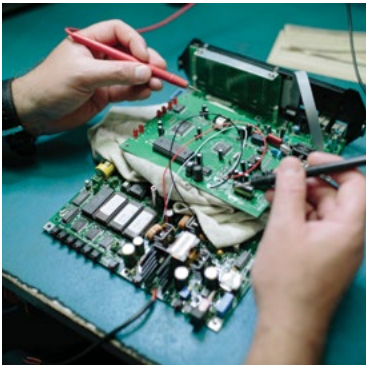


Beyond Business as Usual:

A 21st Century Culture of Manufacturing in Australia

Katherine Gibson
Jenny Cameron
Stephen Healy
Joanne McNeill



WESTERN SYDNEY
UNIVERSITY



Institute for Culture
and Society



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

© The Authors, December 2019

Copyright statement

This publication is protected by copyright laws. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced or altered by any process without prior written permission of the authors.

For more information or to comment on this report, please contact:

Professor Katherine Gibson
Institute for Culture and Society, Western Sydney University
Locked Bag 1797, Penrith, NSW 2751, AUSTRALIA
k.gibson@westernsydney.edu.au

Disclaimer

The analysis presented in this document is that of the authors and does not necessarily reflect that of the research participants.

Funding

This research was funded by the Australian Government through the Australian Research Council's *Discovery Projects* funding scheme (DP160101674). The research team acknowledges and thanks the ARC for its support of the project. The views expressed herein are those of the authors and are not necessarily those of the Australian Government



Suggested Citation

Gibson, K., Cameron, J., Healy, S. and McNeill, J., 2019, *Beyond Business as Usual: A 21st Century Culture of Manufacturing in Australia*, Sydney, Australia: Institute for Culture and Society, Western Sydney University.

Published by:

Institute for Culture and Society, Western Sydney University, Parramatta, NSW 2150

ISBN 978-1-74108-500-6

DOI 10.26183/5de4905d071df

Beyond Business as Usual:

A 21st Century Culture of Manufacturing in Australia

**Katherine Gibson
Jenny Cameron
Stephen Healy
Joanne McNeill**

December 2019



Acknowledgements

The research team would like to thank all the participants in this study for their time, interest and frankness. We particularly thank the ten manufacturing enterprises and their staff who so readily engaged in the research process over the period 2016-2019:

A.H. Beard
Interface
NCMC (Northern Co-operative Meat Company Ltd)
Norco
OzGroup
Sebel Furniture
Soft Landing
The Social Outfit
Varley Group
WorkVentures.

We also thank the international participants who generously provided input:

Altus Enterprises (NZ)
Goods that Matter (USA)
Innesto Cooperative (Italy)
Interface (Netherlands)
KOMOSIE (Belgium)
Pocheco (France)
Professor Vera Zemagni (Italy)
Zero Waste Network (NZ).

The research team also thanks colleagues and friends at the Institute for Culture and Society, Western Sydney University who provided administrative support for this project. Jenny Cameron acknowledges the generous support of her colleagues and students in the Discipline of Geography and Environmental Studies at the University of Newcastle.

About the Authors

Katherine Gibson is a Professorial Research Fellow at the Institute for Culture and Society, Western Sydney University. She is an economic geographer with an international reputation for pioneering research on diverse economies.

Jenny Cameron is a Conjoint Associate Professor at the University of Newcastle. Throughout her academic career she has researched diverse and community economies, principally using action research methods.

Stephen Healy is a Senior Research Fellow at the Institute for Culture and Society, Western Sydney University. He has researched social and solidarity economies during a research career that spans the US and Australia.

Joanne McNeill is the Research Project Manager for this project, and a Research Fellow with the Institute for Culture and Society, Western Sydney University. Her research and prior professional experience engage with social innovation ecosystems and alternative economic organising.

Foreword

Is there a future for manufacturing in an increasingly digital world? Will 'generation next' recognise that a product is more than an app on a smart phone? As the internet of things becomes ubiquitous, who will make the things? These questions are timely and relevant as Australia embarks on its post-mining boom transition to a more inclusive and dynamic knowledge-based economy.

Clearly manufacturing has a future in this new context, but it will be different from anything and everything we have known in the past. The advance of robotics and automation, nanomaterials and big data, and artificial intelligence and machine learning, means that manufacturing requires more than 'business as usual'. It requires the transformation of our entire industrial structure.

The authors of this report understand the need for industrial transformation, but they go further. They argue that manufacturing also contributes to social inclusion through the creation of high skill, high wage jobs. This is certainly the experience of advanced manufacturing economies like Switzerland and Germany. While automation destroys some jobs, it also creates others, both within manufacturing enterprises themselves and in related services.

Additionally, the authors identify the importance of manufacturing in addressing climate change and environmental degradation. This is evident in the remarkable growth of renewable energy technologies and the application of manufacturing techniques to improve energy productivity and sustainability. In this sense, manufacturing has become an 'enabler' of technological change and innovation across industry boundaries as well as being an industry in its own right.

The urgency of such change in Australia is highlighted by the Harvard Atlas of Economic Complexity which shows that we sustain our developed-world lifestyle with an ominously hollowed-out developing-world industrial structure. The atlas measures the research intensity and diversity of a country's exports as a proxy for its innovation capability. Since Australia relies mostly on the export of unprocessed raw materials, we rank well behind the advanced economies with which we usually benchmark ourselves.

Arguably, there was no obvious disadvantage in Australia's export mix while commodity prices were high, and the boost to our terms of trade masked the deterioration in our productivity performance. However, it has become apparent in the wake of the mining boom that our future prosperity will depend increasingly on identifying new sources of value in knowledge intensive goods and services.

The importance of this report is that it explores the reinvention of manufacturing in Australia from the viewpoint of developing a 'manufacturing culture'. Only by doing so will we be able to build competitive advantage in global markets, and achieve the combined objectives of long-term economic growth, social inclusion and environmental sustainability.

Emeritus Professor Roy Green
University of Technology Sydney
December 2019

Executive Summary

There is a culture of manufacturing that is *beyond business as usual* in Australia.

This report shows that there is a viable future for manufacturing in Australia in the 21st century that is being shaped by a culture that is ***beyond business as usual***. This report counters ill-founded fears that manufacturing in Australia is not viable by presenting convincing evidence of dynamic firms that are committed to just and sustainable manufacturing.

In-depth qualitative research with 10 manufacturers based in NSW documents evidence of commitments to:

1. Maintaining firm viability and thereby **safeguarding manufacturing in Australia**
2. Providing decent jobs in an inclusive society and thereby **building a more just manufacturing sector**
3. Producing with a smaller ecological footprint and thereby **building a more environmentally sustainable manufacturing sector**.

Manufacturing matters but it faces major challenges.

Manufacturing supports 1.27 million jobs in Australia. It plays a major role in the social inclusion of people from many different backgrounds and experiences. It is where the productive capacity of the society is nurtured. It is a point of concentration for innovation and investment in R&D.

But the business as usual model is no longer viable. Growth without regard for a social licence to produce is no longer acceptable. Nor is growth with disregard for the environmental impacts of production and consumption.

The new culture of manufacturing identified in this report is robust enough to meet the joint challenges of increasing inequality and environmental degradation.

A beyond business as usual manufacturing culture is *more than smart* and *more than green*.

This culture of manufacturing is 'more than smart'. It situates the technological advancements associated with Industry 4.0 in the wider social context where concerns for good jobs are placed alongside the demand for greater productivity and financial returns.

This culture of manufacturing is 'more than green'. It focuses on environmental sustainability at all stages of the production process and supply chain, as well as looking to the greenfield renewable energy sector and its associated new business opportunities.

This culture of manufacturing combines production of material goods in a just and equitable manner *with* a contribution to social cohesion and *with* the minimisation of damage to supporting ecosystems.

It is building viable firms with the capacity to withstand threats that might undermine the sector as a whole.

In this culture of manufacturing, firms have a clear purpose and a long-term business horizon. This builds the capacity to withstand undermining forces such as corporate raiding and the financialisation of the economy.

It is helping Australia make progress on the Sustainable Development Goals (SDGs).

The firms that are adopting a beyond business as usual approach demonstrate how manufacturers can lead the way in addressing:

- SDG 8 Decent Work and Economic Growth
- SDG 9 Industry Innovation and Infrastructure
- SDG 12 Responsible Consumption and Production.

Contents

Acknowledgements	iv
Foreword	v
Executive Summary	vii
Contents	viii
1. Introduction	1
1.1 Why Manufacturing in Australia Matters	3
1.2 Challenges to Manufacturing	3
1.3 Future Pathways	4
1.4 What this Report Offers	5
2. Research Method and Company Profiles	6
2.1 Research Method	6
2.2 Company Profiles	10
A.H. Beard	10
Interface	12
NCMC	14
Norco	16
OzGroup	18
Sebel Furniture	20
Soft Landing	22
The Social Outfit	24
Varley Group	26
WorkVentures	28
3. Safeguarding Manufacturing	30
3.1 Motivations that extend beyond profit	31
INSIGHTS: Business motivations beyond profit	32
SNAPSHOT: From shareholders to stakeholders	34
3.2 Long term business horizons	35
SNAPSHOT: Interface – From Mission Zero® to Climate Take Back™	36
SNAPSHOT: WorkVentures – Growing seedlings into trees	37
SNAPSHOT: A.H. Beard – Risking all to save the firm	38
SNAPSHOT: Varley Group – Cutting back to save the business	39
SNAPSHOT: Norco – Resisting demutualisation	40
3.3 Thoughtful growth	41
INSIGHTS: Growth that serves multiple stakeholders	42
SNAPSHOT: Soft Landing – Growing and remaining ethical	44

SNAPSHOT: Sebel Furniture – Refocusing growth on what is core	46
SNAPSHOT: NCMC, Norco and OzGroup – Thoughtful growth in a climate changing world	47
4. More Just Manufacturing	49
4.1 Technological Change <i>and</i> Decent Jobs	50
SNAPSHOT: Norco – Introducing automation on the shopfloor	51
SNAPSHOT: Automation and jobs	52
4.2 Workers as Valued Contributors	53
INSIGHTS: Workers as valued contributors	54
SNAPSHOT: Interface – Valuing workers in a crisis	58
4.3 Factories as Sites of Inclusion	59
INSIGHTS: Factories as sites of inclusion	60
SNAPSHOT: New technologies, inequality and training	65
5. More Sustainable Manufacturing	67
5.1 Product as High Quality and Durable	68
SNAPSHOT: Varley Group – High-quality and durable products	69
SNAPSHOT: Product-as-a-Service	70
5.2 Efficiency as Waste Reduction	71
SNAPSHOT: Sebel Furniture – Lean manufacturing as waste reduction	72
5.3 Product Circularity	73
SNAPSHOT: The Social Outfit – Extending the life cycle of fashion	74
SNAPSHOT: WorkVentures – Extending the life cycle of electronic and IT equipment	75
SNAPSHOT: Interface – Extending the life cycle of carpet tiles	76
SNAPSHOT: Soft Landing Mattress Product Stewardship Scheme	77
6. Recommendations for Manufacturing a Liveable Future	78
6.1 Policy Directions for Safeguarding Manufacturing in Australia	80
6.2 Policy Directions for Building a Just Manufacturing Sector	83
6.3 Policy Directions for Building an Environmentally Sustainable Manufacturing Sector	86
6.4 Conclusion	91
References	92
Appendix 1: A Public Declaration	99



1. Introduction

With the closure of the last car assembly plants, doubts were raised about whether there would be a future for manufacturing in Australia.¹ Today many people are surprised to think that manufacturing in Australia might be viable and that young people might expect an exciting future working in manufacturing.

The research on which this report is based set out to answer the following questions:

What kind of future is there for manufacturing in Australia?

How can manufacturing address the two 21st century challenges of:

1. growing inequality and social exclusion
2. environmental degradation?

The combination of the Global Financial Crisis (GFC) and the climate crisis means previously accepted ways of doing business have been called into question. It is now commonplace to hear that business as usual cannot continue and that new ways of doing business are needed.

This report presents compelling evidence that **there is a just and sustainable future for manufacturing in 21st century Australia**. Indeed, the future is already here in the form of a **manufacturing culture** that is beyond business as usual. But this manufacturing culture is not well known or publicly visible.

As two of the manufacturers in this research commented:

There's a view that we don't make anything in Australia anymore – full stop. So people are staggered when I say to them, 'I'm a carpet manufacturer.' They say, 'Oh, you mean you sell some stuff you import from overseas?' I say, 'No, we make it here in Sydney.' And they go, 'Oh, that's astounding. I didn't think we did anything like that anymore.' ... Manufacturing's not as visible as it used to be. It doesn't have big smoke stacks and big industrial sites and people with pickets outside anymore. When you get in there it's invariably clean and smart and clever ... it's no longer the Dickensian sawtooth roof with steam belching out of pipes.

Managing Director, Australia and New Zealand, **Interface**

Mindshop arrange for year 12 students from local high schools to work on a challenge within a business and provide a solution. This is part of their year 12 assessment. Students from Menai High School worked with the A.H. Beard business and on completion of their project, teachers and parents were invited to attend a student presentation. They were astonished that although we are a manufacturing facility, the career opportunities are many and varied. We have roles in marketing, media, education, procurement, sales, customer service and finance as well as operations and logistics. Many people view manufacturing as blue-collar workers on a factory floor. I feel the Australian government needs to consider Australian manufacturing and the career opportunities they provide for our young people and the development of our country into the future.

Education and Development Manager, **A.H. Beard**

¹ For example, Eltham, 2014; Ladd, 2017; Taylor et al., 2014.

Manufacturing is rarely discussed in cultural terms. Yet the ten manufacturing firms involved in this research all referred to their distinctive 'culture' of operation. They articulated distinctive commitments that indicate a culture that is beyond what is associated with business as usual.

These firm level **commitments** shape day-to-day **practices**. Together, the commitments and practices comprise a nascent **culture of manufacturing**, one that transcends individual firms and has the potential to shape the sector as a whole.

This culture is making a vital contribution to the nation by:

1. Maintaining firm viability and thereby **safeguarding manufacturing in Australia**
2. Providing decent jobs in an inclusive society and thereby **building a more just manufacturing sector**
3. Producing with a smaller ecological footprint and thereby **building a more environmentally sustainable manufacturing sector**.

Beyond Business as Usual A 21st Century Culture of Manufacturing in Australia

Safeguarding manufacturing in Australia

Commitments

- | | | |
|--|---|-----------|
| 1. Motivations that extend beyond profit | + | |
| 2. Long term business horizons | | Practices |
| 3. Thoughtful growth | | |

Building a just manufacturing sector

Commitments

- | | | |
|--|---|-----------|
| 1. Technological change <i>and</i> decent jobs | + | |
| 2. Workers as valued contributors | | Practices |
| 3. Factories as sites of inclusion | | |

Building an environmentally sustainable manufacturing sector

Commitments

- | | | |
|--|---|-----------|
| 1. Product as high quality and durable | + | |
| 2. Efficiency as waste reduction | | Practices |
| 3. Product circularity | | |

This introduction sets the scene by providing background information on manufacturing in Australia, identifying the challenges manufacturing faces, and overviewing the types of recommendations that have been put forward in recent reports to secure Australia's manufacturing future. The introduction ends by identifying what is distinctive about this report.

Section 2 explains how the research was conducted. It includes an overview of the qualitative research method and Company Profiles for the ten manufacturing firms that were studied.

The next sections are organised around the **three vital contributions** that manufacturing can make to this nation:

Section 3: Safeguarding manufacturing

Section 4: Building a just manufacturing sector

Section 5: Building an environmentally sustainable manufacturing sector.

Each section discusses the **commitments** and **practices** associated with these contributions.

Section 6 concludes with recommendations for policy directions, organised in terms of their match with three of the United Nation's **Sustainable Development Goals**.

1.1 Why Manufacturing in Australia Matters

Manufacturing remains a significant activity in Australia's economy. It supports 1.27 million jobs.² The employment numbers directly attributed to the manufacturing sector remain substantial (840,325 at end of June 2018).³ The sector continues to demonstrate good prospects in terms of job quality, stability and wages.⁴

Australian manufacturing has seen a steady rise in output over the past half century, representing a dramatic increase in productivity. In 2014/15 it was the largest contributor by sector to business expenditure on research and development.⁵

A robust manufacturing sector has inherent value because it offers practical hands-on problem-solving work (both unskilled and skilled) that further builds up the industrial know-how of society. In Australia, manufacturing has long played a role in building social cohesion by integrating overseas migrants and young people into worksites where new skills and habits are learnt on the job.

1.2 Challenges to Manufacturing

The economic challenge: There is no doubt that manufacturing in Australia faces many economic challenges.⁶ As a developed nation that places value on good workplace relations and regulated standards, Australia is regularly positioned as a 'high cost' operating environment.⁷ Transport costs both internally and externally are seen to be high. Currency fluctuations can drastically affect input costs and destabilise forward projections. Its relatively small domestic market and distance from mass global markets influence the potential for growth.

The social challenge: The image of manufacturing offering a fair go for all Australians is less prevalent today. In recent decades, the distribution of wealth and economic wellbeing to which manufacturing once majorly contributed has stalled and there is growing income inequality in many economies, including Australia.⁸

²Advanced Manufacturing Growth Centre Ltd 2017, p. 11. This number is based on jobs directly classified as manufacturing and jobs that are outside manufacturing but providing direct inputs to manufacturing. These latter jobs include 53,000 jobs in professional services, as well as jobs in areas such as agriculture, mining, and transport and warehousing.

³Australian Bureau of Statistics 2018. In the 1960s, manufacturing in Australia employed over 1.2 million people (or just over one-quarter of the workforce), see Clark et al. 1996; Connolly & Lewis 2010.

⁴For example, as identified by Stanford & Swann (2017, p.8), part-time work in manufacturing is half that in the labour market as a whole; minimum wage compensation is smaller proportionately; and average weekly earnings are about ten percent higher than in the economy as a whole.

⁵Australian Government 2017, pp.77-78; Australian Government 2019.

⁶For example, see Green & Roos 2012; Ranu 2017

⁷Sirkin et al. 2014.

⁸Picketty 2014, pp.246-250. Indeed, in recent years, international institutions such as the International Monetary Fund have become increasingly concerned about the negative consequences of increasing levels of inequality.

The environmental challenge: Today the world is poised on the brink of an environmental crisis that has the potential to threaten the livelihoods and security of millions around the world. Manufacturing and the burgeoning consumption habits of a growing world population are implicated in the Great Acceleration of economic growth and environmental degradation that has taken place since the 1950s.⁹ What and how we produce the stuff of life is now under examination.

A loss of confidence in business: Since the GFC there has been continued revelations of the irresponsibility of some business leaders. There is ample evidence that the 'greed is good' mantra—whether in high profile financial institutions, retailers, miners or manufacturers—has eroded the public's confidence.¹⁰ Business as usual has become associated with profit making at all cost, short term gains on the stock market, a lack of commitment to communities and regions and profligate use of pristine resources without concern for wastage or product 'end of life'. Plausible counter stories are needed to restore confidence that business in Australia can do better.

Amidst the noise of media and research reports that focus on challenges to the Australian manufacturing sector, this report provides insights into the following concerns:

1. How are manufacturers meeting these challenges of the 21st century?
2. How are they challenging stereotypes?

1.3 Future Pathways

The Australian public has become used to hearing that what stands in the way of a more viable manufacturing sector is a business culture that is not sufficiently innovative and labour relations that are too combative. Research and debate often centre on how Australian manufacturing can 'get competitive'.¹¹

Two pathways to competitive success are currently being advocated via the promotion of:

- 1) Industry 4.0 also known as 'advanced manufacturing' or 'smart manufacturing' based on new technologies that bridge the physical and digital worlds¹²
- 2) a Green New Deal, which refers to a renewables-led transformation of the economy.¹³

The Industry 4.0 revolution emphasises the introduction of automated technologies that will transform product design, production, processes of communication with clients and overall management. Robotics, smart sensors, big data analytics, customer profiling, and the Internet of Things are all part of this contemporary industrial revolution.

The Green New Deal sees the development of renewable energy as leading a widespread transition to green jobs away from jobs tied to fossil fuels. The shift to renewables will prompt new high-tech industries, distributed around the country and no longer tied to centralised energy grids. In the US, the Green New Deal is also focused on addressing racial and environmental inequities.¹⁴ In Australia, it is informing discussion of alternative industry policy within the Federal Opposition and the Greens.

Both these pathways largely focus on the things that manufacturers and governments *could* and *should* be doing in order to reach this yet to be realised future. As well, the future that is projected is one in which technological advancements do the heavy lifting of economic transformation.

⁹ Steffan et al. 2015.

¹⁰ The recent Australia Talks National Survey conducted in July 2019 by the ABC of more than 54,000 Australians found that corporate executives were the third least trusted profession (with politicians and celebrities the least trusted). See <https://www.abc.net.au/news/2019-11-27/the-professions-australians-trust-the-most/11725448>.

¹¹ For example, see Australian Government 2014, p.77.

¹² See <https://www.industry.gov.au/funding-and-incentives/industry-40>.

¹³ For example, see Ireland 2019; Murphy 2019.

¹⁴ See Friedman 2019.

A potential (but not insurmountable) problem with these popular and heralded pathways is that they do not challenge the business as usual model. The culture of manufacturing remains focused on being at the competitive edge, ahead of the game.

Another is that they ignore what is at hand. That is, they overlook the ways that existing companies are already practising advanced (*and* just) and green (*and* sustainable) forms of manufacturing.

This report showcases a range of enterprises that are responsibly producing goods essential to material wellbeing and comfort. We document their pathways to success as a contribution to widening the debate about what manufacturing futures could be.

1.4 What this Report Offers

This report has three distinguishing features.

First, it is based on in-depth qualitative research with ten manufacturers using what is called a **strengths-based approach**.¹⁵ This means the research sought to find what it is that manufacturers are already doing to build a viable, just and sustainable manufacturing sector that will meet the challenges of the 21st century.

Second, this report is based on the idea that there are **manufacturing cultures**. This means that manufacturing is understood as entailing ways of thinking (**commitments**) and doing (**practices**). As a culture, these commitments and practices are also entangled with standards, norms and rules informed by shared values. Mostly, a culture goes unremarked, until called into question, often when there is a crisis. The questioning of business as usual was prompted by the Global Financial Crisis and the climate crisis.

Third, the project took as one line of inquiry the differences that **enterprise 'type'**, in terms of ownership and governance structure, might have on manufacturing commitments and practices. The business as usual mode of operation is largely associated with an ideal type of 'capitalist' enterprise, one that is animated by profit-making, competitive growth and the private accumulation of wealth. This study incorporated a range of enterprise types (as discussed more in Section 2.1).

By using a strengths-based approach to study public, private and family-owned companies, as well as co-operatives and social enterprises, all engaged in manufacturing, this research has produced new findings about a culture of manufacturing *beyond* business as usual.

¹⁵ A strengths-based approach seeks out the assets and capacities of individuals, communities or, in this case, enterprises. While not ignoring needs and deficiencies, this approach does not dwell on them as this stokes a negative affect that undermines the incentive for creative action. The authors of this report have used this asset-based approach, as originally developed by Kretzmann and McKnight (1993), in many of their action research projects (for example, Mathie et al. 2017).

2. Research Method and Company Profiles

In order to explore the strengths of manufacturing in Australia, the research used an in-depth qualitative approach based on interviews and site visits with ten manufacturers. This section provides more information about how the research was conducted, how the resulting data were analysed and how it is presented in this report. This section also introduces the ten manufacturers, providing an overview of their operations and important background on their historical development.

2.1 Research Method

Participating manufacturers were recruited on the basis of documented reputation, recommendations from industry experts and snowball sampling. The selection aimed to secure a range of different types of manufacturers, in terms of products, age, size, market reach and scale of supply chains. Table 2.1 overviews the range of manufacturers.

Table 2.1 The Range of Manufacturers

Products	<ul style="list-style-type: none">• Blueberries and Packaging• Carpet Tiles• Dairy Products• Electronics and IT Repair, Refurbishment and Recycling• Fabricated Metal Products• Fashion• Furniture• Mattresses• Mattress Recycling• Meat Products
Age	From 5 years to 133 years
Size	From four to over 1,000 staff
Markets	Local, national and international
Supply Chains	From local to global supply chains

As the research team was based in New South Wales (in Sydney and Newcastle), there was a focus on firms operating in NSW. Some of the firms have manufacturing operations only in NSW and some manufacture in other states and in other countries. It should be noted that NSW contains nearly 30 per cent of Australia's direct manufacturing workforce, with Food manufacturing far outstripping other product areas in terms of numbers employed (followed by Fabricated Metal Products and Other Machinery).¹⁶

Different enterprise types were recruited to encompass different ways of making decisions and conducting business, and to see whether and how these varied approaches to business contributed to ways of 'doing manufacturing'. Table 2.2 identifies the enterprise types included in the study and locates the ten manufacturers in terms of their enterprise type.

¹⁶ NSW Department of Industry 2018, pp. 8 & 9.

Table 2.2. Diverse Enterprise Types

Public company	Public companies have shares that are traded on the stock market. These shares can be purchased by members of the public who then become shareholders in the company. Interface is a public company.
Private company	Private companies are owned privately, usually by a small group such as a company's founding partners. Some of the world's largest firms are private companies. Sebel Furniture and Varley Group are private companies. ¹⁷
Family-owned company	Family-owned companies are a sub-group of private companies that are owned by family members. In Australia, there are over 1.4 million family businesses, accounting for 70 per cent of all businesses. ¹⁸ A.H. Beard is a family-owned company.
Co-operatives	Co-operatives are firms that have members who are also the owners. Co-operatives aim to achieve members' shared economic, social and/or cultural goals. They are governed by the principle of democratic decision-making and each member has one vote. Worker co-operatives are owned by the worker-members; producer co-operatives are owned by the producer-members; and consumer co-operatives are owned by the consumer-members. Co-operatives are classified as either distributing or non-distributing, which refers to whether or not any profit can be distributed to members. The three co-operatives that participated in this study, NCMC , Norco and OzGroup , are distributing producer co-operatives.
Social Enterprises	Social enterprises are for-purpose businesses led by an economic, social, cultural and/or environmental mission that generates a public or community benefit. Any profit or surplus generated is primarily reinvested into the enterprise so it can continue to fulfil its mission. In 2016 it was estimated that there are around 20,000 social enterprises in Australia, operating across all industry sectors. ¹⁹ Social enterprise can take different legal forms. Two of the social enterprises that participated in this study, Soft Landing and WorkVentures , are registered as Companies Limited by Guarantee, a non-profit-distributing form of company with a national jurisdiction that reports to the Australian Securities and Investments Commission (ASIC). The Social Outfit is an Incorporated Charitable Institution.

The research was conducted in three main phases.

Phase 1, January-March 2017. Interviews were conducted with core staff, including owners, Managing Directors and CEOs. 34 interviews were conducted in this phase, and all were transcribed.

Phase 2, May 2017-August 2018. Additional interviews were conducted with a range of staff including managers, engineering and design staff, HR staff, and production staff (including shop floor operators, leading hands and supervisors). 46 interviews were conducted in this phase and all were transcribed. Site visits of manufacturing operations were also conducted, and this provided an opportunity to observe production processes and design meetings.

¹⁷ As discussed in the Company Profiles (Section 2.2) both began as family businesses.

¹⁸ See <https://www.familybusiness.org.au/about-us/we-are-family-business-australia>.

¹⁹ Barraket et al. 2016.

During this phase, the researchers provided a written submission to the Future of Work and Workers Senate Inquiry and presented invited testimony to the Inquiry Hearing in Sydney (February, 2018).

Phase 3, July-December 2018. The initial analysis of results was undertaken using an inductive approach. This involved identifying the main themes that emerged from the transcripts of interviews (supplemented by notes from the observations). The main themes specific to each firm were presented at in situ workshops involving nine of the firms and 36 participants.²⁰ The participants were chiefly those who had already been interviewed. Participants at each workshop ranged from one (at the smallest firm) to nine (at one of the largest firms).

The research team presented analysis of the findings using the 'just sustainability' conceptual framework (see below) focusing on what the manufacturer was doing to contribute to just sustainability, the types of factors that were enabling this contribution and the challenges faced. Time was then dedicated to discussing the 'fit' and usefulness of this concept with the participants. Participants affirmed the analysis with most commenting that the main features of the firm had been accurately captured and that the conceptual framework reflected their thinking.

Box 2.1: Just Sustainability

The concept of just sustainability was developed by Julian Agyeman and colleagues to refer to the importance of ensuring "a better quality of life for all, now and into the future, in a just and equitable manner, while living within the limits of supporting ecosystems."²¹

The final activity in this phase, was a 'whole group' workshop (in December, 2018) that brought together most of the manufacturers (several were unable to attend). The research team presented the overall findings, and representatives from each firm participated in panel discussions based around themes such as strategies for communicating the value of manufacturing as a contributor to a more just and environmentally sustainable Australia.

On the recommendation of the workshop participants, a joint Public Declaration on Just and Sustainable Manufacturing in Australia was prepared, signed by the participating firms, and circulated to politicians, policy makers and industry researchers in December, 2018 (see Appendix 1). This led to meetings with several Parliamentarians and public sector policymakers in early 2019, where the research approach and findings were discussed.

