



A Workforce Report and Action Plan for the Manufacturing Industry in Ipswich

June 2018



**Jobs
Queensland**



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A word from the Interim Chair

It gives me great pleasure to present the Workforce Report and Action Plan for the Manufacturing Industry in Ipswich which provides a collaborative roadmap for addressing workforce development and skills-related issues impacting Ipswich manufacturing, now and into the future.

Manufacturing has a long and proud history as a strong, prosperous driver of the local economy. Manufacturing is a key industry for the Ipswich region employing more than 16,000 people in total and is one of the largest full-time employing industries in the region.

Originating as a hub for wool and cotton production and rail manufacturing in Queensland, the industry has advanced and transitioned to be a hub for food processing, modern engineering and aerospace and defence manufacturing. The industry will continue to advance and transition, however it is expected that the pace will increase due to rapid technological advancement and globalisation increasing competition.

This increased pace of change will demand a higher skilled workforce to continue building business capability; adapt to the rapid pace of technology advancement and globalisation; and support businesses to be economically sustainable in the increased competitive environment.

One of the challenges in meeting this demand is the current skill level of the Ipswich manufacturing workforce. Whilst the majority of technicians and trades workers within the workforce are trade qualified, Ipswich manufacturing is reliant upon a largely low skilled workforce with a significant proportion of the top 20 manufacturing occupations requiring no formal qualification.

This report identifies that there are a range of existing resources and programs available to support skills development for the manufacturing industry. More targeted collaboration and information sharing between local industry stakeholders will also provide a stronger foundation for positioning manufacturing as a career of choice and building a higher skilled local manufacturing workforce.

Supporting the development of a higher skilled local manufacturing workforce is a responsibility shared by all local industry stakeholders so that Ipswich manufacturing remains economically sustainable and a key industry for the region.

On behalf of Jobs Queensland, I would like to sincerely thank all the industry stakeholders who have provided input into this project. Their participation has been instrumental in the development of this Workforce Report and Action Plan for Ipswich manufacturing and their ongoing collaboration will be instrumental to the delivery of the action plan.

Sincerely,

Peter Henneken
Interim Chair, Jobs Queensland

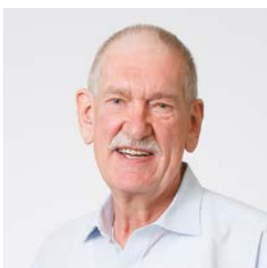




Figure 1
Manufacturing industry
in the SA4 Ipswich region

Source: Australian Government
 Department of Jobs and Small Business, custom extract.

1. Executive summary

The manufacturing industry is one of Ipswich's most important industries. It is the third largest employer in the region. While manufacturing has a long and proud history in Ipswich, it is facing both challenges and opportunities. The industry has weathered the impact of the global financial crisis and is on a growth trajectory anticipated to be fuelled by population increases and the potential of significant manufacturing contracts in the region. The Ipswich manufacturing industry needs to have an appropriately skilled workforce to be prepared for these changes and opportunities.

This project aimed to identify local solutions to maximise the long-term prosperity of the manufacturing industry in Ipswich. To achieve this, Jobs Queensland collaborated with the Ipswich City Council, the Ipswich manufacturing industry, government and other stakeholders to examine skills supply and demand for the industry in Ipswich.

The project has been delivered in two phases: Phase 1 was the development of an Environmental Scan of the Ipswich Manufacturing Industry (the E-scan). The E-scan provided an understanding of employment and training trends for the industry in the Ipswich Statistical Area 4 (SA4). A copy of the E-scan is available on the Jobs Queensland website.

This report forms Phase 2 and builds upon the E-scan with further engagement with industry locally. A series of semi-structured interviews and case studies were undertaken with a total of 20 businesses and other stakeholders. The project was guided by a Regional Advisory Group (RAG) which included representatives from the Ipswich manufacturing sector. Accordingly, this report emphasises the voice of the local industry and the challenges they envisage facing to secure a long-term skilled workforce for the region.

1.1. The Ipswich manufacturing industry

Ipswich employment value

Manufacturing is the third largest employer.

Ipswich economic value

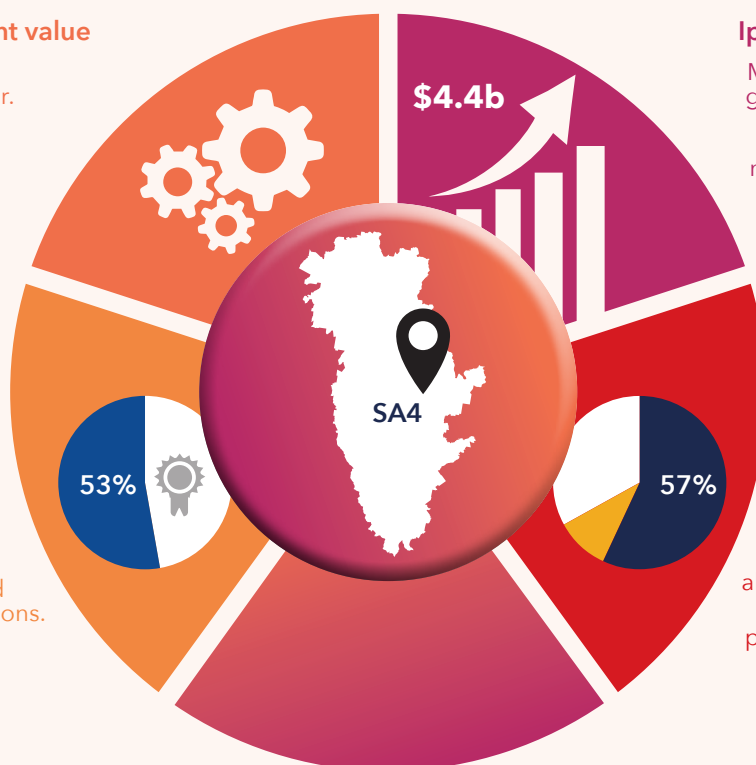
Manufacturing businesses generated export revenue of more than \$4.4 billion in 2016–17, representing more than 50% of exports from this LGA.

Manufacturing workforce: upskilling opportunities

53% of the manufacturing workforce do not hold post-school qualifications.

Manufacturing workforce: demographic challenges

The manufacturing workforce is ageing with almost 57% aged over 40. Around 10% is young people aged 15–24 years.



1.2. Key findings

There are many positive signs for the growth of the manufacturing industry in Ipswich. However, over the coming years, multiple challenges are likely to converge with the potential to create skills and labour shortages for the industry, constraining the ability for industry to grow and prosper. Despite the diverse nature of stakeholders across the manufacturing industry in Ipswich, four key themes emerged as key to building a strong manufacturing workforce into the future being:

1. building business capability
2. upskilling the current workforce
3. engaging and building the future workforce
4. industry support and networks.

Building business capability

- Technology is changing the operating environment and businesses would value support to grow their capability to remain strategically competitive. Specifically, businesses wanted information and resources to support future technological advancements.
- Businesses wanted help to prepare their processes and procedures to access new markets or supply chains. This included ensuring capability in risk management, compliance and quality assurance.
- Upskilling and building capability in leadership, management and business processes through both accredited and non-accredited training is crucial. Businesses also need to prepare the next generation of managers and leaders.

Upskilling the current workforce

- Improving the digital capability of the existing workforce was considered important to help businesses introduce technological advancements and to ensure an adaptable workforce.
- Businesses saw the existing workforce as the potential next generation of leaders and were looking to support operative level staff to develop their supervisory skills as they progressed their careers; similarly, the existing workforce was keen to upskill.
- Both businesses and employees wanted to focus on the future development of transferable and adaptable skills that can respond to changes in work environments.
- Businesses continued to be challenged between choosing accredited and non-accredited training. While businesses recognised the value in the accredited training system, non-accredited training was seen as more flexible and customisable to individual business needs.

Engaging and building the future workforce

- The industry recognised an opportunity to attract new entrants into the workforce by 'myth busting' misconceptions and positioning the industry as an attractive career option.
- Reforms and perceived inflexibility in the apprenticeship and traineeship system and concerns about businesses' ability to meet strict supervisor requirements was seen to have reduced the attractiveness of employing new apprentices and trainees.
- Greater use of existing work readiness and employability programs would help ensure new employees had an understanding of the expectations of the contemporary manufacturing workplace.
- Improving linkages between schools and industry was viewed as a further opportunity to increase exposure to the industry and attract new entrants into the workforce.

Industry support and networks

- Stakeholders were overwhelmingly supportive of continued collaboration to advance the industry, including further collaboration to prepare for the industry's skilling and workforce needs.
- General awareness of existing mechanisms and support networks was mixed and relied upon advice from colleagues.

1.3. A local action plan

There were a number of existing initiatives identified by stakeholders that could assist industry respond to the key challenges identified in this report.

Industry's identification of these challenges and subsequent priority areas suggests that these existing initiatives could be further coordinated, promoted and targeted to the specific needs of manufacturers within the Ipswich region.

Developing a long-term skilled workforce so that the industry is positioned to optimise future growth opportunities will rely on the continued collaboration and engagement between industry, government and other stakeholders that was achieved through this project. This principle underpins the Action Plan.

Ipswich Manufacturing Action Plan

The Ipswich Manufacturing Action Plan (the Action Plan) proposes the following for the manufacturing workforce in Ipswich and surrounds:

Building business capability – Actions

1. Continuing the local stakeholder focus on advancing manufacturing within the Ipswich region and offering opportunities to provide information and resources to build knowledge and capability within businesses in relation to advanced manufacturing business models, and the impacts and opportunities of Industry 4.0.
2. Coordinate, promote and support training and capability development programs and initiatives that meet local manufacturers' needs including (but not limited to):
 - market analysis and export trading
 - supply chain access and management
 - leadership and management
 - operations management, including driving innovation in planning, tracking, scheduling and quality control
 - applying change management practices
 - business planning and strategy
 - harnessing technology to drive productivity and competitiveness including data analytics.

