Swinburne Leadership Institute

SWINBURNE UNIVERSITY OF TECHNOLOGY

Working Paper Series

Leadership for innovation – Why manufacturing has a future in Australia

No. 5 September 2014

Richard Simpson
Managing Director, Furnace Engineering

Robert Wilson
Managing Director, Wilson Transformer Company

Scott Thomson-Whiteside
Dean, School of Design, Swinburne University of Technology

swinburne.edu.au/leadership-institute

About the Swinburne Leadership Institute

The Swinburne Leadership Institute (SLI) seeks to promote **Leadership for the Greater Good** across government, the private and not-for-profit sectors, and civil society.

Our mission is to enrich the understanding and practice of authentic, ethical and sustainable forms of leadership in Australia.

Leadership for the Greater Good can take many forms. It always needs to be locally relevant and culturally appropriate. However, in all cases it recognises the legitimacy of the individual as citizen, the reality of our shared interests, and the importance of judiciously balancing competing interests in ways that enhance the public good.

The emergence in Australia of a political, business and civil culture that elevates immediate private interests over long-term public interests is a worrying sign that the Greater Good and leadership in its service is insufficiently valued in our society.

It is a social and research priority to understand the meaning and the myriad manifestations of Leadership for the Greater Good so as to enrich the practice of leadership in Australia.

Swinburne Leadership Institute

Working Paper Series

Leadership for innovation – Why manufacturing has a future in Australia

No. 5 September 2014

Richard Simpson
Managing Director, Furnace Engineering

Robert Wilson
Managing Director, Wilson Transformer Company

Scott Thomson-Whiteside
Dean, School of Design, Swinburne University of Technology

Introduction

With dire predictions about the future of manufacturing in Australia, we should remember that manufacturing has been an important contributor to national development. There was a thriving manufacturing industry up to 1945, sufficient to supply most domestic needs. Post-war, new industries flourished and a golden era of manufacturing followed. By the late 1950s manufacturing accounted for 29% of Australia's GDP.

By the 1960s, growth and productivity was faltering and manufacturing had begun to stagnate. Today, manufacturing accounts for less than 10% of Australia's GDP, the lowest level since early colonial times. This is due, in large part, to global economic changes and the economic processes of comparative advantage.

However, the innovative spirit that drove previous successes remains and a new generation of leaders and enterprises has emerged. Two of these innovative leaders presented case studies of their firms at a Swinburne Leadership Dialogue in June 2014.

Richard Simpson of Furnace Engineering and Robert Wilson of the Wilson Transformer Company discussed the leadership styles and approaches they have used to ensure their companies are – and remain – national manufacturing success stories. Scott Thompson-Whiteside of Swinburne University of Technology then analyses their experiences to outline the leadership needs for innovation in Australia.

Furnace Engineering

Richard Simpson

Furnace Pty Ltd began life about 45 years ago as a small factory office behind the Jam Factory in South Yarra. We now have 70 staff in a 300-square-metre factory office situated in Notting Hill, Melbourne. Roughly half are engineers or technical people; the other half work in manufacturing, customer service and administration. Furnace has earned an outstanding reputation for its problem-solving, engineering and project execution.

Extractive metallurgy is one of our core activities, especially for the aluminium and nickel industries. Our concept of workplace has never been confined to South Yarra or Notting Hill: we go on site, to smelters and, in the final stages of metal refinement, to locations as diverse as outback mine sites, Melbourne industrial hubs and even overseas – for example, in Thailand.

The company has also moved upstream, transforming minerals and materials into manufactured products. We are heavily involved in aluminium extrusion, especially for window frames and curtain-wall construction.

We're also no strangers to the world of general manufacturing. For instance, we've made furnaces for Wilson Transformers.

While such activities are part of our company's history, our focus today is on new enterprises.

After opening for business in 1968, we were ideally placed to share in the prosperity of the mining boom that began the following year and continued into the 1970s.

The need to respond

Each of the transformational moments in our history was driven by the need to respond to significant external events. After opening for business in 1968, we were ideally placed to share in the prosperity of the mining boom that began the following year and continued into the 1970s.

Of course, the 1980s mining boom was followed by a bust but, fortunately for us, that bust coincided with an expansion of overseas markets for vehicle components. A host of automotive-parts manufacturers prospered during that era, which naturally sparked demand for our heat-processing equipment.

The 1990s were another good decade for us. It was then we developed our own export markets in South East Asia – mainly in the metals sector.