Over the course of the project, there were also 15 meetings with representatives of industry associations and think-tanks, policymakers and unions. These meetings provided valuable insights into the broader context for manufacturing in Australia. As well, interviews and site visits were conducted with seven overseas manufacturers involving 10 interviewees.²² This helped to provide insights into similarities and differences between manufacturing in Australia and manufacturing in other contexts.

This report presents the findings that emerged around the three main themes of safeguarding manufacturing (Section 3), just manufacturing (Section 4), and environmentally sustainable manufacturing (Section 5).

In each of these sections there is a focus on the underpinning commitments and the practices that reflect these commitments. In keeping with qualitative research methods, quotes from the interviews are used to elaborate the themes, and the commitments and practices. These data are principally presented in the form of:

²⁰ Note: NCMC participated in Phase 1 only.

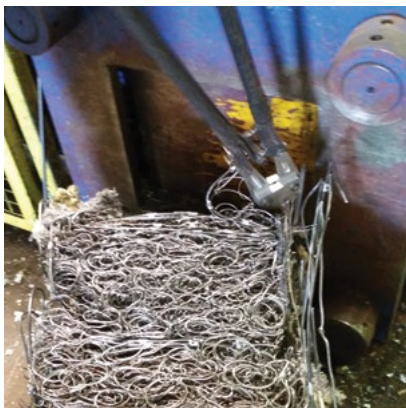
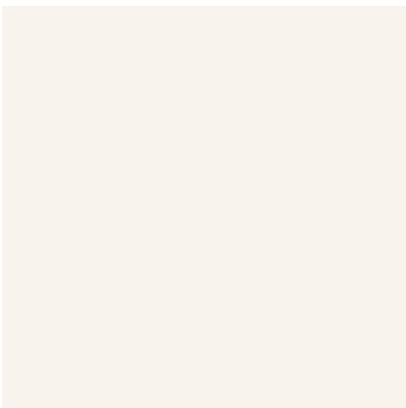
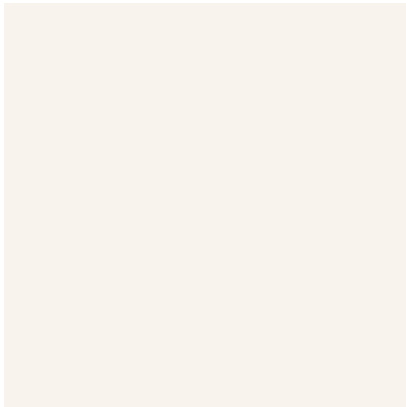
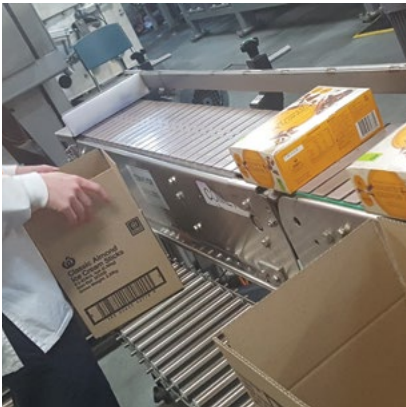
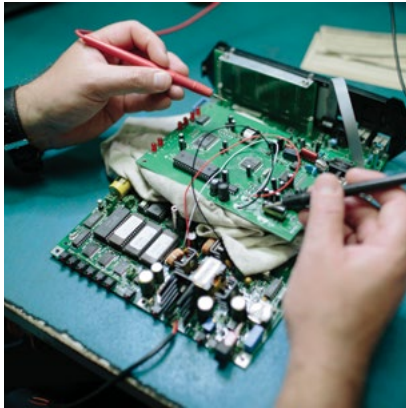
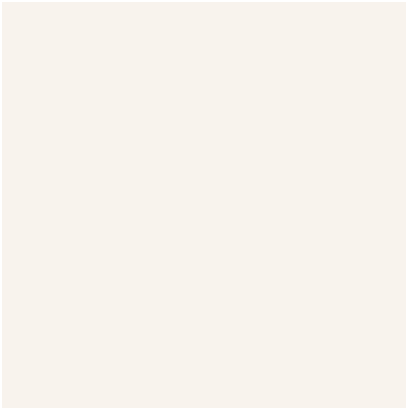
²¹ Agyeman et al. 2003, p.5.

²² Altus Enterprises, NZ (<https://altusenterprises.co.nz/>); Goods that Matter, USA (<https://ourgoodsmatter.com/>); Innesto Coop, Italy (<http://www.innesto.org/>); Interface's plant in the Netherlands (<https://www.interface.com/EU/nl-NL/homepage#>); KOMOSIE, Belgium (<http://www.herwin.be>); Pochecho, France (<http://www.pocheco.com/>); and Zero Waste Network, NZ (<http://zerowaste.co.nz/>).

- **Insights** comprised of quotes from a range of manufacturers, and
- **Snapshots** that explore a theme in a more detailed way by focusing on one or several manufacturers.

Quotes are attributed to participants' Position Title at the time of interview (in 2017 or 2018). In some cases, participants have moved into other positions or have moved to other employers.

The research was given ethics approval by the Western Sydney University and the University of Newcastle Human Research Ethics Committees.



2.2 Company Profiles

A.H. Beard

ESTABLISHED: 1899

LOCATIONS: Sydney, NSW; Brisbane, QLD; Melbourne, VIC; Hobart, TAS; Adelaide, SA; Perth, WA; Auckland, NZ

OWNERSHIP: Family-owned company

EMPLOYEES: 445

PRODUCTS: Mattresses, bases, adjustable bases, bedheads, pillows, Smart Sleep solutions

ANNUAL REVENUE: \$134,000,000 (2017/18)

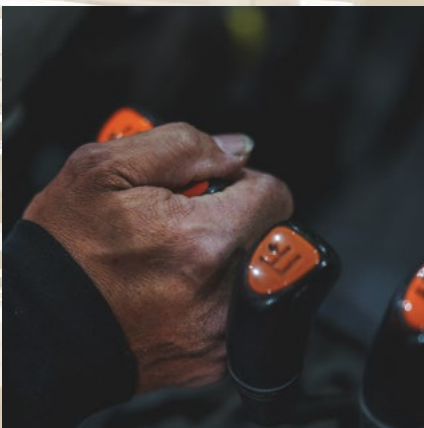
A.H. Beard is a family-owned company, established in 1899. The family legacy is crucial to A.H. Beard's identity and there are fourth and fifth generation members of the Beard family working in the firm. This sense of both family and history has shaped how A.H. Beard operates (and this is discussed more in Section 3.2).

The company is one of Australia's three main mattress manufacturers that together service around two-thirds of the national market (with Sealy and Sleepmaker being the other two main manufacturers). A.H. Beard specialises in the production of high-quality mattresses (such as the King Koil brand). Automatic quilting and tape edge machines allow a mattress to be made in 20 to 40 minutes; other mattresses are hand-stitched by third generation craft workers and take up to two days to make.

The highest quality mattresses are sold into the expanding Chinese market and retail in China for up to AU\$70,000. One crucial selling point is Australia's clean and green image, and the mattresses in this market use natural fibres such as merino wool, alpaca fibre and mohair.

One remarkable aspect of this company is its longevity. In a context in which family business in Australia is, according to the Chairman and Managing Director, "going through one of its biggest attrition rates, with the grey hairs getting out of business because the kids don't want to be in the business," A.H. Beard represents a company that has successfully managed succession planning.

Another remarkable aspect is the major role it has played in initiating and promoting an industry-wide voluntary mattress stewardship scheme, the Soft Landing Mattress Product Stewardship Scheme. Here A.H. Beard is extending the practice of integrity they pride themselves on within the firm into the industry and beyond. This scheme features in Section 5.3.



Interface

ESTABLISHED: 1973

LOCATIONS: Minto, Sydney, NSW (and Georgia, USA; Taicang, China; Scherpenzeel, The Netherlands; Craigavon, Northern Ireland; Chonburi, Thailand)

OWNERSHIP: Public company

EMPLOYEES: Australia, 200; Globally, 3,500

PRODUCTS: Carpet tiles, vinyl tiles, rubber flooring

ANNUAL REVENUE: Australia - \$111,216,000;
US - \$178,000,000

Interface is the world's largest manufacturer of modular carpet tiles. It began as a family company founded by Ray Anderson in the US in 1973. Interface established operations in Australia in 1988 when it took over the Picton factory of Dutch company Heuga Carpets, a pioneer of carpet tile production. The company produces high-quality carpet tiles for institutions and business clients.

Interface has an international reputation for leadership in environmentally sustainable production. This reputation dates back to the major turn the company took in 1994 to decouple from fossil fuel inputs, after the founder had a moment of realisation that the business was plundering the earth's resources and contributing to environmental degradation. Since then Interface has pioneered green production and reoriented its entire manufacturing system (and this is discussed in Sections 3.2 and 5.3). The Sustainability and Lean Manager describes it this way, "The idea was that sustainability would be part of our DNA. It would be embedded in the company culture."

Ray Anderson approached the sustainability agenda with absolute determination. The Sustainability and Lean Manager relates that when the firm embarked on this journey "Ray Anderson didn't really care about the costs ... He said, 'You make it cost effective.' So that's where engineering comes in, innovation, new technologies."

With Ray Anderson's death in 2011, the conditions were ready to test the embeddedness of the sustainability agenda. The Vice President, Asia Pacific recalls what happened when the new CEO started, "He said, 'How much is sustainability costing the business. If we didn't do sustainability what would we save?' It was \$50 million a year ... But he quickly did the maths and said, 'Well, we're ahead ... that \$50 million is a good investment, ongoing investment year-after-year.' So even financially it makes sense. At times you need to make sure that you're still on the right path."

Today the Australian plant, located in Minto in south west Sydney, is the most efficient operating plant in the Interface corporation. It supplies locally made carpet tiles and tiles imported from Asian plants to the Australian and NZ market.

Interface continues to lead the way in sustainable manufacturing showing that this is also an economically viable pathway.



NCMC

ESTABLISHED: 1933

LOCATIONS: Casino & Booyong, NSW

OWNERSHIP: Producer co-operative (1,000 Members)

EMPLOYEES: 1,200 (full-time, part-time, casual)

PRODUCTS: Fresh meat; meat products; hides

ANNUAL REVENUE: \$239 million

Northern Co-operative Meat Company Ltd (NCMC) is the only meat and pork processing co-operative in Australia. It produces meat and pork products at their Casino and Booyong sites, and has licences to distribute across the globe to more than 20 countries including major trading partners, Japan, Korea, United States, China (chilled & frozen), Indonesia, Europe and many Middle Eastern countries, as well as Halal and organic markets. It also produces and sells high-quality wet blue hides on the international market, as well as co-products and by-products.

The co-operative has been operating for 86 years and has a focus on looking after its members. The Chairman highlights this aspect of the business when he says, "We're a co-operative and we've been here since 1933. There's no intention to change that, as we embrace the co-operative ethos and by embracing that, we recognise the local membership ... It's part of our mission. Everyone grows together."

There have been moments when this co-operative ethos has been tested. During the 1980s there were, the Chairman notes, "huge debates about the value of shares. There was a big push to walk away from a co-operative into a company limited, a private company, and be able to trade shares. A lot of AGMs were consumed by this debate."

One of the challenges for the co-operative is to make sure that members understand the benefits. Indeed, this is something the Chairman had to learn himself. He recalls, "When I was sitting on a horse at home and not worrying about it years ago, I didn't see much of a role for the co-operative, I thought they were a bit antiquated ... Even though there's been some great things done within these walls, but it never had a very high profile. Sitting in this chair, I see huge benefits."

For members there are direct benefits, such as the services provided through the Member Services Department. This includes educational workshops for carcass and live animal assessments, off stream livestock water infrastructure pilot projects, instigation of a NCMC soil club and focus on best management practices.

For the broader community, the benefits are threefold. First, there is the benefit that comes from a co-operative that is geared towards looking after its members, and this has flow-on benefits for rural centres.

The Chairman explains, "You've got to look after your local members, because they shop locally in the local towns. Whether it is buying tyres, livestock produce, going to the local doctor, or sending your kids to the local school. So we're very much about the community."

A second benefit are the job opportunities provided by the co-operative. One member expands, "Parents are thankful to have an avenue for young people to obtain employment in their local community and one that also offers career opportunities in a number of areas – administration, maintenance and engineering, logistics, quality assurance and meat processing. We love to collaborate with the local schools to promote the co-operative at their career days. We see the importance of education and are heavily focused on training and are well supported by TAFE NSW. Providing jobs for young school leavers and jobs for both men and women is vital for maintaining rural centres such as Casino and Booyong (in NSW)."

Third, is the support the co-operative can provide the community. NCMC is a major sponsor of the local Westpac Surf Life Saving Rescue Helicopter Service. The co-operative also donates money to different charities and not-for-profit organisations including the local Agriculture Shows, local sporting clubs and Indigenous programs. The Chairman notes, "The community really appreciates it."



Norco

ESTABLISHED: 1895

LOCATIONS: Lismore and Raleigh, NSW; Labrador, QLD

OWNERSHIP: Producer co-operative (309 Members, as at 30 June 2019)

EMPLOYEES: 834 (full-time, part-time, casual)

PRODUCTS: Milk products, cheese, ice cream and other dairy products; resin based packaging

ANNUAL REVENUE: \$603,000,000 (FY19)

Norco opened in 1895 in Byron Bay as North Coast Fresh Food & Cold Storage Co-operative Company Ltd. This almost 125-year history gives Norco a depth of connection to the region and to the generations of farming families that have been members of the co-operative.

The importance of the co-operative to the North Coast region of NSW community was demonstrated in May 2018, when the state government announced that Norco had lost the contract to provide milk to fifteen North Coast health facilities. Instead the contract was awarded to Dairy Farmers which is owned by Japanese brewer Kirin Holdings. However, within days the decision was overturned because of the level of community pressure to reinstate the local supplier.

For Norco, the contract was small—only a \$15,000 contract in a business with an annual turnover of just over \$600 million. What was significant, and what both delighted and surprised Norco, was the level of support that was initiated by community members without any involvement from the co-operative. As reported on ABC News,²³ Lismore Hospital staff and the Health Services Union were active in this campaign, and some patients joined in by refusing to drink the hospital milk unless it was Norco. The Health Services Union secretary Gerard Hayes said, "The dairy industry has played a huge role in the North Coast for many years and health workers want to support their local economy."

Norco processes around 200 million litres of milk each year, with fresh milk plants in Labrador (in South East QLD), and Raleigh (in Northern NSW); and an ice-cream plant in Lismore (in Northern NSW). Norco milk retails throughout QLD and NSW. Norco produces ice cream for third parties that is sold in Australia, China, Japan and the US.

It also owns 30 rural supply stores in Northern NSW and South East QLD, generating additional revenue and supporting its members with bulk purchasing arrangements.

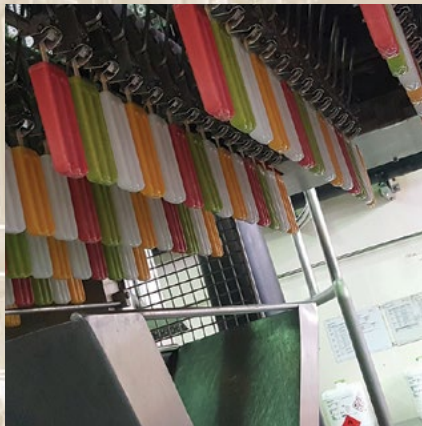
Over the course of its history, Norco has weathered changeable conditions. It survived the deregulation of the dairy industry in the early 2000s, and the following pressure on co-operatives to demutualise (discussed more in Section 3.2).

More recently, climate has become a challenge with Norco's members being affected by drought. Norco supports its farmers by paying them a highly competitive milk price. From September to November 2018 this was increased by an additional five cents per litre (a move which cost the business net \$1.8 million); and in October 2019 Norco announced a drought support premium payment of five cents per litre effective from 1 October 2019 (which will result in an average increase to the milk price to 30 June 2020 of five cents per litre). As well, from 1 April 2019, the Co-operative implemented a 6.5 cent per litre increase to all customers which was fully passed on to members.²⁴

A commitment to co-operative principles (especially support for members) and a quality product has helped Norco to thrive in a global industry while maintaining a deep connection to communities in regional Australia.

²³ Mascarenhas et al. 2018.

²⁴ Norco 2019a & 2019b.





OzGroup

ESTABLISHED: 2013

LOCATION: Coffs Harbour, NSW

OWNERSHIP: Producer co-operative (124 Members)

EMPLOYEES: 35 permanent; 160 casual

PRODUCTS: Blueberries, raspberries, blackberries, cardboard packaging

ANNUAL REVENUE: \$153,000,000 (FY19)

OzGroup is a producer co-operative that processes and packs blueberries (and other berries). In the 2017/2018 financial year, it was Australia's biggest blueberry supplier producing 37 million punnets of blueberries (and 1.1 million punnets of raspberries and 202,000 punnets of blackberries).

As a 100 per cent farmer owned co-operative there is a focus on improving, training and developing farming skillsets and standards. The co-operative is reinvesting heavily to ensure and build the highest standards in both farm practice and quality of products. OzGroup's point of difference and competitive edge is that it is a true local farmer co-operative. It is now building channels into export and the route/food service markets.

OzGroup was formed by a small group of farmers in the north coast of NSW who had started to grow blueberries on what were previously their banana farms. During the late 1990s, many farmers in the region were finding it difficult to compete with Queensland grown bananas, and so they transitioned out of bananas into berries. The infrastructure required and picking techniques used are quite different, requiring higher capital input and periods of labour intensity. The more complicated coordination and capital investment needed to process, pack and transport a high-quality blueberry product to market prompted collaboration among the largely Sikh grower community.

The initial group of around 20 blueberry growers that came together in 2001 were either family or close friends. Ten years later the group had grown to include 70 farmers. By this stage the company ownership structure was more difficult to manage. The Chairman explains that as each new grower joined the then named OzBerries company "they had to dissolve the previous company and make a new partnership for the new people to come on board." The Chairman recalls how they were advised, "You're acting as a co-operative."

You're paying basically all your profits back to growers. You're calling it a bonus. The co-operative calls it a rebate." Thus in 2013, OzGroup Co-op Ltd was formed. The effect has been positive. The Chairman says that now "growers have an equal say ... Everything is on an equal playing field. Each grower feels that they're part of it and they own it."

OzGroup now has over 120 farmer-members, and these have broadened out to include local farmers outside the original Sikh community. In the rapidly growing market for blueberries OzGroup has seen its turnover almost double each year for the past three years from \$40 to \$80 to \$130 million. Turnover in the current financial year is heading towards \$200 million and profit currently year-to-date is up 50 per cent on the previous. As the CEO says, "the hard work and focus is paying off for our members."

This has meant that OzGroup has been able to invest in new technologies to ensure a premium product. For example, on the packing line there are now machines that photograph 280 blueberries per second. Each blueberry is photographed eight times, from different angles, in that one second. The machine can be set for different specifications in terms of variables such as size, colour, softness and insect damage. Within one nanosecond the machine will eject a berry that does not match specifications. OzGroup has also invested in carton erection machinery and it puts together cartons for its own use, as well as for other firms in the area.

These types of investments have enabled OzGroup to create permanent roles for some of the previously casual staff, especially those who live locally. During the berry season when extra workers are required, OzGroup employs around 160 casuals, principally backpackers who are on Working Holiday visas and can work up to six months with one employer. This produces obvious economic benefits for the Coffs Harbour region. As the Director describes, "They come in ... they make money, they spend their money here."



Sebel Furniture

ESTABLISHED: 1951

LOCATION: Minto, Sydney, NSW

OWNERSHIP: Private Company

EMPLOYEES: 110 (approx.)

PRODUCTS: Commercial furniture – seating (chairs and stools), soft furnishings; tables; desks; storage and accessories

ANNUAL REVENUE: Confidential

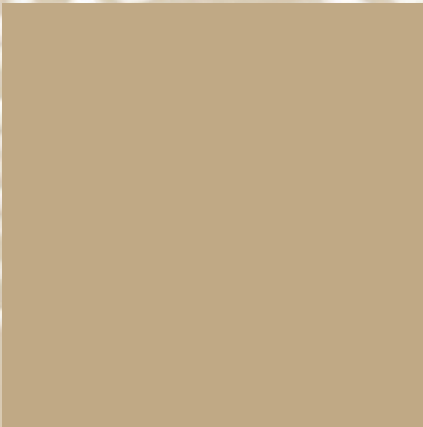
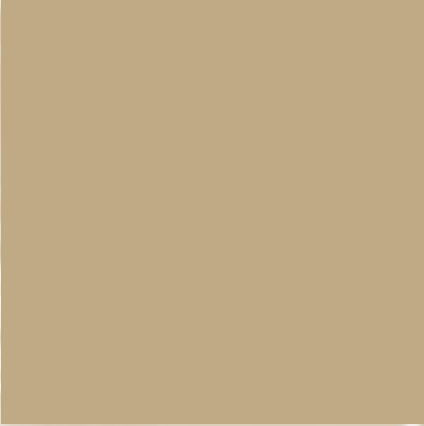
Sebel Furniture (Sebel) manufactures furniture for a wide variety of user segments, especially specialising in meeting the needs of schools, colleges and universities, healthcare, religious places of worship, convention centres and venues, and stadia.

Harry Sebel established the company in 1951 and began making toys and furniture, including the first iconic 'Stak-a-bye' chair. In the 1960s the company ceased making toys and continued with furniture making. Sebel chairs were the first to replace wooden chairs in schools with plastic (polypropylene) and the company was an early adopter of ergonomic designs.

After 30 years of growth and consolidation during Australia's long boom, the family-owned company was sold in 1982 to GWA, which has interests in domestic construction hardware (including locks, hot water systems and bathroom fittings). GWA was publicly listed in 1993. Sebel was the sole furniture maker within the conglomerate "sitting there pretty much as an orphan" (as described by the former CEO).

With the purchase in 2011 by the employee-owned US company KI, Sebel was better positioned as part of a global furniture company, enabling KI a larger presence in the Asia-Pacific region. KI facilitated Sebel's move from the legacy Padstow site to a more modern factory in Minto in 2014, and here the company embarked on the 'Lean' journey (discussed more in Section 5.2).

A mark of Sebel's resilience is that it has continued its manufacturing in Australia, unlike the vast majority of companies in this sector. In 2017, it was acquired by Resero Group, a New Zealand-based group that hitherto operated mostly in the school furniture market. Resero Group reinforced the product design and manufacturing ethos of Sebel, and the company began to refocus on products as the key platform for success and growth, a strategy that the current owners ardently support (and that is discussed in more detail in Section 3.3).



Soft Landing

ESTABLISHED: 2009

LOCATIONS: Wollongong, Sydney, Newcastle, NSW; Hume, ACT; Melbourne, VIC; Perth, WA

OWNERSHIP: Social enterprise, Company Limited by Guarantee

EMPLOYEES: 139 (including FTE and Casual Pool)

PRODUCTS: Recovered mattress components (steel springs, foam, husk, timber, fabric/textile)

ANNUAL REVENUE: \$12,000,000

Soft Landing is a not-for-profit social enterprise that has been operating for ten years. Soft Landing has a dual mission. It has a social mission to provide employment opportunities for people who experience barriers to entering the open labour market including people who have experienced long term unemployment. It has an environmental mission to contribute to the recycling of waste, and it does this by collecting and disassembling end of life mattresses and recycling the components back into the circular economy, where that pathway is possible.

The enterprise was established as a response to the increasing number of mattresses that were being dumped at Mission Australia shops and clothing bins in the Wollongong region of NSW. This was occurring as a result of an increase in the fee charged to dump mattresses at local landfill sites. In 2015, Soft Landing was acquired by Community Resources Ltd, a national not-for-profit organisation that creates jobs and opportunities for groups and communities that experience disadvantage. The social enterprise has expanded from its initial site at Bellambi (just north of Wollongong) to now having operations across four states and territories (including three sites in New South Wales).

Currently, up to 75 per cent of the components are recycled:

- steel springs into products such as roof sheeting
- foam into carpet underlay
- husk into weed matting and mulch
- timber into kindling, mulch and animal bedding
- fabric into acoustic panelling.²⁵

The goal is to recycle 100 per cent of the mattress, and Soft Landing has been working with researchers from the Centre for Sustainable Materials Research and Technology (SMaRT) at the University of New South Wales to try to make this happen.

With more than 1.6 million mattresses being discarded each year in Australia, this effort to recycle the components avoids the problem of landfill sites being clogged with mattresses, bushland being blighted by illegally dumped mattresses or storage sheds being used as scrapyards for thousands-upon-thousands of highly flammable mattresses.

Soft Landing is also the recycler for an industry wide mattress product stewardship scheme, the Soft Landing Mattress Product Stewardship Scheme. Soft Landing's parent body, Community Resources Ltd is the administrator of the scheme. This scheme is discussed in more detail in Section 5.3.

The former Executive Officer of Community Resources Ltd says about Soft Landing, "We're in this lovely sweet spot with waste ... it's not terribly sexy, but our staff in this industry are doing really useful and important work. Not only is it good physical work, but staff can be proud you're doing something for the environment, for the planet."

²⁵ <https://www.softlanding.com.au/the-recycling-process/>. In the Sydney, 65 to 70 per cent of the mattress is recycled because there is no market in Sydney for the timber.



The Social Outfit

ESTABLISHED: 2014

LOCATION: Newtown, Sydney, NSW

OWNERSHIP: Social Enterprise, Incorporated Association (Charity with DGR Item 1 Status)

EMPLOYEES: FTE 6 (FY19)

PRODUCTS: Ethical clothing

ANNUAL REVENUE: \$580,377 (FY18)

The Social Outfit was established in 2014 as a social enterprise that manufactures clothing with a difference.

The Social Outfit has a social mission to provide training and employment in clothing design, manufacture, retail, and marketing for people from refugee and new migrant communities. By working from the traditional and cultural strengths of its diverse communities, it aims to build-up lasting skills while also providing an introduction to an Australian workplace. Since mid-2014, 26 people have been employed at The Social Outfit, for 21 of these people it was their first job in Australia and 20 have transitioned into other employment.

The Social Outfit takes seriously the quality of the garments they produce. The company's first tag line was "good to wear, made for good." The Chair of the Board says, "We can't compromise the quality of the product, and so we need a certain level of skill in terms of manufacturing the clothes." This means that employees with strong existing sewing skills are recruited directly into the business; while others are recruited through the training programs. The aim is not for all participants in the training programs to go on to work at The Social Outfit. The training programs serve multiple purposes, including meeting and interacting with other people; and learning a skill that can be used at home or to produce items that can be sold at markets stalls.

The Social Outfit also has an environmental mission. Around half of the fabrics used are donated by other firms in the fashion industry who have excess or waste fabrics. Without The Social Outfit, these fabrics, from labels such as Bianca Spender, Carla Zampatti, Cue, Romance was Born and Seafolly would end up in landfill. The fabrics are manufactured into clothing and accessories, many of

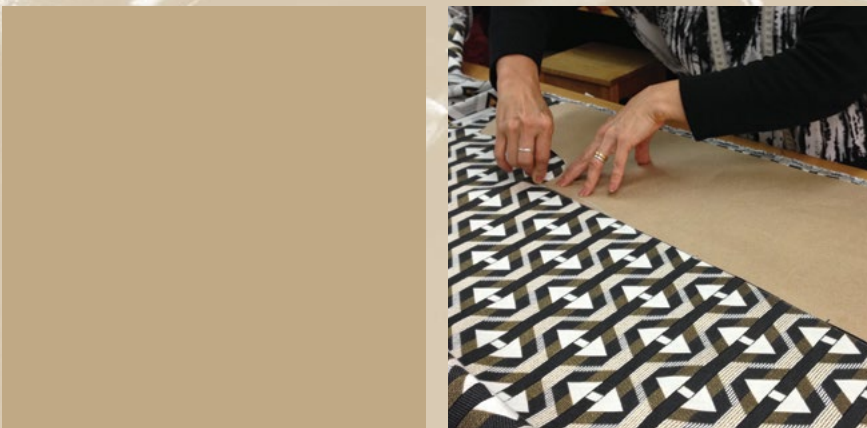
which feature the design and production work of refugees and new migrants. The Social Outfit thus provides one avenue for fashion labels to act on their concerns about the environmental impacts of the industry while also making a social contribution.

The Social Outfit also has fabric screen-printed in Australia. These fabrics are printed on Crepe de Chine silk using only water-based dyes that have a low environmental impact. The print designs are often based on artwork by young new migrants that The Social Outfit engages in art projects to increase their learning, motivation and confidence.

The Social Outfit is accredited with Ethical Clothing Australia. Therefore, when The Social Outfit sources additional inputs (such as screen printing, and zips and cottons) the companies in the Australian supply chain are checked by Ethical Clothing Australia to ensure that they are transparent and legally compliant. For example, this confirms that local factory-based workers and outworkers are receiving Award rates and entitlements.

The Social Outfit's revenue is generated through sales, grants and donations. Around half the revenue is from sales, and the rest is secured through grants and donations (as The Social Outfit is a registered charity). This enables The Social Outfit to offer a range of training programs, such as free sewing classes to refugees. These programs are delivered at a cost to the enterprise and do not generate any revenue.