Upskilling the current workforce – Actions

3. Drive competitiveness of the manufacturing industry in the region by supporting existing Ipswich manufacturing workers (including those who already hold a Certificate III or higher qualification) attain qualifications that underpin a systematic approach to continuous improvement (for example the Certificate III or IV in Competitive Systems and Practices) and promote the availability of this support to the manufacturing industry.
4. Coordinate, develop and support training solutions for upskilling and multiskilling of the manufacturing workforce within the region in the areas of need identified within this report. These training solutions may include a combination of accredited and non-accredited training in areas including (but not limited to):
 - automated machine operation training
 - automated machine programming training
 - injection moulding
 - management and leadership
 - multiskilling to build upon trade qualifications.
5. Build the digital capability of the manufacturing workforce in the region through making available targeted and tailored support for digital capability development within businesses to support the successful introduction of technology.
6. Implement targeted strategies to increase apprenticeship opportunities in the manufacturing industry in the Ipswich region. This may include promotion of existing support, resources and incentives available to manufacturing businesses to take on an apprentice or trainee, as well as promotion of group training arrangements for those employers who are unable to provide the full scope of training for apprentices and trainees, and utilise the existing flexibility available within the apprenticeship and traineeship system.

Engaging and building the future workforce – Actions

7. Actively promote Ipswich as a hub for a highly skilled manufacturing workforce and the diverse range of career opportunities available within the manufacturing industry in a manner that targets both potential employees and the community more broadly.
8. Through the suite of existing programs and initiatives, implement a regionalised strategy that places priority on providing structured pathways into the manufacturing industry that prepare participants for manufacturing careers, including through programs such as Skilling Queenslanders for Work and VET in Schools.
9. Hold an event to connect schools and other relevant organisations in the region with manufacturing employers and:
 - promote the outcomes of this project and the opportunities within the manufacturing industry
 - develop mechanisms for ongoing communication and engagement between industry and schools to support pathways into the industry
 - drive greater opportunities for site visits, work experience and work placements for students to see and experience manufacturing workplaces.
10. Develop and/or promote a career tool that lays out the pathways into a range of manufacturing sectors and promote to schools, industry and other relevant stakeholders within the region.
11. Develop and implement strategies to connect existing local programs providing jobseekers and young people with work readiness skills, exposure to using tools and mechanical skills with manufacturing businesses.

Industry support and networks – Actions

12. Establish and maintain a regional manufacturing industry network (or expand an existing one) to enable coordination and promotion of responses to workforce challenges; coordination of training demand; and information on programs and resources to strengthen the systems and capabilities of manufacturing businesses in the Ipswich region.
13. Establishing a regional leadership group as a governance mechanism to drive the collaboration, cooperation and collective action required to address the priority areas.
14. Establish and maintain a cross-agency network for government and other relevant stakeholders to coordinate engagement with, and information provision to, the manufacturing industry in the Ipswich region, to identify workforce needs and promote joined up responses to identified areas of priority, including through:
 - establishing and promoting a clear communication channel that manufacturers in the region can access to obtain information about matters relevant to skills and capability development
 - promoting the suite of government support and programs available for manufacturers within the region and the skills and capability development initiatives that result from this report.



2. About this Workforce Report and Action Plan

2.1 Project background

Jobs Queensland was established in January 2016 to provide independent strategic advice to Government on future skills requirements, workforce planning and development issues, and the apprenticeship and traineeship system in Queensland.

In 2017, Jobs Queensland undertook statewide consultations to develop the Advancing Manufacturing Strategy which supports Advancing Queensland's Advanced Manufacturing 10-Year Roadmap.¹ As the third largest manufacturing employing region in Queensland², Ipswich was identified as a significant contributor to Queensland's economy.³

Jobs Queensland collaborated with Ipswich City Council to develop a place-based project to support skills and employment growth in the Ipswich SA4.⁴ Jobs Queensland has engaged with the manufacturing industry and other relevant stakeholders in the region to develop a strategy that strengthens the relationship between the supply and demand for skills and labour.

Manufacturing was the third largest employer in the Ipswich region, representing 10.3 per cent of the region's total industry employment.⁵ This proportion was significantly higher than the Queensland-wide manufacturing employment proportion of 7.1 per cent.⁶ The manufacturing industry was identified by Ipswich City Council as one of their five economic priority industries.⁷ It is essential therefore, that the appropriate skills and training are provided to optimise future growth in the manufacturing industry in Ipswich.

This project was undertaken in two phases. Phase 1 was completed in late 2017 and involved:

- the establishment of a Regional Advisory Group
- industry engagement to support the statewide Advancing Manufacturing Skills project
- analysis of skills and workforce supply and demand
- development of the E-scan - to understand the current employment and training trends in manufacturing-related industries in the Ipswich SA4 region.

1 Department of State Development, Manufacturing, Infrastructure and Planning, 2016, Queensland Advanced Manufacturing 10-Year Roadmap and Action Plan, <https://www.statedevelopment.qld.gov.au/resources/plan/advanced-manufacturing/advanced-manufacturing-roadmap.pdf>.

2 Australian Bureau of Statistics, Labour Force Survey, four quarters average, Industry employment by Ipswich SA4, August 2017.

3 Australian Bureau of Statistics, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Feb 2018, RQ1, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6291.0.55.003Feb%202018?OpenDocument>.

4 For this project the Ipswich region is defined as the Ipswich SA4 region - see page 13 for further information.

5 Australian Bureau of Statistics, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Feb 2018, RQ1, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6291.0.55.003Feb%202018?OpenDocument>.

6 Ibid.

7 Ipswich City Council, Economic Development Plan for Ipswich City 2009 - 2031 Executive Summary, https://www.ipswich.qld.gov.au/__data/assets/pdf_file/0009/10224/Economic20Development20Plan202009-203120Executive20Summary.pdf.

Phase 2 of the project involved further engagement with industry and other stakeholders to build upon the findings in the E-scan and develop a regional workforce report and action plan for the manufacturing industry within the Ipswich region that:

- provides analysis of the current and future skills and labour demand and supply in the manufacturing industry
- provides analysis of the workforce skills and capabilities required to underpin a strong, competitive and growing manufacturing industry within the region now and into the future
- contains a range of recommended areas of action for Government, industry and/or other relevant stakeholders in the region to address identified current and future workforce issues.

2.2 Purpose of the Workforce Report and Action Plan

A total of 14 action areas have been identified to assist in positioning the Ipswich manufacturing industry with a highly skilled workforce into the future.

Similar to the Advancing Manufacturing Strategy, no single stakeholder can solely implement or drive the range of actions identified through this project. A key theme was the importance of partnerships and collaboration for driving successful outcomes for the industry. An ongoing collaboration and partnership between all parties with an interest in building on the existing strengths of the manufacturing industry in Ipswich is essential.

2.3 Engagement process

A Regional Advisory Group (RAG), comprising key local industry stakeholders, was established to inform and guide the project. This ensured expert advice on industry, regional and broader community needs and issues were captured. This group played an important role in shaping this report and action plan items.

The RAG comprised:

- Apprenticeships Queensland
- Australian Manufacturing Workers Union
- Capral Aluminium
- Greater Springfield Chamber of Commerce
- JBS Australia
- Ipswich City Chamber of Commerce
- Office of Economic Development, Ipswich City Council
- Nettco - The Netting Company
- QMI Solutions
- Regional Development Australia – Ipswich and West Moreton region
- WesTEC Trade Training Centre.

More than 20 manufacturing businesses as well as other relevant industry and regional stakeholders participated in face-to-face interviews to underpin the development of this report.

During 2017 Jobs Queensland undertook an extensive engagement process as part of the Advancing Manufacturing Skills project. Engagement for this project included stakeholder forums throughout Queensland (including in Ipswich), and stakeholder interviews and surveys of employers and employees in the manufacturing industry. Findings from this engagement activity relevant to the Ipswich region informed this report and action plan.

2.4 Coverage

The definition of manufacturing was drawn from the Australian and New Zealand Standard Industry Classification (ANZSIC). Under this classification system, the manufacturing industry (Division C) comprises the following sub-sectors:

- Food, Beverage and Tobacco Manufacturing
- Textile, Clothing, Footwear and Leather Manufacturing
- Wood and Paper Product Manufacturing
- Printing, Publishing and Recorded Media
- Petroleum, Coal, Chemical and Associated Product Manufacturing
- Non-Metallic Mineral Product Manufacturing
- Metal Product Manufacturing
- Machinery and Equipment Manufacturing
- Other Manufacturing.

For this project, the Ipswich SA4, as defined by the Australian Statistical Geography Standard (ASGS), was used, shown in Figure 1 on page 4. As well as encompassing the entire Ipswich City Council Local Government Area (LGA), this definition provided for the inclusion of surrounding localities including parts of the Scenic Rim LGA, Lockyer Valley LGA, Brisbane LGA and Somerset LGA.⁸ Where data was unavailable for the SA4, this has been indicated. Data and analysis in this report may not align with the Jobs Queensland Ipswich E-scan as the report has been updated to reflect new releases.

8 Australian Bureau of Statistics, 2018, Data by region, <http://stat.abs.gov.au/itt/r.jsp?databyregion#/>.



Woolen Mills



Railways

3. Ipswich manufacturing profile

3.1 A long and proud manufacturing history

The Ipswich and surrounding region has a long and proud manufacturing history. The discovery of coal in 1843 led to the growth of the rail industry and in 1864 the first railway workshops in Queensland were established in North Ipswich.

