Worth Noting

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Worth Noting is the fortnightly journal of L21 Management Consultants. The aim of the publication is to provide our clients and associates with insights of relevance to their business.

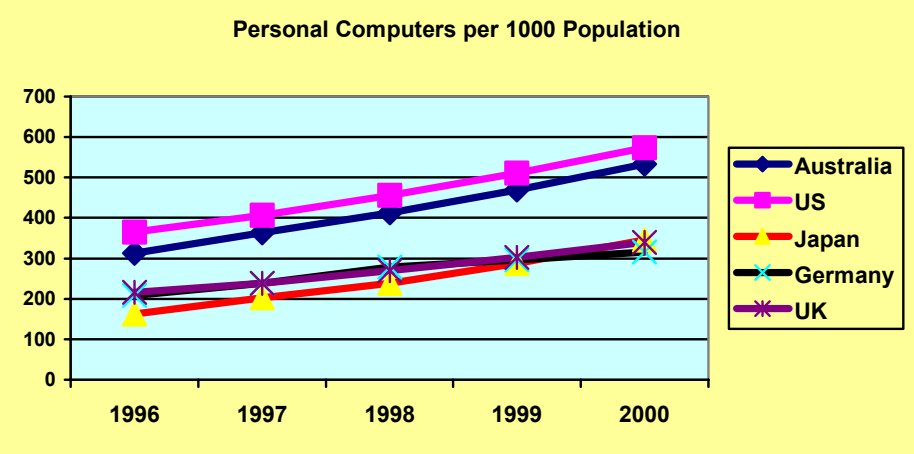
Practice Area: Strategy

Technology in the Australian Economy

With the Australian federal election drawing closer, there has been a good deal of discussion recently about technology in the domestic economy. One of the issues not in dispute in the campaign is that the Australia of the future must be increasingly technologically advanced. It is popular to be on the side of technology: like motherhood and the Australian cricket team, everyone is for it.

While talking about the importance of technology is easy, doing something about it is hard. Part of the difficulty is a lack of general understanding of precisely *why* technology is important. Without an understanding of what specifically it is about technology that makes it beneficial to the economy, it is hard to differentiate between proposed technology solutions. Many technology ideas are bad – or at least of indifferent value. Some technological policies and practices drive national wealth, while others simply stimulate consumer demand. It is good for vendors if demand is stimulated, but better for the country if real national wealth is created. This is a key distinction which we will discuss below.

As a nation, we like to think of ourselves as technologically savvy. And to a certain extent, we are. Our schoolchildren use computers frequently, our governments are digitized, email is as ubiquitous in the workplace as the office water cooler. As the following chart shows, the penetration of personal computers in Australia is greater than in three of the world's four largest economies.



Source: World Bank, L21 analysis

Ranking only marginally behind the US and well ahead of Japan, Germany and the UK, the penetration rate of computers in Australia is one of the highest in the world.

So, three cheers for Australia? Not really.

The fashionable term for our technology use is "adoption" – we have all heard PR assertions such as "Australia is a technologically advanced nation, with one of the highest adoption rates in the world". If a new Palm Pilot is released we will buy it, if Microsoft says it is time to upgrade we will listen, if Adobe Acrobat is the way to read files online we will download it.

As a nation, Australia likes to emphasise the importance of technology adoption. This sort of attitude is reflected by some of the policy statements put forward at the coming election:

"It is widely recognized that Australia's growth potential is strongly linked to the continued take-up of information and communications technology."
Liberal Party, *Building an Information Economy for the 21st Century*

"By enhancing Australian skills and demonstrating the benefits of these technologies, Labor will encourage more Australians to use these important services of the future."
ALP, *IT Kickstart*

