part of the 'Decade of Discovery' initiatives undertaken to acknowledge and celebrate the achievements of the Australian Business Foundation in its first ten years of operation.

THEN AND NOW

Today, as we pause and reflect on the past and future, there is a different mood prevailing, a different sense of the nature of the journey ahead. We are hunkering down for the bad years ahead, aware that a significant shift has taken place from

which there is no return, that we need some new answers to some fundamental questions of global financial governance, that managing turbulence is a key leadership requirement and there are challenges that simply will not go away.

Our experts talk of paradigm shifts brought about by social networking and demanding connected consumers and constituents – shifts that inform the way we do business. But equally informing and exciting are social responsibilities taken by corporations and individuals that have created micro finance, distributed leadership models and global communities of knowledge and friendships – the social and human elements joining the technologies in exciting fusions. Environmental responsibilities, energy costs and resources shortages, corporate responsibilities to employees, stakeholders and society are increasingly accepted as business challenges. Business and civic leaders are more alert to the need to innovate, the need to train and develop skilled people and the need for diversity in management teams and around the board table, although diversity in boardrooms is mainly lip service to date. Australia recognises that we must focus on overseas markets, with India and China becoming increasingly more significant to the size and success of Australian trade and global engagement.

Today's globalisation is non-hierarchical, dynamic, enabled by the internet. It is a fragmented, individualistic, unregulated yet tightly coupled form of globalisation where well-managed companies and entrepreneurial individuals design and locate value chains in the places where that talent and specialisation thrive; where individuals craft their own livelihood and employment. It is a challenging place to play, but Australian companies and individuals are playing and facing the challenges that exposure to the global market place brings – not all of it positive as the exposure to overseas credit has shown in recent times.

The potency of the knowledge economy is being demonstrated in reality. Not just advances in technology and IT, but in new business models that are allowing a wider range of enterprises to operate globally.

But, similarly there are forces at work with the potential to dramatically affect the business environment – the decline in

world economic growth, reduction in world oil reserves, the might of China economically, socially and politically, international security, politically-caused human crises like Zimbabwe, climate change, shifts in geopolitics, to name just a few of the forces causing upheaval and turmoil around the globe.

Whereas in 1999 we referenced Peter Schwartz's *The Long Boom*,¹ in 2009 we reference *The Long Emergency*,² *The Empty Tank*,³ *Reaction Time: Climate Change and the Nuclear Option*⁴ and we no longer debate climate change – it is upon us. Are we seeing the death of capitalism⁵ or merely the 'gales of creative destruction' fundamental to capitalist economic progress?⁶ Does the notion of a globalised economy constantly in pursuit of growth make the 1972 Club of Rome report 'Limits to Growth' not so much wrong as early?

But before we look forward, let's first look back to 1999 and revisit our pictures of the future. In Part One, we summarise the four scenarios developed in 1999, namely *First Global Nation*, *Sound the Retreat*, *Brave Old World* and *Green is Gold*. Each of these scenarios is assessed in light of developments over the decade since we imagined them. The scenarios are examined to see how far they proved plausible.

In Part Two, we look ahead to 2020 and identify the key forces for change likely to have most impact on the future competitiveness and success of Australian businesses.

PART ONE

The Future Arrived Quickly



The GBN study for the Australian Business Foundation, *Alternative Futures: Scenarios for Business in Australia to the year 2015* illustrates that scenarios are a way to imagine worlds and challenges ahead. There were many aspects in which this study's anticipation of the future was accurate and in which the challenges and changes for business and government have played out as we imagined in the past ten years. These scenarios and the factors underpinning them continue to be relevant to the years ahead. Each of the scenarios contains some truth for the way in which the future has unfolded and continues to unfold.

Playing out in more than one of the 1999 scenarios is the trajectory of globalisation. The path of the increasingly free flow of goods, services, information, capital and skills has been erratic and inconsistent. Globalisation delivers both beneficiaries and casualties and the current global financial crisis has highlighted the coupling of economies and emphasised the extent of connectedness of the global financial system. The question for the scenarios was what would derail the trend or define a new model of global connectedness more observant of national and cultural differences and needs. Could it be disaffection and the resurgence of calls for individual identity, cultural protectionism and national sovereignty? Could it be the sort of global financial crisis and pressure on governments for national protectionism that we are now experiencing?

The scenario First Global Nation reflected a productive and successful response by Australia to the challenges of the globalising world economy. Sound the Retreat reflected that the globalisation model we saw in 1999 was flawed and simply would not 'work' for a variety of possible reasons, while Brave Old World reflected that Australia's positive response to the challenges of globalisation would not eventuate because we felt safer and secure in our 'prosperous enough old world'. Green is Gold accepted globalisation but showed the stronger influence of the challenges of the environment in terms of energy costs, resources availability and climate change.

All of the scenarios understood the impact of the economic development of China, but underestimated just how significant the effects would be on growth in key Australian

industries, particularly the boom in Australia's resources sector and the returns to Australian shareholders in recent years. These, coupled with compulsory superannuation savings, created a large and growing accumulation of funds for investment and key questions about where to invest it – national infrastructure? overseas investments? As a result, Australia has had and will again have important strategic choices for capturing greatest benefit from this accumulated wealth.

The scenarios assumed a leading role for government policies in determining Australia's economic future, and while we anticipated advantages from government industry policy which did not eventuate, it was the strength of government imposed regulatory conditions that has buffered Australia a little but by no means completely, from the financial storm around us today.

The Australian economy has been impacted both by its own policy settings and by external factors beyond its control. Many of these factors were reflected in the scenarios, but their intensity and speed of impact were underestimated. As we are discovering, successful economic performance owes much to opportunities being capitalised on by nimble enterprises taking advantage of the new capabilities of the online economy, from the productivity benefits of policies for more open and globalised markets, and from financial discipline and strong management and governance.

In the scenarios, we considered the different paths that the USA could take in Asia and with China in particular - on a continuum from engaged to isolationist, as partner or as competitor. But we did not anticipate the US diversion of attention away from the Asia Pacific region and towards the Gulf.

Our scenarios emphasised the fundamental shift in competitiveness driven by the online revolution and new high growth industries and technologies. We were even alert to the novel uses of online communications led by consumers themselves – the social networking phenomenon we see today. But we underplayed the more subtle forms of innovation that come

from the smart application of knowledge from all sources, from learning by doing, learning by incremental improvements and learning by collaborating with others. This wider and more nuanced view of innovation has been borne out by the Australian Business Foundation's subsequent research.

A consistent theme in all of our scenarios is the potential of Australian individuals and companies to compete and succeed in many different and innovative ways by transforming the way they do business in an intensively competitive and globalised knowledge-based economy.

So, here is a snapshot of the Australian Business Foundation's alternative scenarios for 2015 as developed in 1999 and a commentary on what is transpiring in reality.

First Global Nation

In First Global Nation, the globalisation trend continues inexorably and Australia rides the wave.

FIRST GLOBAL NATION

This scenario tells of a vital, young nation that reinvents itself to capitalise on the massive transformations occurring in the business world, in consumer needs, in society at large. These changes are occurring because of the rise of networking and online technologies and the increasing pace and penetration of the free movement of ideas, knowledge, people, goods, services and capital around the world.

Australia embraces its internal diversity and its freedom from the grinding forces of cultural and ethnic longevity and the responsibilities of global leadership. Despite being small and a long way from anywhere else, Australia is able to catch the tide of globalisation.

By a deft mix of economic reform, engagement in international affairs and aggressive action to boost home-grown innovation and industry capability, Australia leverages a place for itself in the global market and in the affairs of nations.

In First Global Nation, the long boom shows no sign of stopping. The dot.com revolution is in the ascendancy. It is shaping up to be a 'winner takes all' future. The strong economic, political and technological force of the US lies behind a model of a globalised world and is the engine room of the dynamism and entrepreneurial excitement of the new online agenda. This is a world of open borders, an historic and sustained engagement

of China with the West, and the emergence of a largely peaceful world order.

Australia is a fringe dweller in global terms, not only in geopolitics, but in the commercialisation of new technologies, the organisation and location of global enterprises and brands and in positioning itself in the newly rearranged value chains of the knowledge economy. However, as First Global Nation, Australia plays above its weight – securing niche and high growth markets, being nimble, capitalising on Australian skills and adaptability, piggybacking on multinationals and making the most of its talent as integrators of technologies and great customer problem-solvers.

In fact, much of the Australian Business Foundation's later research serves to explain how Australia as a young vibrant nation can buck the forces of geopolitical gravity in First Global Nation and reinvent itself to capitalise on the massive transformations of business and society. Central to this is the capacity to capture the advantages of globalisation. The ability of firms to learn, to collaborate and to harness and use distinctive knowledge in business is crucial, as is the skill of enterprises in forging an array of partnerships internationally.

The evidence of this is presented in Australian Business Foundation studies such as those by Allen Consulting on *Winning Companies and Jobs*, Dr Richard Hall's *Knowledge as a Competitive Edge*, Marsh and Shaw on *Australia's Wine Industry*, *Selling Solutions* by Professor Jane Marceau et al and the comparison by ASX analysts Ramsay and Bladier of wine, mining and listed property trusts in *Success Factors in Australian Industries*.

For the 'players', the world does appear to be flat; a world that looks the same whatever your portal of entry.

Take as an example Alibaba. Alibaba International⁷ is the world's largest online market place for international and domestic China trade, with more than 24 million members in 200 countries and regions and reported a turnover of US\$196 million for the first half of 2008.⁸ Alibaba China provides a secure payments system enabling small and medium Chinese

businesses to bring their products to the world.⁹ Founder Jack Ma maintains that small and medium enterprises are the main engine for the global economy. Of interest in reinforcing how globalisation is working, Ma spent time in his youth in Newcastle, NSW and attributes part of his success to his experiences there.

In 1999, the scenario report said:

Perhaps one of the key features of the emerging information and communication technologies was the way individuals and societies were able to find applications for the technology which the technologists had not envisaged. The ability to manage information emerged as a feature of the information economy and many new intermediaries were built around the interface of online and real world transactions and communications.

Who would not recognise the truth of this 1999 observation – YouTube, Facebook, Wikipedia and MySpace are just a few of the unexpected emergent ideas that have since captured users and attracted investors.

The challenges were many and one of them we noted was the might of China – *the sheer size of China as a producer of low cost and increasingly high quality manufactured goods maintained an overhang in supply, creating considerable downward pressure on prices and commoditisation of goods at increasingly fast rates.*

Australia has reaped the economic benefits of China for a decade – on the supply side, enjoying manufacturing prices that have reduced the price of goods in real terms and brought profit to the bottom lines of our retailers and distributors. Supply chains have been designed to take advantage of the low cost and good quality of Chinese manufacture and these goods have been fed into our branded retailing outlets. On the demand side, as China has developed its economy, it has also been a major customer for our resources driving the unprecedented sustained economic growth seen until recently in Australia.

In 1999 the report said – *This competitive pressure, combined with consumerism, continued to drive product and process*

innovation, growth, the importance of global brands and an ongoing search for new business opportunities, most often at the expense of social and environmental amenity. The intangible resources of knowledge, innovation, design and brand add unique and competitive value to raw materials and manufactured goods – this was where Australia had to outperform on a global stage.... and successful Australian companies have done so.

Again...Australian companies have concertedly worked to develop global brands in a clever mix of real world and online strategies capturing the Australian lifestyle myth. Mambo, Lonely Planet, Steve Irwin Inc, Peter Alexander and Penfolds and many other highly successful exporters fit this description.

The anticipated blurring of the line between work and retirement, with many people moving into part-time and casual work after 55 years of age has also come to pass since 2004. The rise in workforce participation by persons over 55 years of age accounts for around one-quarter of all labour force growth over the past 5 years. Data from the ABS suggests a significant decline in retirement rates.¹⁰

But there remain fundamental challenges to the key premise of First Global Nation – namely, widespread peace, development and prosperity as a result of market forces and economic growth. While many of the key elements of this scenario have come to pass, war in the Middle East, genocides in Africa and the global financial crisis bringing with it widespread economic recession, raise the challenge to steady global growth and development as a central premise.

Sound the Retreat

Notwithstanding Australia's strong economic and productivity performance over the last decade or so, Australia has not developed into First Global Nation.

In 1999, we anticipated a situation in which First Global Nation might not be Australia's future. Driven firstly by weakness in the 'Washington consensus' global model and secondly, by failure of the advantages of globalisation to flow equally around the globe, the disenfranchised raised their voices in dissent and there was a backlash and consequent decay of globalisation. This saw the resurgence of trade barriers, serious and serial wars and skirmishes, capital and immigration controls and nationalist and protectionist policies of all sorts. This was the scenario of Sound of Retreat.

SOUND THE RETREAT

The promise of the boon of an open world economy and open societies proved to be empty. There was a worldwide retreat from the path of globalisation. Only after some hard lessons struck home did world trade discussions and attempts to achieve a multilateral world order resume. The imperative to address social and cultural aspects as comprehensively as economic and environmental matters was recognised.

The lessons of the period for Australia were profound. Cut-off from equal chance of access to global markets and without the old ties to 'Mother England' or 'Brother US', Australia had to forge new bilateral trade relationships as well as attempt to keep the existing ones solid. Trade was built on the

(Continued)

efforts of individuals creating and securing these relationships that sprang from our multicultural society, our proximity to Asia and the energy and tenacity of a generation of entrepreneurs who pushed their way through the trade barriers and political minefields of the first decade of this century.