Ipswich was also a major transport hub for agricultural products from the Darling Downs, Scenic Rim and Lockyer Valley. The processing of wool and cotton saw the area become a manufacturing hub with the Ipswich Cotton Company established in 1861 and the Queensland Woollen Mill at North Ipswich opened in 1875.⁹

Manufacturing continued to grow in Ipswich and by 1932 it was estimated that there were 182 factories operating in Ipswich employing more than 2000 people.¹⁰

Ipswich was also home to the first decentralised factory for the boot industry in 1944 allowing the region to become a leading region for progressive manufacturing practices. The availability of suitable labour in the Ipswich region was a key factor in the decision to base this factory in Ipswich.

In the Scenic Rim and Lockyer Valley, timber milling was a significant industry. Butter, milk and cheese factories were spread across the regions with two meat processing plants established near Beaudesert in the 1950s providing much-needed local employment.¹¹ A number of cotton ginneries operated across the regions. The surrounding regions of the Lockyer Valley and the Scenic Rim built upon their long agricultural history with advancements in 'value add' food processing in recent decades which helped position the whole region as a strong food processing sector.^{12 13}

By 1961 manufacturing, not mining, was Ipswich's dominant employer.¹⁴ For decades the North Ipswich railway workshops site was the centre of rail construction, maintenance and technology for Queensland's burgeoning rail industry. During its peak in World War II, more than 3000 people worked on site, making it the State's largest employer at that time.¹⁵

The decommissioning of the North Ipswich railway workshops – used to service coal trains – in the early 1990s impacted on employment in manufacturing. During the late 1990s, manufacturing, which had bolstered employment as mining dwindled, declined from more than 25 per cent of total employment. By 2000, less than 300 people were employed in mining due to mine closures (although this has fluctuated with just under 400 people employed in mining in 2016–17).¹⁶

9 Centre for the Government of Queensland 2018, *Ipswich Places*, <http://queenslandplaces.com.au/ipswich>.

10 Ibid.

11 Scenic Rim, 2018, *Scenic Rim History*, <https://www.visitscenicrim.com.au/about-us/our-history/>.

12 The Stafford Group, 2013, *Regional Food Sector Strategy*, <http://www.lockyervalley.qld.gov.au/our-region/economic-and-regional-development/Documents/Economic%20and%20Development/lockyer%20valley%20regional%20food%20sector%20strategy%20final.pdf>.

13 Trade and Investment Queensland, 2016, *Lockyer Valley regional profile – The salad bowl of Australia*, <https://www.tiq.qld.gov.au/download/business-interest/about-queensland/qld-regional-market-profiles/Market-Profile-Lockyer-Valley.pdf>.

14 Centre for the Government of Queensland, 2018, *Ipswich*, <http://queenslandplaces.com.au/ipswich>.

15 Ibid.

16 City of Ipswich, 2018, *Time series industry sector analysis*, <https://economy.id.com.au/ipswich/industry-sector-analysis-series?IndkeyNieir=23100>.

In the early 2000s, employment in manufacturing increased at a strong rate, and at a stronger rate than for Queensland. However, the Global Financial Crisis (GFC) in 2007–08 caused employment to decline annually until it rebounded in 2015–16. The GFC required Ipswich manufacturing businesses to reassess their capability to remain economically sustainable in the increasingly competitive market. Some businesses developed different models of operation to remain competitive such as:

- producing specialised products for a higher value market
- undertaking higher value tasks in Australia and manufacturing lower cost components overseas
- investing in technology to reduce costs and boost productivity.

3.2 Ipswich manufacturing today

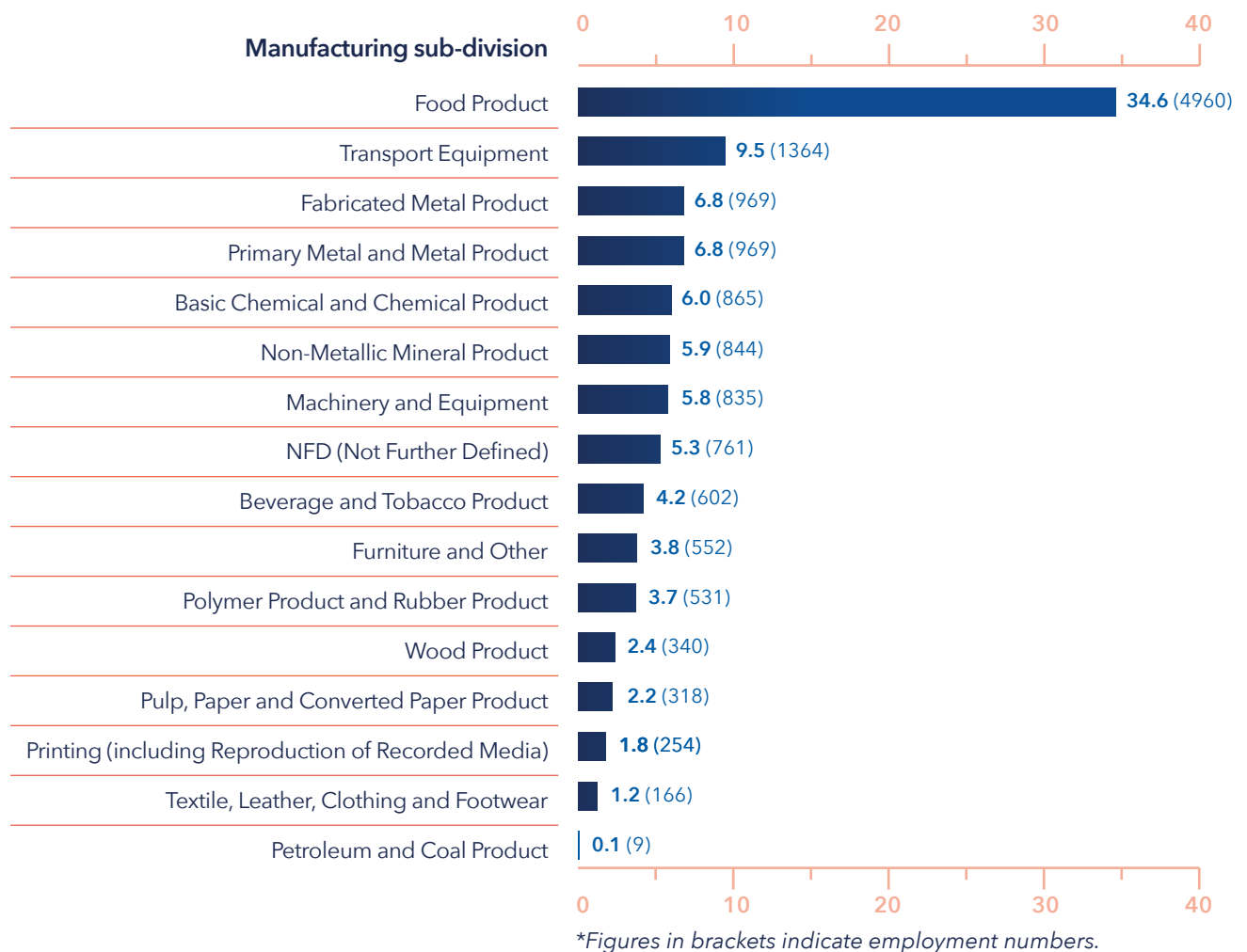
Today, the Ipswich region has a thriving modern manufacturing industry that provides a significant contribution to the Queensland economy. Manufacturing businesses in the Ipswich LGA alone generated export revenue of more than \$4.4 billion in 2016–17, representing more than 50 per cent of exports from this LGA.¹⁷ The globally connected nature of the industry represents a significant strength for the region.

While historically the region has been a hub for rail manufacturing, the industry is diversifying with a growing food manufacturing zone; a modern engineering sector; and a growing centre for aerospace and defence manufacturing. As shown in Figure 2 on page 17, in 2016, food product manufacturing provided 34.6 per cent of all manufacturing industry employment in the Ipswich region, followed by transport equipment manufacturing (9.5 per cent), fabricated metal product manufacturing (6.8 per cent) and primary metal manufacturing (6.8 per cent).¹⁸

¹⁷ City of Ipswich, 2018, *City of Ipswich - Exports*, <https://economy.id.com.au/ipswich/exports-by-industry?IndkeyNieir=23200>.

¹⁸ Australian Bureau of Statistics, 2016 *Census of Population and Housing, Place of Work*.

Figure 2
Share of employment by manufacturing sub-division %, Ipswich SA4, 2016



Source: Australian Bureau of Statistics, 2016 Census of Population and Housing, Place of Work.

In 2016, there were 998 registered manufacturing businesses in the Ipswich region, which was 5.7 per cent of the region's registered businesses.¹⁹ The major centres within the Ipswich region for manufacturing were located on the eastern side of the city (Carole Park, Darra–Sumner, Wacol and Inala–Richlands) close to where the main transport routes (Ipswich–Logan–Gateway and Centenary Motorways) converge.

Outside of the main city hub, regional areas such as Boonah and the Lockyer Valley East, Lowood and Rosewood reflected the close links Ipswich manufacturing had with the agriculture industry.²⁰

19 Australian Bureau of Statistics, 8165.0, *Counts of Australian Businesses, including Entries and Exits*, June 2017.

20 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

While the region was home to branches of a number of national and global manufacturing brands, the majority of manufacturing businesses in Ipswich (91 per cent) were small businesses (employing less than 20 employees, as shown in Table 1). Whilst the reasons for this are varied, small manufacturing businesses consulted by Jobs Queensland reported a focus on working within their business as opposed to working on their business, which had an impact on the capacity and capability of the business to expand. Finding time to attend industry briefings, access business capability training and manage human resources often stretches already time-poor employers and business owners.²¹

The size composition of businesses within the region was consistent with the statewide profile; however, Ipswich had a larger proportion of medium sized businesses (those employing 20–199 employees).²²

Table 1
Manufacturing businesses by employment size, Ipswich SA4 and Queensland, 2017

Business by employment size	Ipswich	Queensland
Non-employing	471	7,421
Share of manufacturing businesses (%)	47.2	45.3
1–19 employees	436	7,833
Share of manufacturing businesses (%)	43.7	47.8
20–199 employees	88	1,040
Share of manufacturing businesses (%)	8.8	6.3
200+ employees	3	84
Share of manufacturing businesses (%)	0.3	0.5
Total number of businesses	998	16,378

Source: ABS 8165.0, *Counts of Australian Businesses, including Entries and Exits, June 2017*.