The Social Outfit is a social enterprise with a social and environmental mission, operating in a subsector of manufacturing that has experienced substantial transformation since the 1980s and that is under increasing pressure to address its negative social and environmental impacts.



Varley Group

ESTABLISHED: 1886

LOCATIONS: Newcastle, Sydney, Gosford, NSW;
Brisbane, QLD; Ballarat, Melbourne, VIC

OWNERSHIP: Family-owned private company

EMPLOYEES: 815

PRODUCTS: Fabricated Metal Products (including
in Defence & Aerospace; Specialised Vehicles;
Marine, Rail & Power Services; Electric Vehicles)

ANNUAL REVENUE: \$200,000,000

Varley Group (Varley) is a private company that is family owned. The firm has its origins in the Newcastle region where it has been operating since 1886. Over that time, Varley has employed generations of workers, and it is not uncommon for staff to spend their entire working lives at Varley, nor for managers to have 'worked their way up' from the shopfloor.

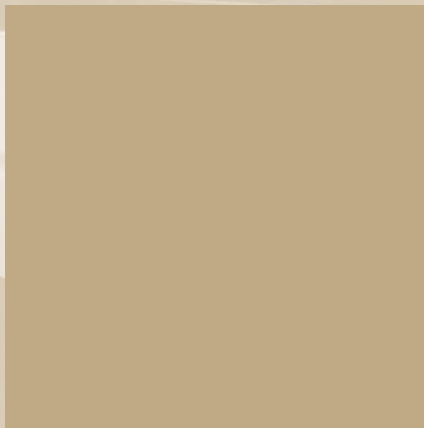
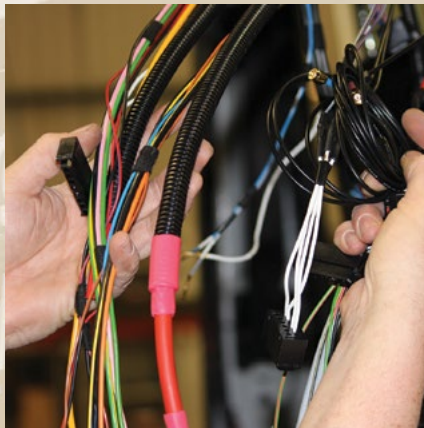
Varley has Business Units in areas that include Defence and Aerospace, Specialised Vehicles, Marine Service, Power Services, Rail Services and Electric Vehicles. The skills and knowledge that have developed are specialised and unique to the firm, as the Managing Director describes: "An example is here on this site, where we design and manufacture special vehicles and lightweight military modules, where else in this whole region can you draw on people with that expertise? They don't exist."

Varley is strongly connected into the Hunter region in NSW and works closely with educational institutions in the area (including schools, TAFE and the University of Newcastle), and is also part of regionally-based industry networks including HunterNet.

Varley also operates across Australia and internationally. The quality of its work is reflected in the contracts it secures, such as those with the United States Armed Forces and with Lockheed Martin as part of the Joint Strike Fighter program.

Although Varley is family-owned, today the family members are effectively investors who are at arms-length from the company. There is a board of directors with both internal and external directors. The Managing Director notes that the external directors are important as they "bring a necessary skill into the company to help guide it."

The sheer determination to stay in business and continue more than a century-long history of producing quality equipment is what led to a wholesale overhaul of the company in the early 2000s (and this is discussed in Section 3.2). Since then Varley has grown from strength to strength, reflected in expanded operations and a focus on quality and customer service in niche markets.





WorkVentures

ESTABLISHED: 1979

LOCATIONS: Sydney, NSW; Melbourne, VIC

OWNERSHIP: Social Enterprise, Company Limited
by Guarantee

EMPLOYEES: 72 full-time, 35 trainees

PRODUCTS: Electronics and IT repair, refurbishment
and recycling

ANNUAL REVENUE: \$10,500,000 (FY18)

WorkVentures is a social enterprise of 40 years standing that has pioneered an innovative approach to refurbishing, repairing and recycling electronics and IT equipment. This includes a data-secure approach to decommissioning equipment, a feature that is crucial to its corporate customers in the areas of finance and telecommunications.

WorkVentures' primary goal is to improve social and economic inclusion through employing marginalised young people, migrants, and older people at the end of their careers. As part of its approach it has developed extensive training and apprenticeship programs, and this helps to encourage intergenerational learning around complex problem solving.

An example of one of its programs is the KickStart Academy. When WorkVentures advertises for participants, a range of people apply including 'gamers' who are interested in playing and building computer games and refugees who are keen to work and contribute to Australian society. There is an open day and interview session to help screen applicants, and especially to identify their passions and their expectations. Once applicants are selected for the Academy, they are exposed to a range of work pathways, including hardware repair; warehousing and logistics; call centre and technical support; and software testing and programming.

From these training programs, many participants go on to be employed by WorkVentures, or by other electronics and IT businesses.

As part of its social purpose, WorkVentures also refurbishes computers that its corporate customers no longer need, and these computers are sold at low cost (with 6-months warranty and technical support built into the price) to non-profit organisations and low-income households. In 2014, WorkVentures delivered its 50,000th low-cost refurbished computer.

WorkVentures challenges some of the stereotypes about social enterprise. As the General Manager, Operations puts it: "A lot of people don't see social enterprise as high end. They could see the recycling. They could see the refurbishing or low-level formatting of computers and things. The reality is 60 per cent of all Telstra's infrastructure spare parts are coming out of this organisation; also, Westpac's branch teller equipment, that's all their branches, rely on us to be open and going."

WorkVentures demonstrates how social enterprises can operate at the core of a society's commercial economy, while also playing a crucial social role through training and employing diverse groups of people, and an environmental role through pioneering responsible handling of e-waste.



3. Safeguarding Manufacturing

Manufacturing in Australia is being safeguarded by firms that are focused on maintaining their viability. For the participants in this study, commercial and financial viability are certainly important. However, these firms have a broader vision of viability that encompasses qualities such as creativity, passion, integrity, honesty and community accountability.

They reflect this broader vision of viability through three commitments:

1. Motivations that extend beyond profit
2. Long-term business horizons
3. Thoughtful growth that benefits multiple stakeholders.

The broad vision of viability and the three associated commitments provide the foundation for a 21st century culture of manufacturing that pushes beyond a business as usual approach.

In Section 3.1, the motivations that extend beyond profit are introduced in the following Insights, using statements from each manufacturer. Sections 3.2 and 3.3 focus on the commitments and practices related to the business horizon and growth, using Snapshots of five manufacturers that present a more detailed exploration of how the commitments are enacted in practices.

Beyond Business as Usual A 21st Century Culture of Manufacturing in Australia

Safeguarding manufacturing in Australia

Commitments

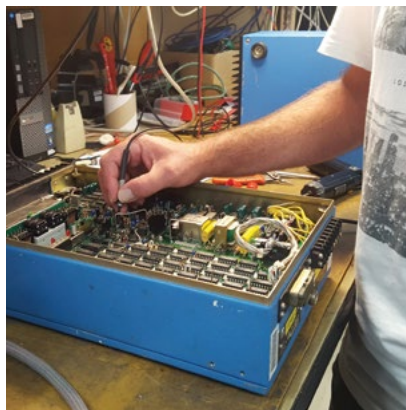
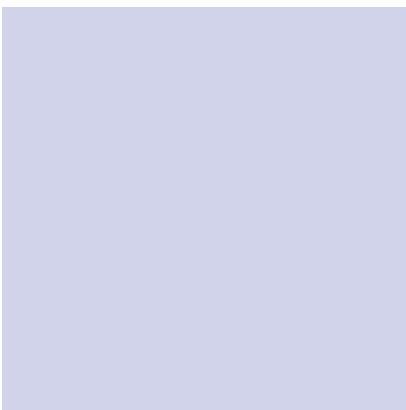
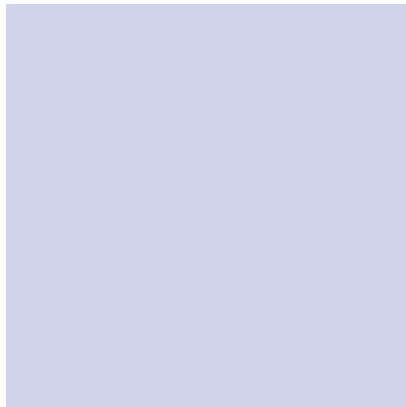
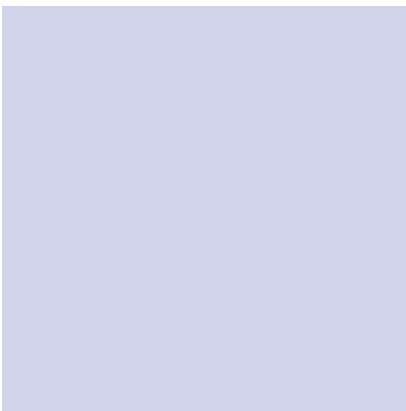
- | | | |
|---|---|-----------|
| 3.1 Motivations that extend beyond profit | + | Practices |
| 3.2 Long term business horizons | | |
| 3.3 Thoughtful growth | | |

3.1 Motivations that Extend Beyond Profit

The economist Milton Friedman once stated that “[t]he social responsibility of business is to increase its profits.”²⁶ This influential proclamation became a key **business as usual** tenet. But it has increasingly come under question.

The manufacturers in this study expressed a responsibility to much more than increasing profits and maximising returns. This commitment to business motivations beyond profit was displayed across all the enterprise types. The essence of this commitment is captured in the following Insights.

This section concludes with a Snapshot that discusses how the diverse motivations of firms in this study align with recent discussions about shareholders and stakeholders.



²⁶ Friedman 1970, p. 1.

INSIGHTS:

Business motivations beyond profit

Integrity

*Integrity is one of our core values—we want to ensure that whatever we produce and whoever is sleeping on it, it's the best possible product that we can produce within that price point. We also want to ensure that wherever it ends up, we're doing, with the **utmost of integrity**, the best to look after the environment.*

Education and Development Manager, **A.H. Beard**

Money ... it's not the only thing

*Business purpose is something that we're talking a lot more about because I think that really brings together what it's about ... **People think the company is only here to make money** and they never think about it again **but that's not the only thing that it's there for** ... Business purpose is an important term because it's probably more enduring as it means that you've got something which is beyond just making product, or that you're operating a factory, or getting your sales, or getting your design, et cetera. What is your role basically? Your personal role, the company's role? ... I think that that has helped us redefine internally as well as how each one can contribute and build up the culture.*

Vice President Operations Asia Pacific, **Interface**

For the community

*We don't sit around chasing share prices. The CEO's not out there trying to lift the share value from \$1 to \$1.20 ... Our future directions are always about being a commercially focused and sustainable co-operative, and investing in our people. Why? Because **we want to be here in the future for the community**.*

Chairman, **NCMC**

Being accountable

*In co-ops, especially regional co-ops, **you are accountable**. It doesn't matter where you go in Lismore or parts of Northern New South Wales, people are going to recognise me and they want to have a conversation about the business. So stopping and taking the time to have a conversation in the street about something is really, really important.*

Chairman, **Norco**

Spend in the local economy

*OzGroup Co-operative is a 100 per cent Australian farmer owned co-operative. We're not a multinational, public or private company so therefore there are no external shareholders, only our farmer members. This means after reinvestment, all profits go back to the members who then **spend in the local economy**.*

CEO, **OzGroup**

We try to be aware of how we can impact the environment that we operate in because we're leaving it to our kids. Whatever mess we make we leave to our kids and all that sort of stuff ... You've got to start thinking about it and be aware of it, and have an attitude to wanting to **contribute to the longer-term benefit**, which is what we're trying to do in everything that we do. The design team thinks about it as much as they can. 'How do we transport things? How do we pack things? How do we make them move around Australia?'

Former CEO, **Sebel Furniture**

The longer-term benefit

Without our integrity ... what are we ... you've got these different pressures hitting the business, but you go, 'Why is everyone on board?' Well they're on board because **we have remained ethical**, we do provide jobs for disadvantaged people, and we're trying our best to solve that environmental piece of the puzzle.

Former National Manager, **Soft Landing**

Remaining ethical

This is a zero sum. When we think that a t-shirt can be made for \$5, we are in the bad end of the manufacturing industry and we are a hundred per cent there now. So that side, I have no interest in that ... I want to focus on the really good stuff. I want to focus on **the good sides of the fashion industry and its creativity**.

Founder and Former CEO, **The Social Outfit**

Creativity

So we're not always necessarily looking to maximise the profit and benefit to the company. The customer is first, so **we like to be honest**. Perhaps giving or suggesting options to the customer might not provide the best opportunity for Varley to make more money. At the end of the day, **it's that honesty** that they appreciate, 'You're looking after me.' You see that instead of spending \$100,000, we could provide a solution for \$15,000.

General Manager, Defence and Aerospace, **Varley Group**

Being honest

Man oh man, making that weekly pay check. That's the name of the game ... All the time it's a constant battle between what's it cost **to help people**. How can I get the money, and how can I keep feeding people ... We could cut our staff now. If we were a normal business we'd be able to cut our staff and continue on. But we won't.

General Manager, Operations, **WorkVentures**

Helping people

SNAPSHOT: From shareholders to stakeholders

One of the deeply held precepts of business as usual is primacy of the shareholder. This is the idea that “corporate managers are agents of shareholders and should act exclusively in their financial interests.”²⁷

This idea has been called into question by legal scholars who argue that it has no legal basis in corporate law but is ‘merely’ a cultural norm that has taken hold only relatively recently.

Before her death in 2018, the distinguished corporate law scholar Lynn Stout wrote: “Fifty years ago, if you had asked the directors or CEO of a large public company what the company’s purpose was, you might have been told the corporation had many purposes: to provide equity investors with solid returns, **but also to build great products, to provide decent livelihoods for employees, and to contribute to the community and the nation.** Today, you are likely to be told the company has but one purpose, to maximise its shareholders’ wealth.”²⁸

Stout was particularly concerned with the detrimental consequences of shareholder primacy. For example, she highlighted how the almost exclusive focus on maximising shareholders’ wealth led to BP’s *Deepwater Horizon* disaster in the Gulf of Mexico.

To save time and money (at least in the short-term), standard safety procedures were ignored. While drilling at the Macondo oil well in 2010 the massive rig exploded and sank, killing 12 workers. The oil that spewed from the uncapped well over the next six months impacted a wide group of **stakeholders**: fishing and tourism operators who struggled to make a living; BP’s competitors who could not operate because of a moratorium on oil drilling; and ecosystems in the Gulf which were damaged and destroyed (and the full extent of the damage is still not known). Of course, BP’s own shareholders were also negatively impacted, with BP’s stock market value plummeting almost US\$100 billion.

Stout uses the example of BP to demonstrate how shareholder primacy has been embraced with what she calls “near-religious fervor.” As a result, the boards of many public companies have lost sight of their capacity to run these companies with other goals in mind, including “**creating quality products, protecting employees, and serving the public interest.**” Under corporate law, boards have the discretion to address these goals so long as they do not enrich themselves.

The legal analysis is concerned with public companies (i.e. those companies whose shares are traded on the stock market, as outlined in Table 2.2. above). What is evident in this study is that there are public companies such as Interface that are operating successfully while also serving these wider goals.

The legal analysis is relevant to other types of enterprises as they also have boards or similar governing bodies. This study finds that these private companies, family-owned companies, co-operatives and social enterprises are serving wider goals. All are examples of successful companies that are concerned with the wellbeing of multiple stakeholders.

Together, these companies are leading the way in shaping a culture of manufacturing that goes beyond business as usual.

The Snapshots and Insights in the rest of this report demonstrate some of the commitments and practices associated with this emerging culture.

²⁷ Deakin 2012, p. 339, see also the discussion in Cameron 2020 and Healy 2018.

²⁸ Stout 2012, p. 2.

3.2 Long-Term Business Horizon

To maintain their viability, the manufacturers in this study are committed to a **long-term business horizons**. This commitment helps steer a course in a changing business environment.

In recent years the increasing power of a financial sector geared towards capitalising on short terms gains and losses in the economy has seen steady investment in productive manufacturing destabilised. All over the world the viability of manufacturing activities within larger corporate entities has been undermined by asset stripping and subsequent layoffs.²⁹

The Chief Operating Officer from Varley Group has seen this happen time and again in Varley's area of operation: "Our opposition went broke. A lot of funny things happen in this industry ... They get taken over by these superannuation funds looking for a quick dollar, buying into it. They think they're going to make a lot of money and they sign up all these contracts, real cheap, to try and make the business look good to sell, and then the business starts to run out of cash and fails. That's basically what's happened to every one of those firms that I've mentioned."

What characterises the firms in this research is their commitment to manufacturing for the long term.

Three of the enterprises included in the study are over 100 years old. They have witnessed amazing changes, participating in the development of the manufacturing sector in Australia. Five enterprises are 40 to 80 years old, having been established during and at the end of Australia's post-war long boom. Together, these eight enterprises have had to withstand major restructuring forces as the Australian economy globalised in the last quarter of the 20th century. The remaining two have been established in the last ten years, responding to new market opportunities created by environmental and social challenges while having to contend with the challenges of starting a business in the post-GFC context.

A culture of manufacturing for the 21st century involves commitments to the long term as reflected in the following practices.

1. Continual **reinvention** of what is being made and how. Companies driven by a well-articulated purpose seek innovative avenues to achieve their purpose while navigating financial and other circumstances. This means engaging in a continual process of revising or reinventing product and production process.
2. Strategic negotiation of **financing**. The determination to keep the firm going has sometimes meant taking a short term hit to secure long-term viability. Some of the firms in this study have faced financial crises in the form of liquidation or voluntary administration. These firms have negotiated their way through these crises by holding true to their long-term commitment and finding ways of securing working capital to manage their way out of crisis.

This section demonstrates these practices with Snapshots of how two manufacturers have reinvented themselves over the long term (Interface and WorkVentures) and how three have staved off crisis through skilful negotiation of financing (A.H. Beard, Varley Group and Norco).

²⁹ See Christopherson 2015.

SNAPSHOT: Interface From Mission Zero® to Climate Take Back™

Interface has a **long-term business horizon** to transform how carpet tiles are manufactured so that negative environmental impacts are not just eliminated but reversed.

This has involved a journey of **reinventing the production process**.

The journey started in 1994 when Interface's founder and chairman, Ray Anderson, experienced what has become known as his 'spear in the chest' moment of realising the extent of his company's negative impact on the environment. Ray was determined to turn things around, as he described: "I wanted Interface, a company so oil-intensive you could think of it as an extension of the petrochemical industry, **to be the first enterprise in history to become truly sustainable**—to shut down its smokestacks, close off its effluent pipes, to do no harm to the environment, and to take nothing from the earth not easily renewed by the earth."³⁰

Ray's vision was formalised in 1996 with the adoption of Mission Zero®, an initiative with the goal of eliminating any negative impact on the environment by the year 2020. That goal has been largely achieved. For example:

- By 2018, the manufacturing sites in Europe and the US were using 99 per cent renewably sourced energy
- By 2018, Interface globally was using 89 per cent total renewable energy
- From 1996 to 2018, there was 89 per cent reduction in water usage, 92 per cent less waste going to landfill and 96 per cent reduction in GHG emissions intensity from the manufacturing sites
- Overall, the carpet carbon footprint has been reduced by 69 per cent.³¹

The agenda of "**disconnecting from the oil well**" (as described by the Vice President, Operations Asia Pacific) meant years of researching new materials and trialling new production techniques, especially ways to make new carpet tiles based on recycling the materials in old ones (see Section 5.3). While the technology was being developed "Ray Anderson filled warehouses with carpet, filled them, he hired warehouses all over the planet ... Old carpet, that was coming back, storing and storing and storing" (Sustainability and Lean Manager). Once the breakthrough technique was developed, Interface was able to move forward with whole new product lines integrating recycled materials.

Interface is moving on with the next step in its journey, and it is built on the second part of Ray's commitment. As Interface's Sustainability and Lean Manager explains: "Ray Anderson always said that doing no harm is not good enough. We've got to restore. We've got to restore the environment."

This vision is captured in Interface's latest campaign, Climate Take Back™. The goal is to **run a business in a way that reverses global warming**. When the campaign was announced in 2016 it seemed the firm was 'shooting for the moon'. In the interview in early 2017, the Sustainability and Lean Manager said: "Climate Take Back™ is an audacious claim. It's not actually happening. It's something we say we're going to do. So then the question is, 'Okay, now we've said it, what are we going to do.'"

Already, Interface is making inroads with new products and new production processes. For example, it is exploring raw materials that use waste carbon or sequester carbon and has created a prototype of the first carbon-capturing carpet tile. It is researching how to improve its performance in producing ecological services such as water purification, shelter for wildlife and soil conditioning.

Since the 1990s, Interface has led the way for manufacturers committed to environmental sustainability. Interface shows how long-term goals, even those that seemed unachievable at one point in time, can steer a company into uncharted waters and maintain business viability.

³⁰ Anderson 2009.

³¹ Interface 2019.

SNAPSHOT: WorkVentures

Growing seedlings into trees

WorkVentures has a **long-term perspective that encompasses both the future and the past.**

The electronics and IT industry is constantly changing and developing. For WorkVentures this means continually looking to the future so they remain relevant and competitive in their markets.

At the same time, some sections in WorkVentures deal with legacy products. At least until the National Broadband Network is completed, these sections keep parts of rural and regional Australia connected to the telecommunications network. Even when the rollout is completed, and most legacy equipment phased out, there will be some vital radio frequency communications that WorkVentures will continue to maintain and repair.

The CEO says “we’re repairing legacy or old equipment, *and we have to reinvent ourselves over the years to remain relevant.*”

This long-term perspective that encompasses both the past and the future, means that WorkVentures has a deep understanding of and appreciation for the skillset that remains core to their industry. The CEO explains “we’ve got new types of technology coming in, but electronics is electronics. So, you might be on this team and then you’re on this team, whereas before, you might have been on this team for years and doing the same thing.” In other words, the core skillset is the same, even if employees are now moving more frequently between different applications of those skills.

This long-term understanding of the nature of the electronics and IT industry means that WorkVentures can confidently take a **long-term perspective to the wellbeing of the people it trains and employs.**

WorkVentures addresses social and economic inclusion by training and employing people who face barriers in the labour market, especially young people and migrants. Many of those who start in one of WorkVentures’ electronics and IT training programs, go on to be employed by the firm—sometimes for decades. WorkVentures also provides meaningful employment for older workers including those who have retired from employment in major corporations but have a lifetime of skills in electronics and IT that they are keen to share with younger people.

A WorkVentures’ manager describes the relationship between these different groups in the following way: “The way I want to describe it is you go into a nursery. At that nursery there’s a seedling, there’s something that’s a bit bigger, and bigger, and eventually you end up with a nice big tree. Well, what we do is we have people that are just at the seedling stage working with someone who is a little bit more advanced, and so on and so on and so on. What they see is – and they’ve all got similar stories or backgrounds – so what they see is **that seedling can actually end up a nice tall tree** ... So [person X] started off as a seedling and here she is 25 years later.”

This is a firm with a well-articulated social mission that has maintained business viability by reinventing itself in its chosen area of operation while also staying on course through valuing the core skillset.

SNAPSHOT: A.H. Beard

Risking all to save the firm

A.H. Beard has a strongly-held identity as family-owned company that in 2019 is celebrating 120 years of operation. **It has a business horizon of the next 200 years.**

This gives the firm a distinctive culture, as the CEO (a non-family member) reflects: "We have a fifth generation operating in the business and a sixth generation starting to run around in nappies in the factories. I think the culture is still very genuinely aligned to those values. There's a lot to do with tradition, a huge amount of mutual respect between the family and the professional management team and the employees within it. There is still a high degree of integrity across the organisation."

The Director (a family member), says: "We certainly have a vision for the business still being under family ownership in 200 years ... We've set up all the things; we have a family council at shareholder's meetings on a quarterly basis et cetera. A lot of that is about the reinvestment and what we do with the business ... So we are seen as one of the iconic family businesses that has managed succession, which is usually where a lot of family businesses fail."

Nevertheless, A.H. Beard has encountered challenges including one with the potential to destroy the company. This challenge was met with a determination that reflects the commitment to a long-term business horizon and to leaving a viable company for generations to come.

This challenge came after a period of rapid growth in the 1990s when A.H. Beard was riding high on the expansion of home goods retailers like Harvey Norman and Forty Winks. But then, as the Director recounts, A.H. Beard had "a near death experience post the 2000 introduction of the GST and the Olympics which created a very big boom but a very big hole afterwards. After being with [one bank] for 70, 80 years, we fell below their line as a risk factor. They were exploring having liquidators appointed and all that."

With no credit available to deal with the expensive aftermath of a company acquisition, A.H. Beard was able to draw on longstanding connections with Gerry Harvey, majority owner of Harvey Norman. As the Director explains, "Fortunately, our relationship with Gerry, he actually lent us millions at the time, to get us through that period, which we repaid ... my father had helped Gerry get started in the early days with credit and so forth ... So Gerry said 'You sell your houses, put it back into the business. I'll fund you in the meantime.'"

As it turned out, the family were able to mortgage their houses to raise capital. Being prepared to take a risk in the short term in order to maintain the long-term viability of the firm built staff loyalty. For example, the Education and Development Manager reflects: "It was very confronting, because the family had literally mortgaged their homes. So, there were a lot of tears at the time because they could have lost everything but they mortgaged their homes – almost like, in their DNA, which has been passed down from their father, is this sense of loyalty to employees. Back then, we probably had maybe 200 employees. **They mortgaged their homes to keep the business afloat to keep employees employed.** You just think, 'Who does that?' So, people that were around at that time have this sense of, 'Wow, what a great family to do that.'"

It also helps that A.H. Beard is a private firm that is 100 per cent family owned. This gives the firm a certain amount of independence that allows for unconventional and risky business strategies. As the Director says: "It makes you a bit nimbler, that you can make decisions faster as a private business than a public listed corporation. Obviously, the benefits of public listing are the influx of capital. If you need that, or an exit strategy (we're not looking for an exit strategy). By being a bit more diligent about the running of the business and making it more profitable, **we're able to fund our own growth and be in control of our own destiny.** It hasn't been easy because it's been constant reinvestment."

SNAPSHOT: Varley Group

Cutting back to save the business

Varley Group (Varley) is 133 years old. This longevity is central to the identity of the firm. Within the plant site, there are streets named after the firm's early owners. For the 125th anniversary a historian was commissioned to write a book about Varley's past and present.

The Managing Director points out how this longevity affects the culture of the business: "**Everybody who works here is tuned automatically to think about the longer term** ... you just ask staff, I guess I'd be surprised if none of them talk about 50 years or another 100 years in the business."

However, longevity is not guaranteed.

In the early 2000s the company's returns were plummeting and it faced closure. The Managing Director, who had just started in the role at the time, recalls that his first task "was about saving the business and that was the first primary goal, to save the business rather than let it die, which was the most likely event if no action was going to be taken. The bank had moved in administrators."

The new Managing Director was **forced to make hard decisions about consolidating operations to save money**: "To me it was black and white decision making; do this or if we don't do it we're gone. It was like that for certainly 12 months, maybe even two years."

The sweeping program took some time to work: "that took a big chunk of overheads out of it. Then we started to refocus the business on the key areas we saw as the growth ones. But, the growth ones at the time were very much about what we can make money out of this year, next year and the year after because it was very much survival thinking and to survive you had to be generating profitable business" (Managing Director).

At this point funds were scarce and couldn't be accessed from mainstream sources. The Managing Director remembers this with some frustration "You didn't have the luxury when you wanted to plan for the future and go, this is the market we should be in, because we couldn't fund any of that. Everything was very short term, very much, as I say, survival, about making sure that everything we were pushing into was going to win us work the next day and the next day after."

Varley emerged from this crisis period as a very different company. By tightening their belts and cutting costs they survived and were able to ride out the subsequent GFC.

Varley's survival largely hinged on it being a private firm with a long history. The Managing Director points to some of the differences that this makes. One is the opportunity to take risks without fear of being sacked: "We've had a few failures that we've gambled with. We've come back, if it was a public listed company I probably would have lost my job over a couple of gambles that we took that were the wrong ones." Nevertheless, risk-taking is tempered by respect for the firm and its history. The Managing Director describes this as being, at times, "a burden" for he does not "want to be the one who does something wrong that sends it down. So it keeps you a little conservative then in some of your risk taking."

Another point of difference is the relative freedom to make decisions without the pressure of shareholders demanding short term returns. The Managing Director explains: "**I am not worried about what my share price is reading at the moment.** I'm not worried about what some analyst is predicting is going to happen to us in the future. I'm not being told by other people out there that our overhead ratio is too heavy for this or I'm not returning enough or I shouldn't be investing in this or that. That allows us a great scope of freedom."

Another difference is the respect for corporate knowledge and a reluctance to implement staff changes when things fail. The Managing Director notes: "We're not as ruthless in the aspect too of where public companies will just put a knife through their management team or through people very quickly, we're much more considered in doing that, in what we're throwing out in corporate knowledge."

