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Benefiting from Asia's Technology Revolution

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Invited Paper

Abstract

An invited paper, the Charles Todd Oration 2019, delivered by Mr John Lord AM that covers how Australia might benefit from Asia's technology revolution.

Introduction

Good afternoon, ladies and gentlemen, and distinguished guests.

It is a pleasure to be here today delivering the TelSoc Charles Todd Oration. Many eminent people have delivered this oration over the years, so I am honoured to have been asked to deliver this today.

TelSoc plays such a valuable role in our local telecommunications industry in promoting the discussion around the development of the telecommunications industry here in Australia.

As we all know, the telecommunications industry has changed beyond comprehension from the days when Charles Todd and his team built that first telegraph line that connected Adelaide to Darwin, and Darwin to the rest of the world. That telegraph line connected Australia to the world and began to open up the pathway to an interconnected world which has helped create the hyper-connected 'Global Village' in which we now live.

The challenge now is not so much around connecting people to telecom networks – here in Australia almost everybody that wants to connect to either mobile or fixed broadband is able to do so.

The issue we are facing now, and the one which I will focus on today, is how we as Australians deal with the consequences of the connected world that Charles Todd helped to deliver. In particular, we need to deal with the impact that more and more of the technology that will drive this connected world is now coming out of Asia Pacific – especially China – rather than Europe and the US, the traditional countries.

How do we as a nation deal with this new reality of the technologies of the future being developed right on our doorstep? If we do not deal with it properly then we will only avail ourselves of 50% of the leading innovation and technology in the future.

The Rise of China

The plain fact of the matter is that China and the broader APAC region are emerging as key drivers of ICT technology and that poses clear challenges for Australia. I need hardly say that the issues that my own company have faced over the last 18 months on 5G are a pretty good demonstration of the challenge. We don't need to go into the details of all that here today but it does raise a very important point about how we as Australians see our regional partners and the ways in which we are prepared to trade with them and build trust in relationships.

As I am sure we are all aware, our country has long imported products from the rest of the region: we have brought in cars and electronics from Japan and Korea and, in recent years, we have imported a huge amount of Chinese-produced consumer goods.

But as we know and understand, the ICT sector is very different.

A few years ago, the Australia China Business Council (ACBC) reported [ACBC, 2014 \[5\]](#) that more than 50% of Australia's ICT imports were from China alone – more than the rest of the world combined.

Some of you may have seen this dilemma summed up rather neatly by Martin Parkinson, the outgoing secretary of the Department of Prime Minister and Cabinet, in an interview with the *Australian Financial Review* recently (Murray, 2019 [\[6\]](#)):

"If China wants to be the world's largest producer of cheap consumer electronics, knock yourself out. I don't care. If, on the other hand, it's going to be the only supplier of quantum computing, or the only supplier of 5G, I've got a problem."

I don't seek an argument with a great and eminent Australian like Dr Parkinson but his comments on China do reflect the challenge that we as Australians are facing in the future.

Fergus Hanson of the Australian Strategic Policy Institute's cyber policy centre, speaking in support of Tobias Feakin, the Cyber Security Commissioner, reportedly said in India recently that, if India bans Huawei, it would represent a great success for western countries (Tillett, 2019 ^[7]). It is hard to see how it could be considered a good outcome if a country such as India could only access 50% of the best innovation and technology. I certainly don't think that Germany, the UK, France and the other twenty or so European countries that use Huawei technology would agree with him.

My key concern is that, if we are to gain all the benefits for our world in the future, we need to be open and embrace all the ideas, innovations and technological developments from all players irrespective of country or company of origin.

There is no doubt the United State of America will be a technological and innovation leader well into the future. It fosters an innovative environment in its society, encourages entrepreneurship, and with its large and dynamic economy has the resources to see innovation and entrepreneurship flourish.

Europe will also remain a key area for entrepreneurship and setting of international standards because of its multicultural and unified governance structures that, despite difficulties overall, do set standards, protocols and rules across many borders.

