

Issues for Consideration in the Industry Statement

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Introduction.

Australia has a problem. Private liabilities at 60% of GDP, trade gap in manufactured goods at \$100Bn per year and increasing, current account in deficit for 50 consecutive months despite very favourable terms of trade, intellectual property (IP) being almost given away because Australian venture capitalists won't invest....I could go on. We need to take action urgently and spend our Government surplus wisely for the long -term development of the nation. Our national interest is not served well by ad hoc decisions.

There are solutions to this crisis, and let's not understate it, it is a crisis. Look at what may happen in the next 12 months to the auto industry in Australia where the cars made in Australia are too big, too thirsty, and largely sold to the fleet market (70%) Mum and Dad have already voted with their wallet and are buying Toyota Corolla's and the new Honda Civic. However there are solutions.

Firstly all massive global shifts create opportunities. The secret is to align these in areas where we have a comparative advantage. Where are our comparative advantages? They are clearly in minerals, coal, bauxite and iron ore and a stable economic climate with a stable well educated workforce and a Federal Government with a surplus of probably \$14Bn.

Leading edge trends in building a successful globally focussed manufacturing base will need a step change in thinking.

Firstly, that section related to export must be given special consideration. A new alignment of knowledge and education and research with industries with a comparative advantage must be brought sharply into focus. No longer can we afford the CSIRO for example to spread itself thinly in over 50 areas of manufacturing in half of which we do not have a comparative advantage. An example of

where we should be a dominant player is the downstream manufacture of high value added machined and diecast Aluminium components for the automotive and aerospace industries. Modern automobiles have Aluminium blocks, heads gearbox cases steering arms suspension wishbones to name just a few of the components. Aircraft are still mainly manufactured from Aluminium. In some cases the bodies of modern automobiles are Aluminium (Honda NSX, AudiA8, Range Rover etc). We have the bauxite, we have the most efficient Alumina refinery in the world at Gladstone, we have the Aluminium smelters and we have the coal to fuel them. If you prefer we could fuel them with nuclear power stations since we have 40% of the world's reserves. However, all this will take time and immediate action is needed.

This is only one of many examples of what could be done if we had the will. The food industry, solar energy, wind mills all offer similar advantages.

In the short term we must change our business model to integrate our logistics, innovate all elements of the business from organisation to process to systems, to remove working capital from the balance sheet and use this capital to make our whole value chain faster and more agile by investing in the latest technology.

In a general sense this means that we must move from mass production to agile made to order production and develop manufacturing systems beyond our simple understanding of what was interpreted as Lean Manufacturing which failed to enhance Ford and GM USA. We need an agile system approach of integration based on continuous innovation of all processes and systems as practised by leading Japanese companies like Honda, Panasonic, Kawai, Canon and Toyota, focusing on all functions of the business. This applies to not only the 70% of our GDP that is related directly to internal consumption but to all manufactured product aimed at the export market. We must use the digital data available much more effectively. Such data is available at any position in the supply chain to any other position in the chain on demand.

There are numerous short-term positive business models that need to be understood and implemented to ameliorate the pain that will certainly come very soon as interest rates continue to rise and the world market takes a dim view of our foreign liabilities and current account and overvalued dollar.

Taking into consideration the weakness of the US economy and their trading deficits and the USA government's inability to deal with their current government debt, it seem to me that we should start measuring our currency against the Yen or the Pound and put less

emphasis on the US dollar as it is certainly going to weaken against other major currencies in the next 5 years.

There are at least six industry specific business models that can be used to assist in rectifying the current manufacturing decline in the immediate short term.. These are modelled on the innovation principles linking commercialisation of IP generated cooperatively by business led research centres and then integrating supply chains in networks with common goals and then linking continuous process innovation with product development. Examples of these are available on my website, but the essence of their structure involves the Japanese approach of long term but continuously improving and monitoring a business plan and developing a process innovation model that links seamlessly with continuous product development. Such a system led to Honda's ASIMO robot the significance of which escaped most investigators in USA and German experts and led also the resurgence of Ferrari in Formula 1 following the input from Honda scientists and engineers.

We can do it but we need to convince the majority of the economists and politicians that manufacturing is the most valuable wealth creating activity of all.

Specific Factors influencing the poor state of Australia's manufacturing Industry and Policies Needed

Factors.