In a world of revived trade barriers and nationalism, we pin our hopes on business relationships, reinforced by our political relations with individual nations, and play to our strengths as a business and cultural gateway to Asia.

The 1999 scenario of Sound the Retreat has been borne out in the mobilisation of anti-globalisation protestors from Seattle in 1999 to Sydney APEC in 2007 to the G20 in London in 2009, the resilience of calls for protectionist policies from Japan, China, USA, France to name a few and the persistent stalling and failures of successive WTO negotiations. It has come to pass in full manifestation with the global financial crisis as the globalised world of financial institutions and the flow of money brings with it loss of jobs and beleaguered industries and economies. Despite understanding that maintaining free trade and international cooperation is essential to economic recovery, governments are under pressure to raise trade barriers to protect local business and jobs and new economic nationalism is on the rise reports The Australian newspaper.¹¹ In Davos, protestors asked for an end to the ravages of globalisation!

Australia displays at times an ambiguous cultural and social attitude to multiculturalism and a face to the world that is straight out of Sound the Retreat. Witness Australia's tougher policies on refugees and migrants in the first years of the 21st century including the 'Children Overboard' controversy and the Pacific solution about subsequent resettlement approaches of refugees, and the refusal to say 'sorry' to indigenous Australians during the Howard years.

In our scenario, the foundations of the backlash against globalisation lay with its unequal impacts across societies, the digital divide, the technology haves and have nots. The reactions of those within countries that failed to benefit and were

left behind were greatly amplified across different nations through the internationalisation of the media and the reach of the world wide web, ironically a tool of globalisation. Globalisation, as some had earlier predicted, did indeed bring to many people *a profound insecurity, powerlessness and a loss of community identity.*

This was anticipated in the Sound the Retreat scenario. And while political instability, community activism and the push back against cultural and spiritual voids were foreshadowed, the Sound the Retreat scenario paid too much attention to the World Trade Organisation and too little to Al Qaeda! The scenario conceived of cyber-wars hacking into satellites and telecommunications. The manifestation was both more low-tech and more chilling – flying planes into iconic buildings on September 11 2001, the Madrid and Bali bombings, home grown, well educated, religiously and political extremist young men behind the London terrorist attacks in July 2005 and subsequent terrorist bombings of civilian targets including those in Mumbai in November 2008.

In the Sound the Retreat scenario, the best chance to retrieve benefits for Australia given declining globalisation was to forge small scale or human to human connections. And there is evidence of this approach operating in reality.

For example, the juggernaut of globalisation is not all-powerful. With the rise of globally integrated enterprises, as opposed to centrally-controlled multinationals, business models of the developing world (for example micro-finance) may solve problems being experienced in the developed world. Paradoxically, the greater the extent of globalisation, (that is open borders, global communications and global brands), the greater the ability for localised responses. Such responses carry greater inherent social, cultural and sometimes as a consequence, economic value.

Australian firms have capitalised on the diversity of commercial options for their global engagement. For example, they have secured niches in the distributed global value and supply chains of multinational corporations, leveraging skills and ownership of global assets and intellectual property. Companies such as Autoliv Australia, a worldwide leader in vehicle occupant

safety systems and PBR International Limited, a development leader in innovative brake system solutions to OEMs at the forefront of brake design and manufacturing, are just two of many successful suppliers to the automotive industry.¹²

There is evidence that Australia has started to play to its strengths of neutrality (Western but not the USA), multiculturalism and proximity to Asia to create its own markets and opportunities, business to business and nation to nation. Today Australia's trilateral security agreements with Japan and the US have been supplemented with annual Australia-China security talks and also with bilateral agreements on supply of uranium to Russia. Geoffrey Barker writing in the AFR¹³ says: *Australia is a country facing a realignment of geo-political influence as the regional economic and military power of China and India grows, as the US remains obsessed with Iraq (and Iran) and as an increasingly wealthy Russia moves to reassert itself as a global power seeking access to Australian uranium.*

Globalisation as envisaged by Sound the Retreat is a place where individuals assert their differences, culturally and attitudinally. Chinese entrepreneur Lyndon Neri, quoted in AFR Boss magazine in September 2007, describes the global youth attitude, as relevant in Australia as in China as follows: *'I would argue that if China is going to be on the global stage it is not about being Western or Eastern but it is about understanding the global condition and understanding global problems. It will transform and change who we are.'* It seems that the global generation have something in common whether in Bondi, Bangalore or Beijing. Kylie Phan Trung, new age entrepreneur (Sound the Retreat 1999) belongs here!

The international experiences of individuals is revitalising Australia's entrepreneurial sector as the Australian diaspora spreads around the world and its members return for stints of time to bring skills, contacts and attitudes to risk to ginger up the local conservatism and risk averse approaches.

Australia is intersecting with the world in different ways. India is now the source of the second highest number of permanent visas granted in 2006-7 mainly for skilled workers such as accountants, computing professionals and registered nurses.¹⁴

China and Hong Kong significantly increased their foreign direct investment into Australia.¹⁵ There is a fight for control of Australian raw materials between China, Russia and India with companies from these economies holding strong aspirations to become major mining companies in Australia.¹⁶ A new global game is on, emanating from many new quarters and influences; Australia must play or be played!

Brave Old World

BRAVE OLD WORLD

For a variety of reasons, Australia does not pursue the new emerging opportunities presented by the globalised, knowledge economy in any systematic or deliberate way. Australians are happy to rest on the laurels of achievements in agriculture and mining, 'new' manufacturing, tourism and in some highly acclaimed information technology and medical and bioscience breakthroughs.

Australia does have its local successes: in particular, there are people and enterprises in Sydney and Melbourne which have become global players in high tech knowledge intensive industries. But there are not enough of them and it is not 'our' success. As like as not, these companies are owned by foreign investors from the US, Asia and Europe, Australia gains little value from their success. Our clever people are siphoned off in the brain drain to the US and Europe, our clever ideas are incubated here and then emigrate for commercial exploitation elsewhere, and major Australian companies like BHP, Lend Lease and AMP move their headquarters to Europe and the US.

Australia's industrial and economic base is narrowing and our ability to generate wealth from the newest fast growing, high return sectors is diminishing.

Australia's comfortable lifestyle, natural endowments, adequate social security system and laissez faire economic policies have created a complacency that doesn't recognise an urgency for change – until it is too late.

Goeff Elliott, Washington correspondent for the Australian newspaper wrote during the 2007 Sydney meeting of APEC¹⁷ *'APEC brought together a slew of bilateral meetings between the most powerful countries on earth, and on the*

whole, Australians didn't hear much about it'. The same newspaper reported on how big issues don't rate on blogs, reporting that Australians were more concerned with traffic snarls, security measures and the inconvenience of hosting the APEC conference than big picture outcomes such as trade deals.¹⁸ Amongst all of the excitement of APEC, Australia is not always there at the edge wanting to play the 'out there in the world' game. This is an illustration of the Brave Old World scenario.

The Brave Old World scenario displays a 'she'll be right' attitude in the face of Australia's strong economic performance and social protections, reinforcing laissez-faire policy settings. There is inertia about pioneering bold policy initiatives even in cases where demonstrable problems can be anticipated and Australian solutions could find markets at home and abroad. An example is the institutional and systemic failure to reform the water system in Australia, the predictable water crisis and as a result, impacts on the economic and social structure of Australia which will be a determining factor for future business and settlement. Another example is our failure to capture economic benefits from solar energy and our abandonment of research into nuclear technologies.

Content with sound macroeconomic policy and freeing up markets, there is no political will or incentive in this 1999 scenario for more active or interventionist initiatives to create a *good home for value creation in new knowledge industries in Australia*. Further, *Australian business and government fail to anticipate the skills, experience and know-how required to be competitive in the global and knowledge economy.... (and) fail to capitalise on opportunities for services businesses in Asia, new online business, new intermediaries and new industry structures* – among other niches and openings for knowledge-based businesses with international markets. As a result, the economy falters, skills erode, few new emergent technologies or new start-ups survive and major brands are lost offshore.

The recent boom in the demand from developing countries for Australia's resources, has rendered Australia once again the 'lucky country', that is to say, lucky to be wealthy without too much value adding to our primary resources - supplying the needs of the economic powerhouses of China and India. But

we are also very good at finding the resources and extracting them in an imaginative way. Mining companies have achieved productivity and efficiencies and enjoy the stable political and governance environment Australia affords.

The success of the mining industry did not relegate Australia to be a resources-based economy, rather than a new knowledge economy, as imagined in Brave Old World. Economies can be both. The resources boom ensured good financial returns to shareholders and savers and will again as today's struggling economies regain their momentum. Australians have enjoyed low consumer prices in real terms for more than a decade. Even now with the global financial crisis and the contagion of this spreading rapidly into Australia's economy, many commentators point to Australia's relatively sound economic fundamentals.¹⁹ While not immune, Australia is expected to fare better than most.²⁰

So in our Brave Old World scenario, it is understandable that Australia might be somewhat smug, self-congratulatory and brave, holding onto what works in a complex and competitive world.

The Brave Old World scenario concluded that the masking effect of Australia's economic success would result in reform fatigue, resistance to change and lost opportunities, for example failing to capitalise on the Sydney Olympics beyond the immediate construction and tourist boom – no global brands, platform technologies or long lasting investment partnerships. It suggested that Australia, bound up in the success of the resources industries would underestimate the value of intangible assets and knowledge-based industries. These negative aspects of Brave Old World however, have not been as stark as they were painted in the 1999 scenario.

Australia's decade of strong economic and productivity performance over the 1990's and into the early 2000's certainly mirrored the Brave Old World scenario. Interventionist and deft government policy leadership did not transpire. But the dire results – Australia's failure to create new business models and enterprises as the source of growth in the new knowledge economy – have also not materialised in the way the Brave Old World scenario anticipated.

Why? The answer is that there are more 'innovation carriers' than government policies alone. Further, the nature of the knowledge economy and the link between innovation and productivity were viewed too narrowly in our 1999 scenarios. The contribution of knowledge and innovation to transformation of business, productivity and economic growth is in fact more pervasive and cumulative. For example, advances in information and communications technologies embedding new capabilities in firms; knowledge transfers through value chains and industry clusters; niche players becoming standards setters or the embryos of whole new industries. This reflects that innovation is more widespread than just the products of the new high technology knowledge economy.

Innovation cannot just be equated with science and high technology breakthroughs. In fact, there are many more ways for firms to compete globally, solve customer problems and make money from their businesses by the smart application of knowledge gained from a wide variety of sources to transform their business and its capabilities.

Furthermore, economically-useful knowledge – the kind that underpins innovation and productivity – is not confined to the products of formal research and development, but comes from learning by doing, learning by using technology and equipment, and learning by interacting with others.

Australia reaped productivity benefits from the knowledge economy, even in traditional sectors, and achieved extraordinary economic performance. Up until the general global market decline in 2008, Australia recorded seventeen continuous years of robust economic growth with low unemployment and low inflation. As the Productivity Commission²¹ has argued, the Australian economy has shifted to a new growth path, attributed to the acceleration in Australia's productivity growth from the use of more advanced information and communications technologies enabling product and process innovation, microeconomic reforms and an increase in average investment in human capital.^{22 23}

Clearly, all Australian industries can be active in innovation and can reap the resultant productivity gains. The hype about the

'New Economy', which many economists condemn now, was perhaps justifiable in light of the role of ICT in enabling firms in traditional industries to innovate. It is the high tech users, not the high tech producers showing the most transformation and therefore the greatest productivity gains.

The reality seems to be one where Brave Old World meets First Global Nation.

Green is Gold

In 1999, the Green is Gold scenario recognised the impact and importance of environment and of sustainable business practices on Australian business.

GREEN IS GOLD

In this scenario, Australia finds itself caught up in a dramatic story about the imperative to protect the natural environment in a globalised world which has visibly stepped up the demand for energy before discovering, either through new technology or new processes applied to current technology, paths to sustainability. Australia shares global turmoil in the years before the successors to the Kyoto Agreement are enforced. Australia creates for itself a position as one of the leading innovators of global environmental management.

Six drivers of change in environmental related activities were identified as moving Australia and the world from a turbulent period in the first few years of the 21st century, to a 'green' led economic growth period.

The six drivers are:

Cost of energy.

Change from coal to gas to renewable resources for energy generation.

Rate of new technology adoption, particularly biotechnologies.

Government intervention to shape market and community outcomes.

Influence and tactics of environment non-government organisations.

Concern by the Australian people that their environment was not sustainable.

Now Green is Hot!!!

Anthony Pratt, the then US based Chairman of Pratt Industries and son of billionaire industrialist Richard Pratt announced a US\$1b investment in paper recycling and waste-to-energy infrastructure in the US as part of the Clinton Global Initiative. At a star-studded function, flanked by Hollywood star Brad Pitt and media tycoon Ted Turner, Mr Pratt said *Green is hot right now. There is an enormous appetite for anything that reduces energy cost. Mr Pratt said American money is green, so being green is green. We think it is good to do well and make money at the same time.*²⁴

The Green is Gold scenario envisaged environmental issues becoming mainstream areas for community and business action.

In 1999, the lack of action on environmental change and sustainability was perplexing. Many people had been active in trying to get recognition of the issues at government and business levels for many years. What would trigger the change and put the environment on the agenda? Multiple forces were at work, but the answer that cut to the national heart and our behaviour, came as Australia entered the grip of a long-term drought. Warnings of the dire situation in the nation's food bowls were given, where there was an 'unprecedented combination of both low storage levels and low inflows'.²⁵

Experts are now warning us that recovery from the drought may never happen in some parts of Australia because of climate change. Rural interest rate subsidies are currently at \$27m per week and government income support is being provided to 23,000 families – up from 9000 families 12 months ago.²⁶

Water prices are predicted to double in the next few years as costs to supply increase and use decreases²⁷ and there is no longer any doubt that this will impact on the structure and nature of the economy and of settlement in Australia.