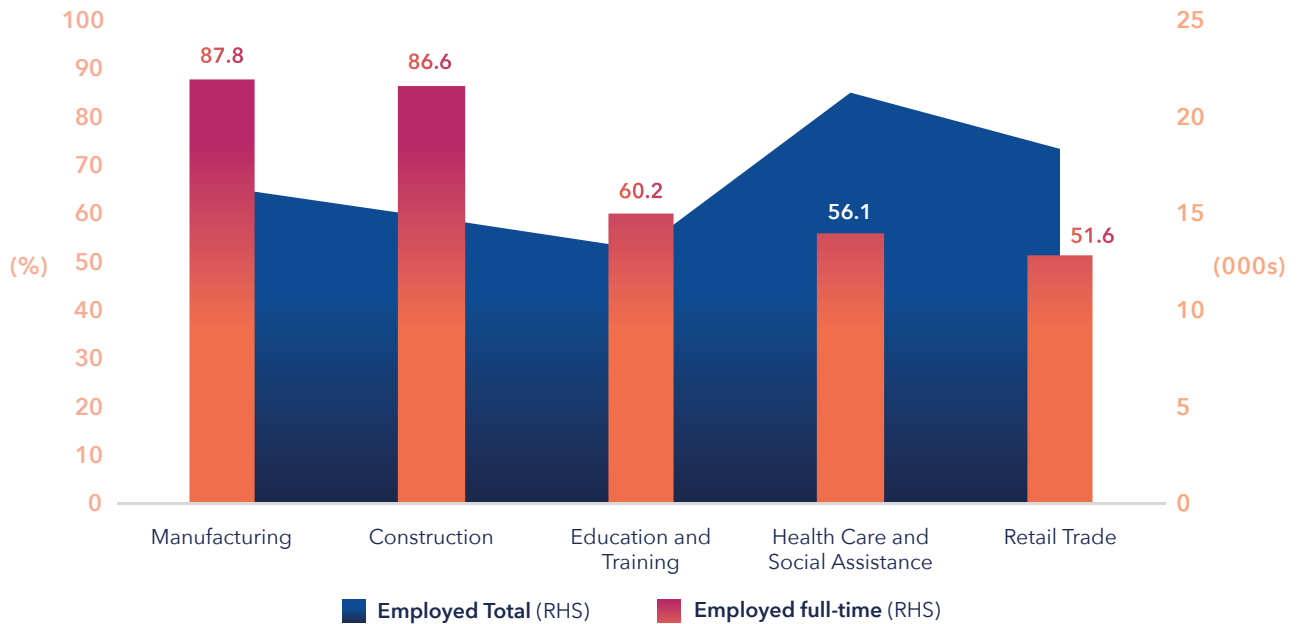
The Ipswich manufacturing industry was dominated by businesses offering business-to-business (B2B) services, with many having transitioned from primarily providing business-to-customer services. A sizeable proportion of businesses in the region were already engaged in global supply chains and a range of future supply chain opportunities were also evolving for businesses within the industry. These included (but were not limited to), the Queens Wharf development in Brisbane Central Business District (CBD), the Cross River Rail and the Defence Industry (including Rheinmetall).

The manufacturing industry in Ipswich was the region's third largest employer, and of the region's five largest industries, accounted for the highest proportion of full-time employment – see Figure 3. Overall, the manufacturing industry was an important employer not only for the region but also for Queensland, with Ipswich accounting for 11 per cent of the state's manufacturing employment.

21 Jobs Queensland 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

22 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

Figure 3
Proportion of full-time employment (%) in five largest industries, Ipswich SA4



Source: Australian Bureau of Statistics, Labour Force Survey, four quarter average, March 2018.

3.3 Ipswich manufacturing workforce profile

More than 40 per cent of the manufacturing workforce (around 5800 people) live outside of the Ipswich SA4 and commute into the region for work (compared to around 32 per cent of workers who were commuting out of the region to work in manufacturing businesses in other parts of South East Queensland).²³

While food product manufacturing was the largest employing sector in Ipswich, some of Ipswich’s smaller employing sectors (such as pulp paper and converted paper manufacturing and beverage and tobacco manufacturing) were significant in terms of those sectors to Queensland’s manufacturing industry, with Ipswich accounting for more than one fifth of the state’s employment in each of these sectors.²⁴

²³ Australian Bureau of Statistics, 2016 Census - Place of Work vs Place of Usual Residence analysis.

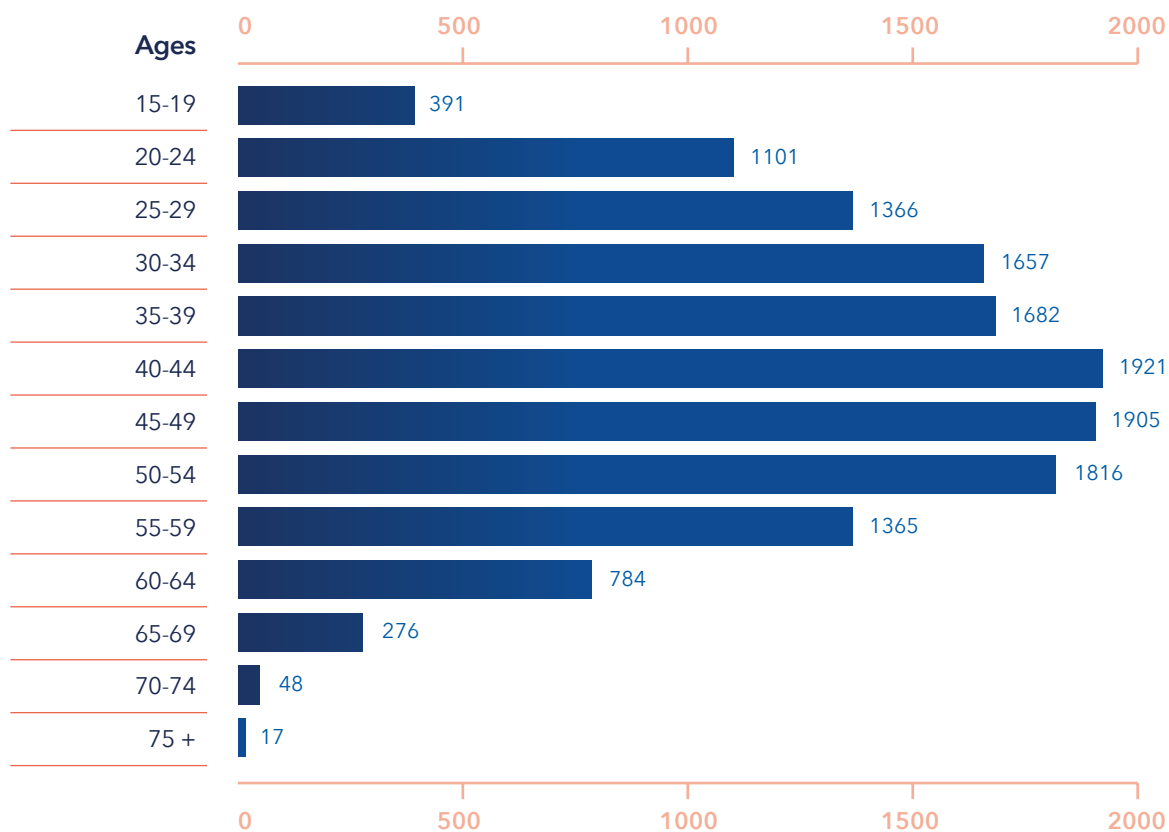
²⁴ Ibid, 2016 Census of Population and Housing, Place of Work.

Workforce diversity

Men dominated employment in the Ipswich manufacturing industry, accounting for nearly 75 per cent of employees across most age groups. Women were under-represented in the Ipswich manufacturing industry. However, in some sectors women dominated. For example, in cake and pastry manufacturing (factory-based), textile, clothing and footwear manufacturing, and computer and electronic equipment manufacturing, the entire workforce was female.²⁵

The workforce is ageing and a significant proportion of the current workforce is nearing retirement age, with almost 57 per cent of the regional workforce aged over 40 – see Figure 4. Attracting a younger cohort and reskilling the existing workforce to support industry growth were two of the recurrent themes that arose during this project. Young people (15–24 years) only account for around 10 per cent of the workforce, compared to almost 13 per cent in the manufacturing industry Queensland-wide. The pattern of an ageing workforce is common across most sectors – only the meat processing (53.1 per cent) and bread manufacturing (factory-based) (52.1 per cent) have a workforce that is predominately under 40 years of age.²⁶ The physical nature of the work and retention challenges could account for the younger workforce in these sectors.

Figure 4
Age of people in manufacturing, Ipswich SA4, 2016



Source: Australian Bureau of Statistics, 2016 Census of Population and Housing, Place of Work.

