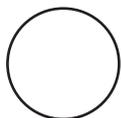
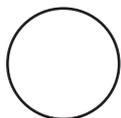
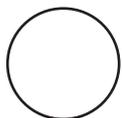


CAN THE FUTURE BE MADE FUTURE PROOF?

DIRECTIONS FOR TELECOMMUNICATIONS, MEDIA, AND PUBLIC POLICY

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Australia's Leading Free Market Think Tank

H. V. McKay Lecture 2006

It is a great privilege to deliver the H.V. McKay Lecture on Technology for 2006. H.V. McKay has been one of my heroes for more than 10 years. I learned of Hugh McKay in Lismore during a lecture tour to Australia in 1995, when I visited nine cities - beginning in Melbourne and ending in Cairns.

In Lismore I discussed with state and local leaders how regional institutions are used in the US to improve the quality of life in sparsely-populated regions of the American West - a region very much like Australia. During these discussions, I learned about *Australia's Royal Flying Doctor Service*. McKay's support for the *RFDS* inspired me to learn more about him and I was fascinated by his biography.¹ McKay's business interests focused on manufacturing farm machinery, where he operated the nation's largest industrial plant in the early 1900s. But he also pioneered advances in mass production techniques; and he stands out as one of Australia's early large-scale exporters, selling his invention, the Sunshine harvester, around the world - from Argentina and New Zealand to Chile, Russia and South Africa.

McKay's sensibilities are very relevant to contemporary Australia - not the least because of his unending commitment to make investments to advance the national interest. McKay used much of the wealth he accumulated from his wide-ranging business interests to finance public interest projects like the *Flying Doctors*.

He also showed a strong interest in major infrastructure projects - including social infrastructure such as parklands, schools, libraries and other public buildings. In the spirit of the evening's namesake, I want to use my time to address some of the lessons from the life of H.V. McKay including:

- how inventions can change the course of a life and a society.
- why investments must be profitable.
- the importance of building social and physical infrastructure.
- our civic responsibility to focus on improving standards of living.
- the quality of life for all Australians, no matter where they live.

Australian Culture

Even though I have been in Australia for about eight months, people still ask me, "What has surprised you

most?" I spoke in Canberra in early December last year to answer that question in relation to government and politics. Tonight, I would like to answer that question in relation to Australian culture.

Aspects of Australian culture that I have enjoyed the most include events at the Opera House, Aussie sports and Aussie films - from *The Castle* and *The Nugget* to more recent releases, such as *The Oyster Farmer*. Of course, I should include the made-for-TV episodes of *Kath & Kim*. Truth-to-tell, I have watched only four of the 24 episodes - a gift of my Aussie cultural guru. As for the remaining 20...can't really say when I will get to them.

I love the movie *The Castle*. As you know, it's a theme I keep coming back to - mums and dads trying to save their property from Government confiscation. When I recently reminded a friend of mine of the important lessons from the *The Castle* - including the fact that the mums and dads beat the system - he said, "Remember, it's only a story."

Future-Proofing

Still, there are a couple things about the culture of public discourse that both surprise and fascinate me. One, in particular, is "future-proofing" - and especially the way elected and civic leaders, the media and the public in general appear to accept this notion of "future proofing." I had never heard this phrase before coming to Australia.

It is a curious and bewildering phrase to my way of thinking. There are lots of things I want to be "proofed" from. I want to be:

- bullet proof.
- fire proof.
- burglar proof.
- water proof.
- fool proof - especially fool proof.

But "future proof?" Those words suggest you don't want to be surprised or that somehow you want to control the future. It's like saying you don't want anything to change. If that is the case, that would be a very boring life. Imagine, no more:

- surprise birthday parties.
- inventions.
- revolutions.
- marriage - or for real surprises, marriages.
- kids.
- family life.
- work and bosses.
- politics.

Almost everything that makes life interesting involves surprises. Think about the world of technology, where we are surprised all the time. New technologies - like the micro chip - are not only surprises, but, even more importantly, they typically have impacts and consequences that were

never anticipated by their inventors and pioneer users.

Consider the railway. The application of technologies that were integrated into what we call the modern railway included things like:

- trackage.
- rolling stock.
- steam engines.

The invention of the railway led to many surprising innovations – including:

- the Pullman sleeping car.
- Westinghouse air brake.
- electronic signalling systems.
- refrigerated freight cars.
- remote electronic switching.
- standardized rail separations that permitted the inter-connection of passenger and freight cars from one railway to another.

But the real economic, social and cultural importance of the railway extended way beyond improvements that were made in the technologies and practice of moving rail cars over fixed trackage.²

The impact of the railway was huge and had enormous spillover effects. For example:

- The railway had major economic impacts, especially in the economic development of the US, Russia, Canada, Australia and other large, continental countries. Reason: Railways reduced the costs of transportation and increased the speed to market – especially for agricultural goods that were often produced in the hinterland.
- The railway led to social inventions. For example, the need to develop reliable railway schedules led to the establishment of time zones – which occurred first in the US and quickly spread to the rest of the world.
- The railway led to the demographic decentralization of society, with human settlements able to prosper away from seaports and inland waterways.³
- You can even make the case the railway led to what we call the “green revolution” – advances in agriculture that ended famine and starvation that were regular features of life in India, China and many other parts of the world. But that is a story for another time.⁴

Consider the automobile. The impact of the automobile is much bigger than:

- electric starters.
- power steering.
- paved roads.
- traffic control signals.