However, outcomes in life – as in politics – are driven by the simple laws of arithmetic – and the numbers we are dealing with here are pretty stark. According to official OECD figures, back in 2009 only around 30% of the global middle class was located in Asia with the remainder in the US and Europe. If you fast forward to 2030, then the OECD is forecasting that two-thirds of the global middle class will come from Asia (Pezzini, 2012 ^[8]).

To put that into simple numbers, the OECD is forecasting that the Asia-Pacific middle class will increase from 525 million people in 2009 to 3.2 billion in 2030 –nearly a six-fold increase over a twenty-year period.

On the back of this demographic sea change Asia will become the consumer powerhouse of the world. Also, its educational institutions will produce large numbers of talented people, its businesses will thrive and will invest more and more in research and development across all disciplines.

The numbers will win out in the end. The younger age of many of the countries, the growing GDPs, will see more and more innovation and technological advancements coming out of the Asian region. To be quite clear about it, the Huawei story of today will be a common story across Asia, not just in China, but in the many other countries that will grow and develop in coming years.

The reality of the situation is simply that the growing and better educated middle class emerging in Asia Pacific – especially China – is now capable of producing much more than cheap consumer electronics. Already Huawei is the undisputed world-leading vendor in 4G and 5G technology.

The Asia-Pacific region is now capable of producing technologies as good as or even better than what is being produced in the western countries – and Australia cannot afford to turn its back on that kind of innovation.

Australians need to be smart about how we deal with this and we need to figure out how we can use this explosion of innovation taking place right on our doorstep as an opportunity and not a threat.

What Can Be Learnt from Huawei

This is where my company, Huawei and particularly Huawei Technologies Australia, is able to offer a unique perspective. We are one of the largest private companies in China, 100% owned by our employees with no Government involvement, and we are truly a global company with operations in over 170 countries around the world.

Australia's future prosperity depends very much on the strength of these kinds of business relationships like those that Huawei Australia has formed in the fifteen years it has operated here in Australia. Huawei has benefited from being in Australia but – just as importantly – we like to think that Australia has also benefited greatly from us being here too.

For example, here in Australia our 4G mobile networks are among the best in the world. This has been driven by strong competition between the three network vendor providers, which has driven innovation and kept costs down. Huawei is proud of the fact that it provides over 50% of Australia's mobile network.

The interesting thing is that there are clear historical parallels between what is happening now with the rise of Asia in the ICT sector and the situation that arose in the 1960s when the Japanese entered the commercial market here in Australia and globally.

In the 1960s, Australian's would not buy Seiko watches as they were thought to be copies, Toyota cars were thought to be highly inferior to European vehicles, and Japan was untrustworthy as we had fought a war against them. By the late 1990s, Seiko watches were considered to be as good as many Swiss watches, Toyota was the number one vehicle in Australia, and an ex-Prime Minister only a few years ago declared Japan our greatest friend in the Asia-Pacific area (SBS, 2013 ^[9]).



It is interesting to remember that the US tried to restrict Japan in the 1980s using the same kinds of tariffs and restrictions that Huawei is facing today.

I see Huawei and Chinese companies in a similar stage of development as those Japanese car companies were all those years ago; or more precisely entering and competing in the global environment.

However, it's also important to note that it's not just about new competitors coming into the market, it's also about the pace of technological change. When I first commanded a vessel, I was using pretty much the same navigation equipment that had been used by Captain Cook in 1779 – very little had changed in maritime technology.

However, by the end of my career in 2000, I was using GPS satellites to position the vessel to metres of accuracy – something that would have been absolutely unimaginable at the start of my career and there will doubtless be more change ahead for the maritime industry.

So, to return to our theme, we want to get to a stage where our country is as comfortable with cutting-edge technology coming here from Asia as it is with cars and consumer goods.

At Huawei, we believe that localisation of Asian technology companies is the real key to doing this. In Australia, we have a local Board of three non-executive directors – Huawei's first local Board anywhere in the world – and we have over 700 local staff. It makes sense that we should be doing our utmost to ensure we have local technology suppliers also benefitting from – and contributing to – Huawei's success.

As part of this localisation drive, Huawei wants to promote an ‘ecosystem of investment’ between Australia and China. Already around half of our global R&D centres and Joint Innovation Centres are outside of China – but none have yet been located here in Australia. The importance of Australia capitalising on the unprecedented scale of technological innovation coming out of China – we cannot afford to miss out on what has been called ‘the largest investment in Research and Development in human history’ (Pearcey, 2015 ^[10]).