1. If commodity prices fall appreciably from the current high values, as determined by the very favourable terms of trade, then the manufacturing sector will be in even more trouble than it is in at the moment because it has been decimated and needs a strong injection of capital equipment. If this is not done while the dollar is relatively high then the cost will be even greater when the Australian dollar falls, as all the necessary equipment will have to be imported. This is so because the resources boom has assisted in holding up the value of the Australian dollar and as a result much of the manufacturing sector has been dismantled since it has not been able to compete with cheaper imports and our manufactured exports have been too expensive. A recent example is the closure of the tinplate mill at Port Kembla. It must be appreciated that we have the coal (to produce the power), iron ore (to produce the steel), expertise (BHP, Bluescope etc), and yet we are unable to compete with cheap imported electroplated steel, our technology was never updated. Bluescope passed on the very high prices of hot strip

created by China's demand and downstream processing of coated products has suffered critically. We need a policy to enable plant to continuously upgrade quickly and a policy to enable integration. Had BHP not spun off Bluescope under the Anderson plan, then we would still have an electroplating line. The flow on effect of increased prices has greatly affected all Bluescope customers in Australia, eg NCI, Precision Valve Australia etc.

2. Even though the terms of trade are at a peculiar high and as a result the price of commodity exports are high relative to the cheaper price of imports, and this is very favourable for Australian trade, we still trade in deficit and have done so for the last 50 months. The Current Account Deficit is approximately 6% of GDP and the net Private Foreign Liabilities continue to grow and are now 60% of GDP, the highest ever.
3. As a result of the strong demand for commodities, particularly coal and iron ore, the various economies of the States have become dislocated with WA and Qld booming and NSW suffering. Skilled labour is being attracted to mining away from the other activities which in the long term would have added more value to the Australian community than the simple mining of coal bauxite, or iron ore.
4. The export of coal, from Newcastle in particular, is constrained by the rail system and the associated contracts and perhaps the coal loader. Large tankers continue to anchor off Newcastle (at what cost?) Imagine how much more coal could we ship if the constraints from the 22 coal mines were removed.
5. Commodities are at the poor end of the supply chain. Elaborately Transformed Manufactures (ETM's) are at the high value added end. The return on Investment (ROI), increases the closer we are to the end user of the final products sold. Similarly, less sophisticated economies can mine but can't make and add significant value to raw materials.
6. Australia's Innovation policy is in disarray. Lack of understanding of process innovation and its important role has hampered all forms of company innovation in all functions including product development. Product development is not a characteristic of commodities. Any developments or innovations are related to process only. World sophistication and product development is based on elaborately transformed manufactured product. Innovation in the mining industry is limited to process innovation primarily to reduce the cost of production for products whose price is set by international agreements eg world price of metals (LME). This is not the case for high value added goods where extra premiums and therefore prices can be obtained for novelty.

(Microsoft 90% Gross Margin, 35% net profit with massive returns on capital.). It is the first to market product innovations that yield the greatest rewards. Such comparative advantages do not exist in the commodities sector. Hence there is no chance to develop the necessary infrastructure to support much of the clever industrial infrastructure. The notable exception here is the sector servicing the commodity sector, e.g. development of trucks and dragline equipment and conveyor equipment etc. Even here, because of our large trading deficit and our inability to create a surplus to control our own assets in areas where we do have a comparative advantage, the companies are sold to overseas buyers. Australian plants are shut down and similar products, often of an inferior quality are imported at higher cost as the control and IP move overseas e.g. Wormald Machinery Group, Albany International etc.

7. The world demand for coal is not likely to diminish much in the next 10 years especially with peak oil and the long lead time for nuclear solutions and the high cost of solar and wind power. We are the lucky country but despite this we still trade in deficit. This deficit is an unhappy legacy. Future generations will look poorly on our current performance.
8. There has never been an integrated approach to developing a total supply chain for areas where we have a significant comparative advantage. (eg Aluminium products for the car industry via global supply chains using our bauxite, our Alumina refinery and Aluminium smelters and coal fired power stations. When Hawker de Havilland manufactured wing sections for Boeing in Sydney, the aluminium alloy had to be made in Europe and this material imported so that sections could be made in Sydney using a unique Australian innovation. Boeing subsequently poached all the Scientists and Engineers and a few years later bought Hawker de Havilland.
9. Our manufacturing industries are in serious decline. In addition, the auto industry worldwide is trying to compete with outmoded non-global platforms at Ford, GMH and Mitsubishi. When this is combined with the increasing price of oil and the fact that the cars produced here are too large and no longer what the people want, then it is clear we are heading for a crisis. As a result, the auto suppliers must enter the global supply chains as a matter of urgency. It is now a question of their survival and how much support is needed to assist. The \$25M so far offered won't go far.
10. As an innovator to numerous overseas owned companies in Australia, I have seen all my major innovations commercialised overseas at Australia's expense. (Precision Valve, Moore Business Systems, Duracell, Pyrotek, Shaw Industries...etc). I have also examined over 500 R&D programs as I sit on the Government's

Engineering and Manufacturing advisory committee and whilst the percentage of successful programs is low, the majority of the successful ones are commercialised overseas or sold to overseas interests usually due to lack of local financial help. (e.g. Hazard) The intellectual property (IP) and the investment by the Australian Taxpayer through the R&D Start and Commercial Ready programs seamlessly passes to an overseas buyer cheaply.