25 Australian Bureau of Statistics, 2016 Census of Population and Housing, Employed Persons, Place of Work.

26 Ibid, 2016 Census of Population and Housing, Place of Work.

Education and training

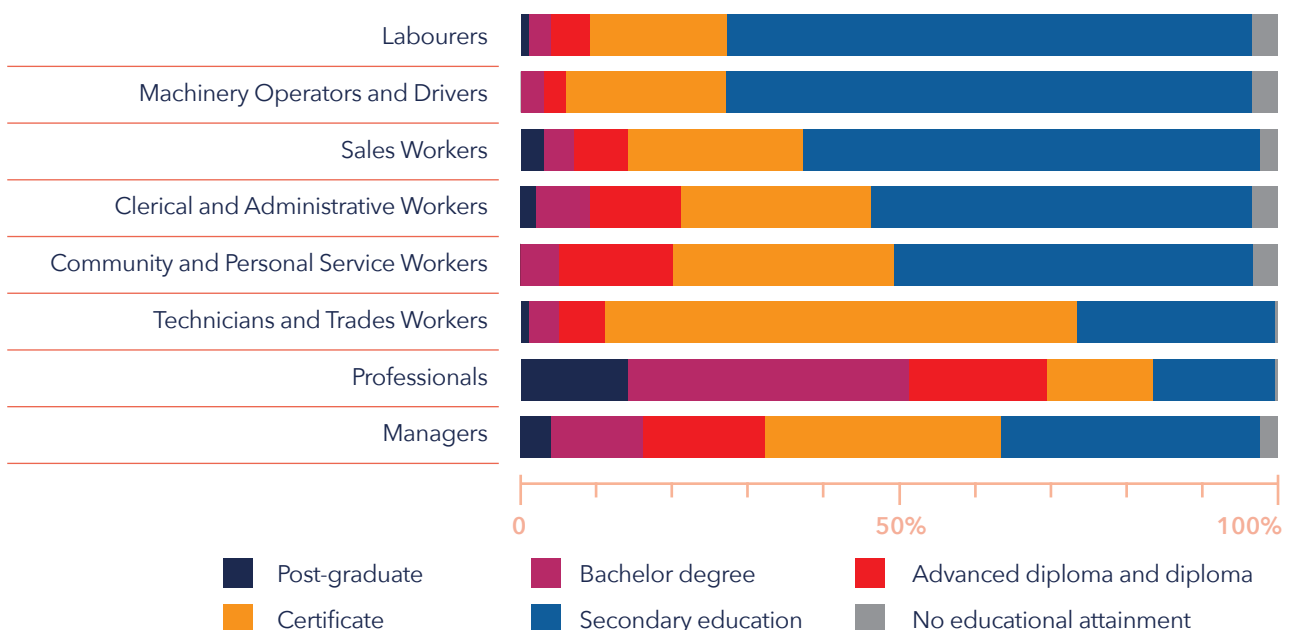
The level of education attainment varied greatly between different occupational groups within the Ipswich manufacturing workforce. The majority of employees in managerial, professional and technician/trade occupations held post-school qualifications, with technicians and trades workers most likely to hold Certificate III and IV qualifications, and managers and professionals most likely to hold higher level and tertiary qualifications. A significant proportion of the workforce did not have any post-school qualifications (48.6 per cent), which is concentrated significantly amongst labourers, machinery operators and drivers, and sales workers – see Figure 5.

In 2016, almost one in three people employed in the Ipswich manufacturing industry were employed as labourers (28.9 per cent). Almost 72 per cent of the labouring workforce had no post-school qualification. Technicians and trades workers were the next largest component of the workforce, making up almost 21 per cent. As would be expected, most hold post-school qualifications at the certificate level (63 per cent). Interestingly, 25 per cent of this workforce had only completed secondary level schooling.²⁷ There may be a number of reasons for this including not needing a post-school qualification to enter the occupation at time of employment.

Machinery operators and drivers were the third largest occupation (15 per cent). The highest level of education for this group was secondary education (72 per cent). This group also offered manufacturing employers an untapped pool of skilled labour with a further 20 per cent having completed a certificate.

The fourth largest occupational group was managers (14 per cent). More than half of this group either had no post-school qualification (30 per cent) or only held a certificate (25 per cent). This was reflective of the journey many manufacturing managers have made from the shop floor to management roles. Less than 20 per cent held a bachelor level qualification.²⁸ Throughout its consultations, Jobs Queensland heard about the need to provide manufacturing managers and owners with opportunities to develop business skills and management capabilities.

Figure 5
Occupation by level of education, Ipswich SA4, 2016



Source: Australian Bureau of Statistics, 2016 Census of Population and Housing.

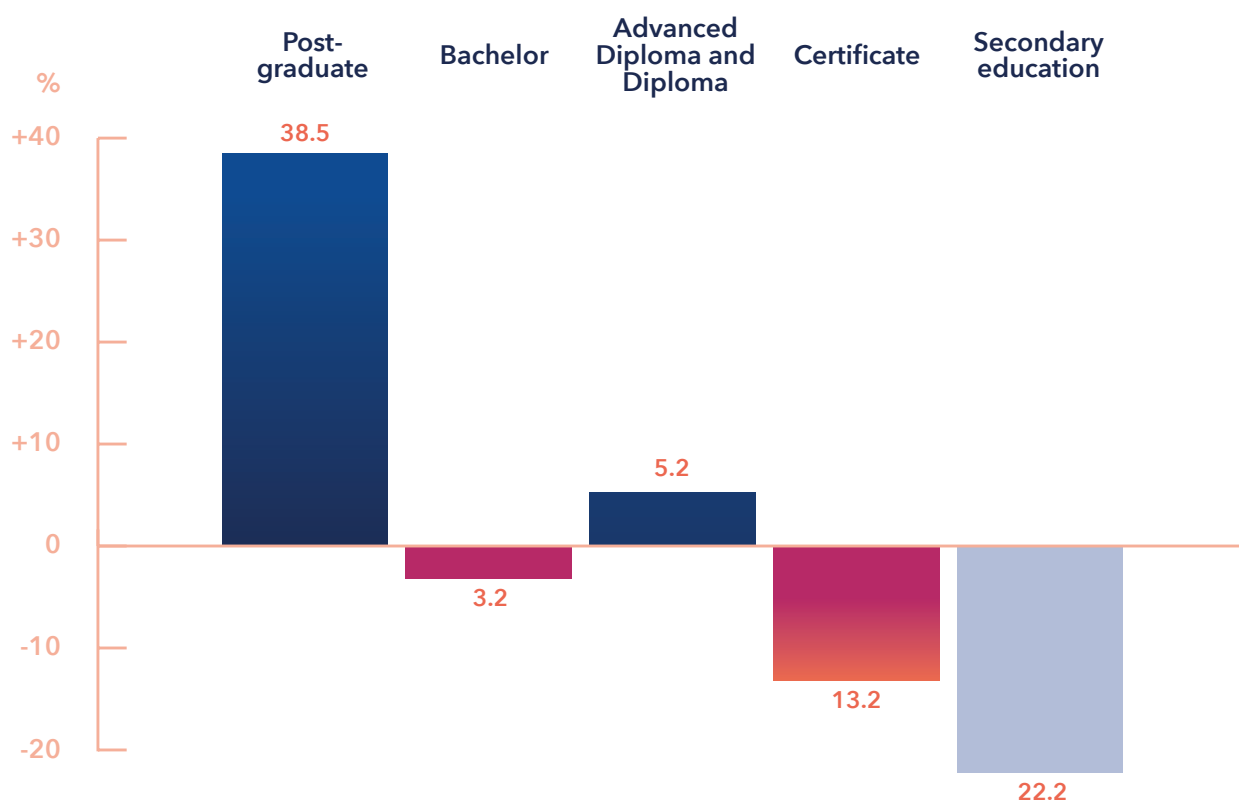
²⁷ Australian Bureau of Statistics, 2016 Census of Population and Housing.

²⁸ Ibid.

Analysis of Census data from 2011 and 2016 showed there had also been a general decline in the use of certificate level qualifications across all occupations in the manufacturing industry, and growth in tertiary level qualifications. Figure 6 shows the change in qualification levels since 2011 within the industry.

This shows a decrease in certificate level and undergraduate qualifications, but an increase in diploma and advanced diploma and post-graduate qualifications. This may be indicative of upskilling and valuing higher level skills at operative and managerial levels respectively.

Figure 6
Change in education levels (%) by manufacturing occupation, Ipswich SA4, 2011 to 2016



Source: Australian Bureau of Statistics, 2016 Census of Population and Housing.

The level of educational attainment within the Ipswich manufacturing workforce correlated with the top 20 occupations in the sector. Table 2 shows that a significant proportion of those employed in the sector, work in occupations that are low-skilled or do not require formal qualifications.²⁹

²⁹ Australian Bureau of Statistics, 2016 Census of Population and Housing.