As a company of Chinese origins, many people imagine that our products are entirely produced in China from Chinese components and suppliers, but nothing could be further from the truth. Overall, 50% of our revenue is generated outside of China, and we source 70% of our materials from non-Chinese companies. The United States provided 30% of components (\$11 billion); Taiwan, Japan and Korea provided 30%; Europe 10%; and Mainland China provides 30% of components. Although we know this is changing.

These components range from complex chipsets to the most basic nuts and bolts, and there are ample opportunities for Australian companies to play a far greater role in this supply chain. And Huawei is not unique. All of our competitors have similar supply chains, and Australia at this time participates well below its capability.

Australia cannot be a one-way street in terms of ICT industry trade with Asia. We cannot be taken by the mindset that we export our minerals to Asian countries and import hi-tech from them – Australia must benefit from Asia’s innovation and technology boom.

If we get this right, then Asian global businesses can grow and succeed utilising Australia’s strengths by being localised; and Australia broadens and increases its global revenues through joining large global supply chains and gaining access to innovations and leading-edge technologies.

The Challenges to Overcome

Hopefully you are becoming convinced that there are great benefits to be gained by Australia being more open and engaged with Asia in terms of technology innovation. I firmly believe that there is a potentially very bright future ahead of us with our neighbours but there are a number of areas we need to work on before we can benefit properly from Asian innovation.

The first of these is a pretty obvious one, our potential partners in Asia want certainty and stability from us if they are going to invest and engage in the longer-term. It hardly needs to be said that what we are seeing at the moment from an Asian perspective is exactly the opposite to the kind of business environment that we need to see in the markets in which Asian companies invest around the world. Too often the first call on an Asian investment proposal is to block it or insert more difficult criteria. Large Asian multi-nationals need to have certainty over what that future looks like because, if they don’t, it is very hard to make the kind of investments that they need to make for our mutual benefit.

So, how do we get that certainty in terms of regulatory outcomes?

Well, to be quite clear about it, the number one thing we need to see established between Australia and the new emerging companies from Asia is trust. It is critically important. This is why Huawei has been working around the world with countries and international organisations to show that our products can be trusted and that we have nothing to hide.

We have been working with operators and government agencies in the UK for around ten years now to demonstrate to them the integrity of our kit and of our company. The results have been hugely positive for both Huawei and the UK. Our fixed broadband technology and equipment has helped make the UK the most advanced of the five major European countries in terms of high-speed broadband deployment.

Because we have been able to build a position of trust with the UK and its mobile operators, we have been able to help UK operators such as EE and Vodafone become some of the first in the world to launch 5G services, which are now rolling out across the UK.

It's been a similar story in mainland Europe where we have established our Cyber Security Centre in Brussels and – working with the European Union – we have been able to demonstrate to European countries that our products are safe and secure. That approach seems to be paying dividends for us because, of the 50 commercial 5G contracts that we have signed, over half are in European countries.

We could not have achieved any of that without building trust with all of those countries and a similar approach is needed here in Australia. We are not asking the Australian Government to trust us as a matter of blind faith. Security of critical infrastructure is a national imperative; security of data is essential.

However, the best Cyber-Security defence says:

- Test all hardware and software;
- Control all access to data;
- Co-operate openly between business, industry and government.

We are saying to them that we are absolutely willing and open to have them test our products and technology to demonstrate that they are safe, secure and reliable.

There are two more things we need to see happen before we can move onto greener pastures.

Firstly, and I have already alluded to this earlier in my comments, Australia needs to change the way it sees Asia in terms of what the region can do for us. The fact is that Asia is no longer simply about mass producing cheap consumer goods, it is now moving to a different plane and is producing cutting-edge technology across a range of fields. As a country it is critically important that we understand that.

The final thing we need to ensure is that we are keeping up our part of the bargain in terms of producing the talent that can play an active and useful role in the mutually beneficial eco-system that we are talking about here. Asian companies producing cutting edge technologies will not invest here and will not be attracted here unless we are supplying young Australians who actually bring high-level expertise to the market.