The 1990s were another good decade for us. It was then we developed our own export markets in South East Asia – mainly in the metals sector. We'd caught the on-ramp to the highway to prosperity at exactly the right time, with South East Asia accounting for about half of all sales from the beginning of the '90s through to the early 2000s.

The last decade also featured some notable exports to Africa but in recent years the rising value of the Australian dollar has damaged our exports' bottom line and potential growth.

The cyclical nature of the minerals industry and the current difficulties with exports, together with the demise of the Australian automotive industry – leading Ford, Toyota and General Motors to announce plans to withdraw from Australia – left us in no doubt trouble was heading our way.

The old ready-made solution would have been to send our sales and engineering staff into the marketplace with the message, 'Go and find more work. There must be more out there. Go get a bigger share of the pie'. Not any more. Now the pie itself was rapidly shrinking.

We had to make several strategic decisions. With our traditional markets in rapid decline, we were looking at company turnover dwindling to 25 per cent of its historical levels.

Those strategic decisions relate to three case studies I would like to share briefly with you.

Case Study 1: Food processing

Our company had no history with food processing: all our expertise was in heat processing. Now there are ovens – and there are ovens. An oven to bake food in is quite different to one that cures plastics or bakes paint – or, in this case, cakes.

This is not Grandma's secret recipe we're talking about here but food processing on an industrial scale. To give you an idea of what I mean, we've just shipped to a customer in Queensland a piece of equipment that will bake 4000 cakes per hour.

We decided to enter this market in 2000. Our first step was to try doing this by relying on our own expertise. That was a woeful failure, let me tell you.

Our next step was to acquire a small company that was going out of business. We purchased its assets in 2005. While this deal didn't come with intellectual property, we felt were getting access to a good 'library' of drawings and expertise. This time we took some tentative steps in the right direction but we really didn't get anywhere.

Our third entry into this market came in 2009, when we bought a business from an owner who was planning to retire in five years and wanted to see his business continue on without him. This gentleman – who retired early this year – was keen to hand his knowledge on to us in a progressive fashion, and today we are shipping about $3 million worth of equipment per year, all from a base of zero.

Pleased as we are with cracking such a challenging market on the third attempt, we recognise this is small biscuits – no pun intended – in the larger scheme of things. But, to stick with the baking analogy, our oven-fresh pie is now getting larger, and our food-processing equipment makes up a 20 per cent slice of it, reckoned by total sales volume.

So, all in all, adapting our base expertise to the manufacturing of such equipment has proved crucial not merely to our growth as a business but to the company's health. If we hadn't persisted until we found a way into this market, we would have been that much less able to keep our workforce – our company team – together.

The cyclical nature of the minerals industry and the current difficulties with exports, together with the demise of the Australian automotive industry left us in no doubt trouble was heading our way.

Case Study 2: Gas distribution

Around 2004 we began to see great potential in manufacturing gas distribution equipment. For every gas appliance in every house, office and factory, there is a gas pipeline up the road. And where that pipeline up the road joins another big branch line, there is something called a 'city gate', which is a station that reduces the pressure from the big pipeline (running from the various main distribution points) down to a suitable and safe level for use in households, offices and factories. At each of those city gates, the gas needs to be heated to stop it freezing in the pipe. So, with our background in heating, we saw this as a good market for us to be in. Having learnt some lessons from our frustrating initial move into food equipment, we went in search of some key intellectual property and the right people.

We found both at the same time, around 2008, and have gradually developed a market in which our industrial-scale gas heaters stop this precious fuel from freezing on the way to its destination, so that now everyone can stay as warm as possible in the colder months of the year.

We are especially fortunate there is a rolling cycle of infrastructure renewal in the gas distribution network. Thus, the industry is not likely to be boom-and-bust for us as the mining and car industries have been. In dollar terms, our gas distribution activities account for another 20 per cent of our business, and that slice is also on the increase.

the industry is not likely to be boom-and-bust for us as the mining and car industries have been.

Case study 3: Carbon fibre

In Port Melbourne, Boeing has a plant that makes components for its 787 Dreamliner, the aircraft that makes jumbos look like baby elephants. In fact, it is the only plant in the world making certain parts – collectively known as the carbon-fibre trailing edge – for this prestige plane.

We began working with carbon-fibre composites in 2000, and are proud to have provided the leading-edge equipment necessary for the exceptional work done by Boeing at its Port Melbourne plant.

Several people have proselytised about the potential for raw carbon-fibre manufacturing in Australia. We were given the opportunity to participate in the 'carbon nexus' project in Geelong, which has piloted a carbon-fibre production facility.