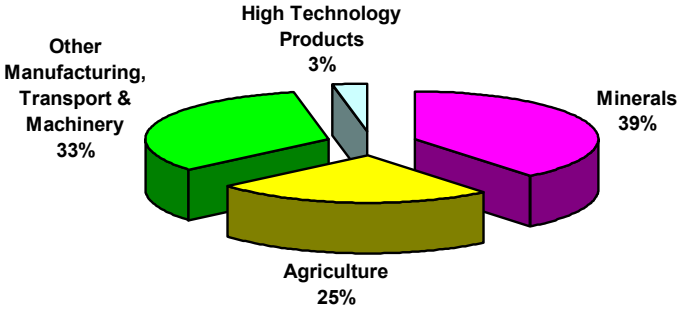
The parties are right to talk about the importance of the adoption of technology. But in the absence of production, all that "adoption" really means is "purchase". It is well and good for a nation to buy technology products, but much better to make them. Wealthy nations are those that make high margin, high value products that the world wants to buy.

Unfortunately, Australia has developed very few serious technology companies. With the exception of our strong biotech leaders such as Cochlear and Resmed, and one or two IT companies such as Radiata, the country has failed to develop large scale technology companies *that actually*

create exportable products. There is plenty of IT expertise in this country – scout around for an Oracle or Sun expert and you will have more CVs on your hands than you can deal with. But these skills are of the professional, rather than the entrepreneurial type. The tendency of our IT industry has been to study the latest software and industry trends, get on top of the detail, and offer sales, consulting and implementation services. Necessary as this is, it does not compare as a wealth generator to actually creating and exporting best-of-breed technologies.

It is part of Australian economic orthodoxy that for many decades, the export of minerals and agricultural products built the wealth of the nation. What is less documented is that we have been very slow to shift the balance of our exports towards technology products.

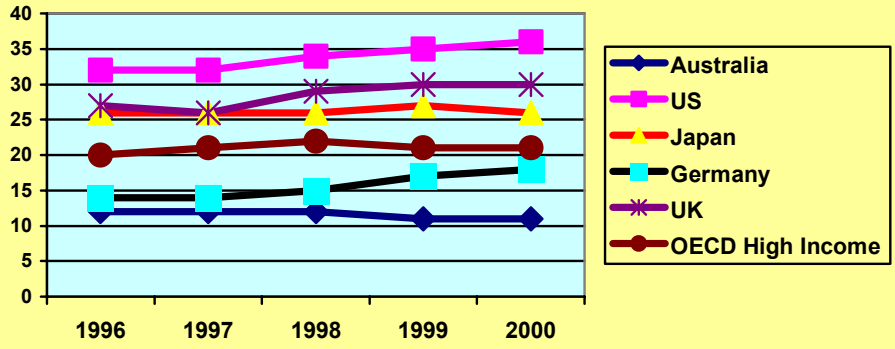
Australian Goods Exports by Category, 2000



Source: ABS, World Bank, L21 analysis

Only 11% of Australia's manufactured exports are regarded as high technology products. As the following chart shows, this compares very unfavourably to other wealthy nations.