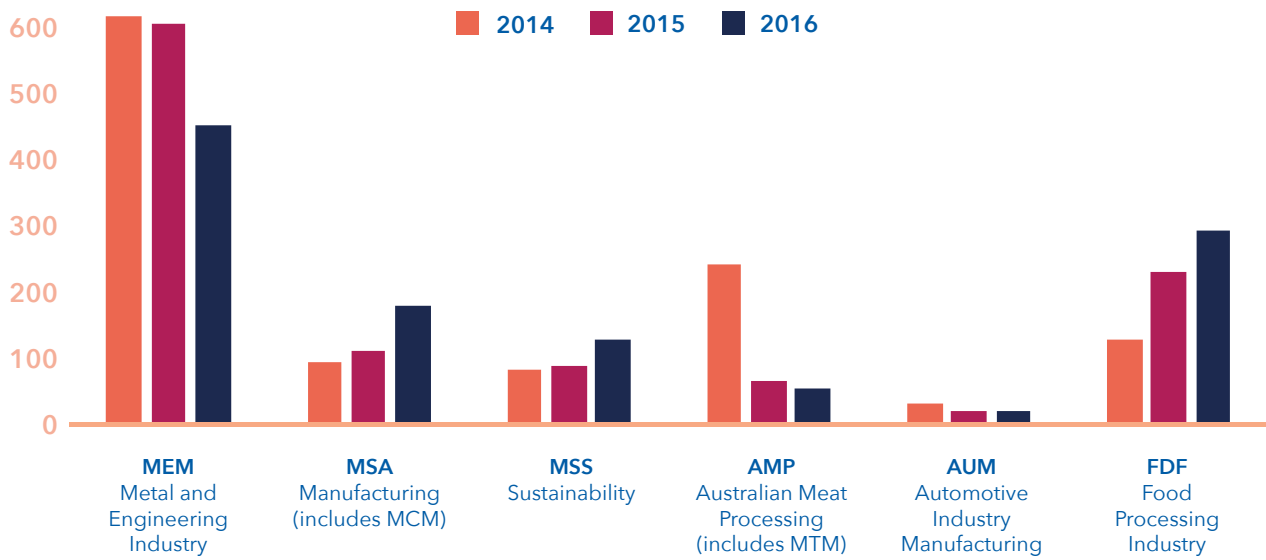
Table 2
Top 20 occupations by size, Ipswich SA4, Place of Work, 2016

Occupation (4-digit ANZSCO)	Ipswich
Packers	881
Meat, Poultry and Seafood Process Workers	790
Structural Steel and Welding Trade Workers	589
Meat Boners and Slicers, Slaughterers	583
Production Managers	574
Forklift Drivers	509
Metal Fitters and Machinists	477
Food and Drink Factory Workers	390
Storepersons	358
Purchasing and Supply Logistics Clerks	268
Advertising, Public Relations and Sales Managers	264
Machine Operators (Not Further Defined)	250
Product Assemblers	239
Sales Representatives	224
General Clerks	209
Accounting Clerks	209
Sales Assistants (General)	206
Engineering Production Workers	203
Commercial Cleaners	187
Electricians	181

Source: Australian Bureau of Statistics, 2016 Census of Population and Housing.

The Ipswich Manufacturing Environmental Scan provided detailed analysis of National Centre for Vocational Education and Training Research (NCVER) data on current Vocational Education and Training (VET) activity relevant to the manufacturing industry in Ipswich. A summary of VET activity relevant to Ipswich manufacturing is shown in Figure 7. Overall, there has been a decline in VET activity in a number of key training packages used in the industry; however there has been an increase in some, including food processing.

Figure 7
Summary of Ipswich manufacturing VET activity

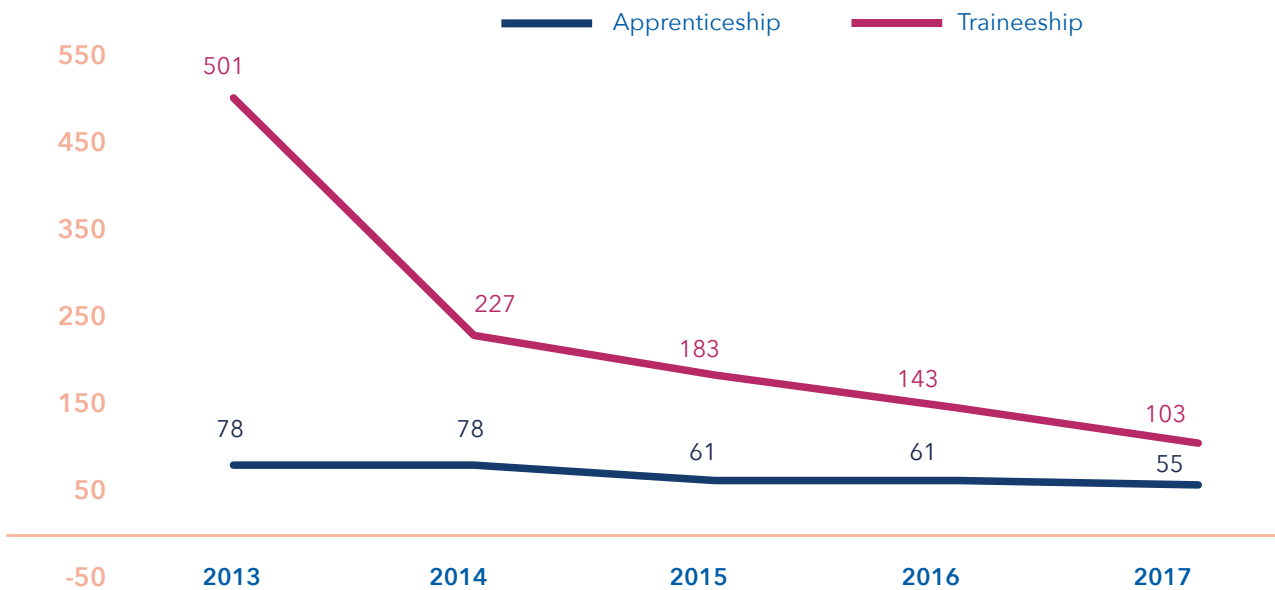


Source: NCVER, 2017, Total VET Activity program enrolments 2014-2016, Type of accreditation by state/territory of delivery location, student SA2 and Year.

In 2017, 888 people commenced apprenticeships and 1443 people commenced traineeships in the Ipswich region. Of these, 6.8 per cent (or 158 commencements) were in manufacturing-related industries. The majority of manufacturing-related apprenticeship and traineeship commencements in 2017 were in engineering-related occupations and food product manufacturing.

From 2013 to 2017, the annual intake of apprenticeships in manufacturing-related industries in the region declined by approximately 30 per cent. Traineeships in manufacturing related industries declined by almost 80 per cent as illustrated in Figure 8. The decline in traineeship numbers reflected a trend across all industries following a change in 2012 to eligibility criteria for Commonwealth Government incentives for employers.

Figure 8
Manufacturing apprenticeship and traineeship commencements for Ipswich SA4 over the five years to 2017*



*Based on manual aggregation of data from LGAs within Ipswich SA4.

Source: Department of Employment, Small Business and Training, Direct Entry Level Training Administration database, Queensland, June 2017.

VET played an important role in providing skills development for the manufacturing industry in Ipswich. It is however, important to note that VET data (such as that outlined above) could not provide a complete picture of the skills development activity in the manufacturing workforce. A sizeable proportion of the training that occurred within the manufacturing industry is non-accredited and therefore data on this activity is not captured in a comprehensive manner.

3.4 Manufacturing industry drivers impacting the region

The future employment outlook for the manufacturing industry in the Ipswich region is strong. Jobs Queensland is undertaking research to project future skills demand in the region which involves the development of three plausible future scenarios alongside a baseline scenario underpinned by Queensland Treasury forecasts.

These scenarios were then modelled using 2016–17 data and employment projections developed to 2022. The modelling shows that employment in the manufacturing industry in Ipswich is expected to continue to grow, with projections varying between 8.4 and 11.4 per cent depending on the scenario.

Macroeconomic drivers combined with a government focus on advancing the manufacturing industry in Australia and Queensland may contribute to this expected growth. The lower Australian dollar is likely to lead to a recovery in some subsectors of manufacturing, especially where there is a strong preference for 'Made in Australia' products (for example, food and beverages, pharmaceuticals and speciality high-technology equipment).³⁰

Major projects within the South East Queensland, such as Queen's Wharf, Cross River Rail, Brisbane Metro and the Rheinmetall Land 400 contract to the region, provide significant opportunities for the major project support manufacturing businesses (mining, oil and gas, infrastructure and construction) to capitalise on further growth.

Within the Ipswich region, the establishment and growth of Springfield has attracted major technology investment which included the \$230 million Polaris Data Centre³¹ and the \$72 million headquarters for GE in Australia and New Zealand.³² Ipswich City Council has also increased the focus on developing the region's connectivity, innovation and technology capability, which has continued to foster growth in digital capabilities that are increasingly important to the development and sustainability of manufacturing in Ipswich.

Jeff Connolly, who heads the local arm of the German industrial giant Siemens, says the future of Australian manufacturing lies in designing and producing parts for global supply chains rather than trying to make complete products for a domestic market. Mr Connolly said a "fourth industrial revolution" was set to reshape manufacturing globally over the next 20 years as digital technology became fused with how goods were made. While automation, artificial intelligence, robotics and digital fabrication technologies have sparked fears of major job losses, he said the changing nature of work did not equate to less of it. "We don't have a shortage of jobs at the moment, we have a shortage of skills in the areas we need," Mr Connolly said. "To survive we really need to be globally competitive and that comes in a number of ways- how we manufacture, what we manufacture and how we see the definition of manufacturing in the future." He said Australia needed to change its mindset around manufacturing from being focused on a small domestic market to looking at where it could provide value in extensive global supply chains.

Source: Dagg, John, 2018, *Automation might be just the job for Aussie Manufacturing*, Courier Mail Brisbane.

30 Chandra Shah, Janine Dixon, 2018, *Future job openings for new entrants by industry and occupation*, <https://www.ncver.edu.au/publications/publications/all-publications/future-job-openings-for-new-entrants-by-industry-and-occupation#>.

31 Springfield City Group, 2018, *Australian Leading Polaris Data Centre*, <https://www.greaterspringfield.com.au/technology/polaris-data-centre/>.

32 Springfield City Group, 2015, *GE Officially Opens First Queensland Headquarters in Greater Springfield*, <https://www.greaterspringfield.com.au/ge-officially-opens-first-queensland-headquarters-in-greater-springfield/>.

Manufacturing is one of the key industries impacted by technological advances and changes in economic climates and markets. The industry has been continually required to develop, change and advance their business processes, products, services, efficiency and competitiveness to remain economically sustainable.³³

There are a number of factors that impacted the ability of manufacturing businesses to invest, grow and to develop their businesses and build their workforce. A number of themes emerged during consultations as issues that created barriers to growth within manufacturing businesses. While these issues did not fall within the scope of this particular project, it is important they be highlighted. These include:

- a reduction in available finances to invest in the business due to rising energy costs
- difficulties experienced by small to medium enterprises (SMEs) in accessing business finance to fund capital investment and/or expansion of their businesses.