It's fair enough to say that carbon-fibre furnaces are the hottest thing in town: they operate at about 1800 degrees Celsius. Before the 'carbon nexus' project came along, we had no background in the large-scale production of furnaces at such temperatures. So a considerable amount of innovation resulted from learning how to do this. That was a key plank in developing intellectual property here in Australia and potentially enticing an international firm to set up a full-scale production facility in this country – or, dare I say it, for some brave person in Australia to set up on their own. The upshot, from a business viewpoint, is that carbon fibre now constitutes another 25 per cent of our custom.

If we do the maths, food processing, gas distribution and carbon fibre now constitute two-thirds of our business, with the sectors in which we've traditionally been involved contributing the remainder. Had we not diversified five to ten years ago, we would be in dire straits now. In the current environment, innovation is absolutely essential.

Conclusion

In conclusion, I would leave with you three leadership lessons we have learnt during our journey so far.

1: Vision

For manufacturing in Australia to have a future, it must have a vision. At Furnace we insisted on, and worked on, establishing one. It may sound trite and obvious but we progressed only when we'd asked ourselves what we wanted to be – and given ourselves an honest answer. It's not that we wanted to be the class leader in carbon fibre or the world's best oven manufacturer. In our eyes, we always were, at our core, engineers solving problems – technical problems.

All the other strategies – being successful, being profitable, making a contribution in the world beyond the firm, securing a future for ourselves and sustaining a future for Australian manufacturing – all these strategies flowed from that vision.

2: Be brave

Historically, much of Australian industry – and we were certainly no exception – has taken the view 'It's not invented here'. Through the '70s and '80s our company spent hundreds of hours sorting out licence agreements with overseas companies, buying their technology and selling it to customers on the basis that it was the best European or best American technology.

Along the way, we became increasingly proficient at project execution. But moving beyond that – and the carbon-fibre line is one example that springs immediately to mind – required the courage to back ourselves, to convince ourselves, 'Look, I think we can do this. We have the expertise and we need to be brave enough not to feel we need to rely on somebody else's.' Taking those calculated risks was an important part of our business transformation.

Taking those calculated risks was an important part of our business transformation.

3: Get the right people on board

This lesson cannot be stated often enough. I am sorry to say that implicit in this is also getting the wrong people *off* it. The destruction of value entailed in keeping a bad person on your team – a person who doesn't share your vision and your values and is not prepared to go in the same direction you are trying to take an organisation in – cannot be underestimated. In our experience, the extent of the destruction only became apparent once we'd moved them out of the organisation.

Conversely, getting the *right* people on board is incredibly valuable, and I would just say in passing that one of the greatest sources of our strength in this regard has been a strong graduate recruitment effort over the past decade and a half. At its peak we had eight graduates come on board in just two years. We have retained a good number of them, and they are now on their way to occupying key positions in the company after just five years' experience with us.

These simple three keys are what make our business what it is today.

Wilson Transformers

Robert Wilson

Wilson Transformer Company started as a business in 1933, when my father Jack Wilson started building electrical products in a little garage in Sturt Street, South Melbourne. This was early in the long road out of the Great Depression. By the time he went off to fight in the Second World War, the business was employing more than 50 people. Many of those people stayed on and their work for Wilsons was a major support of the war effort. When my father returned from the war, we entered what was one of the most interesting periods in Australia's history – the period of post-war growth.

Our business has developed in a direction no one would have foreseen. We used to have a small presence in a number of states, because of state preferences in government purchasing. That was the case right up to the mid-1980s. The effect of that was quite destructive: there were high tariffs in Australia and we grew up behind a high tariff wall. So we could build all these little factories across the country but they were very inefficient. Not surprisingly, they disappeared with the abolition of state preferences and the removal of tariffs.

Tariffs were as high as 37.5 per cent when I started in 1970-71; they were down to 25 per cent by 1988. Between 1988 and 1996 they shrank further, down to a 5 per cent general tariff. So as an Australian manufacturer we were very exposed from 1996 onwards: we were out there experiencing the harsh realities of the real world.

Growth and change

With the tough times at home, our business was not going to survive if we just kept on doing what we had always been doing. So, at the end of the 1980s, even before the 1990s recession, and into the early 1990s, we started exporting quite actively into South East Asia. This also prompted us to start manufacturing in Malaysia. Our business was changing with the abolition of tariffs and the other challenges in the Australian economy.