High Technology Exports as Percentage of Manufactured Exports

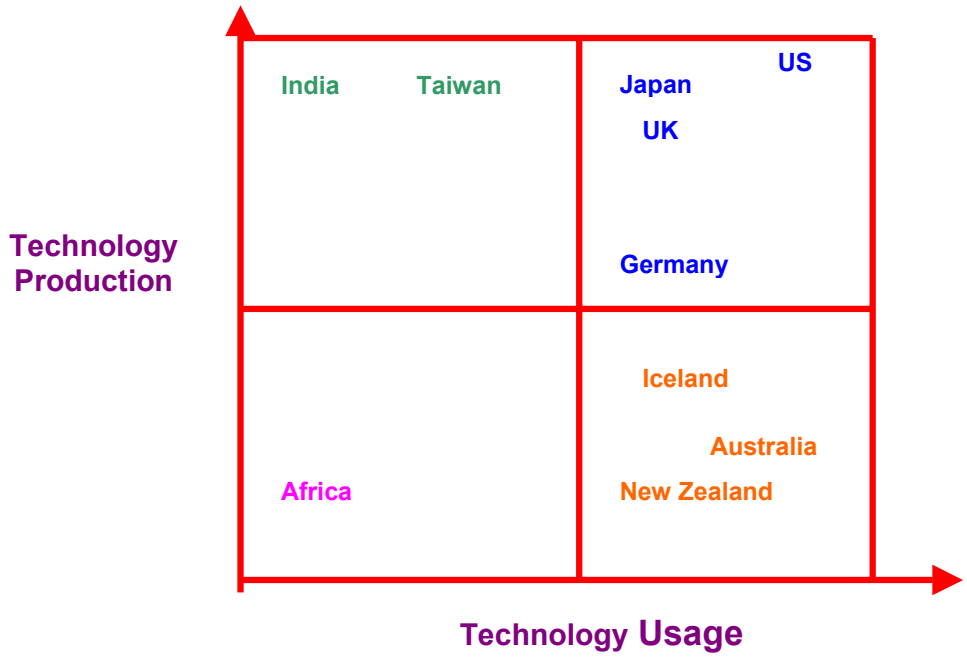


Source: World Bank, L21 analysis

Australia's proportion of manufactured technology exports is a full 25% less than world leader, the United States. And it is just over half of the average of the high income OECD nations, which stands at 21%.

In our view, the analysis above emphasizes the dilemma which the Australian economy faces. On one hand, we are a technology consuming nation. But on the other, we are not a substantial technology producing nation.

While some wealth can be produced by the various IT services in which Australia is proficient, real long term wealth is generated by building substantial, scaled businesses. It is no coincidence, in our view, that the wealthiest nations in the following chart are not only highly technically literate, but also adept at producing technology products.



In the figure above, the four boxes represent different levels of technological sophistication. The bottom left corner represents low levels of technology usage and low levels of technology production – Africa along with Central Asia, parts of the Middle East and much of South America fits this description. Low living standards make not only the production of technology difficult but also the limit the means to purchase it. The top left hand corner represents countries with strong technology export markets but a relatively low level of technology usage across the entire population – Taiwan and more particularly India fit this description. The top right corner represents nations which are both high users of technology and large producers of it – the US being the prime example. Australia finds itself in the bottom right hand corner along

with countries such as Iceland and New Zealand – good at using technology but not so good at creating it.

So what has brought about this state of affairs? And what can we do to improve the situation?

Separating Real Problems from Vague Assertions

If we accept that it is desirable to be a technology producing nation, the question becomes: what factors are stopping Australia from reaching its IT production potential?

When the mediocre state of the Australian technology export industry is discussed, several arguments usually get an airing. Not all of them are valid.

"***You can't get funding in this country***"

This argument laments the relatively small size of the Australian VC market. There are two key assertions which its promoters like to make:

- Australian VCs lack the vision of their American and Asian counterparts, and won't get behind risky ventures
- Australian tax laws are unfavourable for foreign capital looking to invest in early stage companies

It is probably true that Australian VCs are more risk averse than some other technology investors – particularly those found in Hong Kong, Singapore and parts of the US. If you are looking for a few hundred million for a speculative rollout of, say, 3G services, there are better places to look than Collins Street or Governor Phillip Tower.

But this argument is, in our view, often overdone. In our business, we frequently work with venture capitalists, from both large and small funds. The industry is alive and well, and there is no shortage of funds for good ideas: we are still waiting to find a VC that passes on a business it believes it can make real money from. Clearly the culture has changed immensely since late 1999 / early 2000, but there is still ample money available to invest. The idea has to be large enough, the team good enough, and the projections realistic enough. But if these conditions are met, the money is available. Blaming the VCs for being thorough in their due diligence is not the answer. Building credible businesses is. Like any consumer, a VC will buy if the proposition is right.