33 Jobs Queensland, 2018, *Advancing Manufacturing Skills, A Skills, Training and Workforce Development Strategy for the Manufacturing Industry in Queensland*.



Integrated Services

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4. Building business capability

For the Ipswich manufacturing industry to capitalise on future opportunities within an increasingly evolving and competitive global marketplace, businesses will need to further improve their sustainability, competitiveness and productivity.

Commitment to building capability was consistently identified as a priority area by those consulted through this project. While larger businesses were able to dedicate staff to functions such as market research and supply chain management, smaller businesses highlighted the challenge of having the time and resources to work on the business rather than in the business.

4.1 Priority areas identified by the manufacturing industry in Ipswich

Market and supply chain access

Market and supply chain access was seen as a major driver for increasing market share and driving long-term sustainability. Having the capability to analyse and research the current market can assist local businesses to identify future market opportunities. While many stakeholders acknowledged that the significant future growth drivers were well known, individuals' confidence in their business's ability to identify and capitalise on these supply chain opportunities was mixed.

There were two key skills and capability needs that were identified in this area:

1. The growing global market for Ipswich manufacturing highlighted the importance of building capability related to export market analysis and export trading. While many of the manufacturing businesses interviewed were already undertaking market research and analysis, businesses (particularly small businesses) consistently identified that they could benefit from further support as they sought to diversify and strengthen their customer base locally, nationally and globally. This included training across the breadth of the export process, from market analysis through to cross-cultural communication and negotiation and export process and procedures.³⁴
2. Small and medium enterprises (SMEs) were consistently interested in obtaining support to build their capability to pre-qualify for major supply chain opportunities. Increasing competition both locally and at the global level increases the risk that more manufacturing capabilities could be lost from the Ipswich region. Initiatives to boost industry capabilities, resilience and long-term growth would deliver value for individual manufacturers as well as for the region's broader economy and workforce.³⁵

³⁴ Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

³⁵ *Ibid.*

Risk management, compliance and quality assurance

Every major project or large company supply chain was underpinned by a range of systems and standards. Businesses were concerned they would 'miss out' on future contracts unless they prepared their processes and procedures to align with strict risk management requirements covering health and safety, environmental management and quality (HSEQ). These systems could be International Organization for Standardization (ISO) accredited or aligned, or could be industry specific such as Hazard Analysis Critical Control Point (HACCP) accreditation for food processing.³⁶

Consequently, local businesses could benefit from coordinated support and capability development to underpin the adoption of best practice manufacturing systems to improve their risk management and compliance. As local businesses became part of larger and more sophisticated supply chains, capability development in supply chain management would be required to effectively manage these systems and processes.

Supporting the transition to advanced manufacturing

Investing in technology or equipment to remain competitive at local, national and global levels was seen as integral to the long term prosperity of the industry. As labour intensive processes become automated, productivity could increase, operating costs decrease and workplace health and safety of the workforce improved.³⁷

Industry 4.0 – the fourth industrial revolution – is transforming traditional manufacturing. While only about half of local businesses were aware of the term, nearly all were already on the path to transforming their business – with increased use of digital skills and systems; new technology investment; and greater flexibility in the production and skills mix to respond to changing needs.³⁸

Further mechanisms to share industry excellence, information and resources to support manufacturers' understanding of Industry 4.0 and support their ability to respond would be an important investment to grow a sustainable manufacturing sector in the region.

At the business level, strategic and competitive business planning was important for businesses to be able to identify and take advantage of opportunities in a rapidly changing global marketplace. A particular skill need identified through this project is more comprehensive use of data analytics to inform design thinking and drive better business performance.³⁹

36 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

37 Jobs Queensland, 2018, *Advancing Manufacturing Skills, A Skills, Training and Workforce Development Strategy for the Manufacturing Industry in Queensland*.

38 Ibid.

39 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

Leadership and management

Leadership knowledge, skills and quality was identified as integral for growing, developing and improving the business and workforce and was a recurring theme in consultation with local industry.⁴⁰ A lack of access to skills across the workforce was identified as one of the most significant barriers to innovation in the manufacturing industry in Australia.⁴¹

There are a variety of mechanisms for leaders and managers to further develop their business capability, both through non-accredited training (for example, Lean, 5S, Six Sigma, Kaizen) and accredited training such as Certificates III and IV in Competitive Systems and Practices. Non-accredited training was cited often during consultations as an effective training mechanism for skills development in this area.⁴²

Participants at the Jobs Queensland Advancing Manufacturing forum held in Ipswich in late 2017 identified that managers and leaders in manufacturing needed to have a much wider range of problem solving, leadership and culture building capabilities than was required in the past. Upskilling and capability in this area was identified as essential.⁴³

As manufacturers transition their business models to provide more customer-centred and iterative design processes and prototype and test product solutions in collaboration with the customer, a new range of skills in design and design-led thinking is required.⁴⁴

Managing change in the workplace

Successful change management was identified as a significant challenge for many businesses. The ongoing growth of the Ipswich manufacturing industry will rely on its ability to remain agile, adapt to external forces and implement change. Participants at the Jobs Queensland Advancing Manufacturing forum identified lack of change management skills as a barrier to businesses achieving a return on investment when introducing new equipment or technology into their operations.⁴⁵

There are a number of tools to assist leaders to improve their change management processes including existing vocational education and training units of competency (MSS407001 – prepare for and implement change and MSS403010 – facilitate change in an organisation, for example) that could be relevant in supporting this capability development. Non-accredited training was seen by industry to be more relevant and customisable to individual business needs.

40 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

41 Queensland Productivity Commission, 2017, *Final Report – Manufacturing in Queensland*, <https://www.qpc.qld.gov.au/inquiries/manufacturing/>.

42 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

43 Jobs Queensland, 2017, *Summary of Main Themes from the 12 Jobs Queensland Advanced Manufacturing Workshops*.

44 Harvard Business Review, 2015, *Design Thinking Comes of Age*, <https://hbr.org/2015/09/design-thinking-comes-of-age>.

45 Jobs Queensland, 2017, *Summary of Main Themes from the 12 Jobs Queensland Advanced Manufacturing Workshops*.

CASE STUDY

Capral Aluminium - Building leadership and management capability

Capral Aluminium is Australia's largest manufacturer and distributor of aluminium products, operating world class aluminium extrusion plants across the nation. Capral employs more than 1000 people with significant industry skills and expertise within its manufacturing, design and distribution operations.

To support its operations, Capral is undertaking significant investment in developing the leadership and management capability of its employees. Currently 40 supervisory team leaders are undertaking training in leadership and management practices.

To contextualise training to Capral's business needs, they have partnered with a registered training provider (RTO) to customise a three-module leadership and management course structured around:

1. Leading self
2. Leading others
3. Leading process.

The course itself focuses on developing team leaders' abilities to engage and lead their teams, and provides practical tools for them to communicate more effectively and be better workplace leaders overall.

To complement this training, Capral is also investing in the provision of Certificate III Competitive Systems Training to production and warehouse workers at its Ipswich-based Bremer Park site which it views as an important component in its leadership training.

For Capral, this significant investment in skills development has resulted in not only improved business productivity and competitiveness, but also greater awareness amongst employees of the roles and responsibilities they have in driving continuous improvement of business processes and productivity.

In parallel to this investment in staff development, Capral is also undertaking significant capital investment in new technology and automation to improve its long-term competitiveness. A particular focus for Capral is the process of helping employees recognise the benefits of capital investment and their improvements to business processes.

The adoption of these inclusive processes by Capral has ensured technology investments in its Bremer Park facility has resulted in the retention of skilled and qualified employees and that no redundancies have been experienced.

Capral is undertaking significant investment in developing the leadership and management capability of its employees.

Photographer: Mick Richards Photography.



4.2 Addressing the priority areas

A range of existing resources and initiatives are being offered by governments and other stakeholders that the industry could access to build their business capabilities. A list of existing resources is included at Appendix A.

The following table proposes actions that could be taken by stakeholders to leverage the existing resources and initiatives that are available to help improve the capability of Ipswich manufacturers.

Building business capability – Actions

1. Continuing the local stakeholder focus on advancing manufacturing within the Ipswich region and offering opportunities to provide information and resources to build knowledge and capability within businesses in relation to advanced manufacturing business models, and the impacts and opportunities of Industry 4.0.
2. Coordinate, promote and support training and capability development programs and initiatives that meet local manufacturers' needs including (but not limited to):
 - market analysis and export trading
 - supply chain access and management
 - leadership and management
 - operations management, including driving innovation in planning, tracking, scheduling and quality control
 - applying change management practices
 - business planning and strategy
 - harnessing technology to drive productivity and competitiveness including data analytics.



5. Upskilling the current workforce

Manufacturing businesses in Ipswich demonstrated a clear commitment to the continual upskilling, reskilling and cross skilling of existing workers in order to transition into new forms of manufacturing, access new markets, improve business competitiveness, adopt new technology and retain workers in the industry. Businesses saw distinct value in the benefits of training for both the business and the individual.⁴⁶ Similarly, three quarters of manufacturing employees, statewide, are prepared to undertake further education and training to gain the required future skills and knowledge.⁴⁷

However, the rapid pace of technological change in the sector has seen an increase in the demand for higher level skills, and many businesses interviewed demonstrated a proactive approach to helping to support their workforce through these technical advancements by equipping them with transferable skills.