The environment is now on the agenda. Not only drought, bush-fire and global warming effects at home, but brought to us via the Stern Report and Al Gore, now a Nobel Peace Prize winner. The environment is now on the mainstream political agenda in Australia. The climate change initiatives introduced by the Rudd

Government in coming to power in 2007, the business benefits of being green acknowledged by previously unconvinced business groups, and the debate on the details of carbon emissions trading schemes are straight from the Green is Gold script,²⁸ although the later watered-down policies seem to come from Brave Old World.²⁹ Green is Gold was written as an enlightened self-interest story of companies identifying that doing the right thing by the environment was ultimately economically rewarding and offered opportunities for competitive differentiation. In 1999, the scenario commented: *Businesses achieved an ever-widening market for their environmental management, knowledge, skills and products and are now among Australia's most successful international corporations. Further, those enterprises which led the implementation of the emerging values ...have acquired iconic status in Australia ...* This 'Green is Gold' scenario element seems to be playing out in reality.

Is green the new black?

Leon Gettler asks 'Is green the new black?' in The Age on September 6th 2007 under the heading 'Enlightened Self-Interest. Sustainability: the biggest business you have never heard of.'³⁰ He reports the results of a study that estimates the *\$12b that Australians spend on products including grey water systems and organic food will double over the next five years and that these segments are growing at an annual rate of 20% and are set to reach \$21b by 2010*, reflecting increasing concern by consumers of the social and environmental impact of their purchases. However, the study identified that few consumers knew of companies that operated in an environmentally sustainable or ethical manner, which possibly reflects that corporate activity in this area is largely directed at employees and investors and has not yet been communicated to consumers.

Large corporations such as BHP Billiton and Transurban have strong and internationally recognised approaches to sustainability and social responsibility and are in fact finding that this serves to attract and retain quality employees, to gain support from governments and use problem solving as a source of innovation. BHP Billiton, Dexus Property Group, Sims Metal and Lend Lease are four Australian companies to feature in the Global 100³¹ most sustainable companies in the world.

Australia's plastics and chemical sector, feeling threatened by water and climate change issues, has embarked on a strategy to ensure it has a sustainable future.³² *'Consumers are judging products on green, or perceived green credentials'* said the chief executive of the Plastics and Chemicals Industry Association, adding that *'the sector must be transformed by acting beyond the plant fence, looking creatively at products, technology and materials... and taking a sustainable business approach'*.

The Australian Business Foundation has used its research to make business sense of sustainability. Its *Sustainable Business Development* study by Suzy Goldsmith and Danny Samson of the University of Melbourne links the sustainability and innovation debate.

In the 1999 scenario, a greater role of government and government policies was anticipated, as was greater environmental regulation on such issues as waste, recycling and building materials and building design. There were also expectations for a taxation environment that provided economic encouragement, greater leadership and promotion of local research and development efforts to solve our home-grown problems such as water availability and quality, alternative sources of energy and financial support for nascent industries.

To date, these expectations have not been realised and it is an enormous opportunity lost. With the significant and sometimes unique pressures on our environment, our waterways and water storages, and our huge coal and uranium reserves, Australia has unique challenges and hence opportunities. Innovative solutions supported by government policies, funding and strategic procurement could achieve new, or simply commercially stronger environment and energy industries and commercial endeavour.

The Rudd Government's action plan on climate change cannot make up for lost time but is addressing difficult policy and regulatory issues. Initiatives include:

- Establishing a national emissions trading market by 2010 – to enable the market to set a price for carbon, unleash innovation and create strong market incentives to reduce carbon emission levels.

- Implementing the Kyoto Protocol and strong support for a new global climate change agreement to take us beyond 2012.
- Establishing a national emissions trading scheme by 2010.
- Investing in low carbon technologies such as clean coal and renewables.
- Setting a 20 per cent target for renewable energy by 2020 to dramatically expand the use of renewable energy sources such as solar and wind. (although informed sources question if this is achievable).
- Implementing a \$200 million Great Barrier Reef Rescue Plan to help secure the Reef from the serious threat posed by climate change and declining water quality.³³

We can observe that environmental and sustainability issues are now in play politically. They are mainstream business issues. They feature strongly in community and consumer behaviour, and are top of mind for much of the population.

Green is Gold was indeed one picture of the future that arrived quickly.

PART TWO

Snapshot to 2020



The previous section has reprised and taken stock of the four alternative scenarios of business in Australia to 2015 as we looked forward from 1999. In many respects, the futures we envisaged proved possible. There is evidence of significant elements of each of the scenarios playing out in the period since.

There is no doubt that our scenarios missed out on or underplayed some crucial developments like the current global financial crisis and, as is so often the case, we underestimated the speed and intensity of change and the ensuing turbulence.

Overall, however, the scenarios we developed and the factors underpinning them are proving durable. Therefore, based on how these scenarios are unfolding, we take a fresh look at how the forces for change are playing out to 2020. This section of *The Future Revisited* provides a snapshot of five critical factors likely to affect Australia and its business activities towards 2020. These five factors are:

1. Energy and resources conscious 21st century will redefine basic economic and social parameters.
2. Significant changes in global economic geography are reshaping trade and geopolitics.
3. Changing patterns of work and demand for skilled people is a crunch issue for Australia.
4. Unleashing innovation is a prescription for Australia's enduring prosperity, whether facing an economic boom or a global downturn.
5. An outward looking Australia can contribute to defining and achieving the society and global community we want.

Energy and Resources Conscious 21st Century

***ENERGY AND RESOURCES CONSCIOUS 21st CENTURY WILL
REDEFINE BASIC ECONOMIC AND SOCIAL PARAMETERS.***

The 21st century has dawned as the resources and energy-conscious century redefining our economy and society.

This consciousness is hand in glove with growing concerns for the environment and a sustainable future.

The environmental agenda is on the mainstream agenda.

Just as in Europe where the degradation of soil, water and air and the impacts of dense urban settlements drive the sustainability agenda, water shortages as a result of widespread drought in urban and rural Australia drive urgency in responding to environmental needs and climate change.

Changed weather patterns and extremes have heightened awareness of human impacts on the environment and influenced sentiment concerning the environmental impacts of manufacturing, packaging and transporting a product to its markets. Environmental milestones are being hit with Australia's ratification of the Kyoto protocol on 12 December 2007 and its enforcement for Australia on 11 March 2008;³⁴ Sir Rod Eddington's assessment of the East West transport link in Melbourne taking into consideration environmental issues;³⁵ the release of the Garnaut report;³⁶ the Australian government's policy proposal on emissions trading – the Carbon

Pollution Reduction Scheme;³⁷ and previously established and now reinforced renewable energy targets (a commitment to ensuring 20 per cent of Australia's electricity supply comes from renewable energy by 2020).³⁸ While companies until recently addressed carbon reporting and use reduction as a 'good to do', it will now be a 'must do' and costs will be incurred and passed through in higher operating expenses and ultimately prices. A new service sector is growing to advise on governance, assurance and accurate measurement and reporting of energy use and environmental impacts.

In the past year we have seen a dramatic spike in the price of oil. Is this a signal of things to come?

Oil broke through US\$110³⁹ on March 12, 2008 and peaking on July 11, 2008 where oil prices rose to a new record of US\$147.⁴⁰ However, in December, 2008, oil was trading at US\$48⁴¹ a barrel, one third of the peak price reached four months earlier.

At the same time as volatility in oil prices, impacts from drought conditions are being contended with and for a variety of economic, political and availability reasons, the cost of resources are increasing and are expected to increase further in the near future.

According to Heuris Partners,⁴² the Australian economy may be challenged in the future to respond to the price of oil at \$US200 per barrel.^{43 44} Natural gas prices in Australia are rising: the development of the Queensland LNG export industry could see gas prices in eastern Australia increasing from A\$3.50/GJ to more than A\$9.00/GJ over the next 5 years as gas suppliers divert their production to oil priced linked LNG markets. Together with the impact of carbon pricing, wholesale electricity prices on average could rise as a result to more than A\$95/MWh. This has important implications for energy intensive industry sectors which will face major increases in input costs. At the same time, incumbent coal fired electricity producers in Victoria, NSW and Queensland could experience major boosts to their revenue despite the impact of CO2 pricing.

The economy may need to adjust to the price of water doubling or even tripling in the next five to ten year period as a

result of new infrastructure costs of desalination processes, water transportation and recycling along with simple demand and supply logic – reductions in water use simply push up the price per unit of production.

Consequently, Australians as producers, consumers and policy makers are facing big challenges, chief among them being:

- Anticipated global warming and changed weather patterns will likely impact the nature of our agriculture, the costs of production and the opportunities for innovation and new markets.
- This, together with higher costs of water and energy is reducing the reliability of food supply to consumers and increasing the costs of production, transport, processing and packaging, resulting in higher food prices. This is a double edged sword, as rising food prices also raise profitability, investment and opportunities for food producers and processors.⁴⁵
- Consumers are also feeling the impact of increasing gas, electricity and oil prices on transport costs and on household budgets.
- Government regulation and pricing is inevitably trending towards supporting better environmental practices, efficient energy uses and new energy alternatives.
- Finding alternatives to carbon will loom ever larger, seeking feasible technological solutions in addition to carbon capture and sequestration, and putting the politically unpalatable nuclear energy option on the table for Australia. Dr Ziggy Switkowski reported that within about 15 years, with a carbon trading scheme in place, nuclear could offer one of the cheapest, lowest emitting and safest forms of power generation in Australia.⁴⁶
- Changed weather patterns and CSIRO modelling of the effects on Australia's coastline may well challenge coastal settlement patterns and real estate ownership and financing significantly.⁴⁷

The logical conclusion often drawn from these global environmental, energy and resource challenges is a picture of a down-sizing world of declining growth, constraints on business opportunities and discretionary consumer spending, vigilance and incentives to reduce waste and environmental footprints.

There are certainly tough decisions to be made and new trade-offs.

There should be no doubt that pricing policies, procurement and strategic behaviours will need to change in response to an energy conscious and energy price conscious 21st century – and some of these changes will reduce profitability and prospects for economic growth. The stated German target reductions in greenhouse gas emissions (40% of 1990 levels by 2020) will be costly and will restrain economic growth.⁴⁸ This is a challenge also facing Australian businesses wanting to be sustainable. Once the early economic wins have been achieved, further change requires either investment or acceptance of lower growth and earnings.

To understand the impacts on our economy, an illustration is the aluminium refining industry which makes a significant economic contribution in Australia, but which consumes as much as 12% of the nation's electricity and produces around 5.9% of Australia's total greenhouse gas emissions. Australian aluminium smelters pay subsidised electricity prices and in particular the Victorian smelters have been paying below market prices for electricity equivalent to at least \$110m per year – a price regime secured during the early 1980s from the then government and locked in until 2016.⁴⁹ This is not a sustainable position. Presumably if Victoria did not offer these subsidies the refineries would relocate elsewhere in the world. Here, as in other parts of our industrial, mining and commercial base, there are hard decisions to be made by business, regulators and governments.⁵⁰

Internationally the competitiveness of Australian business will be influenced by their ability to meet some tough environmental regulations. Businesses should also anticipate hardening consumer attitudes to the way business meets the sustainability agenda.

At the same time, there are also opportunities.

Garnaut⁵¹ found that Australia is relatively well placed to do well in a world of comprehensive global efforts to reduce greenhouse gas emissions due to our sizeable skills base and renewable resource base. He proposed that we could become a leading exporter of zero emission technology. An agile, market driven, customer oriented economy with the skills, resources and technology base Garnaut describes, can respond

innovatively to the challenges of the 21st century and in doing so, can redefine the character of social and economic development, rather than just putting a stop to it.

Here are some examples.

The costs of water and energy for primary production can cause significant structural adjustment with social and economic implications. However there is evidence this sector is prepared for more and ongoing change, adjustment and learning. The farming sector has seen a decline in participation as holdings needed to become larger and more industrialised, and as the farming population ages. It has also been in a constant state of innovation and renewal with successes such as our wine industry and fine wool and continues to contribute more than 20% of total manufacturing exports.^{52 53}

World food production instability and price increases can also create opportunities for Australia's innovative farmers, able to identify and capture the benefits.⁵⁴

Dry-land agriculture and high value-added applications of water are opportunities that if realised will determine the shape and scale of Australia's agricultural industry.⁵⁵

Similarly, business and household practices will be challenged to reduce energy and resource use, to lower environmental impacts, and indeed to make a positive environmental contribution. Innovation in response to the necessities of better environmental management creates new economic activities and successes for Australia. For example, Plantic Technologies, a CSIRO spin-out company that makes degradable plastic from corn starch.⁵⁶ Endless Solar⁵⁷ a solar hot water system using evacuated tube technology that promises that 'the average Australian household can save up to \$500 per year on their energy costs and the equivalent greenhouse gas emissions of a family car each year'. There are many others.

Undoubtedly, too, consumers are becoming more aware and vigilant with respect to environmental management and sustainability. These consumer patterns are also reinforced by the shift in demographics as the baby boomers age. It is often

anticipated that household spending patterns will change and reduce as a result.