There is certainly truth in the argument that government policy has limited the flow of overseas (and particularly US) capital into the VC market. Simply put, current legislation means that certain types of overseas funds (eg university endowments, funds of funds) have been required to pay Australian Capital Gains Tax on domestic venture capital investments. These same funds are not required to pay Australian CGT on equity investments in listed companies,

so long as they hold less than10% of the company. Consequently a disincentive to invest in early stage Australian companies is created for these types of funds. While the disincentive only exists for certain investors, it is one of the stronger arguments that the naysayers have in explaining Australia's lack of exported technologies.

The good news is that the government has agreed to change the system so as to take CGT off those investments, so long as less than 10% of the company is held by the investor. In researching the ALP's election policies, we have found nothing which would suggest that it disagrees with this decision.

It is shortsighted to blame the limitations of the local capital market for Australia's failure to export technology. Good ideas can – and do – get funded. Bad ideas don't (usually). The improvement in the tax treatment of some foreign investment will increase the pool of available funds. Would-be-entrepreneurs should focus on developing businesses and not on generating excuses.

"***We're too far away***"

There is some truth to this argument. There is no question that geography can make it hard for Australian companies to sign big contracts: US companies, in particular, like to deal with a local. If two products of equal value are sold to an American company by an Australian sales representative and an American, chances are the American will get the deal.

But there are some relatively simple solutions to this problem. First and foremost, build a better value proposition. The world's major markets still find a reason to buy Australian resources and primary products, despite the distance. Why? Because they are among the best in the world and competitively priced. Why should our technology goals be any less?

Secondly, the distance issue can be solved by building regional sales offices, staffed by locals. This should be at the forefront of planning from day one – many Australian companies spend a frustrating six or twelve months missing sales before they realize the necessity of having local presences.

"***We lack the right mix of technical and entrepreneurial skills***"

In our view, this is easily the most important reason for Australia's failure to build substantial technology industries.

A brief survey of the great international technology companies reveals that top technology leaders are almost always both technologists, and focused entrepreneurs. Names like Bill Gates, Scott McNealy and Larry Ellison all connote images of technical sophistication and shrewd, energetic commercial execution. There are few equivalents in Australia.

One of the reasons for this problem, in our view, has been the tendency for our science and technology sectors to look to public institutions for research and innovation. While these organizations play a valuable role in developing ideas, it is fair to say that in Australia their commercialization record is average. Much of the debate about technological innovation in the context of domestic politics focuses on these public institutions. In the US, very few of the major technology exporters have grown out of public research initiatives.

In a sense, this is not surprising. Academics and scientists are not paid to be entrepreneurs, and moulding their solutions to a commercial environment will never be a simple task. The freedom of research institutions does produce discoveries that commercial days-to-payback analysis would not finance. But is it wise to expect the public sector to lead technological innovation? We do not think so. Public bodies should play a role, but a Microsoft is unlikely to emerge from that sector.

Developing a culture which breeds technology entrepreneurs is, in our view, one of the most important steps that needs to be taken to improve Australia's technology export position.

"***It's the government's fault***"

A popular argument regardless of the subject area, this gets a lot of mileage in the technology / innovation debate.

The most commonly expressed idea is that Australia lacks a "knowledge culture". Governments, the argument goes, should do more to bring together the diverse elements of the economy which can contribute to technological innovation.

So what can governments do?

We think that there is a role for government in establishing conditions which are conducive to the development of domestic technology industries. This role is important, but not determinative of outcomes. National wealth creation will always be driven by business, but government can help those businesses in getting off the ground.

Technology policy comes down to two key areas in our view:

- Policies which stimulate technology consumption; and
- Policies which stimulate technology production

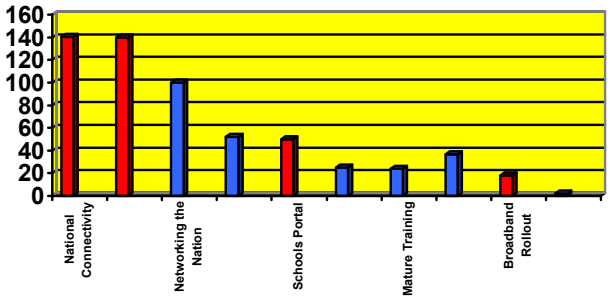
For the reasons outlined above, policies which stimulate production are far preferable to those which stimulate consumption. Simply put, it is good for a nation to be able to work with technology, but great for a nation to be able to create technology.