The sheer determination to remain viable and continue more than a century long history of producing quality products is what led to a wholesale overhaul of the company that is today reflected in Varley's expanded and multi-local operations, its lean production approach and its targeted focus on quality and customer satisfaction in niche markets.

SNAPSHOT: Norco

Resisting demutualisation

Over the past 30 years or so, Norco has had to weather an environment of corporate takeovers, pressures to demutualise and an Australian market that has become increasingly globalised. Norco has met these challenges and stayed viable **by holding firm to its identity as a co-operative of almost 125 years standing** that has long looked after its members and plans on doing so into the future.

Australia's other longstanding dairy producer co-operatives have been sold or demutualised. Some, such as the Murray Goulburn Dairy Co-operative Ltd (now part of Saputo Dairy Australia) started to operate less like a co-operative and more like a conventional company.

At times, these changes in the industry have led to conflict between the farmer-member-owners and the managers of the business. For example, in the lead up to the deregulation of the dairy industry in the early 2000s, Norco's CEO and half of the Board were tempted by the prospect of demutualisation. According to the current Chairman, the then Chairman "wasn't overly co-op minded." For him "it was more about, how do we actually get this beast to a listing and actually get rid out of all the farmer directors and move away from the cultural issues of the co-operative?" But others wanted to stay true to the ethos of cooperation that was both the foundation and the strength of the firm. As well, the farmer-member-owners were clear about their motivations for farming. The Research and Development Officer reflects: "so whereas I thought the only thing that drives farmers is say profit, well it's not, it's lifestyle, it's the family, it's workload. There's so many other things, it's ethics."

Norco has had to navigate a pathway through an increasingly globalised marketplace. Under the guidance of the current Chairman, Norco strategically entered into partnerships with the largest industry players on the planet to keep afloat. This meant working with the multi-national milk marketer Parmalat, and then Fonterra, the NZ dairy multinational that is a co-operative in name only. The expectation was that they would be absorbed. But in both cases Norco was able, at a later date, to strategically and lucratively withdraw. The current Chairman characterises the current context in the following way: "Globalisation has served its purpose and made us all aware that we need to change and move forward, but **it doesn't mean that we need to abandon our own.**"

One of the ways that Norco has looked after its farmer-member-owners has been strategic investment in growing Norco's ice-cream manufacturing factory in Lismore so that it operates all year and smooths out the seasonal fluctuations in milk production.

Today, Norco has over \$600 million in sales per annum and pays its members a highly competitive milk price. In Australia's globally competitive and volatile food processing industry, Norco has stayed true to co-operative values and sought to safeguard the long-term interests of members, employees and the communities in which it operates. The Co-operative Secretary puts it this way: "Governance and decision making is very much always with **the interests of the members at heart.** That's totally contrary to an international corporate who's a processor, a milk processor. They're not particularly worried about their producers. They're particularly worried about their bottom line and their shareholders, investors."

3.3 Thoughtful Growth

That 'growth is good' is another of the **business as usual** tenets that is undergoing significant scrutiny. Economic growth can no longer be advocated without some thought to the consequences for people and the planet. Yet the jobs and growth mantra continues to be mouthed without any scrutiny as to what kinds of jobs and what kind of growth.

Interface's Managing Director, Australia and New Zealand pinpointed the business as usual approach to growth: "In a public company I think there's always tremendous pressure for growth, that's what Wall Street wants to see, growth in the business, it underpins growth in the share price."

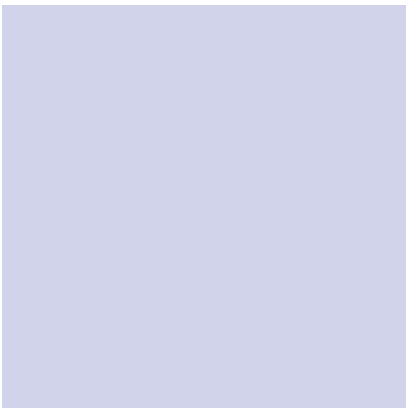
For the manufacturers in this study, growth is not something that they shy away from. Indeed, it is by growing that they can achieve their business purpose. Growth keeps staff engaged and motivated. It also creates the opportunity for making decisions about pathways forward. But growth for growth's sake is not the focus; instead, it is thoughtful growth.

This section highlights the different kinds of growth that feature in the firms in this study, and unpacks the practices that come with thoughtful growth, as follows.

1. Growth that **serves multiple stakeholders**.
2. Responding to the challenges that can come with growth by **focusing on the firm's mission and core strength**.

This section demonstrates these practices with Insights from manufacturers about how growth can serve multiple stakeholders. It then provides Snapshots of how manufacturers have negotiated the challenges that growth can bring by holding onto their mission (Soft Landing) and their core strengths (Sebel Furniture).

The section concludes with a Snapshot that takes a more speculative look at some future challenges and what this might mean for thoughtful growth. This Snapshot features the three producer co-operatives in Northern NSW (NCMC, Norco and OzGroup).



Growth to challenge staff

INSIGHTS:

Growth that serves multiple stakeholders

*Profitable growth is one of our driving forces, if other people are growing then you are going backwards by comparison ... **Don't just grow for growing's sake.** Do it profitably to ensure the business grows and expands. I think if staff see that the business is plateaued they get bored and especially if they've got talent, they will look for a bigger challenge. You've got to keep creating challenges to keep motivation and engagement high.*

Director, **A.H. Beard**

*It's rewarding to see the company making money and growing and that there is a future. We're always trying to **stretch the envelope**, to do more than what we've been doing, so we can grow the business. The vision that I share with the Managing Director is seeing Varley becoming an Australian prime contractor. Most prime contractors in Defence are foreign, or have foreign ownership.*

General Manager, Defence and Aerospace, **Varley Group**

*The challenges are to me, people often talk about there's capital or restrained growth and to me it's management talent, keeping management talent and management buy-in. Buy-in just doesn't come from just giving them shares or more money or that. **Buy-in has really got to come from passion.** That's part of it, that's the hard thing is still finding people, finding the right people who are passionate about wanting to do a good job ... So here I've always been very mindful of making sure that people can see the effect of their effort in the business. So that's part of keeping people engaged and interested and wanting to keep driving the business and giving them, the managers, that freedom to say 'This is what I think we should be doing in the future, this is what I'd like to do.' So you're keeping them engaged and always challenged.*

Managing Director, **Varley Group**

Growth to deepen sustainability

*[Vinyl tiles have] some common raw materials with our backing and importantly we'll be able to put it into our **re-entry reverse supply chain** and recycle those materials. It makes sense on a business level in terms of achieving growth but it also makes sense from a sustainability perspective because it can be part of our supply chain.*

Managing Director, Australia and New Zealand, **Interface**

*We have to be able to grow our business, be a more efficient business **to make sure that we are sustainable in manufacturing.** And that's what we're continuing to do right now, looking at waste, looking at energy. 'How do we make sure that we are sustainable going into the future?'*

Manager, Ice Cream Factory, **Norco**

*We've had a long experience with our bank and we said, 'Look we thought we might buy this mattress recycling business.' We explained the turnover and some three years' history. 'We reckon we could grow it.' Our relationship manager came back and he said, 'They've been doing their research and this charity, social enterprise, stuff you're in, it's a **rapidly growing thing** isn't it?' He said, 'This waste industry wow, **it's growing 21 per cent** a year. You guys are in both of these industries.' ... So we got the finance and we did the deal ... within 12 months we doubled the turnover from \$3.5 million to \$7 million.*

Former Executive Officer, Community Resources Ltd,
(Soft Landing's parent body)

*We're about creating social impact either with young people around employment or digital inclusion ... But we're always going to be limited by our size. So [we're asking] what we can do, what we can manage, how many people we can influence, how many people get trained here or even get a job here. We've been talking strategically, how else do we **grow that social impact** from 100, 1000, whatever it is, to greater ... this is why understanding what we do and what we do well and what are the key success factors of that is important ... and then for us to be able to go to social enterprises and say 'Look, this is what we're doing' and share that learning. 'Here are our network of customers that you might be aligned to.'*

CEO, WorkVentures

Growth to extend social impact

SNAPSHOT: Soft Landing Growing and remaining ethical

Waste management is a growing public concern and with increased regulation of what goes into landfill, a new market for waste disposal and recycling has grown rapidly.

As a result, the waste industry has elements that one Soft Landing staff member describes as “cut throat.” When it comes to mattresses, another staff member says, “There’s guys out there that are picking mattresses up on the kerbside, pulling the old cover off, putting a new cover on, sewing it up and selling it as a new bed.” Soft Landing strives for the best environmental outcomes in accordance with the waste hierarchy, including options for reuse. However, it does not refurbish mattresses at this time as it is not satisfied the risks to people’s health can be managed.

How then does a business that is governed by a social and environmental mission navigate a growing and, at times, unscrupulous industry?

The temptation is to be influenced by the conduct of other firms. The former National Manager recalls: “I could tell you 100 different decision points where we could have gone this way or could have done a dodgy there or could have cut a corner there and we’ve just said ‘No, this is the path.’ ... Although we’d have made a truckload more money and less headaches at every step of the way. We said, **‘We’re not getting involved in what we see as unethical behaviour.’** We’ve maintained that the whole way through ... I guess it’s those key forks in the road where you could go this way or that way. Had we done it and maybe made a lot of money and maybe made some more jobs, but we would totally undermine our credibility.”

The General Manager states, “We have to ensure the business remains commercially viable. It’s the fuel that keeps our car going down the road. But it’s not why we’re in this; it’s not our destination. It allows us to create employment opportunities and outcomes for the environment. It allows us to consistently strive to be a better place to work and to improve our work for better environmental outcomes. We navigate towards this goal in a commercial context that throws up constant challenges.”

This commitment to acting ethically and maintaining credibility has shaped how Soft Landing has operated in relation to other firms and its growth trajectory.

Initially, Soft Landing was part of Mission Australia. However, as Soft Landing’s growth potential became more evident it also highlighted that the business was moving away from Mission Australia’s core activity. Through a series of negotiations, Soft Landing was purchased in 2015 by Community Resources Ltd (based in Tuncurry, NSW), and it is now part of Community Resources’ family of social enterprises, which currently includes four with an environmental focus.

With the backing of Community Resources, Soft Landing began expanding across Australia. However, a private company based in Melbourne (with 15 locations worldwide) had also identified the commercial potential and was moving into mattress disassembly in the two main markets of Sydney and Melbourne using an automated process.

The response of Soft Landing to its potential competitor in Sydney and Melbourne was to partner. Within months of Community Resources acquiring Soft Landing, they were in discussions with the potential competitor. An agreement was reached for working in partnership, including co-locating the manual and automatic disassembling operations in Sydney and Melbourne.

Community Resources then reached agreement to acquire the mattress operations of the private company. This is perhaps the first time in Australia that a not-for-profit social enterprise has bought out the operations of a for-profit company.

Now, Soft Landing has to decide how to balance the incorporation of automation into the business operations of a social enterprise that has employment generation as one of its prime purposes.

The former National Manager reflects: "I think the business pressures that we have in social enterprise are probably common to all business. You've got supply chain issues, you've got just-in-time logistic problems, you've got staff issues, budgets. So they're all similar. I guess with social enterprise you've got **these other layers** of, 'To what extent can we move out of our **sweet spot of our mission**, how far can we push our labour directive to automation.' Well, we've found that we could only go so far and if we went any further it wasn't good."

Currently, mattress disassembly in Sydney is fully manual, and this has meant employing an additional twenty staff to keep up with the demand of taking apart 700 mattresses each day. The General Manager puts this decision in the context of the enterprise's mission: "We're in a good position now with manual processing. It's where the business is most comfortable. **We're doing what we say we do**. So, that's the big thing."

SNAPSHOT: Sebel Furniture Refocusing growth on what is core

With an increasingly open global economy, the Australian manufacturing sector has encountered rationalisation, restructuring and takeovers.

Sebel Furniture (Sebel) has first-hand experience of these changes since its beginnings in the 1950s as an Australian-owned company that developed the iconic seating product—the ubiquitous Postura® chairs.

Each round of rationalisation, restructuring and corporate takeover since the founder sold the company in the early 1980s has slightly shifted the business focus. This has had implications for Sebel's sense of identity.

In the period leading up to Sebel's ownership change in 2017, the company had been trying to operate in a way that did not match what the General Manager describes as Sebel's "DNA." He goes on to say, "It was like **an identity crisis for us** ... We were probably a little confused, because we're trying to be a solutions company when actually we were clearly a product company."

The General Manager explains that being a solutions company meant working more closely with the customers to develop various design options for a workspace: "Let's sit with you. Let's develop 16 alternatives for this workspace. Let's now try to put different products. We've got this and we've got that."

In contrast, being a product company matched Sebel's identity, as the General Manager clarifies: "The Sebel identity is about what is the thing that represents Sebel, it's those iconic products and the durability of those products. And these great products make great spaces."

The ownership change was an opportunity for Sebel to take stock and make the decision to return to the product focus. The General Manager explains, "We are product engineers. We have the **best engineered products** – designed and manufactured in Australia and made for the world. We have those products, so we want now to go back to that to be the **basis for our growth**."

Since the company was acquired by the New Zealand-based Resero Group Ltd, Sebel has been able to focus its efforts. The General Manager continues: "The last few months we have focused on what made us great, which is the iconic products. We have the world's best student chair, Postura®. We have iconic products like our Performance Edge™ desk. We have a Twist'n'Lock™ desking system we developed recently last year. We have the fixed seating (mass seating) products. We are going back to those products in a big way and saying, 'Let's not spread ourselves too wide and then try to chase so many things. Let's ... go back to those strengths that made us great in the first place.'"

This return to Sebel's strengths affirms what is core to the company. The General Manager finishes: "What's the one thing which any customer would think of when he's talking Sebel? It's the durability of our products. Oh my God, they last a lifetime!"

SNAPSHOT: NCMC, Norco and OzGroup

Thoughtful growth in a climate changing world

The unprecedented fires in Northern New South Wales and Southern Queensland in the spring of 2019 have heightened concerns about climate change.

The three producer co-operatives involved in this study have farmer-member-owners who have been directly affected by the fires and the underpinning drought conditions.

This is pertinent to this study about manufacturing for two reasons.

First, all firms will have to contend with the direct and indirect effects of climate change at some point. For the moment, it is those firms in rural and regional areas, especially those involved in agriculture, that are on the frontline. But the effects are coming for all.

Second, Australian manufacturing is intertwined with Australian agriculture. The food subsector is by far the largest employer of manufacturing workers in Australia with almost a quarter of a million workers. This is well ahead of the next largest subsector, fabricated metal products, which employs 76,000 workers.³² Australia once rode on the sheep's back, but today it seems that a good chunk of Australian manufacturing rides on the farmers' backs.

How Australia's agriculturally-based manufacturers contend with the climate crisis will be instructive for all manufacturers as effects continue to take hold.

It is therefore useful to consider the experiences of the three producer co-operatives involved in this study: NCMC, a meat processing and products manufacturer; Norco, a dairy processing and products manufacturer; and OzGroup, a blueberry processing and related packaging manufacturer.

Until now, the three co-operatives have approached growth as a means of securing the livelihoods of their farmer-member-owners, while also providing benefits for the communities in which they are located (including through employment opportunities, and contributing to regional economic vibrancy). **This thoughtful approach to growth has served the farmer-member-owners and their communities well.**

What are the implications of the climate crisis for thoughtful growth?

In their most recent report, the Australian Farm Institute (AFI) has assembled current research on the potential impacts of climate change on agriculture in Australia and recommended ways of responding through a three-pronged approach based on:

1. Strong research, development and extension
2. Adoption of clean energy
3. A focus on the capture and storage of carbon.³³

The AFI report documents various strategies including on-farm adaptation and mitigation (for example, smaller herd sizes to accommodate the land's reduced carrying capacity; and changing animal breeds and the timing of planting to suit a different climate regime). In some cases, the strategy is relocation (as is happening in viticulture with moves to Tasmania) or even industry exit.

CONTINUED ON NEXT PAGE >

³² Advanced Manufacturing Growth Centre Ltd 2017, p. 11.

³³ McRobert et al. 2019.

As well, agricultural industry bodies are looking to the future and developing various road maps. For example, Meat and Livestock Australia are pushing for a carbon neutral red meat industry by 2030 through strategies such as using renewable energy sources and increasing vegetation cover to offset methane emissions.

Such initiatives do not stop at the farmgate; there are also implications for food manufacturers.

The three food manufacturers in this research are also looking to the future and ways of responding to climate change and other environmental issues.

NCMC's target is to be, in the words of the CEO, "absolutely sustainable." He says, "**We have a moral obligation to ourselves and our children to make sure it's right.**" For example, NCMC is reusing its wastewater to help grow and irrigate fodder crops on land that it owns to provide feed for livestock. Along with this, NCMC is developing, supporting and innovating ways to reduce water and energy use, and greenhouse gas emissions.

Norco is also looking at sustainability initiatives and is well-aware that "**we need to be doing the right thing,**" as described by the Operations Manager, Foods. Acting on this, Norco is investing in a new wastewater plant that will generate sludge that can be used in composting. The plastics division (which produces milk bottles) is also reducing its waste and increasing its plastics recycling (both on-site, and by selling to recyclers off-site).

OzGroup are introducing various initiatives. They have installed a 100kW system on the main roof, with the aim of being fully solar powered; they are trialling compostable packaging for berries. Here the focus is on "**being a good corporate citizen**" as the Operations Manager puts it. In the case of OzGroup, the farmers are relatively young compared with farmers in other agricultural subsectors, with an average age of around 35 years. As the Operations Manager explains, this means that "they're not tied up in the old ways."

The attitude of these co-operatives **to do the right thing by being good corporate citizens** provides a firm foundation on which to further respond to climate change. This attitude will also be important as the effects of climate change deepen, and responses are developed.

Also important will be the respect and loyalty that these co-operatives have built in their communities over the years. This puts them in a strong position to bring people together around a shared concern.

As manufacturers, these co-operatives display the **problem-solving capacity** that characterises all the firms in this study. This capacity is usually directed towards addressing technical issues and financial matters. There is no doubt that the co-operatives in this study have formidable aptitude, having been operating for a combined two centuries plus! The challenges of the 21st century will provide another testing ground for this capacity.

Finally, there is the strength of **the cooperation of co-operatives**. All are members of the Northern Rivers Cooperative Alliance (along with eight other co-operatives). This network is important for their existing collaborations for regional development, and will become more so for sharing insights into strategies for rethinking what growth might mean in a climate-changed world.

4. More Just Manufacturing

A just manufacturing sector provides **decent jobs**. It also makes a contribution to **an inclusive economy** by offering opportunities for people from diverse backgrounds to participate.

Decent jobs and an inclusive economy are created and maintained by businesses that understand the role that employment plays in contributing to the wellbeing of workers and a cohesive society. In this research, manufacturers reflected this understanding through three **commitments**:

1. Technological change *and* decent jobs
2. Workers as valued contributors
3. Factories as sites of inclusion.

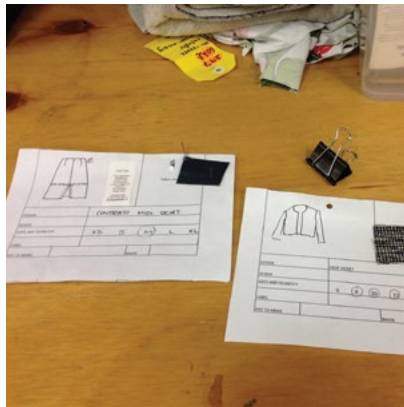
In this research, the evidence for these commitments is found in a range of **practices**, which are highlighted in this section.

Beyond Business as Usual A 21st Century Culture of Manufacturing in Australia

Building a just manufacturing sector

Commitments

- | | | |
|---|---|-----------|
| 4.1 Technological change <i>and</i> decent jobs | + | Practices |
| 4.2 Workers as valued contributors | | |
| 4.3 Factories as sites of inclusion | | |



4.1 Technological Change *and* Decent Jobs

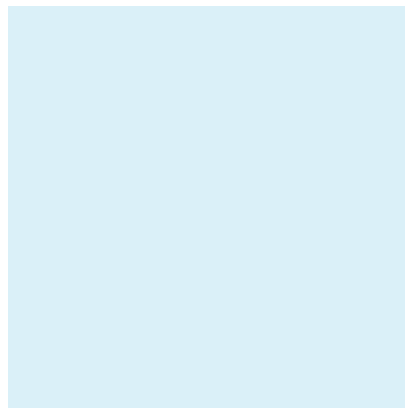
There is a widespread belief that the technological developments of the 21st century such as automation will inevitably displace jobs leading to high levels of unemployment and an entrenched underclass.

The manufacturers in this research introduce and use technology, including automation, to increase efficiency and output. They also find ways for technology to align with decent jobs and even increase the number of decent jobs.

The commitment to **technological change *and* decent jobs** is reflected in the following practices.

1. Technologies are introduced **to reduce physical stress**. Here there is a focus on using technology to reduce the physical stress of repetitive jobs and ensure safe working conditions.
2. Technologies are introduced **with training and support**. This means that workers can keep up with new developments and **take on the increased responsibilities** that can come with more technologically advanced manufacturing.
3. In some contexts, technologies result in more **decision-making being devolved** to the shopfloor and **increased worker participation** in the design of production processes.
4. Technologies are introduced with the option of **redeploying staff whose roles become redundant**. This can mean offering opportunities for staff to move into other areas of the factory, or even to other production sites.
5. When these practices are in place, what results are **expanded employment opportunities for workers**, in terms of the **number of jobs** and the **quality of jobs**.

This section demonstrates these practices with a Snapshot of how one manufacturer (Norco) has integrated automation into their factories, and a Snapshot of overseas experiences of automation.



SNAPSHOT: Norco

Introducing automation on the shopfloor

Norco's production is highly automated with processing lines for milk bottling and ice cream making. Automation increases efficiency and helps to cut production costs, but at Norco **the human impacts of automation are considered** when making decisions about where and how to introduce and use technologies. The Operations Manager, Foods describes the introduction of automation as "a fine line" and he explains: "It is a fine line because how far do you automate and you put people out of work. People still need to make an income to be able to buy your products."

One way that Norco addresses this concern is to **introduce automation to reduce physical stress** on employees, as the Operations Manager, Foods explains: "What we look at first obviously is we look at our OH&S as far as repetitive tasks ... there are several of those sorts of tasks that are throughout all three manufacturing sites. So we look at that first and 'Can we automate that?' That's how we start making our decisions."

These new technologies are introduced **with training and support**, and with **worker participation** in the design of production processes. For example, managers, supervisors and operators jointly devise procedures and 'decision trees'.

One effect is that some **decision-making is being devolved** to the operators on the shopfloor who now **take on increased responsibilities**. As the Operations Manager, Foods describes: "If we've got machines breaking down all the time or wasting a lot of product, then stop the machine. You can make that call. We understand." This manager goes on to say that now the approach of managers and supervisors toward operators is one of "You're the one who knows the machine, you run it ... it's your machine. You take ownership."

A second effect is that the **quality of the jobs** has changed and there is now greater cooperation between staff, as one of the Stick Line Operators explains: "When those machines are going wrong you really need to be on your toes and know that that person has got that covered ... you get to know your partners, you get to know routines and stuff like that ... there's a lot more trust." One of the managers describes this as a transition from "button pushers" to operators who have an eye to the whole process, not just their piece.

In reflecting on the introduction of automation one of the operators describes how, from the perspective of the shopfloor, the changes are providing **expanded employment opportunities** in terms of both **job numbers and job quality**: "This big scare of automating, everything is not as scary as it seems. At first, I was the same, it's like bam, but ... this is going to create more jobs, we're going to need more people, but people with skills ... you can't just sit there and put an ice cream in a box anymore. You're going to have to learn just a little bit, you don't have to be a super star but just learn a little bit, and your job will always be there ... you're going to have to actually think, 'Oh, I've got to run this machine today.'"

When automation does displace workers, Norco attempts to **redeploy staff**, as the Operations Manager, Foods explains: "We look at can we redeploy those employees elsewhere within Norco? Because that's our obligation. We'll offer, if there's jobs available somewhere else, 'Are you willing to engage in that area?' ... We try to look after them as much as possible where we can."

The net effect of automation is that Norco has grown and there have been no redundancies, as one manager explains: "Before we started putting automation in, we employed around about 160 down in ice cream. Now we're employing close on 250, but we've more than tripled our throughput. So we have become more efficient." The effect is crucial as this enables Norco to put resources into its environmental sustainability agenda. To reiterate an earlier quote from one of Norco's Managers: "We have to be able to grow our business, be a more efficient business to make sure that we are sustainable in manufacturing. And that's what we're continuing to do right now, looking at waste, looking at energy. 'How do we make sure that we are sustainable going into the future?'"

Thus Norco shows how **automation provides a win-win-win**—a more efficient business, a more just workplace and a more sustainable form of manufacturing.

SNAPSHOT: Automation and jobs

There are widespread concerns that new technologies such as automation will lead to job losses. In Australia, a 2015 report by CEDA (Committee for Economic Development of Australia) estimated a high probability that up to 40 per cent of jobs “could be replaced by computers within a decade or two.”³⁴ Similarly, a 2017 paper by Frey and Osborne estimated that 47 per cent of employment in the US is in the high risk category of jobs that are expected to be automated over the next decade or two.³⁵ However, a report to the European Parliament highlighted that, in the past, innovation has had a job-creating effect and that predictions have tended to under-estimate the number of jobs that might be created because there is insufficient knowledge and imagination about jobs of the future.³⁶

In reconciling these two perspectives, it is instructive to look to research on the impacts of technological developments on manufacturing jobs. Germany is considered by many to have handled technology most successfully as it has maintained a strong *and* technologically advanced manufacturing sector that accounts for 20 per cent of employment, generates 22 per cent of GDP and contributes 82 per cent of Germany's goods exports.³⁷ A study, published in 2011, of a twenty-year data set on innovation and employment in more than 1,000 German manufacturing firms, found that **innovation had a positive effect on employment**. As well, the effect was stronger for process innovation (i.e. new processes for manufacturing goods) than for product innovation (i.e. new products).³⁸

The data set used in this study was for the period 1982 to 2002 and there seem to be no comparable studies using more recent data on manufacturing in Germany. However, the findings are consistent with more recent studies on innovation and employment across a range of sectors, including manufacturing. For example, a 2019 Deloitte Report asked senior-level managers from 760 companies in 16 European countries what impact they expected new digital technologies (including robotic process automation and AI) would have on their labour force.³⁹ The report found that 41 per cent expected their full-time labour force to increase, 29 per cent expected it would stay the same, and only 23 per cent expected it would decrease. Furthermore, 54 per cent of managers expected that new digital technologies would go hand-in-hand with investment in staff training.

It is also useful to look at how manufacturers are introducing and using technology ‘on the ground’. The experience of Norco, discussed above, shows how technologies can be carefully integrated into operations in a way that takes into account the human factor. Norco's approach is similar to the overseas example of Pocheco, the French envelope making company.⁴⁰ Pocheco has approached automation as a way to reduce risks and stresses in the workplace, using new machines to do tasks that have the highest burden on staff. When this labour-saving technology displaces staff, they are retrained in quality control and this has resulted in a 30 per cent reduction in the number of products that do not conform to client's specifications.

The shift to a focus on quality through the introduction of more advanced machinery and the retraining of staff was also noted by Interface. The Vice President, Operations Asia Pacific says: “I know we're doing a good job when I see you sitting on a chair doing nothing ... It means that the machine is operating properly ... So they're monitoring the machine, and they are there so that if it stops, it's got all sorts of alarms and triggers when something goes wrong. It's about being able to identify what is a problem, solve it quickly and then restart the machine. Make sure the quality is right, fixing quality issues.”

³⁴ CEDA 2015, p. 8.

³⁵ Frey et al. 2017.

³⁶ Dachs 2018.

³⁷ Parilla et al. 2015.

³⁸ Lachenmaier & Rottmann 2011.

³⁹ Deloitte 2019.

⁴⁰ The information on Pocheco comes from a factory visit in 2017 and a book on Pocheco by the company's President (see Druon 2015) (see also <http://www.pocheco.com/?lang=en>).

4.2 Workers as Valued Contributors

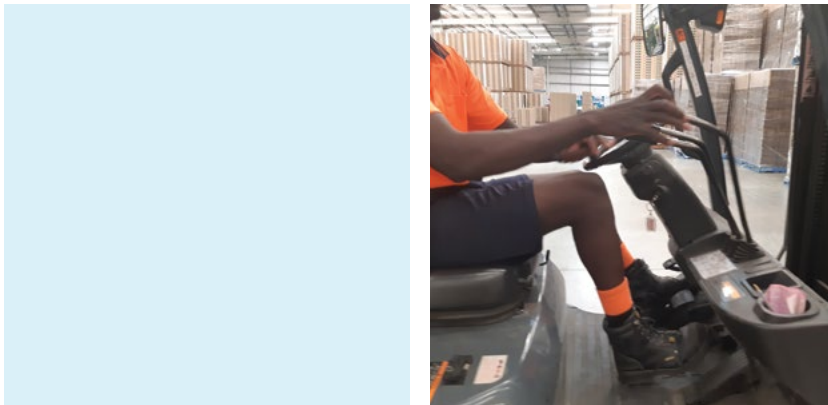
Recent reports in Australia have revealed the extent to which some businesses provide poor working conditions for their staff, including through the practice of underpaying staff.⁴¹

The manufacturers in this research recognise their workers as valued contributors. Rather than entrenching an oppositional approach or exploiting workers, every opportunity is taken to acknowledge and reward their contribution, and to ensure that they have decent jobs and the potential for long-term employment in manufacturing.