In 1981, soon after I took over the company, we built a manufacturing plant in Wodonga. Initially, the plant was to have 39 employees; today there are 260, and it is a very important part of our overall business. These days we also have another world-class facility in Glen Waverley. Most importantly, we have an Australia-wide service network, which makes us attractive to large clients such as Alcoa, Ausgrid, Chevron, Energex, Xstrata, and so on.

The WTC business also has sales offices in the United Kingdom. We are joint venture shareholders in Distribution Transformer (smaller transformer) manufacturing plants in Malaysia and Saudi Arabia. These plants use our Australian based knowhow.

We have also been successful in taking several Australian machine manufacturers into the joint ventures in both those countries when we were establishing the manufacturing facilities. Some of these machine manufacturers have gained repeat orders as the JVs have expanded.

In the late 1990s, we started a new operation, Dynamic Ratings, whose goal was to convert the electro-mechanical controls on transformers into an electronic medium. We did that progressively over five to ten years, starting off with one person, then two; and now the company employs over 50 people. Only fifteen of them are in Australia, however: the core knowledge came from here but now Dynamic Ratings has a large proportion of its workforce in the USA.

The Dynamic Ratings business was recently rated No. 1 in the United States for the monitoring of large transformers. We are the preferred supplier to many large utilities in the USA – but the products that are going into those US utilities come from Australia. We have the application engineering people working over there and we do not get involved in any of the US installations, but the base on which they build comes from Australia.

As we had done in Australia, Dynamic Ratings started off in the USA with just one man. It has gradually expanded and has taken on a number of suppliers who were core to our business there. They were very modest concerns: one was a tiny company called Electric Diagnostic Innovations. We actually bought it to ensure we could retain and built upon its expertise. This acquisition is now a key part of our global supply platform for Dynamic Ratings.

Dynamic Ratings also acquired the technology of another company, Telkonet. Telkonet made powerline carrier equipment, which can be rapidly installed in substations with no civil works: we just put clips on cables and get information into substation control rooms.

Our success does not depend just upon being good manufacturers, however. We have a core 'cradle to grave' philosophy through which we support our products through life.

So, from a technical base that initially made use of our own control capability, we have expanded, especially by recruiting very good people, especially young people, into the business. Most of our Australian engineers are in their twenties or early thirties.

In the USA we have reached outside the industry to recruit a lot of application people – industry maintenance folk and those who have had global experience in what they do. They are assisting us to supply equipment all across North America, and into South America, the Middle East and China. We are also supplying equipment we have manufactured in Melbourne to China.

Our success does not depend just upon being good manufacturers, however. We have a core 'cradle to grave' philosophy through which we support our products through life. We have another joint venture with a company called TJ|H2b, the world's leading laboratory for diagnostics on transformer fluids to provide quality diagnostic services to our clients. This commitment to, and support for our customer base, is a major brand identifier for us. TJ|H2b Australia recently won a major share of Rio Tinto's diagnostic work in Australia.

Along the same lines, supporting and working with our customers and being more than just a manufacturer, we are a major source of knowledge to the industry. We run an annual conference called TechCon, which is attended by more than 300 people. We charge around $1000 for three days; it is an inexpensive conference and many of our clients who attend are able to generate significance business opportunities out of the conference.

Major projects

In a modern manufacturing business, you have got to think of everything – quality, health and safety, environmental certifications, staff qualifications: all are an integral part of the day-to-day running of a business.

Let me illustrate our work by reviewing some of our major projects. Besides supplying a large percentage of the transformers installed in Australia, we have supplied most of the large transformers that have gone into central London over the last six or eight years. For example, the Bankside substation at the rear of the Tate Modern Art Gallery, is the largest substation in central London and supplies most of the West End, the City of London and the area on the south side of the Thames. All the power transformers in this substation were made in Glen Waverley. It also has a heat recovery system on the roof, which recovers the heat from the transformers and then supplies the heat to the Tate Modern. We designed and installed that system at the back of the Tate Modern – where a flight scene over London In a recent Harry Potter movie gave the audience a nice view of our heat recovery system.

A second example is the Clyde North and South Wind Farm in Scotland, between Edinburgh and Glasgow. We won that contract, bidding out of Australia into the UK. When finished, the six grid connection Australian made 120MVA 275kV transformers were a key component of the largest land based wind farm in Europe.

We have also won all of the transformer business for the vast Wheatstone LNG project in Western Australia.