But, this is worth a closer look. Among the variety of influences on the Australian demography and society are the following: the finer segmentation of the population; the emergence of Asian influence and the young Asian agenda within our cities and culture; having enjoyed the asset rich lives their parents provided, our young people do not place similar value on 'things' but value experiences highly; and long periods of independence enjoyed by young people before forming families and obligations. The discretionary spend from this quarter of the population will be on life's finer expressions – luxury brands, amazing experiences and eating out. How the energy conscious and environmental agenda is adopted by this group will be a challenge for policy makers and an opportunity for business.

Forward-looking companies will make energy efficiency and sustainability critically part of their strategy and vision. These companies will seek to win customers, win employees and be sustainable as regulation gets harder. Being ahead of regulation will be their aim. Keeping ahead of customer expectations provides a good point of differentiation. An innovative approach to systemic change is seen as a clever thing to do.

Rather than a blip on the radar of history, energy consciousness will bring behavioural change that heralds a logical sustainable approach to allocation and use of resources and a new ongoing reality. It is a reality which will redefine some basic economic and social parameters to which Australian businesses, governments and the community will have to adapt and have the chance to exploit innovatively.

Changing Global Economic Geography

SIGNIFICANT CHANGES IN GLOBAL ECONOMIC GEOGRAPHY ARE RESHAPING TRADE AND GEO-POLITICS.

While there has been talk of 'decoupling' of the US economy from the rest of the world, it has not happened and the downturn of the US economy has dragged many countries close to and into recession.

The US economy has faltered. *Regardless of any formal announcement of whether or not the United States drops into an actual recession, the ongoing credit crisis guarantees a contraction of the American economy by virtually every measure we know. That period of darkness will be marked by a dramatic slowdown in economic activity, as well as by rising unemployment, additional declines in U.S. stock prices, and constant volatility.*⁵⁸

Further contractions are occurring in the Japanese, British, Euro-zone, Chinese and Indian economies in 2009.⁵⁹

Nobel Economics Prize winner Paul Krugman believes the economy could be depressed until 2011, a period reminiscent of Japan's lost decade in the 1990's where *we'll see a world of zero interest rates, deflation, no sign of recovery, and it will just go on for a very extended period.*⁶⁰

Commentators had noted the beginning of a 'decoupling' between the US economy and other large regional economies with Europe and Asia moving along courses no longer deter-

mined by the US economy. However, that 'decoupling' has not meant independence and the rest of the world economy has been dragged down by the US negative spiral.⁶¹

But the US still remains the primary engine of global growth. It is unwise to write off the US.

To write the US off is to lose sight of the enormous global impact of the US economy and the potency of its human capital, market place for ideas and investments in universities and intellectual productivity. On a very practical level, the continued saving of US Treasury securities by Asian central banks is expected to prevent any drastic revaluation of US dollar-denominated assets by financial agents – notwithstanding the steady increase in net US external liabilities. As John Garnaut commented in *The Australian* newspaper in February 2009, *By now, the cool heads in China and the US surely understand their two economies are two ends of the same problem...*⁶²

The US economy is expected to regain its economic strength in future with a bigger export base and a stronger currency and remain a strong economic and political global force – but a force it will have to share uncomfortably with China and others.

Emergence of the BRICs (Brazil and Russia to India and China)

The USA's long history of cultural, scientific and economic dynamism has faltered and the locus of global 'leadership' is shifting – is it to China? Geoffrey Barker comments that China is not yet capable of replacing the US as the primary engine of economic growth with an authoritarian regime and serious near and long term social issues.⁶³ However Australia is crucially dependent upon the Chinese economy and there are serious geo-political considerations for Australia if it is to respond to the emergence of China as a global economic and military superpower while retaining its traditional friendship with the US.

In the short term, the dependence of the Chinese economy on exports, over-supply of capability in some areas of manufacturing and low margin taking, has led to economic readjustments. Exporting companies and regions are most impacted.

Businesses are closing, jobs are being lost, the stock market has lost value and house prices are falling, much as for most of the world. Hopes pinned on the Chinese domestic market and a surge in demand is not considered realistic as, among other cultural and economic influences, the domestic market is facing higher unemployment, higher food prices and energy costs.⁶⁴ But while growth forecasts for the US and other major economies are negative for 2009, experts are forecasting economic growth will slow in China to a still relatively robust 8 per cent growth for 2009, down from 12 last year. Other commentators are suggesting China may miss this growth target of 8 per cent this year as the country's trade figures slumped for the second month in a row.⁶⁵

China faces the challenge of rebalancing its economy away from exports towards domestic spending and this will require revaluation of the Chinese currency.

In the longer term, China's economic growth *will* continue on a massive scale fuelled by its capacity to produce cheap and quality goods, its own large domestic markets and the emergence of a middle class on an unprecedented scale. 900 million peasants on the brink of being included in the industrial economy moving rapidly from an agrarian age to the information age!

The Chinese economy is diversifying and becoming a rich multicultural 'east meets west' expression of contemporary society and fashion.

The investment by Chinese families in their children's education in the US, Australia and elsewhere around the world in large numbers plus the investment by the Chinese government in education has rewarded the economy with a rich multinational skill base with a strong commercial bias. China can be expected to become strong in branding, design and the application of technologies to achieve innovative products, servicing and marketing. The new energetic brands on the world stage will be Chinese –the Chinese diaspora and the new Chinese entrepreneurs bring an exciting modern cultural 'cool' as a source of ideas, fashion, design, brands, nightclubs, music and online concepts.

However there are contradictions to a resurgent China.

China is not a democracy and is beset by significant problems, which will be exacerbated by the current economic slowdown – from overpopulation to environmental degradation, from population imbalance to alleged corruption and racketeering.

Will China get older and more polluted before it becomes wealthy?

China is expected to continue to be a dynamo in terms of social, cultural and economic impacts on the world. However with the impacts of a single child policy leading anomalously to China being in the unique position of being a developing economy with an ageing population, plus a questionable record in management of the environment and human rights, one critical question is whether the Chinese will get old and polluted before they get wealthy? ^{66 67}

Reported examples of systemic corruption and bureaucracy reinforce the enormity and seeming intractability of the environmental and human rights problems.⁶⁸ Leading Chinese government scholars recently released a report⁶⁹ calling for systematic liberalisation, including greater media and religious freedom, limits to political power and institutionalised corruption, saying the backwardness of the political system is affecting economic development and will affect social instability in coming years. China has stated its intention to be a modern civil society by 2020⁷⁰ and with greater international visibility and scrutiny of human rights and environmental issues in the time leading to and following the Olympic Games in 2008, more ambitious reforms may be expected from Chinese citizens and international trading partners.

India emergent: tradition and globalisation have defined the growth of a massive middle class in India centred on its cities and has moved its economic activity beyond services and into manufactures.

The emerging Indian middle class already hotly contested by Indian and multinational companies has provided business opportunities for Australian companies. Opportunities have blossomed as millions of first-time buyers step up to cash registers, as the bulk of consumer spending moves from scattered, hard-to-

reach rural areas to more concentrated, accessible urban markets, and consumer spending shifts from the informal economy to a more efficient formal economy of organised businesses.⁷¹

India has moved its economic activity beyond services and into manufactures. But whereas the Chinese national government is focused, structured, with the determination and ability to determine economic plans, the Indian government is not and infrastructure short-comings, distribution of wealth, bureaucratic hurdles and lack of cohesive national policies have slowed but not stopped the inexorable growth of the Indian economy.

India also faces environmental issues. It is important to recognise the enormity of the security challenges China and India face in the coming decades. Access to clean water and overall water shortages will impact the region dramatically and will be a critical issue for economic growth. Increasing demand for water for both industrial and urban use poses a real threat to food production and rural livelihoods.⁷² Of all the resources, water will shape the growth of both China and India over the coming decade. The Chinese-held Tibetan Plateau is the major source of all Indian river systems except one. Climate change, the increased use of water and China's ambitious plans to dam parts of the Tibetan river system are putting further strain on China-India relations and economic growth and security of both nations.⁷³

Financial power, so long concentrated in the developed economies, is dispersing. Oil-rich countries and Asian central banks are now among the world's largest sources of capital.

In December 2007 Farrell and Lund wrote: If oil prices remain at around \$70 per barrel, foreign assets purchased with petrodollars would grow to \$6.9 trillion implying an inflow of \$2b per day into global financial markets. Oil prices subsequently rose to peaks in excess of \$100 per barrel creating massive capital inflows to oil exporting nations. Countries included are the Gulf Cooperation Council (GCC) states – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. Other states in the region, including Algeria, Iran, Libya, Syria, and Yemen, held an estimated \$330 billion; the other oil exporters combined, about \$1.5 trillion. At the end of 2006, the oil exporters collectively owned \$3.4 trillion to \$3.8 trillion in foreign financial

*assets- an impressive number for players that lay on the fringes of global financial markets just five years ago.*⁷⁴

Abu Dhabi, the capital of the United Arab Emirates is well positioned to be a key banking centre in the Middle East and has invested strategically in future capabilities in airlines, banking, insurance, finance and universities and museums.

The Emirate's 420,000 citizens, who sit on one-tenth of the planet's oil and who prior to the global financial crisis, had almost \$1 trillion invested abroad, at that time were worth about \$17 million apiece.⁷⁵

The power and potential of emerging markets presents challenges and opportunities for Australian business.

Austrade Chief Economist Tim Harcourt notes that: *The rise of the 'emerging markets' has been a major driver of global economic growth in the 2000s. Whilst Goldman Sachs economists famously predicted the rise of the 'BRICs' – many other regions such as the Middle East, Latin America, the former eastern bloc economies and even Africa now are playing an important role on the world stage. Australia is well placed to take advantage of the rise and rise of the emerging economies as we supply 17 per cent of our merchandise exports and 10 per cent of our services exports to the BRIC economies alone.*⁷⁶

The size and flow of funds around the world and the dynamics of global capital markets present challenges to understand and maintain open minds to the opportunities. There are potent forces at work which will influence some of the underlying economic assumptions and footholds. Challenges to the US hegemony include international currency relativities, oil price relativities and if the Russians have their way, gas pricing relativities. In the emerging markets, uncertainty and nervousness around attitudes to IP protection, dumping, trade agreements, quality assurance, human rights – all of which undermine competitiveness and open trade, and the political control able to be exercised by large and dominant world players – will increasingly exercise the minds of business and governments.⁷⁷

Changing Patterns of Work and Demand for Skilled People

THE CHANGING PATTERNS OF WORK AND DEMAND FOR SKILLED PEOPLE IS A CRUNCH ISSUE FOR AUSTRALIA.

The grim outlook for the Australian economy in 2009 brings with it warnings of unemployment levels of 7% by mid-year. The ANZ Bank predicts the economy shed 21,000 jobs in December 2008 alone, pushing the jobless rate to 4.6%, a 22 month high. The Reserve Bank is predicting an economic slow-down so severe that 100,000 people will be thrown out of work in the next 12 months, pushing the unemployment rate to 5.5% in 2008-09 and 7% in 2009-10.

The US picture is more dire, revealing both short-term job cuts and views that these jobs may never return. As Peter Morici, a Professor at the Robert H. Smith School of Business at the University of Maryland, told BusinessWeek, *The worst news, though may be that the U.S. economy is not just shedding jobs temporarily, but is undergoing a fundamental restructuring process that will eliminate some types of jobs for good. They represent structural, not cyclical, changes to the economy. We're looking at a permanently smaller economy with prolonged unemployment at an unacceptable level.*⁷⁸

Morici says that housing, real estate, automobiles, finance and retail sectors are resetting to 'permanent lower levels' of employment. Mike Montgomery, an economist with IHS Global Insight, asserts that many jobs in autos, manufacturing, apparel,

and textiles aren't coming back. Those industries *have been in a long-term decline, and the recession is knocking them out.*⁷⁹

Critical to Australia is the extent to which the global financial crisis impacts structurally and whether previous policies that have phased out protection of manufacturing industries such as textiles, clothing and footwear, together with Australia's significant productivity gains of recent years, will moderate the impacts of the economic downturn on competitiveness and hence structural employment.

The current global financial meltdown is creating job losses but we should not lose sight of the structural issues within the Australian economy.

In 2007 it was reported that the structure of participation in work had changed and demands for skilled people were enabling high employment rates and offering global opportunities. The commitment required to quality life-time education and skills development had become more urgent than ever. Similarly, clear vision and deft management of human capital by businesses had never been more warranted.

The Australian economy created a million jobs over the four years to the end of 2007. Australia experienced near full employment, and skills shortages across the economy were consistently reported.

Australia was a victim of its own success, particularly in the mining and resources industries.

While the mining industry is a relatively small employer in total in Australia, it is a key driver of demand for skilled people.

In percentage terms, employment growth in the five years to 2007 was strongest for:

- Mining (64.6%)
- Construction (33.6%)
- Transport and Storage (24.5%)⁸⁰

Driving the demand for skilled people in our mining industry has been the growth of demand by China and India. The pace

and scale of industrial and infrastructure development in China and India has been slowed if not stopped by the global financial crisis, but is expected to recover in the future. Engineering and professional services companies that support the mining industry have been performing strongly and are a growth area for Australian business and investment. The Rudd government's mini budget in February 2009 has committed more than \$20bn to construction and construction related programs with implications for technical and trades skills.

Labour markets are impacted unevenly by the drivers of our economy. There are acute skills shortages in key areas of the economy and in country and regional locations.

Skills shortages have imposed limits to growth in the mining industry and related engineering and services sectors⁸¹ and continue to limit growth in regional economies such as the Pilbara, Darwin and Northern Queensland where additional stresses from population growth, consequent demands for housing and major infrastructure projects draw skilled workers away from the general labour market.