The commitment to workers as valued contributors is reflected in the following practices.

1. Workers are always **paid at or above award wages**.
2. There are **opportunities for advancement** and employees are encouraged and supported to take these opportunities.
3. **Part-time and casual staff are treated with care**, and where possible firms attempt to transition part-time and casual staff to full-time and permanent roles.
4. There is **transparent communication between managers and workers**. This is important as it engages workers in the 'big picture' by keeping them informed about how the business is progressing and what future changes and developments can be expected. This is also important for part-time and casual staff as it helps them plan for the future.
5. The skills and knowledge of workers are valued, and their **input into production processes is sought and acted on**. As identified in Section 4.1, this input can be especially important when technological changes are introduced.

This section includes Insights into how the manufacturers in this study are demonstrating their commitment to workers as valued contributors. There is also a Snapshot of one critical incident in which one manufacturer (Interface) demonstrated the depth of their commitment to their workforce.



⁴¹ For example, see Ryan & Chau 2019.

Paying at or above award wages

INSIGHTS: Workers as valued contributors

We always make sure that we pay above award ... it ensures a high calibre of job candidates, so it's a value add for the business.

Operations Manager, **A.H. Beard**

*The New South Wales branch of the AMIEU [Australasian Meat Industry Employees Union] have rated the abattoirs across the state. **We were very highly rated** by the AMIEU in regards to pay and conditions, friendliness of the management and a positive culture and environment to work in.*

CEO, **NCMC**

*We have a challenge, 'How do I compete with all of these forces that I have in manufacturing.' ... I don't want to hire and fire employees. **I don't want to pay them a small wage or just above the minimum wage.** We don't compromise on safety; we haven't had an injury for 1350 days ... So we want to keep all this. How do we make sure that we don't dilute anything because of the cost pressures in the business, in the market? That's a challenge.*

General Manager, **Sebel Furniture**

Opportunities for advancement

*I've been here twenty years, since a youngster out of school. I started off on the factory floor where I bagged the mattresses by hand ... Following this I worked in the quilting section where I became a supervisor. From there I became a production manager and eventually the product development manager, which is my current role ... **I wouldn't change a thing** here, I'd always work for A.H. Beard. It goes back to the culture and the opportunities I was given. I wasn't given a lot of opportunities in life, but **this place gave me a lot of opportunities to change.***

Product Development Manager, **A.H. Beard**

*What we're looking for when we hire is someone with the potential to be the next leader or operator. That's what we're looking for is that progression because **we'd rather promote within the business**, than from outside the business.*

Operations Manager, Foods, **Norco**

*We give people a second chance ... you've got a guy say who's a great engineer, a great tradesman, who's really outperforming and outshining and ... you promote him up to a manager and suddenly they're no good because they can't handle people or they're not a manager. We don't just sack them and get rid of them because they're no good. **We preserve the reason why we thought they were good enough in the first place** and generally drop them back into being that engineer or that tradesman again ... I'm tolerant of failure the first time around ... we learn from it and treat it as a positive for the business rather than as a negative.*

Managing Director, **Varley Group**

Our retention of staff is huge. You can walk out there and there'll be 30 people with 30 years, 25 years with us ... We all go to work to make money to provide money to our family. Because we want to give them the best we can, right? That's a no-brainer ... But there are some people that go to work, and I was in a job like this way back where you sit there and you watch that clock go tick, tick. **To go to work, and feel not only you're valued and doing something of value. But you actually help someone and you help someone's life change.** How do you put a price on that? Especially when you know what it's like to be down like that.

General Manager, Operations, **WorkVentures**

Most of the people were casual, like four years ago, but recently we've converted some of the positions to full-time positions ... **This year we've made 21 people full time.** We need more a skilled labour force now ... I can't train people every year so **we are holding onto the core people.** So we offered them positions this year.

Operations Manager, **OzGroup**

We're a big company operating small ... I can walk onto a floor and people will go, 'Hey, how are you?' If I see a new face I'm, 'How are you going? What are you doing?' 'I'm only a casual.' 'Well keep going. **One day you won't be.**'

General Manager, Food Operations, **Norco**

My ideal is to have that plant running efficiently all year round with a constant production line so that you have your 200 people and **they're all permanent.**

General Manager, Food Operations, **Norco**

[Recruiting casuals ourselves] gave us the ability to try and identify **people that had potential to become full time** – move into full-time roles eventually and then into leading hand type roles, supervisory type roles as well.

Factory Manager, Labrador, **Norco**

A lot of our full-time roles are people that started off as casuals and we've made sure that we give them enough hours that they'll hang around and won't go away.

Factory Manager, Labrador, **Norco**

Transitioning away from part-time and casual work

Transparent communication between managers and workers

*I address the employees probably once every six weeks. It's five minutes in our company time in front of them. It's a great opportunity to let the employees know **where the business is at**, dismiss any rumours and give them an idea of future activities. I've congratulated them on their achievements at work and the good things that have happened. The first time I congratulated them they said, 'That's the first time anyone ever actually thanked them.' Open and transparent communication is our focus.*

CEO, **NCMC**

*A great thing that they introduced, they called State of the Nation talk. What they do is every couple of months, everyone – the whole lot – go down and we have a meeting and the managers tell a bit of a spiel about what's coming up. **It was the best thing they've ever done**, because it stops negativity for starters. It stops the rumours.*

Defence Supervisor, **Varley Group**

*We put in our EBA that the company actually talk to us and tell us what's going on so you don't get to the point where you hear the Chinese whispers, 'Oh, there's guys getting sacked or the company's not going good.' We used to do it probably once a year. Now we make them do it three times a year ... it opens it up, and **they can see that it's not us and them mentality**. Also, when you've got people who haven't got permanent jobs, but they've got families and so on. 'Do I go and buy a second-hand car or a new car? Or am I going to get laid off in two months? What's our scope of work coming up?'*

Boilermaker, **Varley Group**

*The State of the Nation meeting has gone from being a thing that we kind of do that's a bit odd, to now **this is just part of our culture**.*

HR Manager, **Varley Group**

Worker input into production processes

*I ran five workshops with all the operators and we identified every waste stream ... Then we identified ways of reducing or recycling or eliminating completely ... **They designed the zero waste management system** ... They insisted that there should be one person collecting that waste and measuring that waste because if it's not then it won't get separated properly. They were insisting that if it was mixed up that whoever mixed it up would get hammered. They basically said, 'You guys, if we're serious about this then we've got to be strict about it because I'm not going to waste my time separating waste if Joe Bloggs is throwing cans into my bucket.' So that was a very good exercise.*

Then when we were starting to build the factory, I got them involved in trying to estimate the quantities of waste. For instance, we stripped the plastic off four or five rolls of glass fibre and weighed that and then we worked out how many rolls we were going to use in a year, that would then tell us how much plastic we're going to produce every month, how many bales we produce and then they could start getting a feel for the quantities.

Sustainability and Lean Manager, **Interface**

The whole thing of participation came through Lean.⁴² The Lean process said okay we need to change how we operate with our people. They're a resource. They're not a cost. **If they're a resource, they have to be treated differently.** When we started the journey, I had guys in the factory that walk up to me and say, 'You're actually going to listen to us?' I said, 'Yeah, we're going to listen to you, because you know what the job is.' They know how to fix things. I have this belief that people don't come to work to be a problem to Sebel, they come to be a contributor to Sebel so we have to help them figure out how they can contribute ...

The whole Lean journey, it has provided significant benefit to us by the flexibility of our workforce and they've journeyed with us. They've changed some of the dye changing times. **They've come up with sequences** for colour. Because if you think about it you can't go from black to white. You've got to go through a staged process to get the white purely because you've got to get the colour out of the system. They've come up with those things. They've come up with. 'How do I do the dye changes faster?' We used to do eight hours for a dye change, now it's down to four. And it can go down further.

Former CEO, **Sebel Furniture**

⁴² Lean is a manufacturing approach that focuses on waste minimisation (including waste in resources and materials, and waste in time). Lean in Sebel Furniture is discussed in more detail in Section 5.2.

SNAPSHOT: Interface

Valuing workers in a crisis

For one manufacturer, a critical incident provided an opportunity to demonstrate the depth of their commitment to workers as valued contributors—not just as valued contributors to the firm but as valued contributors to the community.

On a Friday evening in July 2012, a fire caused by a mechanical fault totally destroyed Interface's carpet manufacturing plant in Picton on the southern outskirts of Sydney. At this point, a realistic option was to wait for a likely insurance payout, expand the two other manufacturing sites in the Asian region (in Thailand and China), and pull out of production in Australia to remain only as an importer of carpet tiles.

This did not happen.

On the Monday morning after the fire, the firm announced to the 180 staff that it would **guarantee the wages of all permanent employees for at least 12 months** while the firm went through "a process of discovery of exactly what we're going to do" (Managing Director, Australia and New Zealand). One of the senior executives described how when the announcement was made "We didn't know. We had an intention of building but we didn't know whether we would rebuild or not" (Vice President Operations, Asia-Pacific).

Once the firm decided to rebuild, staff were assured that they would have a continuing role in the new factory. Meanwhile, staff were redeployed. Some were enrolled in helping design the new plant; production workers were moved temporarily into warehousing and logistics, and customer service (and gained a new appreciation of office-based roles); and others did community service projects in and around Picton—all on full pay.

The Managing Director, Australia and New Zealand reflects on the community service projects: **"It was a huge opportunity to do something in the community.** Some of our supervisors got together and we organised – we went and spoke to the council, we spoke to some of the schools, we spoke to the rural fire service. We did things like – our maintenance guys because they had no plant to maintain they rebuilt some pumps and serviced the equipment at the rural fire service. Some of our people helped the library re-catalogue books. We did some reading programs with kids at Picton High School. Picton Landcare work ... The people who were supervisors in the plant became supervisors of these activities."

The decision to rebuild was certainly financial as it re-established an operation that was "not only the company's best market share but by far the most profitable" (Managing Director, Australia and Zealand).

The decision reflected the ethos of the company to be "a heartbeat from the customer" (in the words of the Vice President, Asia Pacific) so they could tailor their product for customers and do so with short lead times.

The decision reflected a valuing of the workforce and their skills. This has had the effect of helping to retain scarce skills in Australia "because carpet manufacturing or textile skills are very thin on the ground in Australia these days" (Managing Director, Australia and Zealand).

An unexpected disaster is the kind of event that would push many firms toward a business as usual response of taking the insurance payout and running. But in a firm such as Interface, where the eye is on the long term, obstacles are opportunities to consolidate the firm's mission. In this case, the fire provided an opportunity to value the skills and contribution of workers.

4.3 Factories as Sites of Inclusion

Since WWII, Australian manufacturing has been a crucial site of inclusion, providing entry-level jobs to school leavers, migrants and those who face barriers in the labour market. The manufacturers in this study are continuing this tradition, but with a twenty-first century spin. The Partnerships Manager from Soft Landing's parent body (Community Resources Ltd) puts it this way: "it's giving people an opportunity they didn't have, and it gives them a leg up to move forward rather than pigeon-holing them forever ... that's an important contribution to reducing inequality."

In a diverse society, an inclusive workplace offers an opportunity for people from a range of backgrounds and with varied life experiences to interact with each other, and in so doing a more cohesive society takes shape. In reflecting on this aspect of her workplace, the CEO of The Social Outfit highlights how an inclusive approach generates the benefits of "integrating people, not necessarily the foreign – the refugee – with the Aussie but also the foreign with the other foreign, right? How much wealth is there in that and when we come up here on a busy day, we have women sewing together, eating, laughing, and they're all from different cultures; and that has an enormous value as well."

The commitment to factories as sites of inclusion is reflected in the following practices.

1. There is a focus on **inclusive recruitment**, especially of people who can face barriers in the labour market. This focus is underpinned by tailored **support and training** appropriate for a diverse workforce.
2. There are **partnerships between social enterprises and other types of businesses**. The social enterprises that specifically employ people who face barriers in the labour market usually provide considerable training and support for their employees as part of their approach, and they have to find ways to cover these costs. Having long-term partnerships with other types of businesses is one way to secure commercial viability; at the same time these partnerships are a way that these other businesses can enact their corporate social responsibilities.
3. **Apprenticeships** are crucial for providing manufacturers with skilled workers and for also providing opportunities for young people. Some of the manufacturers work closely with schools to develop pathways into apprenticeships. There are concerns, though, that support for apprenticeships is not as robust as it has been in the past.
4. Along with apprenticeships, there is **on-the-job skills development** that occurs through more informal exposure such as **cross-skilling and intergenerational learning**. Some firms run their own accreditation programs to acknowledge this form of on-the-job learning.

This section provides Insights into the ways that manufacturers in this study are acting on their commitment to factories as sites of inclusion. This section includes a Snapshot about new technologies, inequality and training.

Inclusive recruitment with appropriate support and training

INSIGHTS: Factories as sites of inclusion

One of the jobactive providers is specifically for people with disabilities. Some of those people are on the spectrum or have significant anxiety disorders. We've had a number of other people, a couple, who have had fairly long stints in jail. Some are Indigenous. We didn't go out going 'Oh, we want to increase our Indigenous work base' or anything like that. But it was about going 'Do they fit the organisation?'

This project, the ambulance project, was really quite different because typically the vast majority of people in our factories are tradespeople and this one was a job where you could actually do really well without tradespeople. You needed a proportion of them. So we had some time to do a little bit of planning. I went out to the jobactive providers and we actually got them in here. We showed them the prototyping and went 'What do you reckon?' And they went 'Yeah, we think we can find you people that can do that work.' They had some time to start pre-screening and they ran information sessions and they went very well targeting people to refer to us.

*I grew up in the Western suburbs of Sydney and I have a pretty strong social justice spin. I've seen the delight and the loyalty that employers get when they **give someone that second chance**.*

HR Manager, **Varley Group**

*The type of people that we want to work with, that's **people that have had very chequered pasts or very disadvantaged upbringings**. A lot of these guys are not work-ready, they don't have the work ethic that you would expect to walk into most other businesses ... Every single guy that works here, has either done a qualification in waste management, that might be a Certificate II or a Certificate III. If you're going to come here and work for me, you must be doing some kind of study as well. The girls in the office have to be doing some training, so they're doing business admin training. **It's all about constantly learning**. We put this kind of effort into their education and training because a lot of them finished in Year 9 at school. We tailor their training because we understand that a lot of them don't have a high level of literacy and numeracy skills. So it's tailored to their needs where they're going to learn something out of it ... We want to hang onto those people that we've put a lot of training and time in for.*

Former Manager, **Soft Landing**

*We develop people, and we move people up, and **we try and retain people for as long as possible**. From a business perspective that makes sense. So, the business definitely needs people that know the job and can have good tenure and low turnover of staff.*

General Manager, **Soft Landing**

Social enterprise can play a great role in supporting people for a period of time that suits their learning and support needs. This can lead to people transitioning to another workplace over time, or some staff choose to stay with Soft Landing or one of our other social enterprises if the work is a good fit for them.

Partnerships Manager, Community Resources Ltd
(**Soft Landing's parent body**)

*If you think of our plant in a more holistic sense, what's its role in the community, providing employment, **how do people get a start and learn skills.***

Managing Director, Australia and New Zealand, **Interface**

*The criteria we have for new workers are ... consistency, ability to listen, ability to learn ... willingness to learn ... it's more that type of people and we're quite keen to have people who are looking for an opportunity to grow and grow up. **We will offer them the training** to grow up.*

Vice President, Operations Asia Pacific, **Interface**

*We provide **jobs and training for refugees** is my starting point always ... We do that through manufacturing and sale of clothes, and training programs, and partnerships with the fashion industry ... I'm really committed to running or being the chair of an organisation that gets the team stuff, the culture and actually mirrors good work practices ... we deal with people who often have significant trauma, and we mirror what an Australian workplace should be ... we're providing employment, an Australian work environment, a multicultural **Australian work environment** and a training component.*

Chair of the Board, **The Social Outfit**

*I guess coming from their background, having experienced being a refugee, which I will never know what that's like ... some days are good days and some days are bad days. So it's not as if you've got to make this, you've got to make so many garments each day. We recognise that they do have good days and bad days. **It evens out in the end.***

Sewing Trainer, **The Social Outfit**

*There's not many companies in Australia that repair such a broad band of electronics gear. I could take anything into the workshop that's got an electronic heart in it and these guys can repair it. If you consider the sort of people that are repairing that and their backgrounds and their pasts and what their futures look like, that's what makes us a very proud company ... probably half the people in that workshop up there with those great skills, not so long ago, were on the scrapheap of society. It was our organisation, and I'm very proud of it, that **brought them in, gave them a good environment to work in, gave them the training and the challenges, and they did the rest.***

Operations Manager, **WorkVentures**

***We give them an opportunity.** We get them work ready first so they get to work on time, they understand what their responsibility is in employment and what an employer's responsibility is ... Because as an employer, and we can speak as an employer, because we're not just a college, we're a working, functioning, commercially-based business.*

Client Relationship Manager, **WorkVentures**

Partnerships between social enterprises and other businesses

We went forward with training ... young people. But there was a mixture of unemployed people that have been unemployed for many years ... One of the first things that appeared very obvious to us is the self-esteem. The self-esteem was terrible ... So we quickly learned that we can't start teaching electronics if their self-esteem is terrible. So the first couple of weeks we're getting them to do minor projects. There was the praise and bringing them together as a group and all that sort of stuff. They worked quite well after that phase.

Operations Manager, **WorkVentures**

I think the most important thing [about the partnership with Soft Landing] is creating employability opportunities for people that might not otherwise get the opportunity. I think that's incredibly important. I spent a lot of time in education. What inspired me back then is the belief that you get a better society with better educated people. The other thing that drives a great society is opportunity to participate. **Those sorts of ventures [such as Soft Landing] are creating opportunities that people would never have had.**

CEO, **A.H. Beard**

One of the things that we are hoping will result from product stewardship ... is that **there are additional pathways** provided for people working out on the shop floor in Soft Landing ... a good outcome or an indicator of the success of Soft Landing is when someone poaches their staff ... for somebody who's out on the floor there, to say, 'Well in four years' time you could be working in a mattress manufacturer as a leading hand, or as a whatever, or you could be working in logistics.' ... One of our retailers, one of the things that got the marketing manager really excited was the prospect that there could possibly be a pathway for them to seek employees from Soft Landing, and that's a great Corporate Social Responsibility story for them.

General Manager, **Soft Landing Mattress Product Stewardship Scheme**

I understand we're in the fashion industry ... I'm not separated from fashion. We're trying to use the best of what fashion does to build what we're doing ... That's been one of the pleasures, to meet Australian industry people. **We partner with a whole lot of the fashion industry**, who want to help us, who love us, who give their time.

Founder and Former CEO, **The Social Outfit**

We don't only want to be supportive to the refugee communities, we also want to be supportive to those companies that are producing ethically themselves and environmentally themselves. So when we do spend the money [on screen printing], the good money that we spend, **we want to spend it with them**, not with someone else.

CEO, **The Social Outfit**

With the people that we work with, reputation matters to them ... only yesterday we were talking to Westpac and even though **we've had a long, long-term relationship with them**, we're always reinventing our relationship when there's different players, different people coming in. So you've got to have consistency from both parts to see value to that. We're constantly reigniting that, on the technical side and on the social side.

CEO, **WorkVentures**

We've got one bloke who does our decommissioning, coordinates it ... **People thought he worked for Westpac** and never, ever realised that he wasn't a Westpac employee because he walks through and people are hi, because he's seen CEOs go, come and go, he's seen floors of people, departments come and go.

Client Relationship Manager, **WorkVentures**

You need more techs for the automated stuff, so you're changing the landscape of the types of skills that you actually require. For us at the moment we're looking at apprentices ... that's something we can offer, whether it's here in Lismore, in Raleigh for that region and on the Gold Coast, I don't think there's enough apprentices coming through the system, so **it's where we see our social responsibility to offer that.**

Manager, Ice Cream Factory, **Norco**

The thing that worries me is apprentices, they don't exist really in Australia anymore. There is an apprenticeship sort of scheme out there but **it worries me a little bit for the younger ones coming through who may not be able to work in IT or stuff like that but still want to use their brains and hands and things.** So that worries me a little. Over the last 10 years we've lost so much skills. All my life at Sebel, I've worked with toolmakers who made injection moulding tools or press tools for steel, to punch out steel shapes and things like that. There's hardly anyone in Australia these days that does that.

Design and Engineering Manager, **Sebel Furniture**

Pathways to Technology P-Tech, it's a pilot program funded by the Commonwealth and it's aimed at exposing year 10 students to STEM careers ... Then in years 11 and 12 they've got a number of different VET options from drone piloting to airline maintenance to advanced engineering and electronics. There's four industry partners on that one. So we're all working very closely ... they come for a tour in year 10 and then they select which businesses they would like to do their placements with ... **we would hope that they'll become ideal apprentices** and we haven't advertised for apprentices for a long time. We invite people in for interview. So if they impress the guys out on the floor they go, 'Oh, that's a good one,' or 'Don't worry about that one' ... Mainly boys, but not entirely. We've had a few girls come through ... We've got a girl apprentice, a metalworker ... and we had a year 10 do work experience with the auto electrical boys and she loved it, she wants to come back again.

HR Manager, **Varley Group**

A lot of work balancing happens because they're operating in a super-cell together with lots of processes. A simple tool from Lean⁴³ is Kanban where you basically build up the inventory, but not too much ... they'll put their process down, walk around the cell and see who's actually run very low on their stock and then go help them out ... What we've got now is they're all watching out for each other ... They're always seeing what each other are doing. They've realised the complexity. They're now getting involved with each other's processes so **you've got a lot of cross-skilling.**

Former Manufacturing Manager, **Sebel Furniture**

Apprenticeships

On-the-job skills development

⁴³ As noted above in Section 4.2, Lean is a manufacturing approach that focuses on waste minimisation (including waste in resources and materials, and waste in time). The use of Lean in Sebel Furniture is discussed in more detail in Section 5.2.

We haven't got the standard classifications ... we've introduced a concept of an R1 to R4. The R refers to a readiness mode. You've got an R1, an R2, an R3, and R4. An R1 is 'I'm a newbie. I don't know what I'm doing here.' That's someone that when you put them on the line they're at the start at the line. Someone after them will pick up anything that they've done. Then you go R2, and R3. An R4 is basically someone who can run the line. But you then become an R1 again if you go to a different function. We're actually taking all of this and creating a Skills Matrix. If you walked out there there's all the people's names and the Skills Matrix tells them exactly where they are. They agree, they disagree. There's a protocol they go through if they say 'Okay I want to be another one of those. I want to get to an R2.' ... People who used to be only in upholstery are now multiskilled. So, we can move people out of upholstery, onto a plastics machine. They can go back to assembling a table ... They can take holidays and someone else can do their job for them ... and **we're educating them and teaching them.**

Former CEO, **Sebel Furniture**

It's a good atmosphere, it's inclusive, most people are happy to help if you need it, **whether it be an experienced person needs help or an inexperienced person needs help.** The information goes both ways and it makes a very big difference.

Senior Technician, **WorkVentures**

In the workshop ... **we're from different backgrounds, different experiences.** When we get together, there's very few problems that we can't solve ... Because we all have different experiences, different backgrounds, different expertise and you know, when we come together, we can do just about anything.

Operations Manager, **WorkVentures**

We see ourselves as the sewing people that you come to and this is a place where you can use an existing skill, or an existing interest, **to help settle and build your skills** ... the reason we exist is many new migrants and refugees have sewing skills and have an interest in sewing.

Founder and Former CEO, **The Social Outfit**

We have this space upstairs where we make the clothes ... but we also have a shop downstairs. So we thought, 'Why don't we make the most of that space as well.' So what we started is providing hands-on paid training in retail, so we're getting young women from the migrant and refugee community to come in and learn how to communicate with customers, how to use the EFTPOS machine, how to fold the clothes, how to make up shop windows, et cetera, because there are so many jobs in that area. It's still a pilot. We have our first two women working with us one day a week ... and we do that with them for about six months and then help them find another employment ... We feel that's enough for those young women; they already have English skills, **they just need to fine tune**, and they need to get the confidence and get some more skills; but what they need most of all is to have a CV or resume ... that says they've worked somewhere ... and then they can get the second job.

CEO, **The Social Outfit**

SNAPSHOT:

New technologies, inequality and training

A widely expressed concern is that new technologies such as automation will result in job losses. However, as discussed in the second Snapshot in Section 4.1, the dire warnings are perhaps overstated. The evidence is that innovation can lead to jobs growth.

A challenge that receives less attention is the potential impact of technologies on inequality. The concern is that technology tends to replace employment opportunities in low-skilled and routine occupations, while extending employment opportunities in more skilled and less-routinised occupations.⁴⁴ What results is an increasingly unequal society.

This has important implications for how social enterprises that rely on manual and routinised work respond to new technologies. This concern is summed up by Community Resources Ltd's Partnerships Manager when she says: "The reality is maybe one day you will be able to do mattress recycling with AI, or at least the sorting of the materials during the process. So, our constant challenge is going to be **how do we stay knowledgeable about emerging technologies**, so we don't get blindsided by it. But also, how do we balance incorporating technology that keeps us productive and competitive but does not dilute or compromise the best working outcomes and conditions we can provide our staff who bring a lot of expertise and ideas to the deconstruction and recycling process too."

For the moment, the approach Soft Landing takes is to provide training and support to staff so they develop new skills. The Partnerships Manager explains: "We were able to upgrade to a route optimisation system in our fleet through the support of one of our philanthropic partners. Some of our staff were initially hesitant with the new system and technology, but we were fortunate to have in-house ICT staff support managers and staff to really understand how it would function and to provide on-site training and walk people through the system change. With this type of change in technology, **if you don't go with it you could be creating a gap for staff in keeping up with the industry we are supporting them to be skilled and succeed in.**"

In the context of new technologies, the approach taken by Soft Landing of focusing on appropriate training and support is consistent with the importance that the literature places on investments in education and skills development at all levels, including in schools, in TAFE, in universities and in firms. The challenges are "recruiting and retaining a new generation of manufacturing workers and providing existing workers and new recruits the requisite skills for the twenty-first century technologically advanced factory."⁴⁵

Of relevance to this report is the discussion in the literature about national level vocational education and training (VET) systems and a more localised 'micro-skills' approach.⁴⁶

On the one hand, it is widely recognised that a key ingredient for maintaining Germany's manufacturing sector has been its strong apprenticeship program that forms part of its national VET system. Thus, recommendations for investment in education and skills development frequently focus on similarly strong programs and a national level system.

However, some researchers point out that such national level systems do not have the flexibility that is needed in the current context and are not able to respond to the varying pace of technological and workplace change.

CONTINUED ON NEXT PAGE >

⁴⁴ For example, see Dachs 2018.

⁴⁵ Snell 2019, p. 254.

⁴⁶ In what follows, we draw on the recent review and study by Snell (2019).

These researchers point to the importance of a micro-skills approach involving secondary schools, training centres, employers, industry associations and unions working to devise locally appropriate training and skills development. One firm-based example from this research is the strategy used by Soft Landing to work with a Registered Training Organisation to tailor the training for their employees. On a regional level, there is the example of HunterNet Group Training Company. This not-for-profit organisation was established in 1996 in the Hunter region, and it manages the training and development program for apprentices and trainees for its member companies.⁴⁷

The findings of this research suggest that it is not an either/or approach. Rather, both approaches are important for ensuring that a diverse workforce has access to the training and skills development needed both to equip workers with the skills needed in a world of technological change and to help maintain and strengthen the manufacturing sector.

⁴⁷ <https://hunternet.com.au/about-us/>

5. More Sustainable Manufacturing

An environmentally sustainable manufacturing sector is one that has a smaller ecological footprint. It takes into account the quality and durability of the product, the resources that are drawn on in the initial production process, and what happens to the product at the end of its 'first life'.

A smaller ecological footprint is achieved when businesses attend to the environmental sustainability of what they do. These businesses see themselves as contributing long term to environmental care and repair. This is reflected in three important **commitments**:

1. Product as high quality and durable
2. Efficiency as waste reduction
3. Product circularity.

These three commitments are a move away from the familiar 'take-make-waste' model of production and consumption. The Ellen MacArthur Foundation describes this **business as usual** model in the following way: "Companies harvest and extract materials, use them to manufacture a product, and sell the product to a consumer—who then discards it when it no longer serves its purpose."⁴⁸

However, there is growing interest in moving **beyond this business as usual** approach in manufacturing towards a more circular approach. This means keeping products in use for as long as possible through activities such as repair, redeployment and refurbishment. In the circular approach, where practical, recycling is delayed for as long as possible with a product going through several lifecycles before the component materials are converted into some other form.⁴⁹ As well, products are being more carefully designed and manufactured in the first place so they are high quality and durable (and therefore need to be replaced less often). Furthermore, in the initial manufacturing process there is a focus on efficiency in the form of waste reduction.