In the early 1990s we developed focused business units. Our enterprise was divided into various sectors, which at the time were power transformers and distribution transformers. Others were added later, like Dynamic Ratings, the joint ventures overseas and so on. We set about getting the right people to run each business unit, and that's absolutely key: without the right people, there is no business. Without the right people, it will decline: it will die.

We have had a very small corporate office of, in fact, three people; about three years ago that increased to four. So the head office costs are very low: the real investment is in the business. We are currently going through a slight restructuring where we're moving to have shared services model. This is related to cost-cutting but the activities that drive the business will all stay in-house.

We have also spent quite a lot of money in the business, improving things such as our capability, our quality, our productivity and of course our products. Most of the profits of the business have been reinvested back into the business.

Our history very much mirror-images Furnace Engineering's business in the sense that we started our major export activity around the late 1980s, early 1990s. That transitioned from South East Asia – because that was the logical market at the time – into more distant areas like the Middle East and the UK. Part of that process is clearly working very hard on making our customers important and always servicing, working, solving their problems, addressing their needs – whether it be delivery issues or whatever.

There are some interesting examples I could share where we did things – certainly in the early 2000s in Australia – where people had great shortages of equipment. We did things most people would have regarded as impossible in terms of supply.

In a modern manufacturing business, you have got to think of everything – quality, health and safety, environmental certifications, staff qualifications: all are an integral part of the day-to-day running of a business.

Outcomes

And so to outcomes. We grew our exports as a result of our innovation, our commitment to our customers and our strategy of focused business units. Our turnover has grown eightfold over the last 20 years. Throughout most of my involvement in the business, we've had in Australia two major transformer competitors – both multinationals, obviously – and both have ceased manufacturing in Australia. We are now the only manufacturer of large transformers in Australia and the only organisation in this country that can actually repair large transformers.

Part of our methodology is to be agile in expanding our market share. We've done things in terms of responsiveness to customer demand such as being able to service customer demand for distribution transformers in less than a week.

Flexibility

So, agility and responsiveness have been a key part of our success. We believe both are integral to the future of Australian manufacturing. To service the Australian market place, one must be flexible and agile.

Just on Chevron: we were the first Australian manufacturer to be globally accredited by Chevron. That in itself is a commitment, because to become an approved supplier to Chevron is a two-to-three-year process that involved many people making multiple trips – make that multiple multiple, multiple trips to Houston. It involved Chevron people from Houston, around Australia and elsewhere coming to our plants and auditing them.

That's absolutely key: without the right people, there is no business.

It involved us completely rewriting our occupational health and safety plans and business systems, because what we had previously was OK for an Australian utility market but not good enough for the oil and gas sector. We went to all these pains, and we achieved that accreditation. That work has resulted in substantial improvements in our OH&S performance.

We spent a large amount of our retained profits in the business, and borrowed a little as well, to give us a very modern facility on a 4-hectare site in Springvale Rd, Glen Waverley.

There is no question; it's a challenging environment and we do not know all the answers. However, as a business we are committed to the future

The test area is probably the best in the Southern Hemisphere, and large transformers move round the factory on air skates. Anything up to 300 tonnes can be air-skated around the factory, into test, out of test, and we can also lift 220 tonnes inside the factory.

Also, as part of the through-life support for our products, we have our service business, which features oiling trucks, test vans and all manner of post-sales assistance to our customers, so we are much more than just a manufacturer.

Challenges

Now, where are we going forward? We have a number of challenges in putting innovations into practice. Over the past 15 years we've had a very committed leadership, and ditto the people working for us in our business.

We've also had supportive customers, suppliers and lender in the form of a bank – a major local bank. In 2008, during the global financial crisis, we started work on our Glen Waverley upgrade. And the local bank (I won't promote them by name) was prepared to lend to us during the GFC to upgrade our facility because it believed in our story and in our manufacturing business. I would have to say that today, given the overall direction of manufacturing in Australia over the past five or six years, they're probably not so bullish as they were back then.

Succession planning is well under way. I'm part of the second generation in the business. We also, as I've mentioned before, have very, very good internal people. We've recruited from outside the business – a good mix of youth and experience, from within Australia and from overseas. Also, I happen to have two sons who've entered the business. Like me, my eldest son, who's 34, is a Monash graduate (sorry about that, Swin: didn't get a look-in there). He is taking over as Deputy Managing Director on July 1, and probably in about a year he'll take over the role of Managing Director.

He's been running the power transformer business for the last five years and certainly has a lot more energy, enthusiasm and commitment to the future of the business than I do as a 65-year-old. So I'm actually quite excited about this imminent transition to the next generation.