How we work and who participates has structurally changed.

Over the last three decades the nature of work in Australia has undergone significant structural change. Technological change, the growth of part-time work combined with a changing industry mix has systematically altered the demand for certain types of skills, with an increasing focus on conceptual and interpersonal skills.

The growth in part-time work has been an important source of jobs growth, between 1980 and 1990s but, since 2000, the proportion of the workforce that is casual has reached a plateau of about 27 percent.⁸² This suggests that what used to constitute 'normal' working hours, are very different in today's labour market.⁸³

Much of the changing composition of employment can be attributed to a changing industry mix. In 1975 services accounted for just over 50 per cent of all jobs, but by 2007 this figure had climbed to over 70 per cent. By contrast, manufac-

turing's share of total employment almost halved over the same period to about 11 per cent in 2007.⁸⁴

Data from the ABS shows that the percentage of 'blue collar' workers in the workforce has been falling consistently over three decades, while the percentage of the workforce in professional, associate professional and managerial occupations has been rising.

The picture that emerges when combined with the industry distribution is that a 'typical' Australian worker today is a 'white collar' employee in the service sector, who is much more likely to work until later in life in part-time and self-employed work.

Enabled by communication technologies, this 'typical' worker is much more likely to work some of the time from home or take advantage of some form of flexible working arrangements. This trend has even turned some previously-termed 'dormitory' suburbs into vibrant local communities.

Length of employment tenure at any single place of work is short (especially during the first ten years of working life) as young people experiment and move on to greener pastures. Two to three years is recognised as a good length of employment tenure.

Self-created work is common and the micro and small business sector is dynamic as enterprises form, destruct, get sold, merge and evolve.

Diverse work arrangements are becoming the norm. They take a variety of forms including part time or sessional work; flexible work arrangements to suit working fathers, mothers and grandparents, as well as carers for older parents; and individuals engaged simultaneously in multiple work roles including full or part time self employment. This pattern is now aided and abetted by employers whose competitive workplace practices will make or break their ability to attract and retain the best employees and contractors.⁸⁵

The demand is high for knowledge workers, people able to problem solve and provide intellectual leadership.⁸⁶ The profile

of the Australian workforce is expected to shift towards high skill occupations.⁸⁷ Skilled people with mathematics and science proficiencies will be in high demand because solutions to really tough problems are needed urgently and citizens will expect governments to invest in these solutions.

Baby boomers have not been successful at saving over their life time and while the policy of compulsory superannuation has made up some ground, their savings have been ravaged by the share market decline. The result is that they will need to work longer and have a part-time retirement to fund the lifestyle they expect to continue to enjoy.^{88 89 90}

Global supply chain logic is extending to skilled people and groups, meaning that an individual can be based in Australia working for a global firm with its employees spread around the world, or individually offering expertise into a global team.⁹¹ This is facilitated by information and communications technologies that increasingly are becoming cheaper and more effective.⁹²

There are big challenges ahead.

Despite being on the agenda for several decades as a critical issue for the future, a long term and comprehensive approach to Australia's education and skills challenges is still to emerge.

The Australian Government's plan for an education and skills 'revolution' aims to satisfy an urgent need for Australia to become a higher-skilled, more knowledge-intensive producer in response to global pressures.⁹³

There are significant challenges facing Australia in guiding education choices and availability. There is a need for a global perspective.

The labour market is globalising. Developing nations such as China⁹⁴ and India⁹⁵ are investing keenly in education and while their education systems may not currently match Australia's⁹⁶, their national planned approach means that it is just a matter of time when they will and Australia cannot afford to be complacent.

'It is crunch time for the education revolution!', writes Simon Marginson.⁹⁷ Australia awaits action on the response by government to the Bradley Review of higher education and the Cutler Review of innovation, and the overarching question is the approach by government to the knowledge economy in the context of the current economic crisis.

Bradley confirms that Australia is falling behind other countries in performance and investment in higher education and is, more broadly, 'losing ground' in the global knowledge economy.⁹⁸

While the recommendations and general goals of the Bradley Review have been well received,^{99 100} most of the debate and the criticisms have been concerned with Bradley's recommendations about the character and nature of university funding.

The Bradley Review was established to address the question of whether this critical sector of education is structured, organised and financed to position Australia to compete effectively in the new globalised economy. The panel has concluded that, while the system has great strengths, it faces significant, emerging threats which require decisive action. The challenge for the nation now as Australia faces the prospect of a deficit and uncertain global markets is the difficulty of paying for the \$6.5 billion over four years price tag on catching up.¹⁰¹

Conversely, will the global financial crisis now upon us provide a trigger for the ambitious revitalisation of our universities that our nation's competitive position requires?

But, beyond the Bradley Review, Australia's education revolution will need to deal with other tough questions, like:

- How will our key wealth creating industries respond to critical shortages of skilled engineers and tradespeople? Will efforts to include women returning to work after child rearing periods, long-term unemployed, older workers and indigenous people yield the numbers of workers and requisite productivity and returns to business? Who are responsible for the longer-term efforts to engage these groups in the workforce?

- How will young Australian adults respond to the decline in their employability in a globalised labour market as they realise that their bilingual counterparts in China have studied harder, longer and mastered the more challenging maths, science and engineering disciplines that are in greatest demand. Who will they blame for such shortsightedness? Will they ask, 'Why weren't we told?'¹⁰² (Victoria's Auditor-General reports that despite the Government ploughing more than \$1.1 billion into literacy and numeracy initiatives over the past six years, literacy and numeracy skills in Victoria have barely improved and achievement is particularly bad among VCE students. The Auditor General also warned that a stronger focus is needed to improve results and address the gap between rich and poor schools).¹⁰³
- What is the policy and social response to the practice and short-term planning horizon of addressing shortages of tradespeople by sourcing these from overseas on temporary visas? What is our commitment to these people and their families and what is our commitment to their learning and development in the workplace?
- Have we challenged ourselves to debate the merit of a deregulated university sector? Is a radical overhaul required of our tertiary sector? Can we survive by simply doing more of the same?
- Where, in our approach to education and training, do we address the capability to make transformational change for which we need systems thinkers and thought leaders who cross disciplines and are able to envisage and deliver innovative and sustainable policies and strategies with economic and social benefits to Australian and international communities.

Further, the 'education revolution' must encompass resolution of difficult issues such as:

- Underutilisation of talented and experienced workers who face barriers to work because of factors such as cost and access to childcare, cheap transport to work, ongoing education to keep skills up-to-date, age, disability and psychological health-related, physical and attitudinal barriers

and the need for flexibility to cope with carer roles. All of these factors will necessitate new ways of designing and defining workplaces.

- Restrictions in access to learning – for cost or physical access reasons; poor outcomes from the learning experience for reasons of family and community, gender, race and language; retreat from engagement in work for reasons of discrimination and alienation.
- Mediocre and worse education standards at all levels including technical education and trades training and apprenticeships.
- Intergenerational and long term unemployment.

Driven by the 'global war for talent', many organisations have been and need to remain active in ensuring competitive, 'employer of choice' strategies which care for the safety, health, wellbeing and rewards of employees. Similar effort is an imperative to unlock the human potential of employees through organisational design, work design, ongoing education and training and attention to the attitudes and culture of the workplace.

As recognised in the Intergenerational Report from Federal Treasury,¹⁰⁴ workforce participation is one of the three potent areas of action for Australia to avoid a crisis in its standard of living in the next 40 years – the others being action on population and on productivity.

In essence, the challenge for Australia, both for business and political leaders, is to do all that is necessary to win the global war for talent. Whether the current economic crisis is cyclical or structural, these are issues that will not go away.

Unleashing Innovation as a Prescription for Prosperity

UNLEASHING INNOVATION IS A PRESCRIPTION FOR AUSTRALIA'S ENDURING PROSPERITY, WHETHER FACING AN ECONOMIC BOOM OR A GLOBAL DOWNTURN.¹⁰⁵

The importance of innovation to the competitiveness of business enterprises and to the prosperity of nations is usually accepted as unquestioned fact, a motherhood statement. There is widespread support for investment in blue sky research, business R&D, education, more mathematicians, scientists and engineers and better commercialisation of advanced technologies and new inventions. But this unquestioning stance has the effect of turning innovation into 'wallpaper' policy of interest only to scientists, universities and a few venture capitalists and high tech entrepreneurs.

The alternative angle requires a more nuanced and reality tested view of innovation and how it can be unleashed to bring benefits for ordinary businesses and to the wider mainstream population. It presupposes an understanding of how innovation works in modern knowledge-based service-intensive economies and not restricted to old-fashioned industrial age concepts of innovation.

The active ingredient of this kind of innovation is using knowledge to do something new and valuable for customers and communities.

Why should Australia be concerned about innovation?

Because Australia is suffering from a 'prosperity paradox', where it is a wealthy country but underperforming as an innovator with the

productivity benefits this brings. Australia's productivity performance around 2002 went from growing substantially faster to growing substantially slower than the OECD average. The effects of this productivity decline were masked by the commodities boom. Now, in a situation of global economic downturn, it is obvious that we must question just how enduring and robust Australia's wealth is. For this reason, there is an imperative for action to boost Australian innovation.

Doing something new that creates value is the working definition of innovation. The focus is not on increasing the supply of knowledge, but on its absorption and use to solve problems and identify opportunities for paying customers worldwide.

This kind of innovation leads to greater productivity, sustainable growth and robust prosperity. It enhances the quality of life and the wellbeing of ordinary people, not just bringing economic benefits to businesses or professional achievement to researchers and scientists.

Innovation-led prosperity is about Australia remaining a good place to live, work and play, where all our people can earn a living and make choices about their future. And where Australia can take its place in the world as smart, active and compassionate power, sharing solutions to big intractable problems like climate change, chronic disease and healthy ageing and earning an 'innovation dividend' from doing so.

This motivation for action and this aspiration for innovation-led prosperity is at the core of findings of the Cutler Review into Australia's National Innovation System, in particular the case for a resetting of Australia's innovation policy.¹⁰⁶

There are new understandings of innovation.

It is crucial to capitalise on the opportunities for enduring and sustainable prosperity that comes from innovation, whether in good economic times or bad. This requires attention to new understandings of innovation, particularly the critical dimension of market-led innovation that occurs when businesses and workplaces engage with and respond to customers and their needs and problems.

These understandings of innovation are informed by an eminent and growing body of innovation studies scholarship, including the pioneering analytic work of Joseph Schumpeter,¹⁰⁷ intelligence on knowledge-based, post-industrial economies and incorporating several different schools of thought such as New Growth Theory. New Growth Theory puts forward the concept that economic growth does not just arise from adding more labour to more capital, but from new and better ideas expressed as technological change – the discovery of better ways to do things.

Paul Romer, one of the architects of New Growth Theory comments that *one extremely important insight is the process of technological discovery is supported by a unique set of institutions. Those are most productive when they are tightly coupled with the institutions of the market. The wonder of the United States is that we've created institutions of science and institutions of the market. They are very different, but together they've generated fantastic benefits.*¹⁰⁸

From this and related innovation scholarship, prominent commentators on innovation concur that:

- Learning and absorbing knowledge by firms is central to their ability to innovate.
- The competitive advantage of firms (and the nations in which they produce) hinges ever more on the accumulation and application of knowledge, and ever less on the exploitation of given factor endowments.
- Higher real wages and profits prevail in those countries that harbour innovative activities.
- Governments play an integral role in providing the physical and intellectual infrastructure that makes sustained innovation possible.
- Innovation successes and failures are cumulative.
- Successful innovation commonly requires local concentrations ('clusters') of interconnected companies and institutions in specific fields.
- Freer cross-border flows of trade, finance, foreign direct investment and research and development are heightening the interdependency of firms.

- Innovation, investment expenditure is increasingly being directed towards intangible assets, for example creative design, marketing, organisational improvement, customer relationship management, tacit know-how etc.
- Innovation fosters new services, which provide employment for significant numbers of knowledge workers.

From this basis of theory and contemporary innovation studies, the key feature is that innovation is the smart application of knowledge to solve problems and create opportunities for customers worldwide that results in the business transformations that generate new value.

This is at the heart of how innovation is fundamental to productivity growth.

Productivity is not about doing more with less, not about making people work harder for longer. Productivity results from transformations in business capabilities and offerings that are enduring and that have multiplier effects. Such innovation serves to transform businesses not just with new products and technologies, but in their operations, relationships and business models.

This wider concept of innovation as the smart application of knowledge that transforms businesses and their capabilities shifts the game. It recognises that patterns of innovation have evolved and changed from closed to open systems, where users and customers are as much the source of innovation as producers.

There has been a shift from the old-fashioned concept of 'innovation as discovery' to innovation as 'connecting for value', ie. innovation that comes from new connections throughout the value chain. From Steen et al in the Australian Business Foundation's recently released book *Inside the Innovation Matrix*¹⁰⁹: *Value is created through rearranging and recombining knowledge, people, processes and technologies—[it involves] problem-solving and improvisational activity, eg. in project businesses and complex product systems such as wind turbines (eg. Vestas), construction (Laing O'Rourke) and management consulting (eg. Deloitte), or Beeline where tractors and GPS as old technologies are com-*

bined for new capabilities in agribusiness. Recombinations of previously disconnected ideas, with fluid interactions and knowledge transfers.

This approach places the behaviour of firms and workplaces as the key to unleashing the productivity effects of innovation.

A paper by New Zealand Treasury¹¹⁰ clearly articulated the challenge for business enterprises.