Applying this framework we have looked at the released policies of both major parties in advance of the Australian election. We have broken those policies down into "consumption" and "production" policies. Consumption policies

tend to be about promoting Internet access, training in rural and regional areas, and so on. Production policies are generally related to tax, R&D incentives, and incubators.

In terms of consumption policies, they have been coming thick and fast during the election campaign. Consumption policies are generally less arcane in their detail and more relevant to the general population, and consequently get most of the airtime.

Australian Federal Election 2001, Technology Consumption Commitments ($M)



Source: ALP, *Labor's Plan for Information Technology;* Liberal Party, *Building an Information Economy for the 21st Century* (Networking the Nation figure is an estimate)

In the chart above, red columns represent ALP commitments while blue columns represent coalition commitments. Totalling over half a billion dollars, the spending will encourage the proliferation and use of technology in Australia.

This is all well and good, but as demonstrated above, this is not where Australia's problems lie. Production is the area that needs focus.

One of the centrepieces of the ALP's *Knowledge Nation* statement is its commitment to provide an additional $179M in R&D incentives to Australian business over the next five years. This assistance is provided through a 200% tax rebate on R&D investments. Critically, though, the tax rebate only applies if businesses invest in the R&D activities of public institutions such as universities and the CSIRO. The standard R&D rebates apply for commercial commitments.

As we discussed above, the vast majority of major technology businesses worldwide have been conceived by entrepreneurs, not scientists. In no way do we seek to diminish the value of scientific research. Rather, we would simply point out that experience suggests that business leaders are the main drivers of national wealth. For a myriad of reasons, commercializing ideas conceived in public institutions has proven extremely difficult in Australia. Giving businesses a financial incentive to invest in public institutions' R&D does not address the issue of actually turning those ideas, once produced, into real companies.

The same criticism can be leveled at much of the Coalition's policy in this area. Though its COMET program, the Coalition aims to commercialise Australian research ideas. But again, the detail on how precisely that will be achieved is missing. And the fact that high technology exports have not increased as a proportion of total exports during the Coalition's term is not encouraging.

Governments should aim, in our view, towards the following policy goals:

- An emphasis on technology production policies over technology consumption policies
- R&D incentives which do not differentiate between public and private institutions
- Favourable tax treatment of venture capital investments in high technology industries
- Fostering of a culture which encourages technology entrepreneurs

Neither of the parties, in our view, has got the balance right.

But that is not to say that we can simply blame government. At the end of the day, business must lead in business matters. The majority of the problem lies with the culture of Australian business, rather than a failure of government policy.

Summary

There is a real need for the balance to shift from Australians consuming technology to Australians producing technology. In our analysis, none of the reasons usually cited for Australia's lack of technology production expertise provides sufficient excuse for the nation's failure in this area. Yes, there have been some tax disincentives for certain types of foreign investors. Yes, distance can be a problem. And yes, governments have failed to show a great deal of leadership on the topic. But none of these problems have been sufficiently grave to explain the poor position we currently find ourselves in.

Australia has a real need for technology entrepreneurs. Technologically savvy executives should broaden their business skills. And technologically literate – but not technologically skilled – executives should strive to drill down on technical detail. Only by combining these two sets of skills can great technology companies come into being. Governments can play a part, but at the end of the day it is these future leaders who will drive the nation's growth.

We do not think it is overstating the case to say that this issue should be at the top of the nation's economic priorities. National wealth is not static. In 1900, nations which have long slipped into economic obscurity led the world in GDP per capita. Australia's GDP per capita has been gradually declining against many OECD nations over the past ten years. Building technology products the world wants to buy is a key part of arresting that decline.