Conclusion

I think it's important for Australia to maintain a diversified manufacturing base. The disappearance of the auto sector – although it was probably inevitable – has been a shame to see. The really sad thing is what's happened to a lot of auto parts manufacturers: that's taken a lot of capability out of the manufacturing sector. Supplies that many people outside the auto sector had access to won't be on tap any longer. I'm not sure that we've really come to grips with what that means. Going forward, I don't see any positive or rational alternatives, but I do think it is important that we have manufacturing in this country.

Any industrialised country – any country of any worth in the world – has a manufacturing base. One need only look to see which nation is the engine of Europe. Germany is, and manufacturing is the key activity in Germany. Manufacturers in Australia today are here because they've done things which are difficult. They've worked exceptionally hard, and they're here not because of government support but because they've been committed, and, as businesses, have addressed the needs of their markets while developing themselves.

We have serious challenges facing us in the manufacturing sector today; our challenges are probably greater than they've ever been before, and in one sense they are actually unprecedented. Yes, we had challenges in the early 1980s (the '82-'83 recession) and in the early '90s (the '90-'92 recession).

In the sphere we're involved in, which is electricity, we – for the first time ever – are faced with declining consumption, a consequence of de-industrialisation and energy efficiency.

Because of the new government's policies, we're also about to wind back investment in renewables – and renewables is also a business we're part of. We are involved in large-scale solar plants, in wind farms with grid connection transformers and wind tower transformers. So we are actually unhappy to see renewable investment being wound back.

Anyone in our industry is facing extreme competition from Asia, and we are no exception. We have a dumping case before the Anti-Dumping Commission – and we genuinely believe dumping is a big problem. That case has been running since July 2013, and the Statement of Essential Facts is due on 8 September. In October the report from the Anti-Dumping commission will go to the Minister, so it is finally coming to a head.

Under World Trade Organisation rules, if a foreign government has programs which assist overseas manufacturers in export markets, these activities can be countervailed. We've also manning a countervailing duty case against China, Thailand, Vietnam and Taiwan because our competitors from these countries enjoy quite substantial support from their own governments. But in Australia we have no support, or relatively little..

We also face the challenge of a high Australian dollar and, in addition to that, high Australian costs. Now they're not just labour costs. A lot of them are extrinsic: insurance costs, regulatory costs: all the sorts of things we have to do in this country in the way we operate that people overseas simply do not do.

There is no question; it's a challenging environment and we do not know all the answers. However, as a business we are committed to the future and we will be doing our very best as an Australian manufacturer to ensure that we survive and prosper in the years ahead.

Leadership: A synthesis

Scott Thompson-Whiteside

Anyone who has undertaken a business education will have heard of the acronym PESTLE. It stands for Political, Economic, Social, Technological, Legal, and Environmental. Success in companies such as Furnace and Wilson Transformer has chiefly been due to external factors that have changed dramatically over the last 80 or 90 years. Both companies have managed to weave their way through complexities, and often ambiguities, in their respective external environments to forge ahead with new strategies that take on and indeed conquer those changing contextual constraints.

In today's environment we must move even faster as the levels and types of complexity are changing all the time. Increasingly, this is overlaid by the quickening pace of globalisation and greater competition coming from across the world.

The Furnace and Wilson Transformer case studies show different firms responding to similar challenges in different ways – acquiring or setting up businesses overseas or, in both cases, investigating a variety of markets in different countries and entering the export market themselves.

Our competitive edges

Unquestionably, manufacturing is an important part of Australian economic development, contributing about 30 per cent of our nation's GDP in the 1950s. That's now down to less than 10 per cent. So what does Australia offer, compared with its competition – particularly among the emerging Asian countries? In other words, what can we offer that they can't?

As we all know, we cannot compete purely on price. That's a given. But in Scandinavia and Germany we see countries that are able to maintain a very competitive manufacturing industry with the same labour costs. How do they do it?

The defeatism we see in parts of the sector is not ideal. I think we need to rethink our manufacturing capacity from first principles. There are examples of decline and retreat, and obviously we can learn from studying the causes of death surrounding automotive manufacturing. However, there are also amazing stories of parts manufacturers that have retained the capacity to supply components globally.

There is no reason why we can't have the best lighting manufacturers in the world. So it is not right to say that our automotive manufacturing is dying. We may not be making complete cars in Australia, but there is no reason why we cannot make world-class components and export them around the world, so that, for example, some of them end up as parts in a car being made in Thailand.