Innovating firms are the key institution for translating knowledge into national economic success and in order to raise productivity by a significant margin (a country) needs a large number of firms to raise their performance through smart new product offerings, better technology, the use of more skilled workers and improved organisational and human resource practices.

This has been elaborated on by work done by the University of Tasmania and summarised in their submission to the 2008 Federal Government's Review of Australia's National Innovation System:¹¹¹

Innovation requires sustained investment under conditions of uncertainty. Firms cannot know the future and innovation can be extremely risky. Nevertheless, they must invest in a wide range of innovation-related assets – human skills, new capital equipment, design capabilities, strategic marketing, engineering development programmes, and more. So innovation requires corporate governance systems that both permit and encourage such investment, and that can manage the risks involved.

What emerges is a view of a critical mass of successful Australian enterprises each being dynamic, energetic and agile:

- constantly vigilant to new markets and changing supply chain conditions;
- well informed and expert in applying knowledge to gain competitive advantage;
- offering best employment practices to demanding employees;

- close to customers and their needs and changing expectations;
- innovative across a range of activities as determined by their strategic positioning; and
- drawing knowledge and inspiration for that innovation from all levels of the organisation and from suppliers, customers and knowledge institutions.

In short, business executives and directors must understand and use innovation as a decisive competitive strategy, rather than being content to compete just on price, quality and industry norms. Australian business enterprises need to invest in the knowledge, skills and capabilities to understand and manage innovation (particularly non-technical innovation) to advance and sustain their competitive position globally. Australia's innovation policy must focus on facilitating this business behaviour.

Opportunities to innovate by problem-solving.

Finally, there is one additional opportunity available for Australia to set a path for innovation-led prosperity. This involves turning big picture problems that affect both Australia and the world into innovation opportunities.

If innovation flows from solving problems, then Australia is at the cusp of a huge innovation opportunity. We have a number of big intractable problems that other nations have too – water, carbon constraints, health, ageing population, infrastructure, and environmental sustainability. So the world will be a customer if Australia can devise the innovative solutions to these problems.

These problems represent a market demand that pulls through and applies the fruits of science and technology, as well as the managerial and operational competencies, needed for solutions to be uncovered.

There is an opportunity to create new multidisciplinary, cross-sectoral institutions for such problem-solving. Action is needed to broker new coalitions and to foster fresh thinking, as different combinations of knowledge and perspectives are required to create the new imaginative solutions to complex problems.

If Australia can bring together the researchers, business people and other key stakeholders like regulators and standards bodies to develop intelligent market-based solutions, then innovation benefits will flow to Australian businesses and to the economy as a whole from solutions that the world is prepared to pay for.

These urgent and large scale problems require government expenditure in any case. Australia is its own customer for solutions and other nations desperately need such solutions too. So, there is a compelling case to secure new innovation capabilities and benefits at the same time for Australia.

Attention to market-led business innovation and the 'innovation yield' from global community problem-solving provide a pathway for harnessing innovation to underpin sustainable and robust prosperity for Australia, even in the face of a global economic downturn.

An Outward-looking Australia

AN OUTWARD-LOOKING AUSTRALIA CAN CONTRIBUTE TO DEFINING AND ACHIEVING THE SOCIETY AND GLOBAL COMMUNITY WE WANT.

Robert Skidelsky¹¹² writes in January 2009: *Today we are living through a crisis of conservatism. The financial crisis has brought to a head a growing dissatisfaction with the corruption of money. Neo-conservatism has sought to justify fabulous rewards to a financial plutocracy while median incomes stagnate or even fail; in the name of efficiency it has promoted the off-shoring of millions of jobs, the undermining of national communities, and the rape of nature. Such a system needs to be fabulously successful to command allegiance. Spectacular failure is bound to discredit it.* Skidelsky believes we are observing a crisis of globalisation and genuine challenge to the inevitability of market-based globalisation. He refers to Keynes, a moralist as well as an economist, in the call for the reuniting of economics with ethics, in achieving a balance between national and international wellbeing, efficiency and morality.

Is it time for Australia now to be among the lead nations to develop a new sort of global community with some changed principles and values?

At a time when governments will be challenged to 'keep jobs at home' and revert to protective national agendas, can

Australia show the leadership, intelligence, courage and aspiration to keep markets open and to participate in a world community of nations? Critical is our sense of fairness and equity, our keenness to engage in solving environmental and social problems and leading by example, our ability to be innovative, adaptive and fleet of foot in a time of great turbulence and our sense of responsibility to the global community.

These qualities will determine how Australia builds its future and its influence on the global community.

'Splendid isolation' is not feasible.

Australia shares with the global community extremely difficult economic, human, social, environmental and resource related problems that must crucially be solved through international agreements and aligned national policies and actions. Just to name a few, critical issues are:

- The global financial crisis and the response of governments in re-regulation, active government and the diminution of corruption of corporate power.
- Climate change and the necessity to address this challenge as part of the global effort. The increasing challenge to find ways to develop '*Green Growth*', looking at how the global economies can grow in synergy with environmental action.
- Terrorism and fundamentalism. The refocus of the Obama-Biden foreign policy agenda on Afghanistan and Pakistan as a key security issue¹¹³ will see Australia with a continued role in the security and developments of South Asia.
- Refugeeism and population movements around the globe. For economic, political and increasingly environmental reasons, refugee movement has increased dramatically in the latter part of the 20th century and until today. Australia has specific responsibilities in our region. Garnaut¹¹⁴ reports that Australia is more vulnerable to climate change than most other developed nations as we are surrounded by mostly developing nations which are likely to be adversely affected by rising temperatures. There are current predictions that by 2010 the world will need to cope with as many as 50 million people escaping the effects of increasing envi-

ronmental deterioration, with research conducted by the Red Cross showing more people are now displaced by environmental disasters than war.¹¹⁵

- Border protection from close at hand populous countries. Indeed is this possible?
- Our responsibilities in PNG and Pacific Island nations. The policies and outward looking strategies we employ to ensure peace, basic health and education infrastructure and opportunity for others in countries with fewer resources than Australia.
- Changing balance of global economic power and rapid transition of emerging economies and societies.
- Managing the US-China-Australia strategic triangle. This is Australia's biggest and most complex foreign policy challenge, because of our increasing economic reliance on China,¹¹⁶ and as a potential peer competitor of our principal ally.
- Global energy and resource security. Water security, particularly in developing nations of Asia, coupled with the urgent need to develop alternative and renewable energy resources in a world that will have to accommodate 9.2 billion people by 2050.¹¹⁷

Prime Minister Kevin Rudd said in March 2008:

The challenge this presents to Australian policy makers of the future is acute. Australia today lives in an increasingly joined-up world. If Australia fails to engage with the global economic, security and environmental challenges, we will simultaneously fail to deal with their impact on our own country.

That means in order to advance Australia's interests at home, we must increasingly be engaged with other nations in responding to the challenges to those interests abroad. Foreign policy, foreign economic policy and national security policy must increasingly be seen as the natural expression and extension of the nation's domestic policy interests – not as some sort of policy exotica removed from the Australian mainstream, but as part and parcel of the interests of main-street Australia. Those who would still

*believe (or, for the purposes of crass partisan advantage, pretend to believe) in the splendid isolation of the Australian continent live in a fool's paradise.*¹¹⁸

Heralding a new period of active, creative Australian middle-power diplomacy.¹¹⁹

The Rudd Government's foreign policy agenda envisages Australia as actively engaged in middle-power diplomacy.

The Government's foreign policy intention is to prosecute a more activist foreign policy in partnership with allies, friends and, through the UN, the wider community of nations in areas where we believe we can make a difference.¹²⁰

There is a renewed effort to address the global issues which have long term implications for Australia. For example, Ross Garnaut¹²¹ describes 'comprehensive global efforts' to reduce greenhouse emissions and in saying this, reflects the Federal Government's external affairs policy approach in the 21st century where Australia assumes responsibilities and a role in comprehensive global efforts to address challenging agendas.

Now more than ever, Australia's domestic interests are impacted by global events. Australia's economic and security wellbeing domestically is dependent upon keeping global trade happening and contributing to global solutions to the effects of the global financial crisis.

As a case in point, the unprecedented explosion in credit and debt plus ill-understood financial instruments, which were left unconstrained by any national or effective international regulatory regime governing financial markets, has seen 'toxic assets' lodged on the balance sheets in the United States and Europe. Though the Australian financial sector is not buried in these bad debts, the problems of the global market have led to a credit crunch now affecting the economy, jobs and families across Australia.

Hence Prime Minister Rudd's early and active stance encouraging concerted global action by all nations to rid banks of their toxic assets and get them lending again.

That same logic is being applied by the Australian Government's willingness to take a leading role in international forums on key issues, for example: arguing for China's membership in the IMF, new corporate regulatory regimes operating globally and action on global carbon emissions trading schemes.

Australia is home to many nationalities, but is it multicultural? Australia will be faced with the need to address and be flexible on what it takes to be multicultural.

We have had to work hard to define what is important culturally – the status of women, the rights of individuals, the quality of life, and to cherish and safeguard these. More recently Australia has started down the path to understand how we can ensure that indigenous people have access to education, health and safety.

Our national culture and values, multicultural policies, capabilities in resettlement, any plans for optimality of population size and settlement patterns will continue to be tested and stretched.

There has been the economic imperative to bring skilled people to Australia on temporary visas, but these people may not be easily repatriated to their countries of origin for a variety of reasons familiar to Germany with their Turkish workers for example. We will have to continue to adapt and find ways of settling the numerous nationalities Australia now welcomes, investing in their employment and education and developing skills in assimilation – for good economic, social cohesion and safety reasons.

There are change agendas at home that require leadership.

Water and protection of the natural environment, equitable access to an efficient health system, rebuilding indigenous communities and futures, renewal of social and economic infrastructure, healthy cities, economically and socially viable rural and regional communities are just some of the challenges that require systemic and transformational change and new collaborative ways of bringing about the change. Yet, the default position seems to be locked into the perspectives of sectoral

interests and compartmentalised solutions. Systemic change requires systemic thinking that crosses disciplinary boundaries and an action agenda that includes involvement of all partners to the solution. It is not a mode of operating we see often, it is not a skill we know how to include in education syllabi and it requires new organisations and partnering approaches.¹²²

Prime Minister Rudd opened the conversation for Australians with the 2020 Summit in April 2008 – a government initiative to garner the ideas of Australians in thinking about ‘a modern Australia ready for the challenges of the 21st century.’

*With the complex challenges that Australia is facing, we need to get the best ideas we can from all Australians – business people, experts, community leaders – and just ordinary Australians. The Summit will help us shape a long term strategy for the nation’s future – covering the economy, the nation’s infrastructure, our environment, our farmers, health care, indigenous Australians, the arts, national security, how we improve our system of government, and how we strengthen our communities and ensure nobody is left out of Australia’s future. It’s a big agenda, but we need to think big.*¹²³

The 2020 Summit addressed 10 major policy challenges facing the country and the recommendations are now reported:¹²⁴

1. the productivity agenda—education, skills, training, science and innovation
2. the future of the Australian economy
3. population, sustainability, climate change, water and the future of our cities
4. future directions for rural industries and rural communities
5. a long-term national health strategy
6. strengthening communities, supporting families and social inclusion
7. options for the future of Indigenous Australia
8. towards a creative Australia—the future of the arts, film and design

9. the future of Australian governance—renewed democracy, a more open government (including the role of the media), the structure of the Federation, and the rights and responsibilities of citizens
10. Australia's future security and prosperity in a rapidly changing region and world.

So what does it take for Australians to 'think big' and address and deliver big change agendas?

Underlying this challenge are two questions:

- Can Australians embrace the concept of Australia as a creative middle power democracy and address comprehensive global agendas?
- Can we envisage and deliver significant change, indeed transformation in key areas where change is required at home - in health, education, infrastructure delivery, economically and socially viable rural and regional communities, environmental management to name just a few?

For example, will we accept Federal Government leadership in examining the policy connections between climate change and national security, with particular reference to the nation's food, water, energy, health and environmental vulnerabilities, disaster planning and unregulated population movements.¹²⁵ Could this be an agenda that moves away from clear cut scientific evidence and debate to a broader policy framework that assesses strategic risk, in which the probability of an adverse climate event is measured against the magnitude of the impact.

The implications for Australians include how we:

- define and build our culture and values through education and community and demonstrated fairness
- harness the energy and skills of Australians and new Australians to engage in work and society
- encourage identification of change agendas and reward and encourage participation in their realisation

- design decision making to ensure rewards for creative and breakthrough thinking and reward courageous leadership in addressing the difficulties and trade-offs the 21st century will bring
- organise to deliver system-wide change.

The systemic nature of the change agenda requires partnering between all parties to the change and will require partnering between public, private and not-for-profit interests.

Change in the health sector to take one example requires collaboration between public and private sectors, community and commercial interests, health professionals, patients, pharmaceutical companies, health education bodies and regulatory authorities. Delivery of public infrastructure requires long term planning and collaboration between owners and concessionaires to ensure flexibility to respond to future community and environmental needs. The challenge here is to craft flexible partnering arrangements, innovative ways in which the private, public and community sectors can engage to deliver long term services with awareness of and ability to respond to future social and environmental needs, and ways in which the interests of relevant parties can be aligned and their contribution harnessed.

Business will be expected to deliver a wider range of returns.

Whether it is triple bottom line, sustainability or driven by commercial interests and regulation, business will be expected to meet higher standards and greater social responsibilities.