11. The CSIRO's performance in manufacturing has been very poor. As Rod Hill presented at the Manufacturing Summit in November 2005, 50% of the total expenditure of the CSIRO's meagre funds are spent in areas where we do not have a comparative advantage and as such much of this effort is wasted. In addition the effort is thinly spread in a very wide range of activities and this again is reflected in the poor performance of the CRC's. The problem with the CRC's appears to be in the way they are setup with academics without business training making poor commercial decisions. The Japanese model needs to be copied.
12. As Professor Ken Preiss (Ben Gurion University Israel – Professor of Technology and Global Competitiveness) pointed out at the Manufacturing Summit held in Victoria last year, Australia's industry bodies are largely political agitators with little understanding of the real nature of the problem.
13. At the "Sustaining Prosperity Conference" in Melbourne in April 2005, there was no recognition of the problem facing Australia's coming Balance of Payment Crisis and my comments regarding Nuclear Power and CAD were not published by the editors who all pushed the line that the high net foreign debt would correct itself (at what cost?) What assets will be ultimately controlled by Boards in Australia?, Is this important?) Des Henry believes we don't need a manufacturing sector but offers no solutions to the mounting trade deficit.
14. Australian assets are already being sold to overseas companies as our manufacturing infrastructure collapses. If the dollar collapses then these assets become cheaper and our debt (in US\$) rises and we become a second rate developed nation.
15. Why did Australia have to become a lone champion of free trade in Agriculture especially when the USA and the EU continue to subsidise their farmers??
16. Sugar for biofuels. Why not? The internal combustion engine can be modified to run on 100% Ethanol. Soichiro Honda's first motorcycle ran on 100% cane sugar syrup in 1946. The new HCCI (Homogeneous Charge Compression Ignition) engines could be built here for the world from our own raw materials (Al). Licensing

will be needed and should be supported. We could integrate with say Honda, the leader in this field. This is the future beyond the Hybrid. Our automakers GMH and Ford and Mitsubishi will not move on this because these decisions will not be made in Australia's Interests because they are overseas owned companies. This is an indication of what will continue to happen with increased frequency as our total private foreign liabilities continues to grow.

Policies Needed

17. Important Government support is needed in strategic manufacturing industries where we have a significant advantage. Toyota, the most successful automotive company in the world began with substantial Japanese Government support. Look where they are today. A long-term strategy is needed now, not ad hoc short term goals.
18. Support and incentives for companies to develop integrated networks to supply manufactured product to global producers in areas where we have a comparative advantage. e.g. Aluminium diecast products for the auto and aerospace industry.
19. Support for business at all levels of turnover to carry out R&D with a strong commercial objective aimed at using a CSIRO and University based network combined with a network of companies all working together to achieve global success. (not limited to companies with turnovers less than \$50M. A better selection criteria is needed.)
20. Offer incentives and training so that companies can understand how to extract the state of the art from patents and then build on that knowledge like John Lysaght did with Zinacalume which became Colorbond. This means we must not favour product development over process innovation.
21. Offer incentives for companies to modify overseas purchased equipment so that the real needs of the company can be met. Since Australian plants require equipment to be much more flexible and agile than those for say USA or Europe as our production runs are so much shorter.
22. Establish a national database of expertise and make it available to all Australian companies.
23. Rationalise the activities of the CSIRO so that it matches Australia's needs not the isolated views of some researchers which do not fit the public interest.

24. Encourage universities to work hand in hand with industry only in areas of national interest, and so avoid many of the missed opportunities of say the University of Newcastle when the administration set up what was once a classical style university in a coal and steelmaking city.

25. Exploit developments where there is proven global demand and we have the intellectual capability and expertise. e.g. solar power. (UNSW IP is currently being exploited in China and Japan with a rapidly growing market worth Billions already).

26. Exploit the nuclear industry by controlling the whole of the fuel cycle from mine to storage. (Synroc, UO₂). Despite claims to the contrary, nuclear fission does not produce CO₂, and the power supplied for the conversion could be supplied by nuclear power anyway.

27. Accept the fact that GMH, Ford, And Mitsubishi and Toyota will not all be able to produce cars in Australia. However, the auto parts suppliers can produce economically for the world from Australia.

28. Accept the fact that if the USA and EU subsidise their farmers then we are not operating on a level playing field and help our farmers in all ways and in particular to produce Biofuels.

29. Adopt new business models that are agile and flexible. In the short term this will mean sourcing components overseas and assembling at the market with Australian IP control. There are numerous successful models for each industry type. All these take advantage of flexibility, agility, lean production, IP control, and smooth logistical control.

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