The fact of the matter is that our Asian neighbours are producing staggering numbers of highly skilled engineers from their universities. The World Economic Forum reports that in 2016 China and India combined produced a staggering 7 million STEM graduates – by contrast the US and Japan produced a mere 800,000 (WEF, 2016 ^[11]).

As for us here in Australia, figures suggest that we have only around 800,000 STEM participants in our entire country – only a third of whom have post-graduate qualifications (Dobson, 2018 ^[12]).

If we want to have an impact on the world stage and create the kind of mutually beneficial environment that we are talking about, then we have to lift our game here and produce more STEM graduates that can add value to the global technology supply chain.

Finally, to put it succinctly, we need to let our universities grow, not shackle them.

The Productivity Angle

When we talk about making the most of new technology, what we are really talking about is how we can make sure we get the productivity benefits that it brings and that we don't fall behind our competitors.

I am sure you will have heard many of our Federal politicians – including the Treasurer himself – recently discussing the fact that we need to lift productivity in this country. In a recent speech on August 26th to the Business Council of Australia (Frydenberg, 2019 ^[13]), the Treasurer pointed out that we are enjoying our 28th consecutive year of economic growth, adding that the Australian economy has grown on average by 3.1% per year – compared to an OECD average of 2.2%.

The Treasurer says that productivity has contributed 1.7 percentage points or over half of the 3.1% annual average growth with the productivity boost being at its greatest in the 1990s – but there are some areas of concern. In particular, labour productivity has increased over the last five years on average by 1.1% – below the long-term-run average of 1.5%.

Research from the OECD is suggesting that the benefits of technological innovation have not been spread as widely as we may have hoped and that some firms are still not benefiting like they could from new technologies that are available. Indeed, analysis from Treasury here in Australia (Cranston, 2019 ^[14]) alarmingly shows that the top five per cent of firms in Australia account for almost all of our productivity growth, so there is a clear gap between those at the frontier and the rest.

Why is this so important to those of us in the telecom industry? Well, there is pretty firm evidence to suggest that we are the ones that have the answers to this productivity problem being experienced here and around the world. After all, technology companies such as Huawei and network operators are the people most responsible for taking productivity enhancing technological innovation to, quite literally, billions of people all around the world.

This is particularly important when you think about where we are at right now in terms of 5G, which many people are saying will enable the 4th industrial revolution.

Many of you would have seen the recent research from AMTA and Deloitte Access Economics which said that the productivity benefits of mobile telecommunications with the arrival of 5G will be worth \$65 billion to the Australian economy by 2023 – equivalent to 3.1% of GDP (Deloitte, 2019 ^[15]). This is equivalent to approximately \$2,500 for every Australian and larger than the current entire contribution of the agricultural industry to Australia. The AMTA-Deloitte report demonstrates quite clearly the huge potential that technology has to shape and improve our lives and deliver better outcomes for everyone.

However, we must accept that the technologies of the future – including those from something like 5G – can come from anywhere in the world and we need to find ways to deal with that.

Conclusion

In conclusion, it is important to restate once again that we have far more to gain than to fear from the rise of our neighbours in Asia. Of course, there will be challenges that we have to overcome in the years ahead but the opportunities that will present themselves will far outweigh the challenges. As a country we need to aim for a scenario where we grow and benefit from the Asian tech revolution and don't see it as a zero-sum game.

Australia, a country of between 25 million and 30 million people, located at the bottom of the world, needs to have access to and to use all of the leading innovation and technology being produced globally. It needs to embrace solutions that address security, the economy and strategic relationships rather than solely the security perspective, which is presently being mischievously overplayed and which is unbalancing the debate on our national interests in the future.

The story of Huawei in Australia can hopefully be used as an example of how one of the biggest companies in Asia has come to this country and has not just taken out but has also put back in as well – all to our mutual benefit.

As a country we are incredibly fortunate to find ourselves in this position where our own region will become the technology powerhouse that drives much of the innovation that we will see over the next century.

We need to build trust and relationships.

It's a once in a generation opportunity and one that as a country we cannot afford to squander.

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