Investors and employees are showing more interest in the intangible assets of a company and seeing a correlation between its culture and values and good financial returns. They look to see that there is fair and honest reporting, that the business is meeting best performance measures in terms of safety, participation of women, governance practices and remuneration and incentive structures.

Also in the line of sight are requirements for corporate social responsibility, recognition of the wider number of stakeholders in the outcomes of the business and dawning understanding of

the potential economic and growth tradeoffs business will need to make to meet energy use and greenhouse reduction obligations and targets.

It is this collision of unfamiliar issues that cross foreign policy, multiculturalism, national security, immigration, corporate governance and social policy that a modern, globally engaged Australia will face as it seeks to forge its identity at home and its position in the world community.

Concluding Thoughts: 'the fierce urgency of now'

At the time of writing this, Australia is facing significant unprecedented challenges. The Australian economy is under stress, the global financial system is frail, and economies around the world have entered recession. We ask: how long will it last? What can governments do to ensure we do not enter recession, that we do not have widespread job losses and that the financial system can continue to support the needs of business for capital?

Critical questions also refer to policies in the US and in China. Will the US Government's policies achieve the shoring up of the financial system, support the continuation of the US car industry so important for employment, avoid extreme levels of unemployment and mortgage defaults? Can China manage to encourage local consumption of their manufactured goods? Will China continue to grow and provide the opportunities needed for both environmental and social stability?

The scale and spread of the global economic crisis suggests fundamental shifts in responses to globalisation, governance of financial systems and perhaps even to the shape of capitalism itself. We will not emerge from the global economic crisis the same as we entered it.

In addition to global economic instability, the world is facing a slew of significant challenges in the 21st century. Human rights issues, environmental degradation and climate change, food, water and energy security, the AIDS pandemic, nuclear and biological weapons, terrorism, hostilities in the Middle East, genocide in the Sudan, tyranny in Zimbabwe and the challenges

presented by Iran and by India, Pakistan, Afghanistan and other countries in Southern Asia.

Government has a critical role, and on a global scale the US has a key role. Newly inaugurated President Barack Obama is charting a new course, demonstrating a willingness to rethink the models and practices that have brought the world to the edge of the economic abyss. US military power approaches that have been costly of lives and funds and have arguably achieved very little are also under new scrutiny. President Obama's 'smart power' approach recognises that the seemingly intractable foreign policy and national security problems of the 21st century exceed what military power can change, and commentators are now seeing the possibility that some change can happen. Fundamental change takes time and lies outside of the timeframe of any individual leader. However the starting line has to be drawn today.

From crisis emerges a new opportunity. We have the opportunity to invest in the education and engagement of individuals the world over, to create future generations and societies capable of being willing participants in a global community and carrying forward a change agenda.

In the speech that rocked a nation 40 years ago, Martin Luther King described the 'fierce urgency of now'. *This is no time to engage in the luxury of cooling off or take the tranquillising drug of gradualism*¹²⁶ he said.

These are words we can heed as we look to the future.

Appendix

EXPERT GLOBAL PANEL

Carol Austin, Contango Asset Management
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Bill Cushing, commentator at large
Vince Fitzgerald, Allen Consulting Group
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References and Endnotes

- ¹ Schwartz, P, Leyden, P and Hyatt, L (1999), *The Long Boom: A Vision for the Coming Age of Prosperity*, Basic Books.
- ² Kunstler, J (2005), *The Long Emergency: surviving the end of oil, climate change, and other converging catastrophes of the 21st century*, Grove Press.
- ³ Leggett, J (2005), *The Empty Tank: oil, gas, hot air and the coming global financial catastrophe*, Random House.
- ⁴ Lowe, I (2007), *Reaction Time: climate change and the nuclear option*, Quarterly Essay 27
- ⁵ *The End of American Capitalism?* www.washingtonpost.com 10 October 2008
The end of capitalism? No, just another bust bubble www.guardian.co.uk, 15 October 2008
- ⁶ Schumpeter, J (1939), *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, Vol. I. McGraw-Hill, New York and London
Schumpeter, J (1954), *Capitalism, Socialism and Democracy*, Fourth Edition, George Allen & Unwin, London
- ⁷ www.alibaba.com
- ⁸ Heng, E, *Changing landscape in China's e-commerce and social networking services*, published in Telecommunications Online, 4 December 2008.
Alibaba is the incumbent China b2b e-commerce player promoting global trade among 200 countries and has a total of five portals. Apart from Allibaba.com, its other interests include an online payment service, Alipay, online consumer marketplace, Taobao, Internet-based software management targeted at small-medium-sized enterprises, Alisoft, and a search engine-cum lifestyle portal acquired from Yahoo China.
http://www.telecommagazine.com/newsglobe/article.asp?HH_ID=AR_4631
- ⁹ Ryan, C, *Small is the way to grow, says net king*, Australian Financial Review, 30 August 2007. www.telecommagazine.com
- ¹⁰ Betts, T, Connolly, E and Osmond D (2007), *Reserve Bank of Australia Trends in Employment and Labour Supply*.
http://www.rba.gov.au/PublicationsAndResearch/Bulletin/bu_sep07/Pdf/bu_09_07_1.pdf
- ¹¹ King, N, MacDonald, A and Walker, M, *No Foreigners, please*, The Australian, 3 February 3 2009.

- ¹² <http://www.autolivaftermarket.com/ci-about.htm> and <http://www.pbr.com.au/>
- ¹³ Barker, G, *Global powers being realigned*, Australian Financial Review, 7 September 2007
- ¹⁴ Manallack, S, *Sleeping elephant now wide awake*, The Age, 6 September 2007
- ¹⁵ Rollin, S A, *Growing source of direct investment into Australia*, Australian Financial Review, 7 September 2007
- ¹⁶ Andrusiak, K, *China, India in battle of Bowen*, The Australian, 13 September 2007
- ¹⁷ Elliott, G, *Big visions collided with small-town mindset*, The Australian, 13 September 2007
- ¹⁸ Sinclair, L, *Big issues don't rate on blogs*, The Australian, 13 September 2007
- ¹⁹ Eslake, S, *Implications of the global financial crisis for the Australian economy*, Melbourne Herald Sun, October 11th 2008.
<http://www.anz.com/documents/economics/Herald-Sun%20Financial%20crisis%2011%20Oct%202008.pdf>
 and
<https://invest.etrade.com.au/cms/assets/Aust%20Outlook%20briefing%2023%20Oct%202008.pdf>
- ²⁰ *China View business, Australian economists predict bleak economy in 2009*, http://news.xinhuanet.com/english/2009-01/03/content_10597027.htm
- ²¹ Dean, P (1999), *The New Economy? A New Look at Australia's Productivity Performance*. Productivity Commission Staff Research Paper, AusInfo, Canberra.
 Dean, P (2003), *Australia's 1990s Productivity Surge and its Determinants*. Revised draft of a paper first presented at the 13th Annual East Asian Seminar on Economics, Melbourne, 20-22 June 2002.
 Productivity Commission. (2007), *Industry Sector Productivity: Individual industry productivity movements*.
<http://www.pc.gov.au/productivity/performance/industry/sectors>
- ²² The innovative capacity of the 'old' elements of the Australian economy is reflected in official government statistics (see Australian Bureau of Statistics. (2006), *Innovation in Australian Business 2005*. Catalogue no. 8158.0). In 2004-05, one-third of Australian businesses undertook innovation in goods and services, production processes and/or organisation and management. Furthermore, the proportion of innovating businesses ranged from electricity, gas and water (49%) to retail trade (28%).
 Interestingly, the low-tech and traditional industry of wholesale trade ranks second with respect to both the proportion of innovating businesses in 2004-05 (43%) and the rate of labour productivity growth between 2001-02 and 2005-06 (4%). Mining, another old industry, ranks ninth in terms of innovating businesses (31%), but first in terms of total factor productivity growth (7%).
- ²³ These findings are also supported by Hughes, A and Grinevich, V (2007), *The Contribution of Services and Other Sectors to Australian Productivity Growth 1980-2004*, Australian Business Foundation, Sydney.
http://www.abfoundation.com.au/research_knowledge/research/200
 A small number of sectors were found to be the prime contributors to Australia's increase in productivity growth, notably services sectors and agriculture. It was the

- development and application of information technologies, together with the investment in management competencies and other organisational assets that were found to be behind the transformation of the sectors contributing most to Australia's productivity growth.
- ²⁴ Hughes, D, *Visy seen to be green*, Australian Financial Review, 28 September 2007
- ²⁵ Morris, S, *Go with the flow urged in water trade*, Australian Financial Review, 7 September 2007
- ²⁶ Morris, S, *Drought moves past exceptional to direct*, Australian Financial Review, 14 September 2007
- ²⁷ Wilson, G, Chairperson of the Essential Services Commission, *Water Pricing – What's coming up for industry in Victoria?* Address to the Australian Industry Group, Melbourne 4 July 2007
http://www.esc.vic.gov.au/NR/rdonlyres/452DF876-4699-4261-92E2-10936B8A4916/0/PTN_AIG_SpeechPublicVersion20070704.pdf
- ²⁸ Banham, C, Foreign Affairs Reporter, *I can unite world on climate, says Rudd*, SMH, 5 December 2007
<http://www.smh.com.au/news/environment/i-can-unite-the-world-on-climate-says-rudd/2007/12/04/1196530678978.html>
- ²⁹ ABC news, *Garnaut criticism shows Rudd is a 'climate change fraud'*, 20 December 2008
<http://www.abc.net.au/news/stories/2008/12/20/2451899.htm>
- ³⁰ Gettler, L, *Sustainability: the biggest business you have never heard of*, The Age, 6 September 2007
- ³¹ <http://www.global100.org/>
- ³² Hopkins P, *Green future for plastics*, The Age, 1 October 2007
- ³³ <http://www.pm.gov.au/topics/climate.cfm>
- ³⁴ The Kyoto Protocol, <http://www.climatechange.gov.au/international/publications/fs-kyoto.html>. Under the Protocol, developed countries are required to take domestic action to reduce greenhouse gas emissions. The latest emissions projections show that Australia is on track to meet its Kyoto target. Australia's emissions are projected to be 108% of 1990 levels during the 2008-2012 period.
- ³⁵ Eddington. R, *Investing in Transport, East West Link Needs assessment*, March 2008, http://210.15.220.118/east_west_report/Investing_in_Transport_East_West-Overview_Contents.pdf
- ³⁶ Garnaut, R, *Climate Change Review*, final report to the Commonwealth, State and Territory governments of Australia, 30th September 2008
http://www.garnautreview.org.au/domino/Web_Notes/Garnaut/garnautweb.nsf
- ³⁷ Department of Climate Change, (2008), *Carbon Pollution Reduction Scheme Green Paper*. <http://www.climatechange.gov.au/greenpaper/report/index.html>
- ³⁸ <http://www.climatechange.gov.au/renewabletarget/publications/fs-ret.html>
- ³⁹ *Oil breaks through \$110*, The Globe and Mail
- ⁴⁰ *Oil price hits yet another record*, BBC 3 July 2008, <http://news.bbc.co.uk/2/hi/business/7486764.stm>

- 41 *Oil prices rise on slumping US dollar*, The Age, 12 December 2008
<http://news.theage.com.au/business/oil-prices-rise-on-slumping-us-dollar-20081212-6wya.html>
- 42 Heuris Partners is an independent consulting firm based in Melbourne specialising mining, minerals and basic industries sectors, www.heurispartners.com
- 43 Money Morning, *Oil's Price is Soaring and These Companies Are Poised to Profit*
 Oil prices are expected to continue their upward march. It recently crossed the \$100/barrel threshold that energy analysts have predicted. Their next prediction: 'Black gold' could reach price points up near \$200 within 12 months. But if that happens, it won't be a straight line. Oil's price moves reactionary to geopolitical events, especially those in the tumultuous Middle East. That, along with slowing major economies and a falling dollar, causes oil's price to fluctuate wildly.
http://www.moneymorning.com/ppc/oil_2008_je9.html?gclid=cjew1azswpicfrwbagod aqygcg
- 44 Denning, D, *Next US Fed rate cut could bring \$150 oil*, The Daily Reckoning, 11 March 2008 <http://www.dailyreckoning.com.au/fed-rate-cut-oil/2008/03/11/>
- 45 Wyatt, S, *High prices mark start of agriculture's strong run*, Australian Financial Review, 5 April 2008
- 46 Switkowski, Z, Chairman Prime Minister's Review of Uranium Mining, Processing and Nuclear Energy, *The report of the Prime Minister's Taskforce on nuclear energy*, released in Canberra 21 November 2006
- 47 Ayers, G (2007), Chief CSIRO Marine and Atmospheric Research, *'The Ocean in our Climate System'* <http://www.cmar.csiro.au/research/climate.html>
- 48 Hartmann, A, Riese, J and Vahlenkamp, T, *Cutting carbon, not economic growth: Germany's path*, The McKinsey Quarterly, April 2008.
- 49 Turton, H, , *The Aluminium smelting industry: Structure, market power, subsidies and greenhouse gas emissions*, The Australia Institute, Discussion paper number 44, January 2002, ISSN 1322-5421
- 50 The Australian Government's Carbon Production Reduction Scheme Greenpaper proposes to provide free permits for a high proportion of the emissions of the most emissions-intensive trade-exposed activities including the aluminium industry.
- 51 Garnaut, R, *Climate Change Review*, www.garnautreview.org.au 30 September 2008
- 52 Marsh, I and Shaw, B (2000), *Australia's wine industry: Collaboration and learning as causes of competitive success*, Australian Business Foundation, Sydney.
http://www.abfoundation.com.au/research_knowledge/research/96
- 53 CSIRO and the Water for a Healthy Country Flagship and the CRC for Irrigation Futures (2005), *Irrigation in perspective: Irrigation in the Murray and Murrumbidgee Basins – a bird's eye view*.
http://www.csiro.au/news/newsletters/0509_water/story2.htm
- 54 Wyatt, S, *High prices mark start of agriculture's strong run*, Australian Financial Review, 5 April 08
- 55 Dunlop, M, Social and Institutional Research Programme, Australian Government, Land and Water Australia, *Decision points for land and water futures*, April 2006