Therefore I think we need to review how we describe, and indeed define, automotive manufacturing. Research and innovation in manufacturing provide an essential basis for future streams both of products and of incomes generated from those products.

To bring this about, we require significant investment in research and development in this country, to actually change this. I must say, the government doesn't have a particularly inspiring vision of how it intends to invest in R&D in this regard, if indeed it does. The issue also goes to investment in education – which, obviously, I'm passionate about: investing in the right education, which is around R&D, science, engineering, technology, and I would include design in that as well.

As an industrial designer, I of course advocate the role that design plays in the "innovation ecosystem" and in manufacturing companies. Now design is often a term that's not particularly clear to people, but I see it as simply a human-centred problem-solving process.

It's not just an afterthought to solve the problem of how to make something you have hopes will sell well actually look good into the bargain. Design actually embraces a whole range of activities that make a firm more competitive, whether it be reducing the number of components in the manufacturing cycle, or the number of processes that make up that cycle. Design can take a holistic view of a product, along with the services and systems that surround it, and all this increases competitiveness.

If you actually look at successful companies that have invested in design, it's not just about the product. Of course, when we're talking about manufacturing, the focus on innovation tends to concern the product that comes out of that process. But a product is not just the end result: there are services and systems surrounding it, and you need to provide quality services to match
your quality products.

Studies have shown that firms that invest in design up front are 200 per cent more likely to outperform key stock-market indices.

You need the gift of thinking five to ten years ahead, and the courage to take a calculated risk on what that future might look like.

Innovative leadership

Research has shown that for every $100 spent on design, the return on that investment is about $225. Studies have shown that firms that invest in design up front are 200 per cent more likely to outperform key stock-market indices. Learning of this prompted me to ask what are the characteristics of leadership in the innovation space ?

I think the first one is about being comfortable with complexity and ambiguity. That is our daily business and, if we are not comfortable dealing with that, I don't think we're going to be particularly good leaders in that space. Obviously, your staff, customers and clients need to get the message loud and clear that you're comfortable with nuance and ambiguity, and have a strong sense of where you're going, a strong sense of their vision, if as business people they are not to perish.

I think you also need foresight, the ability to envisage what the future might look like. You need the gift of thinking five to ten years ahead, and the courage to take a calculated risk on what that future might look like.

Now, all this is difficult to pull off amidst a rapidly changing external environment. It's very hard to think five years ahead when certain external factors are changing every year or every other year – whether that be the Australian dollar or short-term political cycles. But it's important to have some vision of where the future is likely to lie.

It's also important to be able to move from the macro to the micro level within an organisation. You have to think about the company's strategic direction, but also to be hands-on in solving problems internal to the company and its unique relationship with your clients. I see future leaders having that trait of moving easily between the macro and micro worlds.

Innovative leaders are also systems thinkers. They're pondering not just solutions but what impact those solutions might have on their system, or on customers and their systems. So every new idea comes surrounded by issues of process and implications for others who are important to your business success. An innovative leader will keep both these matters in mind.

Yet, for all the calculation and prognostication, there will always be an element of risk-taking. Make no mistake: taking risks is an inevitable part of our job description. From a design perspective, we've been using Apple products for the past 30 years, and I've got to know the company over that time. Really, Apple has only emerged as a prominent global brand in the last six or seven years. If you look back 30 years ago at the range of products launched by Apple, about 80 of those were failures: it is only very recently, starting with the iPhone and the iPod, that we can equate Apple with business success. They took lots of risks to achieve some of those successes. Largely forgotten nowadays is a primitive device known as the handheld Newton. It was the PDA of its time, which is now, of course, the iPad. The Newton was a miserable failure. However, sometimes you have to take those risks, you have to fail and, as a leader, you have to accept the prospect of failure – your own and that of your staff.

Future leaders have that trait of moving easily between the macro and micro worlds.

Companies that prosper maintain a focus on quality in everything they do – in the staff they recruit, the standards on which they insist in their services and systems alike. Whether it's the end product or international standards, that focus must never falter.

Values and Culture

Companies that prosper maintain a focus on quality in everything they do – in the staff they recruit, the standards on which they insist in their services and systems alike. Whether it's the end product or international standards, that focus must never falter.

I also sense an ability to source ideas in-house, together with a capacity to co-create new ideas with suppliers, clients and customers – not to be afraid of asking clients and customers, "Well, how could we do this better?" "What kinds of innovation are you looking for, and how can we respond to that?"