In this research, the evidence for the three commitments is found in a range of **practices**, which are highlighted in this section.

Beyond Business as Usual A 21st Century Culture of Manufacturing in Australia

Building an environmentally sustainable manufacturing sector

Commitments

- | | | |
|---|---|-----------|
| 5.1 Product as high quality and durable | + | Practices |
| 5.2 Efficiency as waste reduction | | |
| 5.3 Product circularity | | |

⁴⁸ Ellen MacArthur Foundation 2013, p. 6.

⁴⁹ For more discussion on the circular approach see Lemille (2019) and <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>.

5.1 Product as High Quality and Durable

The manufacturers in this study are committed to designing and producing products that are high quality and durable. A staff member from A.H. Beard sums up this commitment when she says (as earlier quoted) that the aim is "to ensure that whatever we produce and whoever is sleeping on it, **it's the best possible product that we can produce** within that price point" (Education and Development Manager).

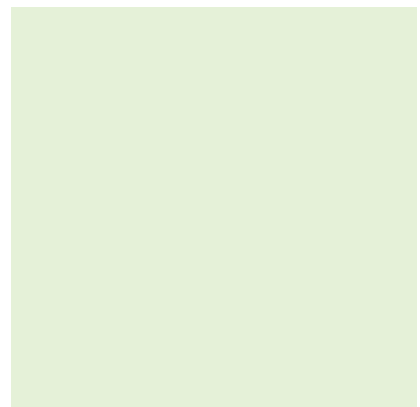
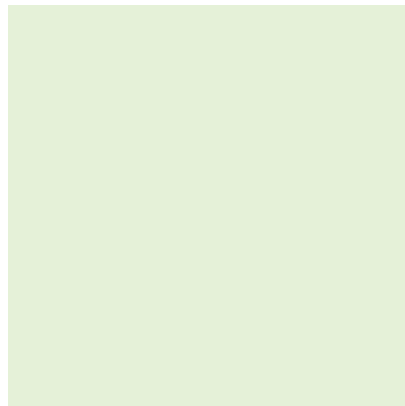
This commitment has helped some manufacturers compete with cheaper products imported from overseas as the customer is assured that they are purchasing a quality product that is 'fit for purpose' and will last. It is helping some compete on international markets and maintains the reputation that Australia has garnered overseas for producing quality products.

The commitment to high quality and durable products also has environmental benefits as these products need to be replaced less often than cheaper options, and this reduces demand on finite resources and materials.

The commitment to manufacturing high quality and durable products is reflected in the following practices.

1. **Fostering pride** in the product across the workforce.
2. Being **customer-focused**.
3. **Monitoring product use** to refine product quality and durability.

This section demonstrates these practices with a Snapshot of one manufacturer (Varley Group), and a Snapshot of an emerging trend in which manufacturers 'sell' their product as a service to customers.



SNAPSHOT: Varley Group

High-quality and durable products

As a longstanding firm, Varley Group (Varley) has been able to foster **pride in its product across the workforce**. This is the vision of the Managing Director, who says "I really want to make sure everybody has got **pride in what they do** here because if they haven't got that and if they don't really care about what they're outputting that makes a big difference in **the quality of our work**." It is a sentiment shared by staff, from the shopfloor to senior managers, as the following two quotes demonstrate: "The **quality of work** we put out, it shows that people have got some passion" (Boilermaker, Varley); "I like to build **high-quality products** ... I don't want to build rubbish (Chief Operating Officer, Varley).

One way that Varley produces quality products is by being **customer-focused**. No two product lines are identical as the engineers and other production staff work closely with the customer to ensure the final product fits the customer's needs, including their budget. For example, reflecting different customer requirements, the ambulances manufactured for the Ambulance Service of NSW look very different to the ambulances that are manufactured for export to Pakistan.

The Managing Director offers the following insight into how Varley works with customers to ensure that they are designing and producing the best quality product: "Everything we do is customised. We don't have a standard product we sell, it's all customised ... A lot of customers will come to us with the specification and saying this is what he wants and we try as much as possible to get interactive with the customer to find out why do you want this, what's this for? We then start to help them problem solve to give them what they really need and how they want the thing to work for them ... we are always trying to look at it a lot more **through the customer's lenses** as to what's his issue he's trying to overcome and solve."

Sometimes this problem-solving approach means that Varley will, for example, recommend a repair job that might cost the customer only \$15,000 rather than a \$100,000 new build (as the General Manager, Defence and Aerospace points out above in Section 3.1). This builds customer loyalty as the General Manager, Defence and Aerospace explains: "The customer is first, so we like to be honest ... it's that honesty that they appreciate, '**You're looking after me**'".

Sometimes, however, Varley's recommendation will be a more expensive option but one that more precisely matches what the customer needs. The risk is that contracts will be awarded to cheaper but lower-quality products. In the long run, however, this can end up being the more expensive option for the customer, as the Chief Operating Officer describes: "I think the government divisions tend to take the cheapest option at times, until they get bitten and then they come back and go, '**Well, it didn't really work**.'" Indeed, staff report that on occasion they have lost a tender that has been awarded to a cheaper overseas import, only to receive a contract to modify and repair that cheaper import even before its first use in Australia. This results in an overall bigger spend for the client.

Another way that Varley produces high-quality products that serve the customer is by **monitoring product use**. For example, for forty years Varley has been maintaining power stations. Over that period, the firm has collected information about the parts they maintain (such as valves) and made improvements to these parts. As a result, one of the power stations that Varley maintains set the world record for the longest period of time between outages.

More recently, Varley has been integrating electronics into its products so that it can run data analytics on how the product is used. As the Managing Director makes clear, the purpose is not be 'invasive' but to better understand the patterns of usage and to use this information to pinpoint what will best suit the customer's needs and improve the product: "**Your designs have got to get smarter**, based on having real live feedback not perceived feedback."

The strong customer focus is how Varley has maintained viability, as the Managing Director explains: "We've survived because we clearly set ourselves out on a path to get in **smart niches**, not trying to compete on large global scales ... we don't compete against the factory that's spitting out that same product ... where we've been able to survive is **we build the customer exactly what they want**."

SNAPSHOT: Product-as-a-Service

Overseas, some manufacturers are taking their commitment to high-quality products one step further. Rather than selling their products they lease them to customers. This is known as the **product-as-a-service** (PaaS) business model. The manufacturer is staking their reputation on the quality of the products, and they use data to understand how the customer uses the products and how products can be refined to suit the market. The environmental benefit is that the manufacturer is incentivised to produce durable products that will 'last the distance' and thereby need to be replaced less often.

Philips' 'pay per lux' package sells light to commercial clients (with plans to extend to households).⁵⁰ Customers only pay for the light consumed; Philips owns the lighting mechanisms and systems. This puts the onus back on Philips to manufacture high-quality and durable lighting products, while customers are encouraged to use lights as efficiently as they can to reduce the light they pay for.

The furniture manufacturer Ikea began leasing out products in February 2019, as part of its project to reduce its GHG emissions by at least 15 per cent by 2030 (compared to 2016).⁵¹ By leasing their products, Ikea is creating its own incentives to manufacture more durable products that can be repaired and reused. This is part of Ikea's overall strategy to design products that can be repurposed, repaired, reused, resold and recycled (strategies that are discussed further in Section 5.3). As well, Ikea is also considering running its own spare parts business so that customers can buy replacement components, such as hinges or screws, for furniture that Ikea no longer stocks. This range of strategies is helping Ikea to extend the life of its products and thereby reduce the amount of resources and materials that it needs to draw on to manufacture its furniture.

Even the iconic toymaker, Lego, is proposing to lease its product to customers.

This focus on quality and a closer relationship with the customer reflects a repositioning of manufacturers as more than makers. Plus, it has the environmental benefit of helping shift away from the 'throw-away' mentality to a more considered and long-term approach to products.

⁵⁰ See <https://atlasofthefuture.org/project/pay-per-lux/>.

⁵¹ Information on Ikea is sourced from Milne 2019; and <https://about.ikea.com/en/sustainability/becoming-climate-positive/what-is-climate-positive>.

5.2 Efficiency as Waste Reduction

It is now increasingly accepted that efficient businesses are those that are reducing if not eliminating waste. This makes business sense as waste is a cost to a business. It makes ecological sense as it means that the planet's finite resources are being used more carefully in the first place and that already-stressed environments are not having to absorb the waste that is produced.

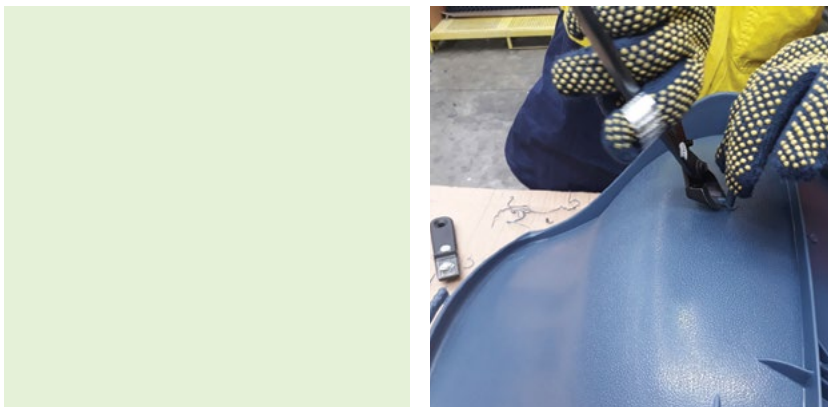
The manufacturers in this research are committed to achieving efficiency through reducing waste and they are doing this through the following crucial practice.

1. Using **Lean manufacturing principles** to streamline the use of resources and materials and thereby reduce the amount of waste produced.

The connection between 'Lean' and sustainability is emphasised by Interface's Vice President, Operations Asia Pacific as he reflects on what happens when he presents Interface's environmental agenda: "When I do presentations to other companies, manufacturers ... their first question is about, 'How much money is that costing you?' The way I always approach it is from the Lean philosophy point of view, because most manufacturers now are well accustomed to Lean. They understand that waste is the biggest thing that we have to chase out. That's where sustainability starts ... If you remove the waste, you improve your sustainability ... So sustainability is not just about using green power and using bio-based material or recycled material, it starts with making sure that you **just use what you need**." This Vice President's message that Lean manufacturing reduces the environmental impact of manufacturing is consistent with the findings of academic studies, which also conclude that 'Lean equals green'.⁵²

The idea of **only using what is needed** also features in other firms that have integrated Lean into their operations. For example, Varley Group's General Manager, Defence and Aerospace explains: "We would buy from our suppliers mostly everything in kits. For instance, one particular assembly might require three bolts, three nuts, four washers and other specific fasteners, so we'd purchase **only what's required** so we don't have to go through boxes to segregate the items needed. What's needed would already come pre-packaged to go directly to the assembly work cell."

What follows is a Snapshot showing how one manufacturer (Sebel Furniture) has incorporated Lean into its operations and what some of the effects have been. In this Snapshot the focus is on the environmental effects in terms of the use of materials and resources (including costs to the company). In Sections 4.2 and 4.3 above, the effects on worker participation and on-the-job skills development have been noted.



⁵² For example, see Chiarini 2014; Inman and Green 2018.

SNAPSHOT: Sebel Furniture

Lean manufacturing as waste reduction

Sebel Furniture (Sebel) uses what the General Manager describes as a "Lean compass." Sebel constantly reviews and questions its use of materials and resources.

This has resulted in changes such as a reduction in the number of machines and a reduction in packaging, as the General Manager notes: "Why have three machines on when you're only running one? Why have nine machines when you can manage with five?" Why have packaging on something that is not adding additional protection to the way you transport, that's going to be thrown away in two minutes at the customer end?"

Another change has been the redesign of products so there is less opportunity for waste, even wasted space during transportation. The former CEO explained: "The steel frame component that may be manufactured overseas can be shipped more efficiently to Australia. We have steel frames. We bring steel frames from overseas a lot of the time and they're inefficient by the nature of how you bring them in. So, we're working on KD [knocked-down] frames. We're working on a plastic insert into a metal frame so that it's got an adjustable leg. So, you get the frame and you can insert the legs when it's here rather than have all that space taken out when you're shipping it from overseas ... **the whole sustainability thing is in the design, but it's also in the way that you handle the product.** So, you look at, when do we assemble? Where can we assemble? ... Even in shipping and distribution. We try to think about all of those aspects in designing a product."

As part of the introduction of a Lean compass, Sebel changed the linear-style assembly line arrangement in which operators did one repetitive task and saw the product only at that one point in the process. Sebel now uses what the former Manufacturing Manager describes as a "super-cell" arrangement in which the operators for different processes are co-located and the production of the entire product happens within metres of where operators are working. This super-cell arrangement fits with the one-piece-flow that is associated with Lean manufacturing (as opposed to batch-style manufacturing which is suited to an assembly line arrangement).

One advantage of the super-cell arrangement is that it has, in the words of the former Manufacturing Manager, introduced "more accountability, ownership and pride in what they're doing". One very practical implication is the cost savings in time and materials. For example, previously it could take weeks before a mistake in one part of the production line was identified; now mistakes are picked up almost immediately. The former Manufacturing Manager explains: "You get to the end, oh wow, so you've just spent three weeks and you realise in the first operation something went wrong. The amount of rework time is phenomenal. Now with one-piece-flow **within 10 minutes you know if something has gone wrong** within the process. They go back and they'll talk to each other. They'll walk straight up to the gluer and say, 'Hey, look, this one didn't come out too well. What happened?' 'Oh yeah, sorry, okay.' So they're always adjusting a little bit and keeping the variability as low as they can."

As well, mistakes are no longer hidden away but have become **a shared issue for problem-solving** and an opportunity for continuous improvement. This occurs because the production process is more transparent, operators are more invested in the quality of both the production run and the final product, and supervisors and managers invite and welcome input from the shop-floor. It is no longer possible, as once happened, for a \$50,000 a month discrepancy in raw materials to occur because products with faults were not being reported and instead were thrown in general waste or hidden in storage bins.

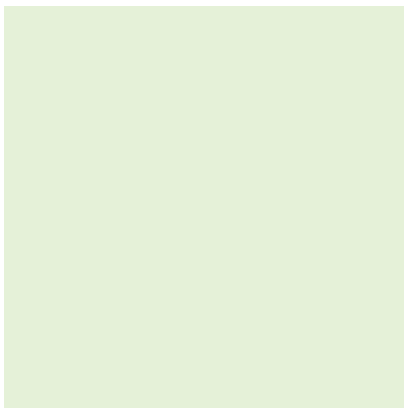
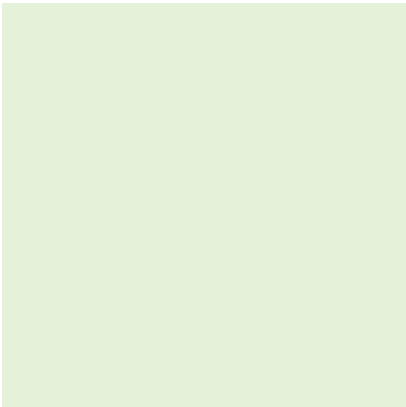
5.3 Product Circularity

The manufacturers in this study are moving towards a more circular approach to manufacturing. Designing and producing high-quality and durable products, as discussed in Section 5.1, helps to extend the initial lifecycle of a product, but there are things that can be done so a product goes through multiple lifecycles before recycling or final disposal. When multiple lifecycles are not practical or when a product reaches its final lifecycle, then there are strategies to ensure that recycling or disposal is undertaken with care.

The commitment to product circularity is reflected in the following practices.

1. **Extending** the product lifecycle.
2. **Stewardship** across the supply chain.

This section uses Snapshots of three firms (Interface, WorkVentures and The Social Outfit) to show how the product lifecycle is being extended, and it uses a Snapshot of a scheme that involves two firms (A.H. Beard and Soft Landing) to show how final recycling can be undertaken through a stewardship and supply chain approach.



SNAPSHOT: The Social Outfit

Extending the lifecycle of fashion

In recent years, the environmental impact of the fashion industry has come to light. The figures reveal just how dire the situation is. In Australia, 6 tonnes of clothing are thrown away every 10 minutes, and in the UK an item of women's clothing is worn, on average, only 7 times before it is thrown away.⁵³

There is no doubt that fashion wastes.

Consumers are starting to do their bit to make fashion more circular. Reuse of clothing items has become 'hip'. For example, for The Uniform Project™ which was initiated in 2009, Sheena Matheiken wore one dress for a whole year, but made it unique each day by accessorising with extras, mainly reused items sourced from second-hand shops.⁵⁴ Other women followed, and shared their experiences through social media to demonstrate a different approach to fashion.

Fashion manufacturers are also starting to do their bit. For example, major international clothing manufacturers and retail chains (such as Gap, H&M and Lee) have come together to devise the Jeans Redesign Guidelines that establishes minimum requirements for durability, material health, recyclability, and traceability.⁵⁵ Sixteen leading brands are following these guidelines to make jeans that will be on the market in 2021.

Through its Worn Wear program, Patagonia is introducing various initiatives to extend the life of its products. For example, in the Sydney store there is a Worn Wear® Repair Hub that offers free repairs and alterations on Patagonia clothing. Through this service broken zippers are fixed; rips and tears, mended; buttons, replaced; and so on.⁵⁶

One of the manufacturers in this study is also doing their bit. **The Social Outfit makes clothing from fabric that would otherwise be wasted.** The Social Outfit has built relationships with clothing companies in Australia's fashion industry. These companies donate excess and unused fabric to The Social Outfit. The fabric is then manufactured into high-quality and small-run designer clothing. **This clothing is designed and manufactured to last.**

Just as the amount of clothing that is thrown away is astounding, so too is the amount of fabric that is wasted before it is even manufactured into clothing. The Sewing Trainer at The Social Outfit, who once worked in the mainstream fashion industry, commented on the pattern of wastage: "There's a lot of waste in the industry ... it often gets stored in a warehouse for a really long time. You'd have to count it every six months for stocktake. You think, 'Why am I doing this ... in terms of wasted time ... wasted storage space?' I guess [the company] had such a good profit margin that that waste was absorbed anyway."

Compared to the extent of wastage in the clothing industry, what The Social Outfit is doing may seem like a drop in the ocean. The Founder and Former CEO reports that "as a conservative estimate, we would say that at least a tonne of fabric is diverted every year going into landfill ... approximately 40 to 50 per cent of the garments we make are using excess fabric that has been donated to us."

However, The Social Outfit plays an important role in demonstrating how unused fabrics can be put to good use by serving both a social and an environmental mission. The Social Outfit also reveals just how much untapped potential and good will there is in the 'rag trade' for other innovative initiatives that extend the lifecycle of materials.

⁵³ See Ragtrader 2018; Daily Mail, 2015.

⁵⁴ <http://www.theuniformproject.com/>.

⁵⁵ Ellen MacArthur Foundation 2019.

⁵⁶ See <https://www.patagonia.com.au/pages/worn-wear>.

SNAPSHOT: WorkVentures

Extending the lifecycle of electronic and IT equipment

WorkVentures was operating in the area of e-waste and using a circular approach long before these ideas became more widely adopted. In the late 1980s, WorkVentures asked a major IT firm why they were throwing away so many monitors. The response came back that they were broken. Broken, yes, but able to be repaired. The Operations Manager recalls: “It was really stupid stuff like the switches mechanically are broken. A resistor had blown. They were throwing the whole monitor and importing a whole brand-new monitor back in ... So we came up with a business proposition which was very attractive. Instead of paying for a new monitor they were paying for repair on a monitor – which is a lot less.”

This exchange laid the foundation for WorkVentures' business model.

WorkVentures works with major corporations (chiefly IBM, Telstra and Westpac) to test and **repair** IT equipment so it can be **redeployed** within the firm. Once equipment has reached the end of its corporate lifecycle, WorkVentures extends the life of equipment even further. As outlined in the Company Profile (in Section 2.2), corporate computers are donated to WorkVentures, then **refurbished** and sold at low-cost (with 6-months warranty and technical support built into the price) to non-profit organisations and low-income households.

Computers (and other electronic and IT equipment) that cannot be repaired, redeployed or refurbished are identified for **recycling and recovery**. WorkVentures and its corporate partners are well-aware of the importance of responsibly managing these processes. WorkVentures sends the equipment to one of only a handful of R2 (Responsible Recycling) accredited electronic recyclers in Australia. This recycler uses what it calls a closed loop approach, which minimises the use of downstream processors and ensures each component can be tracked and accounted for to the end of chain.

The components end up in a range of processes. Plastics, for example, are **recycled** for use in materials such as asphalt and posts. Circuit boards are exported to Singapore where a water pressure system is used to separate the metal and non-metal components so that the precious metals can be **recovered**.

From one major financial corporation, WorkVentures redeploys around 30 per cent of the computers within the corporation, refurbishes and reuses around 40 per cent, and recycles around 30 per cent. For the major corporations that WorkVentures works with, data security and responsible e-waste management are absolutely critical, and WorkVentures supports this through the sophisticated tracking system it has developed for pinpointing information about each and every piece of equipment.

The Operations Manager provides the following overview of the whole process: “A lot of the stuff that we pick up ... that's stuff that the corporations have deemed that they can't use anymore. That's a **totally different philosophy** with us because when it gets back here much of it goes out to disadvantaged, low-income families. The rest either goes back into the circle and back to those corporations as usable gear ... The stuff that unfortunately doesn't meet that criteria is deemed as a scrap ... [one corporation] every quarter will beep me up. They want to know how much stuff we picked up. They want to know where it was from. They want to know how much it weighed, how much did the recycling weigh ... What happened to all the old cables and stuff like that.”

WorkVentures could go in another direction. As the General Manager, Operations relates, “We could flog IT equipment to people that will bring a container and they will give you a heap for that container. Who knows where it ends up? Not interested.” WorkVentures and their corporate partners have high environmental standards that they are sticking to; in turn this underpins and secures the viability of the business, enabling the fulfilment of its social mission.

SNAPSHOT: Interface Extending the lifecycle of carpet tiles

Interface is a global leader when it comes to developing innovative and sustainable production processes. In Australia, Interface has developed an approach that helps to close the loop so that the materials in carpet tiles can be used time and again (rather than manufacturing carpet using new materials).

Since the mid-2000s, Interface in Australia had been taking back old Interface carpet and sending it to Interface's facility in Georgia in the US for reprocessing. However, since the introduction of new state-of-the-art technologies in 2016, Interface's facility in Minto has been able to reprocess old carpet in Australia.

Interface's Sustainability and Lean Manager explains: "I've tested equipment in Europe, Japan and the US, and we've got what we think is the best solution for our process." This involved a combination of off-the-shelf technologies and modified technologies so that Interface was able to achieve its aim of closing the loop of carpet manufacturing in Australia.

Under the ReEntry® program, old carpet is collected and taken to the Minto facility where it is checked using near-infrared technology to identify the yarn. If Nylon 6 or Nylon 66, it can be recycled into new carpet. Carpet that is made of other materials is cleaned and resold, where possible.

For the carpets that are suitable, the technology breaks the carpet down into its constituent parts, with the Nylon 6 or Nylon 66 yarn sent back to suppliers to make new yarn. The backing material is then reprocessed at an offsite facility ready for use as new carpet backing.

For Interface, the ReEntry® program allows the firm to adopt a **product stewardship** model. As the Sustainability and Lean Manager outlines, "Rather than just being about recycling, our program is really about **taking back what we put out and being accountable for it.**"

As well, the program helps to **minimise waste**. Initially, 600 tonnes of carpet has been diverted from landfill each year, and this will increase as the program expands.

The program was developed as part of Interface's Mission Zero® initiative. This gave the Australian arm of Interface the ability to find a solution that would work in the Australian context. The Managing Director, Australia and New Zealand explains: "Mission Zero® gives our leadership the mandate to find the capital that will deliver savings in the mid and longer term ... **It forces us to look beyond a quarter's results – years beyond even.** It's liberating in a way – giving us the freedom to invest in projects like this ReEntry® upgrade."

The program also helps Interface's position in the market. Again, the Managing Director, Australia and New Zealand explains: "The market is trending towards the expectation that recycling is not an aspiration but the norm. The time is coming when manufacturers will simply be unable to afford the waste of not recycling. What's more, even your recycling programs will need to be lean and efficient."

Knight Frank is one of Interface's clients that has participated in the ReEntry® program. Knight Frank engaged Interface to uplift 42,000sqm of carpet that had been in place in a commercial property in Canberra for the period of the prior tenancy (a decade). This carpet was then replaced with Interface carpet tiles that had a fifteen-year long performance warranty (a 150 per cent endurance improvement on the 10-year expectation governed by leasing requirements for major tenants).

SNAPSHOT:

Soft Landing Mattress Product Stewardship Scheme

A chance meeting in a bar in New York in the 1980s and the chance reading of an in-flight newspaper helped lay the foundation for what is now considered one of the world's leading voluntary and industry-led stewardship agreements.

A.H. Beard's Chairman and Managing Director, a fourth-generation mattress-maker, recalls the moment in New York: "I got a layover in New York going through to Chicago and ended up in a bar in New York. I was just sitting alongside this guy who had a big, fat cigar. He said, 'What do you do?' I said what I did and he said, 'Goddamn, you're the guy I want to talk to, you absolutely ruined my business.' I looked at him and I said, 'What do you do?' He said, 'I own the tips in New York. Your beds are the worst thing that can ever come into my place and you should be doing something about it.'"

The New York landfill operator was referring to the increasing number of mattresses taking up valuable landfill space; the uncanny ability of mattresses to rise to the surface of landfill sites; and the havoc that the wire and springs create when entangled with machinery. This chance meeting became "the driving force" that prompted A.H. Beard's Chairman and Managing Director to act, and he started to pursue options for recycling mattresses. Fast-forward some twenty years and several attempts to establish a recycling operation later. The Chairman and Managing Director is on a Singapore to Sydney flight and his wife hands him the *Sydney Morning Herald* with a news item about Soft Landing. The rest, as they say, is history.

A.H. Beard and Soft Landing developed a plan for what is now the Soft Landing Mattress Product Stewardship Scheme. **This scheme brings together the manufacturers of mattress inputs, the manufacturers of mattresses, the retailers and the recycler, Soft Landing.** The shared purpose is to make the recycling of mattresses a streamlined operation. This involves the manufacturers of mattresses and mattress inputs looking at their production processes so that mattresses can be more easily disassembled and their components recycled at end of life. It also involves retailers building in the collection of an old mattress as part of the process of buying a new one.

The success of the first stage of the scheme rests on two factors. First, is the willingness of firms who usually compete in the market place to instead cooperate to transform the mattress supply chain and exercise end of life care for mattresses. A prompt for this cooperation is the belief amongst members that a voluntary and industry-led scheme is more appropriately designed, delivered and funded than one that might be designed by government.

Second is Soft Landing's contribution. As a not-for-profit social enterprise with charitable status, Soft Landing plays a crucial role as the neutral and trustworthy lead agency that operates as both the hands-on recycler and the administrator of the scheme (through its parent body Community Resources Ltd). As the former National Manager describes: "We're a nice not-for-profit, we do all these great things and you can leave your guns at the door, come and sit nicely and talk about good things, social and environmental, and that's great for your company, and you can go back out there and get in the trenches and tear strips off each other."

In the circular approach, the recycling of component parts is usually seen as a last resort after the product has gone through several life cycles. However, in the case of mattresses one life cycle is usually more than enough. During their initial life cycle, mattresses become hosts of microscopic life forms and human detritus. For health and hygiene reasons, it is not practical to reuse or repurpose mattresses, but the components can be recycled.

The Soft Landing Mattress Product Stewardship Scheme shows how a product with only one life span can be responsibly recycled and serve a social mission.

MEMBERS

Supply Chain	Bekaert Deslee, Covestro, Foamco, Thermotec, Joyce
Manufacturers	A.H. Beard, Sealy, SleepMaker, Tempur
Retailers	Beds n Dreams, Bedshed, Chiropradic, Domayne, Forty Winks (Warrawong), Harvey Norman, Koala, Sherman, Sleepy's (Kotara), Snooze, Zen
Recycler	Soft Landing

6. Recommendations for Manufacturing a Liveable Future

As this report has shown, the manufacturers in this study all display commitments to a manufacturing culture **beyond business as usual**. A number of recommendations arise from the research findings for ways that future policy might strengthen and support the kind of just and sustainable manufacturing these firms champion. The recommendations bear directly on Australia's commitment to meeting the United Nations Sustainable Development Goals (SDGs).⁵⁷

The SDGs are part of *The 2030 Agenda for Sustainable Development*. The 17 goals were adopted in 2015 by all United Nations Member States, including Australia.⁵⁸

The SDGs address the relationship between economic growth, environmental protection and social inclusion. They call for action by all countries, poor, middle-income and rich, to **promote prosperity while protecting the planet**. They recognise that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

Businesses are increasingly interested in the SDGs. But a 2018 PWC report concluded that while they had "a clear appetite for embracing the SDGs" there is "a gap between companies' good intentions and their ability to embed the SDGs into actual business strategy."⁵⁹ The findings of this report on manufacturing in Australia show how this can be done.