- http://sirr.gov.au/Publications_and_Tools/People_Practice_and_Policy/Policy_Instrument_Choice_and_Mix/Decision_points_for_land_and_water_futures/printdl_3868.aspx?printView=true
- ⁵⁶ Plantic Technologies, <http://www.plantic.com.au/our-technologies/overview/>
- ⁵⁷ Endless Solar, <http://www.endless-solar.com/>
- ⁵⁸ Gilani, S, *U.S. Economic Outlook for 2009 Money Morning*, The Money Map Report, 22 November 2008, <http://www.moneymorning.com/2008/11/22/us-economic-outlook-for-2009/>
- ⁵⁹ ABC Radio Australia, *Serious risks facing deteriorating Indian economy*, Updated 17 November 2008, <http://www.radioaustralia.net.au/programguide/stories/200811/s2421335.htm>
- ⁶⁰ *Nobel winner Krugman's worst case: a lost decade*, Reuters, 8 December 2008 <http://www.reuters.com/article/domesticNews/idUSTRE4B75KJ20081208>
- ⁶¹ GEAB online report, *Global systemic crisis*, September 2008, *Phase of collapse of US real economy*, March 2008, http://www.leap2020.eu/GEAB-N-22-is-available!-Global-systemic-crisis-September-2008-Phase-of-collapse-of-US-real-economy_a1298.html
- ⁶² Garnaut, J, *China's Premier pays heavy price for national insecurity*, The Australian, 2 February 2009
- ⁶³ Barker, G, *Beware simple solutions*, Australian Financial Review, 2 February 2009. (Geoffrey Barker is a visiting Fellow at the Strategic and Defence Studies Centre at the Australian National University)
- ⁶⁴ Snowdon K, *World worries as China growth slows*, ABC Radio Australia, 16 October 2008, <http://www.radioaustralia.net.au/programguide/stories/200810/s2392815.htm>
- ⁶⁵ Sainsbury, M, *Slowdown in China trade figures* The Australian, 13 January 2009, <http://www.theaustralian.news.com.au/business/story/0,28124,24907433-5017996,00.html>
- ⁶⁶ Baird, A, Heuris Partners, *ibid*
- ⁶⁷ Devan, J, Negri, S and Woetzel, J, *Meeting the challenges of China's growing cities*, The McKinsey Quarterly, July 2008,
- ⁶⁸ Kahn, J, *In China, a lake's brave crusader is silenced*, The Age, 15 October 2007
- ⁶⁹ Zhou, T and Wang, C, *Storming the Fortress: a Research Report on China's Political System Reform after the 17th Party Congress*, reported in The Age by Mary-Anne Toy, 20 February 2008
- ⁷⁰ Zhou, T and Wang, C, *ibid*
- ⁷¹ Beinhocker, E, Farrell, D and Zainuibhai, A, *Tracking the growth of India's middleclass*, The McKinsey Quarterly, September 2007
- ⁷² International Food Policy and Research Institute, *Water Resource Allocation: Productivity and Environmental Impacts*, <http://www.ifpri.org/themes/wra.html>
- ⁷³ Brahma, C, *Is the India and China hype true?*, 18 June 2008, <http://search.japantimes.co.jp/cgi-bin/eo20080618bc.html>
- ⁷⁴ Farrell, D and Lund, S, *The World's New Financial Power Brokers*, McKinsey Quarterly, December 2007

- ⁷⁵ Gimbel, B, *The richest city in the world* Fortune, 12 March 2007
http://money.cnn.com/magazines/fortune/fortune_archive/2007/03/19/8402357/index.htm
- ⁷⁶ Harcourt, T, *The Global economy in 2008*, Australian Trade Commission, Sydney, 21 December 2007, <http://www.austrade.gov.au/The-Global-Economy-in-2008/default.aspx>
- ⁷⁷ Wallach, L and James, D, *Why the WTO Doha Round Talks Have Collapsed – and a Path Forward*, CommonDreams.org, 14 August 2008,
<http://www.commondreams.org/views06/0814-33.htm>
- ⁷⁸ *A Red-Letter Day for Layoffs*, Business Week, 27 January 2009,
http://www.businessweek.com/bwdaily/dnflash/content/jan2009/db20090126_735128.htm
- ⁷⁹ Miller, D, *Black Monday Brings Massive Layoffs – Economists Say Some Jobs Could be Gone for Good*, Money Morning, 27 January 2009,
<http://www.moneymorning.com/2009/01/27/job-cuts/>
- ⁸⁰ Department of Education, Employment and Workplace Relations, *Australian Jobs 2008*,
<http://www.workplace.gov.au/workplace/Publications/LabourMarketAnalysis/AustraliaJobs.htm>
- ⁸¹ Department of Education, Employment and Workplace Relations, *New Jobs: Employment Trends and Prospects for Australian Industries*, March 2008.
<http://www.skillsinfo.gov.au/NR/rdonlyres/DA40ED55-047F-4624-A496-DDFD5CE38D78/0/NewJobs.pdf>
- ⁸² Lewis, P, Garnett, A, Hawtrey, K and Treadgold, M (2006), *Issues, Indicators and Ideas: A Guide to the Australian Economy*, Pearson Education Australia.
- ⁸³ Lewis, P (2008) *The Labour Market Skills Demand and Skills Formation*, Skills Australia Occasional Paper
- ⁸⁴ Australian Bureau of Statistics (2007), *The Labour Force*, Australia Cat No 6202.0
- ⁸⁵ Australian Bureau of Statistics (2006), *Australian Social Trends*, Cat No 4102.0
- ⁸⁶ Parekh, K, and Walker, M, *Tomorrow's Knowledge Workers: The Evolving Workforce and the Challenge to US Businesses*, PARC Futures workshop, April 2008,
<http://www.slideshare.net/MCW/tomorrows-knowledge-workers-the-evolving-workforce-and-the-challenge-to-us-businesses>
- ⁸⁷ Shah, C and Burke, G (2006), *Qualifications and the future labour market in Australia*, Report prepared for the National Training Reform Taskforce, Monash University – ACER Centre For The Economics Of Education And Training.
- ⁸⁸ Hamilton, M, University of Sydney, Hamilton, C, The Australia Institute, *Baby Boomers and Retirement: Dreams, fears and anxieties*, Discussion Paper Number 89, September 2006, ISSN 1322-5421
- ⁸⁹ Jackson, N, Walter, M and Felmingham, B, (2006), *Will Australia's baby boomers change their retirement plans in line with Government thinking*, Key points from the ASRAM (Australian Survey of Retirement Attitudes and Motivations, University of Tasmania.
- ⁹⁰ Erickson, T, *Why Do You Think What You Think?: Boomers' Views on Work and the World*, Harvard Business Review, 10 March 2008

- ⁹¹ Bryan, L and Joyce, C (2007), *Mobilizing Minds: Creating Wealth from Talent in the 21st-Century Organization* McGraw Hill, adapted from *The 21st century organisation*, The McKinsey Quarterly August 2005
- ⁹² McKinsey Global Institute (2005), *The Emerging Global Labour Market*, <http://www.mckinsey.com/mgi/publications/emerginggloballabormarket/>
- ⁹³ Australian Labor Party (2007), *Skilling Australia for the Future; A Digital Education Revolution*, policy document <http://parlinfo.aph.gov.au/>
- ⁹⁴ University World News, *CHINA: Investment in tertiary education on the rise*, 17 April 2009 <http://www.universityworldnews.com/article.php?story=20080620091250723>
- ⁹⁵ UNESCO Institute for Statistics (2006), *Financing Education – Investments and Returns*, http://www.uis.unesco.org/ev.php?ID=5245_201&ID2=DO_TOPIC
- ⁹⁶ OECD, (2007), *Education at a Glance*, http://www.oecd.org/document/30/0,3343,en_2649_39263238_39251550_1_1_1_1,00.html
- ⁹⁷ Marginson, S, *Joint decision the right way to go*, Australian Financial Review, 2 February 2009
- Simon Marginson works in the Centre for Study of Higher Education at the University of Melbourne and is a co-author of *Creativity and the Global Knowledge Economy*, published 2009 by Peter Lang New York.
- ⁹⁸ Bradley, D, Noonan, P, Nugent, H and Scales, B (2008), *Review of Australian Higher Education Final Report*, for the Department of Education, Employment and Workplace Relations. The Bradley Review concluded that Australia is falling behind other developed countries in terms of the number of people attaining degrees. The relative ranking of 25 to 34 year-olds with degree-level qualifications has slipped from seventh among OECD countries to ninth.
- ⁹⁹ Johnson, P (2008), *Paul Johnson discusses the Bradley Review*, La Trobe University, <http://www.latrobe.edu.au/news/articles/2008/article/paul-johnson-looks-at-the-bradley-review>
- ¹⁰⁰ Ranck, H, *Bradley Review Provides a Solid Basis for Reform*, BCA, 18 December 2008, <http://www.bca.com.au/Content/101526.aspx>
- ¹⁰¹ Davis, M, *Budget deficit will put pressure on Rudd reforms*, Canberra Times, 2 February 2009, <http://www.canberratimes.com.au/news/national/national/general/budget-deficit-will-put-pressure-on-rudd-reforms/1422828.aspx>
- ¹⁰² Baird, A, Heuris Partners, *ibid*
- ¹⁰³ Tomazin, F, *Funding splurge fails to improve student results*, The Age, 5 February 2009
- ¹⁰⁴ Australian Government Treasury, *Integration Report 2007*, <http://www.treasury.gov.au/igr/IGR2007.asp>
- ¹⁰⁵ This section on Innovation was authored by Narelle Kennedy, CEO of the Australian Business Foundation.
- ¹⁰⁶ Department of Innovation, Industry, Science and Research (2008), *The Review of the National Innovation System Report, Venturous Australia— Building Strength in Innovation* <http://www.innovation.gov.au/innovationreview>

- ¹⁰⁷ Schumpeter, J, *ibid*
- ¹⁰⁸ Bailey, R (2001), *Post Scarcity Prophet, interview of economist Paul Romer*, Reason Online, <http://www.reason.com/news/show/28243.html>
- ¹⁰⁹ Steen, J, MacAuley, S, Kastelle, T (2008), *New Tools to Map and Manage Innovation Networks*, Inside the Innovation Matrix: Finding the Hidden Human Dimensions, pp. 83-95, Australian Business Foundation, Sydney.
- ¹¹⁰ New Zealand Treasury (2008) '*Innovation and Productivity: Using Bright Ideas to Work Smarter*', submission to Review of National Innovation Systems, Australian Department of Innovation, Industry, Science and Research, <http://www.innovation.gov.au/innovationreview>
- ¹¹¹ Laybourn-Parry, J, (2008), *University of Tasmania Response to the Innovation Review*, submission to Review of National Innovation Systems, Australian Department of Innovation, Industry, Science and Research, <http://www.innovation.gov.au/innovationreview>
- ¹¹² Skidelsky, R, *Where do we go from here?* Prospect Magazine, issue 154, January 2009.
- ¹¹³ Council on Foreign Relations, *Obama-Biden Foreign Policy Agenda*, 21 January 2009 www.cfr.org/publication/18307/obamabiden_foreign_policy_agenda.com
- ¹¹⁴ Garnaut, R, *ibid*
- ¹¹⁵ United Nations University, *As Ranks of 'Environmental Refugees' Swell Worldwide, Calls Grow for Better Definition, Recognition, Support*. 11 October 2005 – Press Release – UNU Institute for Environment and Human Security, www.ehs.unu.edu/article:130
- ¹¹⁶ Fullilove, M, *Alliance goes back to business first with Rudd*, The Sydney Morning Herald, 4 April 2008
- ¹¹⁷ UN News Centre, *World population to reach 9.1 billion in 2050, UN projects*, 24 February 2005, <http://www.un.org/apps/news/story.asp?NewsID=13451&Cr=population&Cr1>
- ¹¹⁸ Rudd, K, Prime Minister, *Advancing Australia's Global And Regional Economic Interests*, address to the East Asia Forum in conjunction with The Australian National University, 26 March 2008
- ¹¹⁹ Rudd, K, *ibid*
- ¹²⁰ Rudd, K, Prime Minister, *The Australia-US Alliance And Emerging Challenges In The Asia-Pacific Region*, speech to The Brookings Institution, Washington, 31 March 2008
- ¹²¹ Garnaut, R, *ibid*
- ¹²² Oliver, S (2002), *New Intelligence: Fact and Fiction*, address to AVETRA conference, http://www.avetra.org.au/abstracts_and_papers_2002/oliver.pdf
- ¹²³ Rudd, K, Prime Minister, *Opening Address*, <http://www.australia2020.gov.au/>
- ¹²⁴ *Australia 2020 Summit - Final Report* (2008), http://www.australia2020.gov.au/final_report/index.cfm
- ¹²⁵ Dupont, A, *Heating up the planet- Climate change and security*, Lowy Institute for International Policy, Lowy Institute, Paper 12. P85
- ¹²⁶ Martin Luther King, *I have a dream*, August 1963