In any successful company that is really driving an innovation agenda, you have got to have deep insights into what your customers want. And by customers I don't just mean the end users but even the suppliers, the distributors and manufacturers of components or products you are making. You have to get insights – genuine and profound insights – into what they're thinking.

The second last point I would make is that Furnace and Wilson are two companies that obviously have very strong values. They inherited strong company values – both were family businesses – but they have kept faith with those values. They bring their staff along to imbibe and be true to those values, so I think you can't overestimate how vital it is to cling to those fundamental values when you're trying to stay upright amid an external environment that is in constant flux.

Lastly, long-term success is about creating a nurturing culture among the staff, creating confidence on the factory floor that 'we' as an organisation do have a future, and there is a path we must follow if we're to get there. We must get across to them that we do want new ideas coming forth, we do want them taking risks, and it's OK to fail along the way.

Embedded in all of that, I think, is the ultimate leadership trait: having a good understanding of people – of where they fit within the company and in relation to their own pursuits. 3M is famous for allowing employees to spend 10 per cent of their time on any project they like, whether it relates to the company or not. The ideas that come from allowing them to do this rebound to 3M's benefit. In this manner a big appetite is constantly being whetted for innovative approaches to be applied to its everyday business.

Embedded in all of that, I think, is the ultimate leadership trait: having a good understanding of people – of where they fit within the company and in relation to their own pursuits.

SLI Working Paper series

The Swinburne Leadership Institute's *Leadership for the Greater Good Working Paper Series* was established in 2014 to disseminate work-in-progress by members, Fellows and associates of the Swinburne Leadership Institute.

Papers in the series include the revised text of presentations at SLI Dialogues (held monthly through the Australian academic year), conference and seminar presentations, research papers, review essays, and other reports.

The series aims to encourage discussion and collaboration on ways of clarifying the meanings of the greater or common good and to enrich the understanding and practice of leadership in its service. Working papers are available at the SLI website: www.swinburne.edu.au/leadership-institute.

The Working Papers in this series include:

1. *On leadership, continuity, and the common good*
   Samuel Wilson, 2014
2. *Reimagining ethical leadership as relational, contextual, and political*
   Helena Liu, 2014
3. *Leadership tools for wicked problems*
   John Fien and Samuel Wilson, 2014
4. *Chasing the honey bee: Enhancing leadership for sustainability*
   John Fien, 2014
5. *Leadership for innovation – Why manufacturing has a future in Australia*
   Richard Simpson, Robert Wilson and Scott Thompson-Whiteside, 2014

www.swinburne.edu.au/leadership-institute/publications

About the authors

Richard Simpson

Richard is the Managing Director of Furnace Engineering Pty Ltd, having been with the company for 18 years. Prior to this, Richard held leadership roles in engineering design, project management and sales within Furnace Engineering and with Ford Motor Company. Furnace Engineering is an Australian engineering company specialising in the design and manufacturing of heat processing equipment for industrial and research purposes.

Robert Wilson

Robert has been Managing Director of Wilson Transformer Company (WTC) since 1978, taking over from his father who started the firm in 1933. WTC is the largest Australian manufacturer of power and distribution transformers with two manufacturing plants in Victoria, joint venture operations in Malaysia and the Saudi Arabia, and sales and marketing operations in the UK, Europe and the Middle East.

Scott Thompson-Whiteside

Scott is Professor and Dean, School of Design, Swinburne University of Technology. With a background in industrial design and design management, Scott currently teaches design strategy and, in 2006, won the Vice-Chancellor's teaching award for higher education. His research intersects design strategy, management and innovation and emphasizes the value and importance of design thinking in both innovation and leadership.

Leadership for the Greater Good – Values

The Swinburne Leadership Institute's conception of **Leadership for the Greater Good** is grounded in the values and principles embedded in the culture and aspirations of Swinburne University, including:

Innovation and creativity in solving real-world problems.

Integrity, honesty and the highest ethical standards in everything we do.

Accountability to ourselves, each other, and the communities we serve through transparency and evidence-based decision making.

Celebration of diversity and respect the strength that difference creates.

Teamwork and collaboration through mutual respect, open communication and the sharing of responsibility.

Sustainability at personal, group, national and planetary scales.

FURTHER INFORMATION

(03) 9214 5717
PO Box 218 Hawthorn VIC 3122
leadershipinstitute@swin.edu.au
swinburne.edu.au/leadership-institute

Blog: http://blogs.swinburne.edu.au/leadershipinstitute

https://twitter.com/swinleadership

Linkedin group – Swinburne Leadership Institute