In different ways the manufacturers in this report are already enacting a thoughtful kind of economic growth, a concern to contribute to economic justice and social inclusion, and a responsible approach to environmental protection. They show how firms can manufacture in just and sustainable ways, and contribute to achieving the SDGs. The recommendations suggested here extend practices already identified. Given the policy framing offered by the SDGs it is useful to arrange the recommendations according to specific goals.

The commitments and practices enacted by the enterprises featured in this report provide practical ways forward for meeting at least three of the 17 SDGs. Table 6.1 shows how the three main sections in this report 'map onto' goals. Obviously, there are multiple areas of overlap between the sections of this report and other SDGs; for the purpose of clarity the focus is on the three main areas of contribution.

The following subsections elaborate policy directions that arise from this research grouped according to the most relevant SDG. These policy directions are relevant to individual firms and for governments at all levels, as well as for regional clusters and for more dispersed supply chains.

⁵⁷ See <https://www.un.org/sustainabledevelopment/development-agenda/>.

⁵⁸ See <https://sdgs.org.au/>.

⁵⁹ Scott & McGill 2018, p. 7. This report analysed the published information of 729 companies from 21 territories across six broad industries. The report found that 72 per cent of companies mentioned the SDGs in their corporate or sustainability reporting, but only 50 per cent had identified priority SDGs, and only 23 per cent had meaningful KPIs and targets related to the goals.

Table 6.1: The Sustainable Development Goals and This Report

THE SDGs	This Report
 <p>Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p>	<p>Section 3: Safeguarding manufacturing in Australia</p> <p>Commitments</p> <ol style="list-style-type: none"> 1. Motivations that extend beyond profit 2. Long-term business horizons 3. Thoughtful growth
 <p>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>Section 4: Building a just manufacturing sector</p> <p>Commitments</p> <ol style="list-style-type: none"> 1. Technological change <i>and</i> decent jobs 2. Workers as valued contributors 3. Factories as sites of inclusion
 <p>Ensure sustainable consumption and production patterns</p>	<p>Section 5: Building an environmentally sustainable manufacturing sector</p> <p>Commitments</p> <ol style="list-style-type: none"> 1. Product as high quality and durable 2. Efficiency as waste reduction 3. Product circularity

6.1 Policy Directions for Safeguarding Manufacturing in Australia


This research suggests that a robust manufacturing sector in Australia will be safeguarded by a culture that goes beyond business as usual. A major finding is that this culture is informed by three commitments that are shared across a diversity of enterprise types. As discussed in Section 3, these commitments are:

1. Motivations that extend beyond profit
2. Long-term business horizons
3. Thoughtful growth.

In turn these commitments are enacted through distinctive practices, namely: the continual reinvention of what is being made and how; strategic negotiation of financing; growth that serves multiple purposes; and responding to the challenges of growth by focusing on the firm's mission and core strength.

It is these commitments and practices that enable the diverse enterprises in this research to contribute to Goal 9 of the SDGs: **Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.**

The findings of this report suggest four policy directions to help achieve Goal 9.

Safeguarding manufacturing in Australia	
	Policy Directions <ol style="list-style-type: none">1. Strengthening the connection between manufacturers and the 'ecosystems' in which they are embedded2. Increasing the diversity of finance sources for manufacturing3. Supporting succession planning and transition to maintain existing manufacturing capacity4. Increasing the profile of just and sustainable manufacturing

Policy Direction 1: Strengthening the connection between manufacturers and the 'ecosystems' in which they are embedded

A key finding of this report is that no manufacturing enterprise is an island—the manufacturers in this study do not operate alone; rather, they operate in an 'ecosystem' comprised of rich and collaborative relationships with other firms (sometimes even competing firms); with various institutions and organisations (e.g. with government agencies and with unions); with educational institutions (including schools, TAFE and universities) and with their communities (most evident in the three regionally-based co-operatives, but also evident in the approach of all the firms).

Therefore, one area for policy is to strengthen and develop place-based clusters of manufacturers to generate mutual benefit and support local economic development. Examples of such policies, include:

- Forming manufacturing clusters. One example is HunterNet Co-operative Limited, a network of 200 manufacturing, engineering and specialist service companies in the Hunter region. It has been operating since 1992. One of its benefits is that it provides smaller companies with access to activities "previously out of reach."⁶⁰ This includes training, joint marketing initiatives, joint project bids, trade missions and tendering.
- Adopting anchor institution models. In these models, the procurement spend of locally-based institutions and businesses is directed to other local businesses (including those that directly train and employ people who face barriers in the labour market). Especially important in this mix are institutions such as hospitals, universities, and local councils that are rooted in their communities and act as 'anchors'. Manufacturers can play an important role in the model through their procurement spend, through manufacturing for local needs, and through their employment approach. A small instance of this type of approach was when NSW Health reinstated Norco as the supplier of milk to North Coast health facilities (see Norco Company Profile, above). The GROW initiative, based in Geelong, provides a comprehensive Australian example of an anchor institution model.⁶¹ In the UK, the Preston model has gained much attention.⁶² This model is based on worker co-operatives supplying local institutions, such as hospitals, councils and universities. It draws on a similar approach in Cleveland Ohio, which in turn has drawn on the example of the longstanding Mondragon Corporation in the Basque region of Spain.

Policy Direction 2: Increasing the diversity of finance sources available for manufacturing

In times of crisis or rapid change, manufacturers seek capital to tide them over rough patches or to launch innovative but costly developments. These are times when firms are vulnerable to predatory financial investors who see an opportunity for asset stripping as a business option, without thought to safeguarding manufacturing. What is needed is access to patient sources of capital (especially when banks threaten liquidation). Depending on their organisational structure, the firms in this project drew on various non-bank sources of finance including internal funds, personal connections, co-operative shares, and philanthropy to secure their business purpose in the face of threat.

Current government investment in manufacturing tends to prioritise the gap between product innovation and start-up, but there is a need to consider effective forms of patient capital that manufacturers might access during times of crisis or rapid change.

Examples of policies that would help to make diverse sources of finance more readily-available for manufacturing include:

- Establishing manufacturing-focused patient capital funds, with priority for those manufacturers that have just and sustainable manufacturing at their core. This could include low interest loans for established companies with long-term commitments, or equity-based crowdfunding.
- Undertaking R&D into other forms of patient capital that could effectively support a diverse manufacturing sector.
- Investigating legislative changes to strengthen the financial base for co-operatives. In Italy worker-owned co-operatives play a major role in specialist manufacturing, especially in the Emilio Romagna region. Italian law provides a tax exemption on the internal reserves of co-operatively owned capital, and in the event of business failure these funds are deemed indivisible and are apportioned to other

⁶⁰ See <https://hunternet.com.au/about-us/>.

⁶¹ GROW (G21 Region Opportunities for Work) is a regional initiative between Give Where You Live Foundation and G21-Geelong Region Alliance, and involves local partners from across all sectors. The GROW Strategic Plan (<https://grow.g21.com.au/what-is-grow/strategic-plan>) details a long-term approach to strengthening the social and economic fabric of the region over an initial ten years. The strategy includes a local and social procurement initiative that is supporting local collaboration (<https://grow.g21.com.au/grow-strategies/social-procurement>). In the UK, this trajectory in procurement spending has been influenced by the Public Services (Social Value) Act 2012.

⁶² Sheffield 2017.

co-operatives. This effectively eliminates the temptation for co-operatives to demutualise. It also safeguards internal capital reserves so they can be fully used to facilitate growth.⁶³

Policy Direction 3: Supporting succession planning and transition to maintain existing manufacturing capacity

Another key finding is in the area of successful succession planning, with A.H. Beard providing a strong example of how succession in a family-owned business can be successfully managed (see A.H. Beard Company Profile, above). But many family businesses in the manufacturing sector are not managing succession transition as founders reach retirement age. There is a danger that existing manufacturing capacity will be lost.

Examples of policies in this area include:

- Supporting the membership-based organisation Family Business Australia, which recognises that succession is one of the greatest challenges associated with running a family business, and provides support for family businesses to plan for succession.
- Supporting family businesses transition to different enterprise ownership forms. In the area of metal fabrication two small family-based firms have taken this approach. C-Mac is a sheet metal fabricator in Western Sydney with a 50-year history that would have ended had it not been for a share buyout by employees and transition into employee ownership.⁶⁴ Earthworker Energy Manufacturing Cooperative manufactures high-quality solar hot water technology. This worker-owned co-operative grew out of a partnership with a family-owned company Everlast Hydro Systems that eventually closed in 2016. The factory relocated to Morwell in the Latrobe Valley where it is an exemplar of just transition for a coal-based resource region.⁶⁵ Key to Earthworker's future has been securing agreement with unions for an EBA Earthworker's Clause that will allow the purchase of the solar heat pump as an in-kind wage supplement.

Policy Direction 4: Increasing the profile of just and sustainable manufacturing

The manufacturing culture discussed in this report is not as visible as it could be. It is also not well understood that viable businesses can operate in ways that are also just and sustainable. The manufacturers that are featured are largely the 'quiet manufacturers' who are getting on and doing what they do without too much attention seeking.

However, making what they are doing more visible and better understood would be an important contribution to shifting to more sustainable and just ways of manufacturing and doing business (including by encouraging other manufacturers, and businesses more generally, to adopt the types of practices highlighted throughout this report).

Examples of policies that would increase the profile of manufacturing that is just and sustainable, include:

- Providing further support for programs that link schools and manufacturers in meaningful ways (such as the Commonwealth's pilot Pathways to Technology P-Tech program that Varley Group is involved in, see Section 4.3; or the year 12 project-based course that A.H Beard is involved in, see page 1).
- Adding into university-level Engineering and Business School curricula case studies of just and sustainable manufacturing in order to: i) show how technological advances need to be situated within the wider social context; and ii) how manufacturers (and firms in other sectors) can run viable operations while also being guided by motivations and commitments that are aligned with just and sustainable ways of doing business.

⁶³ CECODHAS and International Co-operative Alliance (ICA) 2012, p. 47.

⁶⁴ See <https://www.cmac.com.au/about-us/our-history>.

⁶⁵ See <https://earthworkerenergy.coop/about-us/>.

- Promoting certification programs such as the Certified B Corporations program that verifies the social and environmental performance of companies. Programs such as this increase the visibility of firms that are driven by multiple motivations and have developed practices that reflect these motivations. B Corp certified firms are promoted as “the new kind of business that balances purpose and profit.”⁶⁶

6.2 Policy Directions for Building a Just Manufacturing Sector

This research suggests that a manufacturing culture that is beyond business as usual will ensure a just manufacturing sector in Australia. A major finding is that this culture is informed by three distinctive commitments that are held to across a diversity of enterprise types. As discussed in Section 4, these are the commitments to:

1. Technological change *and* decent jobs
2. Workers as valued contributors
3. Factories as sites of inclusion.

These commitments are enacted through a raft of practices, including, for example, the introduction of technologies to reduce physical stress; transparent communication between managers and workers; inclusive recruitment supported by appropriate training and support; and apprenticeships and on-the-job skills development.

It is these commitments and practices that enable the enterprises in this research to contribute to Goal 8 of the SDGs: **Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.**

The findings of this report suggest five policy directions to help achieve Goal 8. An underpinning policy support is to secure stable industrial relations and fair labour laws.

Building a just manufacturing sector	
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>Policy Support</p> <ol style="list-style-type: none"> 1. Job progression and skills development 2. Considering the needs of part-time and casual staff 3. Transparent and regular communication between managers and workers 4. Considering the human impacts of technological change 5. Entry-level opportunities and support for people from diverse backgrounds

Policy Direction 1: Job progression and skills development

This research further affirms how manufacturing can provide secure and long-term employment for a diverse range of workers, provided they are given opportunities to develop their skills through externally accredited training (e.g. apprenticeships) and internally-developed programs (e.g. recognition of on-the-job cross-skilling, as happens in Sebel, see Section 4.3).

⁶⁶ See <https://www.bcorporation.com.au/>.

Also important are the building of links between educational providers and manufacturers so young people (and their parents) recognise the long-term career opportunities offered by the manufacturing sector in Australia (see Policy Direction 4, above).

Relevant policies include:

- Developing a micro-skills approach that provides locally appropriate training and skills development through collaboration between secondary schools, training centres, employers, industry associations and unions (with HunterNet Group Training Company being an example of such an approach, see the Snapshot in 4.3).
- Developing partnerships between TAFE and employers to provide training in emerging areas. For example, Federation TAFE in Victoria has been running a pilot Global Wind Organisation Basic Technical Training qualification course, with scholarships being funded by Tilt Renewables, which is developing the \$560 million Dundonnell Wind Farm project near Mortlake.⁶⁷ This partnership is attempting to address the massive shortage of qualified wind turbine technicians in Australia.

Policy Direction 2: Considering the needs of part-time and casual staff

Given fluctuations in production, part-time and casual work will always be, to some extent, inevitable. However, firms in this study have strategies that consider the needs of part-time and casual staff and, where possible, seek to transition these employees into full-time and permanent roles.

Examples of relevant policies include:

- Prioritising part-time and casual staff for full-time and permanent positions (as Norco does, see Section 4.2).
- Considering options for diversification and expansion so more full-time and permanent positions can be created (as OzGroup has done by investing in carton erection machinery and putting together cartons for its own use and for other firms in the area, see OzGroup Company Profile).
- Providing timely information for part-time and casual staff so they can plan ahead (as Varley Group does through their four-monthly State of the Nation meetings, see Section 4.2, and Policy Direction 3 below).

Policy Direction 3: Transparent and regular communication between managers and workers

Staff at two firms in this study (NMC and Varley Group) specifically highlighted the importance of transparent and regular face-to-face meetings between managers and workers (see Section 4.2). These meetings, during which all staff 'down tools', provide an opportunity for communication about matters that affect working conditions such as production timelines, fluctuations in demand and the changing nature of work with technological developments. They also, in the words of one worker, "stop the rumours." There is no doubt that this type of communication provides workers with a sense of security and helps to build a motivated workforce.

A relevant policy is:

- Running regular and face-to-face meetings between managers and workers at which all staff get to hear about the 'current state of play' in the business and likely trajectories.

⁶⁷ See Smith 2019.

Policy Direction 4: Considering the human impacts of technological change

Contrary to the widely-held view that technological developments such as automation will inevitably displace workers, there are ways of incorporating technologies so that opportunities open up for existing workers and for new workers. The way that firms in this study are incorporating technologies is consistent with other research which also finds that technological change can benefit workers (as discussed in the Snapshot in Section 4.1 on automation and jobs).

Examples of policies that enable this to happen include:

- Prioritising the use of new technologies to reduce the physical stress of repetitive jobs and ensure safe working conditions.
- Providing training when new technologies are introduced so that workers can keep pace with changes.
- Finding openings within the firm or with other firms in the supply chain for redeploying staff whose roles are made redundant because of technological change.
- Developing protocols for using technology in a way that increases worker participation and devolves decision-making.

Policy Direction 5: Entry-level opportunities and support for people from diverse backgrounds

In Australia, manufacturing has played an important historic role providing entry-level employment for diverse groups of people (such as new migrants in the post-war period). As this research has found, there is considerable scope to combine this role of manufacturing with the more recent development of for-purpose social enterprises, especially those that provide appropriate training and employment for people who face barriers in the labour market. These types of social enterprises play a crucial role as “vocational universities” (in the words of WorkVentures’ CEO). They especially understand how patience is a crucial element in appropriate training and employment (and this is evident in how staff from the three social enterprise in this study talk about this dimension of their work, see Section 4.3).

For social enterprises to be able to take this patient approach they need partners, and particularly customers. There are opportunities for other businesses to partner with social enterprises and to have social enterprises as their suppliers. This also allows other businesses to act on their concerns about opportunities for diverse groups.

Examples of policies that would build on the historic role of manufacturing in an inclusive Australia, and help to realise the potential of combining this with the more recent development of for-purpose social enterprises include:

- Developing commercial partnerships with for-purpose social enterprises that focus on appropriate training and employment of people who face barriers in the labour market. An example is the procurement relationship that Air New Zealand has had with Altus Enterprises since 1986. Amongst other services, Altus refurbishes and packages 20,000 headsets per day for the airline.⁶⁸ Altus also does work for manufacturers, including Marley NZ, a manufacturer of pipes and guttering.
- Designing procurement policies that acknowledge: i) the role that for-purpose social enterprises play in social and economic inclusion; and ii) the role of commercial partnerships between social enterprises and other types of enterprises that enable social enterprises to enact a patient approach to training and employment. The success of these types of procurement relationships often rests on the role of intermediary organisations (see Box 6.1).

⁶⁸ See <https://altusenterprises.co.nz/getaquote/services/>.

- Creating opportunities for recruiting people from diverse backgrounds by cultivating relationships with organisations with specialist skills in recruiting and supporting people from diverse backgrounds.
- Prioritising procurement from firms that either recruit people from diverse backgrounds or that have partnerships with social enterprises that have this focus. As discussed in Box 6.1, intermediary organisations such as Supply Nation and Social Traders play a crucial role connecting businesses and government with social enterprises that focus on employing people from diverse backgrounds.

Box 6.1: Intermediaries in Social Procurement Relationships

Intermediary organisations play a critical role in social procurement in Australia. Their verification processes provide surety and reduce risk for the purchaser, and they promote the businesses they represent.

Since its establishment in 2009, Supply Nation has enabled significant growth in procurement from Aboriginal and Torres Strait Islander owned businesses by government departments and corporate entities around Australia. Examples include a 2-year contract for Muru Office Supplies to provide stationery and other workplace supplies to KPMG; and the provision of corporate travel services for ATCO by Inspire Travel Management.⁶⁹ To facilitate these types of business relationships, Supply Nation has a unique 5-step verification process for certifying and regularly auditing its member businesses.

In 2018, the Victorian State government adopted a whole-of-government Social Procurement Strategy and Social Procurement Framework. This world-leading move recognises the significant contribution social enterprises can make to a range of policy objectives, including building a fair, inclusive and sustainable Victoria. The success of the program is supported by the role that the organisation Social Traders plays in certifying, brokering procurement relationships, and supporting the capacity and development of social enterprises.⁷⁰

6.3 Policy Directions for Building an Environmentally Sustainable Manufacturing Sector

This research suggests that a manufacturing culture that is beyond business as usual is building an environmentally sustainable manufacturing sector in Australia. It is establishing a smaller ecological footprint by taking into account the quality of what is produced, the resources that it draws on, and the waste that it generates. As discussed in Section 5, this culture is informed by distinctive commitments to:

1. Product as high quality and durable
2. Efficiency as waste reduction
3. Product circularity.

These commitments are enacted through practices, including, for example, fostering pride in the product across the workforce, being customer-focused, monitoring product use to refine product quality

⁶⁹ For more examples, see <https://supplynation.org.au/stories-of-success/>.

⁷⁰ For more information, see <https://buyingfor.vic.gov.au/social-procurement-victorian-government-approach>; <https://www.socialtraders.com.au/>.

and durability, using Lean manufacturing principles to streamline the use of resources and materials, extending the product life cycle and stewardship across the supply chain.

It is these commitments and practices that enable the enterprises in this research to contribute to Goal 12 of the SDGs: **Ensure sustainable consumption and production patterns.**

The findings of this report suggest four policy directions to help achieve Goal 12.

Building an Environmentally Sustainable Manufacturing Sector	
	Policy Directions <ol style="list-style-type: none">1. Product design, production processes and accounting to lighten the ecological footprint2. Avoiding waste3. Extending product life4. Voluntary and industry-led stewardship schemes

Policy Direction 1: Product design, production processes and accounting to lighten the ecological footprint

Addressing the use of resources and materials, and the management of waste and pollution generated during and after production means developing standards that take into account environmental impacts. The Jeans Redesign Guidelines is one example where manufacturers are cooperating to establish minimum requirements for product design and production (see Section 5.3). There are opportunities for this collaborative industry-wide approach across any number of products.

The findings of this research highlight how high-quality products that are durable and tailored to the customer's requirements are longer lasting and need to be replaced less often—thereby reducing demands on finite resources and materials and the demand for waste management (see Section 5.1). The development of guidelines and standards for product design and production processes can build on what manufacturers are already doing to produce high-quality and durable products.

The full costs associated with establishing minimum standards and producing high-quality and durable products need to be acknowledged. There is increasing awareness that the full cost of responsibly producing products and managing what happens to them at end of life is rarely acknowledged and not reflected in the price of goods. As there is more awareness of environmental impacts there is a need to develop 'full cost accounting' methods for application to all aspects of product design, manufacture and end of life management, and there is a need to develop methods to convincingly communicate this information to customers.

Examples of policies that would help to lighten the ecological footprint of manufacturing include:

- Supporting manufacturers to collaboratively develop minimum environmental standards for product design and production processes, including quality and durability.
- Designing methods to appropriately account for the full cost of manufacturing high-quality and durable products in an environmentally responsible way (and the costs of not manufacturing in this way).

- Developing procurement policies that are based on full cost accounting; that require minimum standards to be met; and that reward manufacturers whose product design and production processes exceed minimum standards.
- Engaging with customers to educate them on the benefits of durable, high-quality and environmentally responsible products, and to explain the basis of price differences.

Policy Direction 2: Avoiding waste

The research findings highlight that responsible manufacturers have two strategies in place when it comes to waste. First, manufacturers are reducing waste in the production process by incorporating Lean principles (see Section 5.2). Second, manufacturers are taking products and materials that were once considered waste and reframing them as valuable resources. The three social enterprises, in particular, have operations that are based on taking something once considered waste and turning it into an opportunity for training and employing groups who face barriers in the labour market (see the Company Profiles of Soft Landing, The Social Outfit and WorkVentures).

With China having introduced its 'National Sword' policy in January 2018 and with countries such as Indonesia increasingly concerned about how poor separation is making waste for recycling unusable, Australia is having to confront what to do with the literal mountains of materials that could be recycled. This is helping to drive innovation.

There are, however, obstacles that are impeding efforts to avoid producing waste in the first place or to turn waste into a resource. In particular, there is significant variation across Australian councils and between State-based requirements when it comes to fees and levies for waste. This has resulted in cases in which waste is trucked interstate to landfill sites where dumping is cheaper. It is worth noting that Soft Landing has been able to make inroads in those states where space in landfill sites is at a premium, and this is reflected in the costs for using these sites. When the cost of dumping exceeds the cost of recycling, then there is a strong motivation to recycle.

Examples of policies that would help to avoid waste include:

- Promoting the link between 'Lean and green', including the financial benefits (as highlighted by Interface's Vice President, Operations Asia Pacific, see Section 5.2), and encouraging manufacturers to build on their Lean operations and take additional steps to deepen their sustainability practices.
- Undertaking R&D into technologies for waste recycling, accompanied by R&D into the niche and hands-on role that social enterprises can play.
- Harmonising waste levies across states and municipalities to help drive the motivation to recycle.

Policy Direction 3: Extending product life

One of the findings of this research is that product life is being extended through strategies such as repair, refurbishment, redeployment, reuse and repurposing. In this research, the social enterprises The Social Outfit and WorkVentures, play a pivotal role in making this happen (see Section 5.3). As part of this research, interviews and visits were also conducted with KOMOSIE (Koepel van Milieuondernemers in de Sociale Economie) in Belgium. This example helped to extend the research findings, and an overview of their activities related to reuse are included below (see Box 6.2).

Examples of policies that would help to extend product life include:

- Undertaking R&D into ways that products or components of products can be reused for the original purpose or repurposed for a new use, accompanied by R&D into the niche and hands-on role that social enterprises can play.
- Developing labelling approaches that identify how products or components of products have been extended beyond their first life.
- Designing procurement policies to prioritise products which are based on an extended life of either the product in full or components of the product.

Box 6.2: KOMOSIE

KOMOSIE is a not-for-profit social enterprise based in the Flanders region of Belgium. It is a membership-based enterprise and its members are 31 reuse centres located across the region. In turn, these members own and manage 120 reuse shops that operate under the collective De Kringwinkel brand. In 2014, the network of reuse centres and shops employed over 5,000 people (and over 80 per cent were previously long-term unemployed); diverted almost 66,000 tonnes of reusable material from landfill; had over five million customers who purchased reuse items; and turned over in excess of €45 million.⁷¹ KOMOSIE deals in the reuse of household products including electrical goods, whitegoods, furniture and toys.

There are four inter-related policy 'levers' that underpin the success of the KOMOSIE network. First, each Centre has been allocated a designated and exclusive zone of operation, so they don't compete with each other for inventory. Instead, they are encouraged to share knowledge to constantly improve their operations. Second, each centre uses a bespoke accreditation system to monitor their performance against social and environmental objectives. This system is now required for reporting to the relevant (environmental and social) government departments. Third, each Local Authority is required by the Flanders government to enter into an agreement with the accredited reuse centre in its area. This encourages reuse as the centres provide services such as free pick-up of household items. Fourth, only a six per cent sales tax applies to goods sold through the De Kringwinkel shops. This is the rate for basic needs goods; whereas a twenty-one per cent rate applies to everything else.

Policy Direction 4: Voluntary and industry-led stewardship schemes

Supply chain stewardship schemes extend product responsibility. This means that manufacturers, retailers and recyclers share responsibility for reducing the negative environmental impacts of products. A voluntary and industry-led approach is important to foster cooperation and ownership across the supply chain. There are also opportunities in these schemes for social enterprises, as found in the example of the Soft Landing Mattress Product Stewardship Scheme (see Section 5.3). Here the social enterprise plays two crucial roles. First, it is the recycler that does the labour-intensive work of mattress disassembly. Second, through its parent body, Community Resources Ltd, it is the administrator of the scheme, accepted and trusted by participating firms as a neutral body.

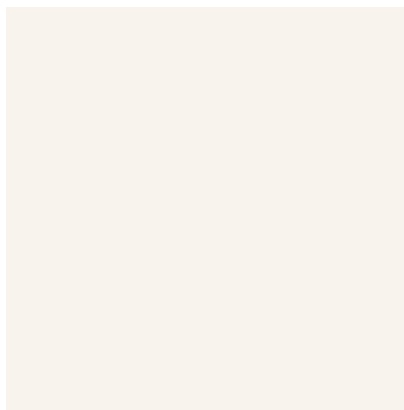
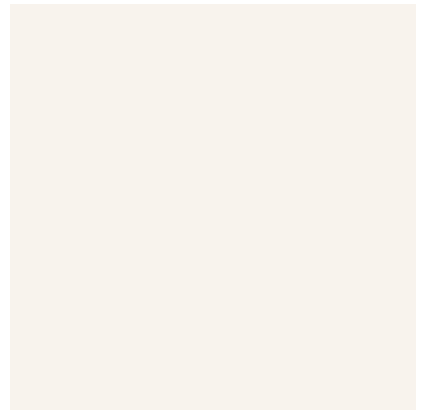
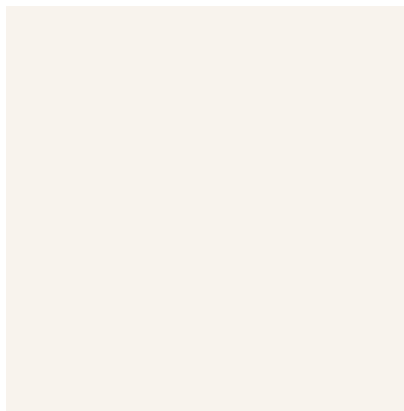
It is also important that nationally-based product stewardship schemes, which invariably add additional costs to the product, are not disadvantaged by lower-cost overseas imports in which the manufacturers take no responsibility for their product at end of life. A 2019 briefing paper on mandatory product stewardship schemes proposed an additional cost of \$14.50 to \$16.50 on a standard double sized mattress; \$3.50 to \$4.00 on a standard passenger tyre; and \$1.55 to \$1.85 per 0.75 kg of electronic equipment.⁷²

⁷¹ The information on KOMOSIE incorporates material from McNeill 2017.

⁷² Equilibrium 2019.

Examples of policies that would help to generate and support voluntary and industry-led stewardship schemes include:

- Introducing fees and levies on products (whether manufactured within Australia or imported) to cover the cost of responsible waste management at the product's end of life (including through product stewardship schemes).
- Providing incentives for voluntary and industry-led supply chain stewardship schemes, especially those that include social enterprises in the process.
- Designing procurement policies to prioritise products around which there are voluntary and industry-led stewardship schemes that promote responsible end of life care of the product.
- Incorporating new technologies to facilitate the tracking of products throughout their life cycle, including what happens at end of life (for example, building on the sophisticated techniques that WorkVentures has developed to track electronic and IT equipment. See Section 5.3).



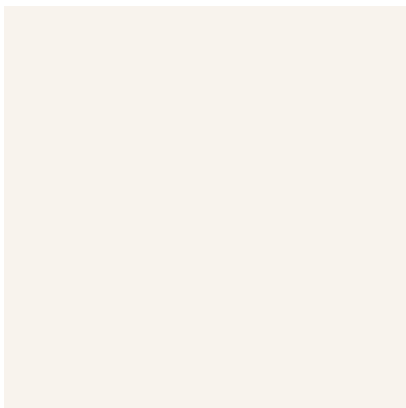
6.4 Conclusion

This report presents an appreciative account of what some of the quiet achievers of Australia's manufacturing sector are doing to ensure that there is a future for 'making' in this country. Its publication coincides with a time when business as usual has become associated with disrespect for people and environments, and confidence in business leaders is at an all-time low. In such a context, this report paints a very different picture of manufacturers with commitment, integrity, problem-solving capabilities and future orientation.