The biggest impacts were cultural, changing the way we live, work and play. The automobile led to:

- drive-in movies.
- motels.

- more sexual freedom.
- drive-through fast food.
- suburbs.
- sprawl.
- more personal freedom and mobility.

The same goes for the compass. The compass was more than a better way to find your course around on the planet especially on the oceans where the traveller-navigator had no landmarks for using dead-reckoning methods of navigation.

The improved ability to navigate on the oceans created by the compass led to:⁵

- the ability to sail in all kinds of weather since the compass relieved the navigator of the need to be able to see the stars or track the shoreline.
- the construction of larger ships because the compass dramatically reduced the dangers of running aground,⁶ and the ability to sail long distances, opening up global trade routes which, in retrospect, we now know, sparked unprecedented wealth creation.⁷

The point is that future proofing can't be done...and shouldn't be done. Policies required by future proofing will inevitably prevent innovation and stifle creativity.

This is not to say we shouldn't practice risk mitigation and risk management – e.g., “fix the roof while the sun is shining” or strategies for adaptation in the light of new technologies or changing consumer needs. But these are dynamic, outwardly-focussed concepts and are very different from the static and defensive concept of “future proofing” as it used in Australia.⁸

Static, defensive, micro-managed notions of the future are bewildering to me because, to my way of thinking, man was created to make the world a better place. That means to change things,

- to invent things.
- to upgrade, advance, and perfect.
- to engage in a process of continuous improvement.⁹

The Future Doesn't Need Proofing

Indeed, both non-religious secular philosophies and most of the world's great religions affirm that we are created - or evolved, take your pick - to make the world a better place and especially that little part we can influence - our kids, our family life, our communities, the enterprises we work in - to leave that part of our world a little better than we found it.

So, I would think that the worldviews that most of us hold - whether secular or religious - would throw doubt at the notion of being 'proofed' against the future.

Of course, I understand that those who call for 'future proofing' in Australia are concerned that some people - especially those in the bush - might be "left behind" by the process of change.

Put Faith in Market Mechanisms

But market mechanisms, not more government controls, remain the best way to ensure progress - in the case of telecommunications, that new and better services continue to be delivered to everyone. If market forces are not used, the alternative will be - favoured companies, favoured technologies or government-owned or government-directed facilities. Government intrusion that tries to "pick winners" or decide how private enterprises should plan, manage and deploy capital is asking for future agony, not future proofing - as innovation is stifled and investment dries up.

In fact, if you encourage investment, leave the market to innovate, and remove barriers to the deployment of new technologies and services, the often-regretted digital divide will be bridged. Where natural markets do not exist, vouchers or other market-based mechanisms can be used to create market forces that will attract private sector providers to provide services in rural and remote areas that are otherwise beyond commercial arrangements.

Where markets are imperfect there is a role for Government to make sure the benefits of new technologies is shared as widely as possible. However, this role is not to be a builder or operator that will freeze consumers into a static system. The last thing we need is a communications "industrial policy" with a technology and service delivery bias based on onsize-fits-all, the default approach of government.

Keeping up with the future requires change, innovation and removing barriers to investment. It didn't take government "future-proofing" for Hugh McKay to develop the Sunshine Harvester which brought enormous benefits to rural and regional Australia. And, today, no amount of "future proofing" is going to keep rural and remote Australia from falling behind if all they have is a government-driven network built piecemeal by a government-funded private company "consortium." Instead, rural and remote Australia need what the rest of Australia needs: A wall-to-wall, full-service Next Generation Network (NGN).

Sustainability

"Sustainability" is another concept that is widely used around the world - including the US, but especially in

Australia. The notion of sustainability - that you shouldn't do anything that is not sustainable over a long period of time - is now commonplace. It sounds so good, so...well... simple. But the opposite is true. Moreover, those who talk about sustainability almost always overlook central ideas of economics - especially markets and price - and that is why they are so often wrong.

Pricing and market mechanisms are pretty good at allocating resources. And they are pretty good at signalling to consumers when they should start looking for substitutes. That's why, where free markets are allowed to operate, that most societies are able to cope. And that's why it is correct to say that "We will never run out of oil." There are two reasons:

- First, as the price for oil increases, guess what, we find more of it. The reason: The size of a mineral reserve is an economic concept, not a physical concept. The higher the price of oil, copper, iron ore - or even broadband services - the more you will get. When oil rose from \$3.00/barrel to \$40/barrel, we started finding new sources of oil and gas all over the world - from Prudhoe Bay and the North Sea to Mexico and Venezuela.
- Second, as the price of oil or any other commodity goes up, inventive people start looking for substitutes.