The research sought out cases where manufacturers were 'doing something interesting' with respect to major challenges that face contemporary society: 1) increasing inequality and social dislocation; and 2) climate change and environmental degradation. The findings provide evidence of a productive and responsible culture of manufacturing that goes beyond business as usual. This culture is not without its challenges and setbacks. But the manufacturers and workers who participated in this study present a vigorous, intelligent and thoughtful cadre in whose capable hands a just and sustainable future for 21st century manufacturing rests.

The research deepens understandings of manufacturing in Australia and demonstrates that shifts are taking place. Key elements of manufacturing culture are being redefined.

- Manufacturing for the 21st century involves not just making, but unmaking and remaking. It relies on close and ongoing relationships with clients as products are sold along with services such as maintenance and end of life care.
- The manufacturing enterprise is reconfigured as an entity whose licence to exist involves responsibilities to multiple stakeholders.
- In place of the lone manufacturer, there are collaborative relationships with other businesses (including competitors) that are enabling the development of new initiatives that might address social and economic justice and environmental sustainability.
- Efficiency is linked to waste reduction and increasingly waste avoidance.
- Manufacturing jobs involve educational advancement and participation in problem solving.
- Overall, there is a concern with the direction of individual businesses, but there is also a deep concern for the bigger picture, and to the contribution that manufacturing might make to the type of future envisioned by initiatives such as the Sustainable Development Goals.



References

Advanced Manufacturing Growth Centre Ltd, 2017. *Advanced Manufacturing: A New Definition for a New Era*. Sydney: Author. Online at <https://www.amgc.org.au/wp-content/uploads/2018/11/Advanced-Manufacturing-a-new-definition-for-a-new-era.pdf>.

Anderson, R.C., 2009. *Lessons from a Radical Industrialist*. London: Penguin Books.

Agyeman, J., Bullard, R., Evans, B. (Eds), 2003. *Just Sustainabilities: Development in an Unequal World*. Massachusetts, USA: MIT Press.

Australian Bureau of Statistics, 2018. *Manufacturing Industry Data Cube*. Online at <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8155.02017-18?OpenDocument>.

Australian Government, Department of Industry, 2014. *Australian Innovation System Report 2014*. Canberra: Author. Online at <https://www.industry.gov.au/data-and-publications/australian-innovation-system-report/australian-innovation-system-report-2014>.

Australian Government, Department of Industry, Innovation & Science, 2017. *Australian Innovation System Report 2017*. Canberra: Author. Online at <https://www.industry.gov.au/data-and-publications/australian-innovation-system-report/australian-innovation-system-report-2017>.

Australian Government, Department of Industry, Innovation & Science, 2019. *Australian Innovation System Monitor*. Canberra: Author. Online at <https://publications.industry.gov.au/publications/australianinnovationsystemmonitor/index.html>.

Barraket, J., Mason, C. & Blain, B., 2016. *Finding Australia's Social Enterprise Sector 2016*. Melbourne: Centre for Social Impact Swinburne. Online at https://www.csi.edu.au/media/uploads/FASES_2016_full_report_final.pdf.

Cameron, J., 2020. Framing diverse enterprise. In J.K. Gibson-Graham & K. Dombroski (Eds), *Handbook of Diverse Economies*. Cheltenham, UK: Edward Elgar.

CECODHAS and International Co-operative Alliance (ICA), 2012. *Profiles of a Movement: Cooperative Housing around the World*. Brussels: Housing Europe & International Co-operative Alliance. Online at <http://www.housingeurope.eu/resource-115/profiles-of-a-movement>.

CEDA (Committee for Economic Development of Australia), 2015. *Australia's Future Workforce?* Melbourne: Author. Online at https://www.ceda.com.au/CEDA/media/ResearchCatalogueDocuments/Research%20and%20Policy/PDF/26792-Futureworkforce_June2015.pdf.

Chiarini, A., 2014. Sustainable manufacturing-greening processes using specific Lean Production tools: An empirical observation from European motorcycle component manufacturers. *Journal of Cleaner Production*, 85, 226-233.

Christopherson, S., 2015. How does financialization affect manufacturing investment? Preliminary evidence from the US and UK. In J.R. Bryson, J. Clark & V. Vanchan (Eds) *Handbook of Manufacturing Industries in the World Economy*, pp. 42-57. Cheltenham, UK: Edward Elgar.

- Clark, C., Greer, T. & Underhill, B., 1996. *The Changing of Australian Manufacturing*, Staff Information Paper, Canberra: The Productivity Commission. Online at <https://www.pc.gov.au/research/supporting/changing-manufacturing/changman.pdf>.
- Connolly E. & Lewis, C., 2010. *Structural Change in the Australian Economy, Bulletin – September Quarter 2010*, Reserve Bank of Australia. Online at <https://www.rba.gov.au/publications/bulletin/2010/sep/1.html>.
- Dachs, B., 2018. *The Impact of New Technologies on the Labour Market and the Social Economy*, Report for the Science and Technology Options Assessment (STOA) Panel, European Union, Brussels: STOA. Online at [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU\(2018\)614539_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU(2018)614539_EN.pdf).
- Daily Mail, 2015. Women ditch clothes they've worn just seven times. *Daily Mail UK*, 10 June. Online at <https://www.dailymail.co.uk/femail/article-3117645/Women-ditch-clothes-ve-worn-just-seven-times-items-left-shelf-buyer-feels-ve-weight-ve-bought-whim.html>.
- Deakin, S., 2012. The corporation as commons: Rethinking property rights, governance and sustainability in the business enterprise. *Queen's Law Journal*, 37(2), 339-381.
- Deloitte, 2019. *Innovation in Europe: A Deloitte Survey on European Companies and How Digital Technologies can Strategically Enhance Innovation*. Deloitte Insights. Diegem, Belgium: Deloitte University. Online at https://www2.deloitte.com/content/dam/insights/us/articles/DE_897_Innovation-in-Europe/DI_Innovation-In-Europe.pdf.
- Druon, E., 2015. *Ecolonomy: Doing Business and Manufacturing Differently*. Axminster, England: Triarchy Press.
- Eltham, B., 2014. The end of Australian manufacturing? newMatilda.com, 11 February. Online at <https://newmatilda.com/2014/02/11/end-australian-manufacturing/>.
- Ellen MacArthur Foundation, 2013. *Towards the Circular Economy Vol. 1: An Economic and Business Rationale for an Accelerated Transition*. UK: The Author. Online at <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>.
- Ellen MacArthur Foundation, 2019. *The Jeans Redesign Guidelines*. UK: The Author. Online at https://www.ellenmacarthurfoundation.org/assets/downloads/The-Jeans-Redesign_Guidelines_Dec-2019.pdf.
- Equilibrium, 2019. *Australian Council of Recycling Briefing Paper: Mandatory Product Stewardship Schemes*. Online at http://www.acor.org.au/uploads/2/1/5/4/21549240/mandatory_product_stewardship_briefing_final_2019.pdf
- Frey, C.B. & Osborne, M.A., 2017. The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114, 254-280.
- Friedman, L., 2019. What is the Green New Deal? A climate proposal explained. *New York Times*, 21 February. Online at <https://www.nytimes.com/2019/02/21/climate/green-new-deal-questions-answers.html>.
- Friedman, M., 1970. The social responsibility of business is to increase its profits. *The New York Times Magazine*, 13 September. Online at <http://umich.edu/~thecore/doc/Friedman.pdf>.

Green, R. & Roos, G., 2012. *Australia's Manufacturing Future*, Discussion Paper for the Prime Minister's Manufacturing Taskforce. Online at https://www.uts.edu.au/sites/default/files/Australia%27s_Manufacturing_Future.pdf.

Healy, S., 2018. Corporate enterprise as commonwealth. *Journal of Law and Society*, 45(1), 46-63.

Inman, R.A. & Green, K.W., 2018. Lean and green combine to impact environmental and operational performance. *International Journal of Production Research*, 56(14): 4802–4018.

Interface, 2019. *Lessons for the Future: The Interface Guide to Changing your Business to Change the World*. Online at http://interfaceinc.scene7.com/is/content/InterfaceInc/Interface/Americas/WebsiteContentAssets/Documents/Sustainability%2025yr%20Report/25yr%20Report%20Booklet%20Interface_MissionZeroCel.pdf.

Ireland, J., 2019. 'We need a Green New Deal': Di Natale calls on party to develop new plan for climate and jobs. *Sydney Morning Herald*, 16 November. Online at <https://www.smh.com.au/politics/federal/we-need-a-green-new-deal-di-natale-calls-on-party-to-develop-new-plan-for-climate-and-jobs-20191115-p53auj.html>.

Kretzmann, J. & McKnight, J., 1993. *Building Communities from the Inside Out*. Illinois, US: Asset-Based Community Development Institute.

Lachenmaier, S. & Rottmann, H., 2011. Effects of innovation on employment: A dynamic panel analysis. *International Journal of Industrial Organization*, 29, 210–220.

Ladd, M., 2017. Holden closure: Australia's history of car manufacturing comes to an end. ABC News, 8 October. Online at <https://www.abc.net.au/news/2017-10-08/holden-closure-australia-history-car-manufacturing/9015562>.

Lemille, A., 2019, For a true circular economy, we must redefine waste, World Economic Forum, 15 November. Online at <https://www.weforum.org/agenda/2019/11/build-circular-economy-stop-recycling/>.

Mascarenhas, C., Sapwell, G. & Bali, M., 2018. Dairy Farmers land NSW hospitals' milk supply contract over local Norco, draws angry reaction from farmers, ABC News, 15 May. Online at <https://www.abc.net.au/news/rural/2018-05-15/norco-no-longer-supplying-hospitals-in-favour-of-os-supplier/9758830>.

Mathie, A., Cameron, J., & Gibson, K. (2017). Asset-based and citizen-led development: Using a diffracted power lens to analyze the possibilities and challenges. *Progress in Development Studies*, 17(1), 54-66.

McNeill, J. (2017). *Enabling Social Innovation Assemblages: Strengthening Public Sector Involvement*. (Unpublished Doctoral Thesis). Western Sydney University, Australia. Online at <https://researchdirect.westernsydney.edu.au/islandora/object/uws%3A41460>.

McRobert, K., Admassu, S., Fox, T. & Heath, R., 2019. *Change in the Air: Defining the Need for an Australian Agricultural Climate Change Strategy*. Research Report. Sydney: Australian Farm Institute. Online at <http://www.farminstitute.org.au/LiteratureRetrieve.aspx?ID=165255>.

Milne, R., 2019. Sweden's Ikea trials furniture leasing as it puts together new business model. *Financial Times*, 4 February. Online at <https://www.ft.com/content/da461f24-261c-11e9-8ce6-5db4543da632>.

Murphy, K., 2019. Tony Burke floats Green New Deal-style approach to Labor's climate policy. *The Guardian*, 23 May. Online at <https://www.theguardian.com/australia-news/2019/may/23/tony-burke-floats-green-new-deal-style-approach-to-labors-climate-policy>.

Norco, 2019a. Norco Annual Report, 2019. Online at <https://www.norco.com.au/annual-reports.php>.

Norco, 2019b. Media Release – Milk Price increase to support drought affected farmers. 3 October. Online at <https://www.norco.com.au/real-rural-storiesDetail.php?Media-Release---Milk-Price-increase-to-support-drought-affected-farmers-68>.

NSW Department of Industry, 2018. *NSW Advanced Manufacturing Industry Development Strategy*. Sydney: Author. Online at https://www.industry.nsw.gov.au/_data/assets/pdf_file/0007/159388/NSW-advanced-manufacturing-industry-development-strategy.pdf.

Parilla, J., Trujillo, J.L., & Berube, A., 2015. *Skills and Innovation Strategies to Strengthen US Manufacturing: Lessons from Germany*. Washington, DC: The Brookings Institution. Online at <https://www.brookings.edu/wp-content/uploads/2016/06/LessonsFromGermany.pdf>.

Picketty, T., 2014. *Capital in the Twenty-First Century*. Cambridge, USA: The Belknap Press of Harvard University Press.

Ragtrader, 2018. Every 10 minutes, 6 tonnes of clothing goes to Aussie landfills. *Ragtrader Magazine*, 19 April. Online at <https://www.ragtrader.com.au/news/every-10-minutes-6-tonnes-of-clothing-goes-to-aussie-landfills>.

Ranu, I., 2017. *Manufacturing 4.0: Cracking the Code for Western Sydney*, Western Sydney University Research Paper. Sydney: The Committee for Sydney. Online at <https://www.sydney.org.au/wp-content/uploads/2015/10/Manufacturing-4.0.pdf>.

Ryan, P. & Chau, D., 2019. Woolworths investigated after admitting it underpaid 5,700 staff up to \$300 million. ABC News, 30 October. Online at <https://www.abc.net.au/news/2019-10-30/woolworths-underpays-5700-staff-up-to-300-million-dollars/11652656>.

Scott, L. & McGill, A., 2018. *From Promises to Reality: Does Business Really Care about the SDGs? And What Needs to Happen to Turn Words into Action*. London, UK: PWC. Online at <https://www.pwc.com/gx/en/sustainability/SDG/sdg-reporting-2018.pdf>.

Sheffield, H., 2017. The Preston model: UK takes lessons in recovery from rust-belt Cleveland. *The Guardian*, 11 April. Online at <https://www.theguardian.com/cities/2017/apr/11/preston-cleveland-model-lessons-recovery-rust-belt>.

Sirkin, H., Zinser, M. & Rose, J., 2014. *The Shifting Economics of Global Manufacturing: How Cost Competitiveness is Changing Worldwide*. Boston Consulting Group. Online at <https://www.bcg.com/publications/2014/lean-manufacturing-globalization-shifting-economics-global-manufacturing.aspx>.

Smith, M. 2019. Federation TAFE and Tilt Renewables offering new scholarship for tradies to become wind turbine technicians. *The Courier*, 10 November. Online at https://www.thecourier.com.au/story/6481617/changing-winds-for-tradies-careers/?fbclid=IwAR3X2VyzqM3Gd_VTxoHtLq-AL-yhcc9IqdsIWzmmwOBL4uKStg2_tuP0o5dc.

Snell, D., 2019. Vocational education and the revitalisation of manufacturing in the United States. *Journal of Vocational Education and Training*, 71(2), 239-259.

Stanford, J. & Swann, T., 2017. *Manufacturing: A Moment of Opportunity*. Canberra: The Australia Institute, Centre for Future Work. Online at <https://www.tai.org.au/content/manufacturing-moment-opportunity>.

Steffan, W., Broadgate, W. & Deutsch, L., 2015. The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, 2(1), 81-98.

Stout, L.A., 2012. *The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, and the Public*. Oakland CA: Berrett-Koehler Publishers.

Stubbs, W. & Cocklin, C., 2008. Conceptualizing a 'Sustainability Business Model'. *Organization & Environment*, 21(2), 103-127.

Taylor, L., Chan, G. & Jabour, B., 2014. Toyota to cease manufacturing cars in Australia. *The Guardian*, 10 February 2014. Online at <https://www.theguardian.com/world/2014/feb/10/toyota-cease-manufacturing-cars-australia>.



Appendix 1: A Public Declaration

Just and Sustainable Manufacturing in Australia

A Public Declaration

December, 2018

Preamble

A new culture of manufacturing for the 21st century is currently being shaped by a group of medium-sized firms in Australia. Building on the wisdom of almost 500 years of operations combined, they are showing what the contribution of manufacturing can be to a vital, productive, inclusive and ecologically responsible society. These companies are charting a direction for how Australian manufacturing might meet two of the Sustainable Development Goals - Decent Work and Economic Growth (Goal 8), and Responsible Consumption and Production (Goal 12).ⁱ In their own quiet way, they are getting on with manufacturing a just and sustainable future.

This declaration is based on discussions between researchers and manufacturers about the findings of the Australian Research Council funded Discovery Project *Reconfiguring the Enterprise: New Cultures of Manufacturing in Australia*.ⁱⁱ The manufacturers who are signatory to this declaration are:

A.H. Beard	mattress manufacturing
Interface	modular carpet manufacturing
Norco	dairy processing
OzGroup	blueberry processing
Soft Landing	mattress recycling
Varley Group	engineering manufacturing
WorkVentures	e-waste repair, reuse and recycling

More information on these manufacturers in Appendix.

These companies provide an image of the manufacturing culture that will be capable of adapting to the challenges of the 21st century. We invite other manufacturers to endorse, and governments to support, this **Public Declaration for Just and Sustainable Manufacturing in Australia**.

Australian manufacturing at a crossroads

In post-war Australia, the manufacturing sector saw tremendous growth that improved living standards. For vast numbers of returned soldiers and post-war new arrivals manufacturing provided a first job and a way to settle into an increasingly multicultural society. The economic base of manufacturing expanded and industrial know-how deepened. As the economy grew and opened to globalization, manufacturing's share of employment has declined and yet remains significant (and ABS data from September 2018 shows that manufacturing employment over the past 12 months increased by 86,000, the largest increase in employment of any sector)ⁱⁱⁱ.

But manufacturing in Australia is at a crossroads. Many citizens have little connection to manufacturing and are willing to be persuaded that it is no longer a vital component of the Australian economy. The distribution and sharing of wealth from the 1950s to 80s has stalled and inequality is growing. At the same time there is increasing awareness of the detrimental environmental effects of industrial growth and a lack of vision for how a manufacturing sector can be part of a global solution.

Australia is among the 193 countries that endorsed the United Nation's 17 Sustainable Development Goals (SDGs),^{iv} which means that we have signed up to a vision that demands change. The SDG targets are conceived in relation to a 15-year timeline—to 2030, or roughly half a generation from now. Reaching them will require a dramatic shift in how the national economy works. From research and discussions with a small group of innovative NSW-based manufacturing firms we are convinced that there is a trajectory of change, already underway, that points the way forward. We call this a new culture of manufacturing that practices, to various degrees and in diverse ways, 'just sustainability'.

What is just and sustainable manufacturing?

The term 'just sustainability' was coined by Julian Agyeman and colleagues in 2003 to refer to forms of development that create "a better quality of life for all, now and into the future in a just and equitable manner whilst living within the limits of supporting ecosystems".^v Central to the idea of a just and sustainable manufacturing sector is the proposition that what is manufactured is not just a tangible product for sale, but a series of social, economic and ecological relationships that can make an invaluable contribution to wellbeing now and into the future. Below are some of the ways that these manufacturers are proceeding in a just and sustainable way, and demonstrating how manufacturing can be oriented to make contributions to the achievement of at least two of the SDGs: inclusive forms of growth (Goal 8) and responsible consumption and production (Goal 12).

Socially responsible manufacturing

- Providing safe and well-paid working conditions.
- Providing on-the-job training opportunities to ensure that workers' skills remain up-to-date in a changing technological environment.
- Supporting workers' personal job satisfaction, through providing rewarding work environments.
- Providing education and support for workers interested in advancing to positions with greater responsibility.
- Providing employment for workers from multiple generations of the same families.
- Providing employment pathways for those at a distance to the labour market, e.g. unskilled young people, long-term unemployed, Indigenous people, refugees and migrants, previously incarcerated persons and those living with mental health issues.
- Forming partnerships and entering into stable procurement relationships with social enterprises to develop employment pathways for those at a distance to the labour market.
- Demonstrating leadership by acting on commitments to the well-being and vitality of place-based communities, especially in regional areas.

Environmentally responsible manufacturing

- Designing products to be durable.
- Minimising waste in the production process.
- Using renewable energy sources.
- Building-in end-of-life reuse and recycling.
- Using procurement relationships up and down the supply chain to spread practices of reduction, reuse and recycling.
- Investing in technologies and skilling people for closed-loop and circular economy production systems.
- Educating clients and customers of the value of responsible production and products.

In the context of current social and ecological challenges, manufacturing is at the centre of the 'critical zone' where futures for humanity, other species and ecologies are being forged. Decisions today to manufacture in socially and environmentally responsible ways will help to build a new culture of manufacturing that will reverberate down the generations.

What is enabling just and sustainable manufacturing in Australia?

The research findings identify a number of key factors that have enabled companies to develop just and sustainable development pathways. They include:

A clear business purpose, beyond the manufacture of a tangible product, that incorporates a social and environmental mission and results in the types of responsible manufacturing practices outlined above. This purpose guides business decisions and investment strategies and provides a compass for when the inevitable and constant challenges of business-life arise.

A long-term perspective which acknowledges and honours the role and contributions of earlier generations while also keeping the prospects for future generations firmly in view. This perspective mitigates against rash and short-term decision-making while provoking a willingness to anticipate and even lead long-term investment and innovation.

Strategic capitalisation that allows for an arms-length relationship to the rent-seeking actions of corporate financiers, asset strippers and unengaged shareholders. Depending on the company structure, this is achieved by private family-based ownership and investment (e.g. A.H. Beard, Varley Group), co-operative ownership and governance (e.g. Norco), philanthropic investment (Soft Landing), reinvesting earned income in the social enterprise (WorkVentures), or engaging shareholders in ethical leadership (Interface).

Building up an “ecosystem” of mutual benefit that allows these manufacturers to have influence up and down their supply chains, including working in cooperation with others who might usually be their competitors and prioritising customer communication and education.

Strategic application of smart manufacturing approaches and technologies that allow this group of manufacturers to remain viable - including lean principles, niche production, and a strong customer focus.^{vi}

What’s needed to promote just sustainability in manufacturing?

The signatories to this document are demonstrating leadership in how manufacturing can be fashioned to meet SDGs 8 and 12. Their experiences will help establish the framework for a new culture of manufacturing in Australia that will achieve greater progress towards these goals. This Public Declaration is the first step towards articulating a vision for **other manufacturers** to follow, for **policy-makers** to support, and for **clients and customers** to endorse. A just and sustainable manufacturing future for Australia will be achieved by commitment to the following issues and contributing elements:

Issue 1: A clearly stated just and sustainable business purpose

- *Metrics that demonstrate the expanded understanding of what the manufacturing product is, i.e. all the values (beyond financial returns) that manufacturing creates.*
- *Regular tracking of the social impacts, community benefits, regional cohesion and environmental care produced by manufacturers.*
- *Promotion of a just and sustainable business purpose through the education sector, including secondary schools and business schools.*

Issue 2: A long-term perspective

- *Industry policy and a general business environment that looks to the 2030 time-frame of the SDGs and beyond.*
- *A thirty-, sixty-, and ninety-year vision of what manufacturing might be - which both sets a direction while allowing for the unexpected and disruptive.*
- *Procurement practices that support a future for high quality, durable, resource responsible Australian manufacturing.*

Issue 3: A valued and educated manufacturing workforce

- *Inclusive employment policies.*
- *Creating career pathways for staff.*
- *Balancing the cyclical need for casual workers with commitment to full time employment opportunities.*
- *Enrolling the workforce in making long term plans and achieving visions.*
- *Commitment to supporting TAFE and on-the-job training opportunities.*

Issue 4: Strategic application of technological advancements

- *Development and adoption of technological advancements in service of the full breadth of the business purpose, including its social and environmental goals.*

Issue 5: Strategic capitalisation

- *Access to patient capital and ethical investment, including the forms of long term research and development investment that government can provide.*
- *Removing disincentives that block superannuation funds investing in responsibly innovative manufacturing.*
- *Diverse ownership structures that allow for diversification of capital sources.*

Issue 6: Circular economy principles

- *Materials reduction at all stages of production.*
- *Voluntary product stewardship agreements led by independent social enterprise intermediaries.*
- *A regulatory and accounting environment that recognises the true costs of waste and dumping.*

Signatories

Garry Beard, Chairman, **A.H. Beard**

Michael Gabadou, Managing Director, **Interface**

Mark Myers, Co-operative Secretary, **Norco**

Brett Kelly, CEO, **OzGroup**

Janelle Wallace, Manager, **Soft Landing Product Stewardship Scheme**

Jeff Phillips, Managing Director, **Varley Group**

Scott Dibb, Client Relationship Manager, **WorkVentures**

Professor **Katherine Gibson**, Dr **Stephen Healy**, Dr **Joanne McNeill** – University of Western Sydney; Associate Professor **Jenny Cameron** – University of Newcastle

Appendix

- A.H. Beard, established in 1899 and one of Australia's leading mattress manufacturers with operations in Australia and New Zealand. It is mover and shaker in establishing the Soft Landing Product Stewardship Scheme that is tackling waste reduction through voluntary regulation.
- Interface, the world's largest manufacturer of modular carpet that has been on a visionary environmental journey since 1994 to have zero negative environmental impact by 2020. With this Mission Zero® goal soon to be achieved, Interface has launched an even more ambitious Climate Take Back™ campaign.
- Norco, established in 1895, is a dairy co-operative owned by more than 200 farmers that employs a workforce of nearly 800 across processing plants in Northern New South Wales and South East Queensland. Norco has used their commitment to cooperative principles to thrive in a global industry while developing a deep connection to communities in regional Australia.
- OzGroup, is a producer co-operative, based in Coffs Harbour, that processes blueberries (and other berries). It is Australia's biggest blueberry supplier producing 37 million punnets of blueberries in the 2017/2018 financial year. OzGroup contributes to the vitality of a regional community by supporting its more than 150 grower-members and employing a diverse permanent and seasonal workforce.
- Soft Landing is a “de-manufacturing” social enterprise operating throughout Australia that recovers valuable materials from the more than 1.6 million mattresses discarded each year nationally. It applies a waste to wages model that generates employment opportunities for people at a distance to the labour market. It is the principle recycling partner and was a key driver for the establishment of the Soft Landing Mattress Product Stewardship Scheme. The scheme is administered by Soft Landing's parent organisation Community Resources.
- Varley, established in 1886, is a privately-owned engineering firm based in the Hunter Valley that operates in Australia and internationally across six divisions. Its activities include building high quality bespoke vehicles critical to Australia's emergency preparedness. Varley connects with learning institutions understanding that long term viability is bound to intergenerational learning.
- WorkVentures is a social enterprise of 30 years standing involved in the repair and refurbishment of electronics and data-secure approaches to decommissioning and recycling. Work Ventures is a key supplier of these de- and re-manufacturing services to businesses operating in the financial and telecom sector. It has developed extensive training and apprenticeship programs and encourages intergenerational learning around complex problem solving.

ⁱ See <https://www.un.org/sustainabledevelopment/>; <https://dfat.gov.au/aid/topics/development-issues/2030-agenda/Pages/sustainable-development-goals.aspx>.

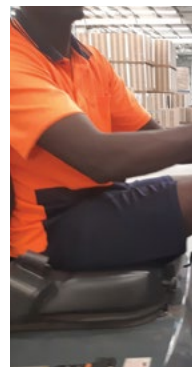
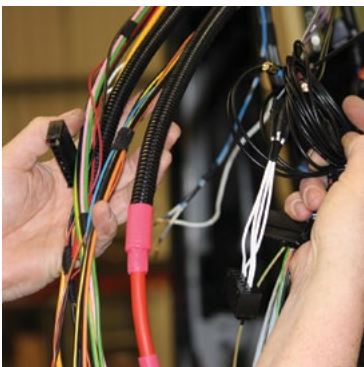
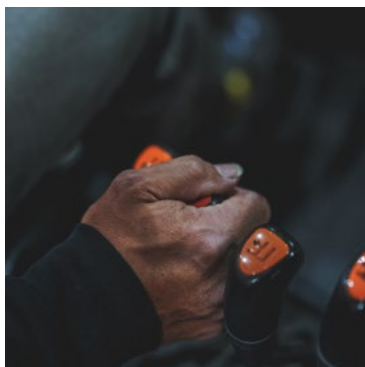
ⁱⁱ https://www.westernsydney.edu.au/ics/projects/reconfiguring_the_enterprise_shifting_manufacturing_culture_in_australia Australian Research Council Discovery Program #160101674. This declaration will be followed by a full research report in the first half of 2019.

ⁱⁱⁱ See <https://www.businessinsider.com.au/australia-unemployment-manufacturing-jobs-growth-2018-9>.

^{iv} See <https://www.un.org/sustainabledevelopment/blog/2015/09/historic-new-sustainable-development-agenda-unanimously-adopted-by-193-un-members/>

^v Agyeman, J., Bullard, R., and Evans, B., eds. 2003. *Just sustainability: Development in an Unequal World*. Cambridge, MA: MIT Press.

^{vi} These types of strategies are recognised in recent reports on manufacturing in Australia, for example: CSIRO. 2016. *Advanced manufacturing: A roadmap for unlocking future growth opportunities for Australia*. Sydney, Australia: Advanced Manufacturing Growth Centre Ltd.; 2016. Advanced Manufacturing Growth Centre Ltd. 2016 *Sector competitiveness plan 2017: Taking Australian ingenuity to the world*. Sydney, Australia: Advanced Manufacturing Growth Centre Ltd.



Design by JustGold - Australia's first full service consulting & creative agency that is a certified social enterprise.

Printed on EcoStar 100% recycle paper (FSC Certified)

Images in this report were taken by the authors or supplied by the participating enterprises; additional photo by Aler Kiv on Unsplash