There are all kinds of examples:

- coal for wood.
- plastic for copper tubing.
- ethanol (grain) for petrol.
- aluminium studs for wooden studs in home building.

This basic consideration - understanding the role of prices and markets - was ignored in the famous Limits to Growth studies led by Dennis Meadows and the Club of Rome in the early 1970s.

It is also found in the present time in the writing of Jared Diamond in his best-selling book, *Collapse: How Societies Choose to Fail or Succeed*. In this book Diamond shows how careless use of resources led to the collapse of civilizations, but in nearly every case critical decisions were shaped by tribal leaders and other "wise men" who were undisciplined by prices and markets.

There is another problem with embracing the ideas of sustainability and future proofing too closely. The reason is this: If public policy embraces only those actions that are sustainable, then somebody, someplace has to decide what is sustainable. If public policy is going to embrace future proof, then somebody, someplace has to be given the power to say what technologies or practices will work in the future and what will not. When a society goes down this road, it risks turning its future over to the experts. And what happens is predictable:

- problems get professionalized.

- issues get nationalized.
- solutions get bureaucratized.
- grassroots civic leaders lose control of their lives and their communities.¹⁰

In the end, the victim is democracy and self government. We should not be afraid of change. We should not be afraid of trying things that may not work forever. We should have confidence in our ability to adapt and to change things that are not working. Still, we should not over-estimate our ability to know the answers. Because the answers are more likely to be an incremental process of trial and error.

Rather than upholding the notion of absolute future proofing, the best that we can do is pass on to the next generations an environment that nourishes creativity and innovation. That's why you hear me so often talking about the dangers of regulatory intervention.

Conclusion

In closing, let me end with a story. One of my colleagues, Stuart Lee, has a beach house at Pt. Lonsdale -- about 120km by road from Melbourne via Geelong at the entrance to Port Phillip Bay.

Alongside the town cricket ground is the "Marconi Memorial." The text on the memorial reads as follows:

From This Spot

On 12 July 1906

The First Overseas Wireless Messages

Were Sent By:

Lord Northcote, Governor General;

Sir R. Talbot;

Hon. A. Deakin, Prime Minister;

Hon. A. Chapman, Postmaster General; And,

Hon. R. A. Crouch M.P.

For Corio

...

Equipment

Supplied and Operated By

Marconi Wireless Coy Ltd.

That was 100 years ago – a century. Marconi Wireless is now owned by Ericsson, which is headquartered in Sweden. The Postmaster General (PMG) no longer heads up the telephone company; instead it is governed by an independent board of directors, has 1.6 million Aussie shareholders, and provides advanced telecommunications services to people, businesses, government and communities in Australia.

Lots of changes. However, during these past 100 years, one thing hasn't changed: The old PMG - now called Telstra - is still the only company that provides telecommunications services to all Australians, no matter where they live. And all this happened without future proofing.

References

1. See J. Lack, "The Legend of H.V. McKay," *Victorian Historical Journal*, vol. 61, pp. 124-157.
2. This account draws on Peter Drucker, "The Age of Transformation." *The Atlantic*, November, 1994.
3. In the US, for example, the railway led to the opening of the American West and transformed the U.S. into a truly continental country, enriched by natural resources and cultural diversity that were found west of the Mississippi River.
4. The railroad's contribution to the "Green Revolution" happened in the US. The link: the establishment of the land grant college with departments of agriculture, agriculture experiment stations and the agricultural extension service including university-based county agents probably the most sophisticated and most successful institutions for systematic innovation and technology diffusion in the history of human civilization. This all happened because members of Congress from the Midwest and Atlantic regions of US needed to be given "inducements" for the many benefits that were being given to the railroad for the benefit of Western states and territories.
5. On these points, see, for example, Amir D. Aczel. *The Riddle of the Compass: The Invention that Changed the World*, New York: Harvest Books, 2001; or Alan Gurney. *The Compass: A Story of Exploration and Innovation*. New York: W.W. Norton, 2004.
6. In *The Compass: A Story...* Gurney writes that "the cry of 'breakers ahead!' was the first warning that the navigating officers had made a dreadful mistake in the dead reckoning..."
7. This story is told most recently in Thomas Friedman. *The World is Flat: A Brief History of the Twentyfirst Century*. New York: Farrar, Straus, 2005.
8. The term "future proofing" was first used in telecommunications, as far as I can see, in the Estens Report. See *Regional Telecommunications Inquiry, Connecting Regional Australia* (Dick Estens, Chairman), Department of Communications, Information Technology and the Arts, Canberra, 2002. For a contemporary rendition, see Helen Coonan, "Connect Australia: Future Proofing the Nation." Address to the Sydney Institute, August 23, 2005.
9. Recognizing, of course, that you will never get there because the inevitability of progress and perfectibility of man are false hopes.
10. This is exactly what happened in the US at the turn of the last century, when the Progressive Movement advanced "reforms" at every level of government that took power from the people and elected institutions and gave it to elites, primarily professional elites.

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