5.1 Priority areas identified by the manufacturing industry in Ipswich

Digital skills

While some businesses were concerned that the adoption of automation would cause significant job losses within the industry, those that have adopted new technology have anecdotally advised that the result is not as significant as perceived. Instead, these businesses stated that the largest change to employment within the industry was the increased need for their employees to have the digital literacy and capability needed to adapt to the technological changes of their role and industry.⁴⁸

The requirements for digital skills literacy, and the digital skills to configure and use digital systems, is becoming more commonplace across the industry. The requirements for increased digital skills are almost certain to increase in the coming years.⁴⁹

There was a wide spectrum of digital skills development needed across the manufacturing industry in Ipswich. A number of businesses in the region were driving productivity improvements through the introduction of Enterprise Resource Planning software systems but have found the level of digital literacy across their workforce was a barrier to the successful implementation of these systems. This especially applies in the basics of navigating touch screen technologies. The workforces in a number of other businesses were already highly digitally capable but required more advanced programming skills as new technology is being introduced into the business.⁵⁰

A further skill need that was identified related to data interpretation and analytics. As more sophisticated technology was utilised across the industry, the need to interpret and analyse data generated by that technology in order to monitor and optimise performance was becoming a critical part of many job roles.⁵¹

46 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

47 Jobs Queensland, 2018, *Advancing Manufacturing Skills, A Skills, Training and Workforce Development Strategy for the Manufacturing Industry in Queensland*.

48 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

49 Foundation for Young Australians, 2017, *The new Basics: Big data reveals the skills young people need for the new work order*, https://www.fya.org.au/wp-content/uploads/2016/04/The-New-Basics_Update_Web.pdf.

50 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

51 Ibid.

Career advancement

Clear paths for career advancement existed within many larger manufacturing businesses. Many of the businesses interviewed preferred to promote from within. However, identifying sufficient candidates with strong technical expertise combined with management skills was difficult. This is especially the case in relation to people management, performance management and effective change management skills.

Many businesses had strong internal training programs for new staff and for the technical and operational aspects of their businesses. However, when promoting existing staff into supervisory and managerial roles, a wide range of broader capabilities were required which (depending on the role and the business) include:

- more advanced capability in innovation and design thinking
- emotional agility/intelligence
- business development and estimating skills
- leadership, supervisory and people management skills
- business management skills, including finance and human resource management.

Overall, the majority of businesses consulted noted the provision of training to support the next generation of management and leaders as important or very important. Large companies were more likely to use structured management training programs while SMEs relied on training on the job.

Businesses were already accessing a range of products to support them, including accessing nationally recognised training such as the Certificate IV in Leadership and Management, the Certificate IV in Leadership for Supervisors and short courses. However, anecdotally businesses expressed preference for customised training rather than nationally recognised qualifications.⁵²

Transferable and adaptable skills

Businesses interviewed by Jobs Queensland identified that focusing on the development and promotion of transferable and adaptable skills within the current workforce helps prepare the business to grow and adapt within the global environment. Research suggests that in a labour market where qualifications are becoming increasingly important, employers are more likely to be able to recognise the transferable skills of workers if they have formally recognised qualifications.⁵³

However, businesses also reiterated that there are numerous forms of training that, while not nationally accredited, are highly valued and transferable within the manufacturing industry. A number of businesses highlighted the benefits associated with employing staff who have worked in other businesses or sectors within the industry in introducing new skill specialisations, ideas and perspectives into their business. Ensuring that current employees can self-identify their transferable and adaptable skills will also help to create a more resilient workforce that can adapt to changes in work requirements.

52 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

53 Wibrow, B and Circelli, M, 2016, *When one door closes: VET's role in helping displaced workers find jobs*, NCVER, Adelaide, <https://www.ncver.edu.au/publications/publications/all-publications/when-one-door-closes-vets-role-in-helping-displaced-workers-find-jobs#>.

Mechanisms for upskilling the workforce

Research has found that typically, larger businesses upskilled their existing workers according to well-developed plans, evaluate the effectiveness, access the support and funding available and track the development undertaken. However, smaller businesses tend to need significant guidance and support to do this.⁵⁴ Anecdotal evidence from industry suggests that training providers see a more viable option in engaging with larger businesses as they have a larger student cohort in one place at one time. Meeting the training demand of smaller businesses for their existing staff poses challenges for training providers. Customising training can be difficult when the cohort comes from multiple businesses and emergent changes in small business priorities can force participants to withdraw.

The impetus to access training increased when businesses could see a direct application of the new skills in the workplace. A common theme from consultations with industry was that the best training involved the direct application of that training immediately into the workplace and this was regardless of whether it was technical or equipment training or training in management skills such as planning and risk management.

Businesses were seeking flexibility and industry-specific knowledge from their training providers. Businesses were attracted to non-accredited short courses that cost less than whole qualifications or units of competency, even though accredited training provides the staff with a recognised qualification. This may have been because the cost of training paid as fees to providers was not seen as the significant cost to businesses in training. The most significant cost involved the time away from the business to undertake training and assessment.⁵⁵

Awareness of the Queensland vocational education and training (VET) system amongst businesses interviewed was low and typically limited to previous involvement in the employment of apprentices and trainees. While some businesses reported accessing funding under the Certificate 3 Guarantee (C3G) program, most were unaware of this program or the Higher Level Skills program.

Businesses also expressed desire for support to upskill existing staff who have existing qualifications. Some of the existing mechanisms for businesses to upskill their staff and access funding had limited visibility to Ipswich manufacturers and their awareness of such programs was low. For example, awareness of the skill sets on the Queensland Training Subsidies List, and mechanisms that assist jobseekers or existing workers to access additional qualifications or skill sets such as the C3G Boost, Skilling Queenslanders for Work, Training in Emerging and Innovative Industries fund (TEII) and Regional Skills Investment Strategy (RSIS) was low. However, it was noted that businesses who had awareness of the Queensland system expressed satisfaction with their experience.⁵⁶

It is also noted that, more broadly, across the Queensland manufacturing industry, employees are in favour of adding to their existing skills. Three quarters (76 per cent) of employees surveyed by Jobs Queensland indicated that they would be prepared to undertake further education and training to gain skills and knowledge.⁵⁷

54 Stone, I, 2012, *Upgrading Workforce Skills In Small Businesses: Reviewing International Policy And Experience*, Durham University Business School, http://www.oecd.org/cfe/leed/Skills%20Workshop%20Background%20report_Stone.pdf.

55 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

56 Ibid.

57 Jobs Queensland, 2018, *Advancing Manufacturing Skills, A Skills, Training and Workforce Development Strategy for the Manufacturing Industry in Queensland*.

CASE STUDY

Matrix Polymers - Upskilling the current workforce

Matrix Polymers is one of the biggest suppliers of coloured powder to the rotomoulding industry in Australia and New Zealand. It also has one of the rotomoulding industry's largest, most knowledgeable and experienced technical teams - providing technical advice on the best materials for different applications in domestic use, industrial and defence applications.

Matrix Polymers employs approximately 25 people at its Carole Park facility and has the ability to draw on expertise from its sister sites located in Malaysia, the United Kingdom and Poland.

The business invests in a range of training and upskilling programs for staff ranging from accredited training from registered training providers through to industry-specific programs delivered by industry associations and groups on topics such as chain of responsibility, managing people, good recruitment processes and managing environmental responsibility.

Training providers are chosen because they have the flexibility to tailor training to Matrix Polymer's specific business needs, making it immediately implementable and giving the business the flexibility to select units or modules that are relevant for its specific workplace.

Matrix Polymers introduced small continuous improvement teams focused on achieving the benefits it derives from training. These teams, typically comprising two operators, a supervisor and a manager, agree on a plan and implement any continuous improvement opportunities they identified in their training.

Through staff engagement and training, Matrix Polymers drives a sense of employee ownership in the business via communication and transparency, and also nurturing the 'founder mentality' in its staff so everyone experiences a sense of pride and involvement in the business's achievements.

Matrix Polymers introduced small continuous improvement teams focused on achieving wins for individuals, the workforce and the business as a whole.

Photographer: Mick Richards Photography.



5.2 Addressing the priority areas

There is value in considering mechanisms to build the awareness of existing programs and opportunities for responsive modularised training to assist with upskilling and multiskilling existing workers in a rapidly changing economy. The increased visibility would help facilitate the development of flexible and adaptable training opportunities.

Overwhelmingly, businesses identified the need for training to be customised to their workplace. Work-site based training (irrespective of being accredited, non-accredited, public or private registered training organisation) was the preferred method of training delivery as it reduced the costs associated with training off-site.

A range of existing resources and initiatives are being offered by governments and other stakeholders that the industry could access to upskill their current workforces. A list of existing resources is included at Appendix A.

The following table proposes actions that could be taken by stakeholders to leverage the existing resources and initiatives that are available to help upskill the current workforce of Ipswich manufacturers.

Upskilling the current workforce – Actions

3. Drive competitiveness of the manufacturing industry in the region by supporting existing Ipswich manufacturing workers (including those who already hold a Certificate III or higher qualification) attain qualifications that underpin a systematic approach to continuous improvement (for example the Certificate III or IV in Competitive Systems and Practices) and promote the availability of this support to the manufacturing industry.
4. Coordinate, develop and support training solutions for upskilling and multiskilling of the manufacturing workforce within the region in the areas of need identified within this report. These training solutions may include a combination of accredited and non-accredited training in areas including (but not limited to):
 - automated machine operation training
 - automated machine programming training
 - injection moulding
 - management and leadership
 - multiskilling to build upon trade qualifications.
5. Build the digital capability of the manufacturing workforce in the region through making available targeted and tailored support for digital capability development within businesses to support the successful introduction of technology.
6. Implement targeted strategies to increase apprenticeship opportunities in the manufacturing industry in the Ipswich region. This may include promotion of existing support, resources and incentives available to manufacturing businesses to take on an apprentice or trainee, as well as promotion of group training arrangements for those employers who are unable to provide the full scope of training for apprentices and trainees, and utilise the existing flexibility available within the apprenticeship and traineeship system.



6. Engaging and building the future workforce

Ipswich manufacturing has a strong value proposition to offer its workforce. The combined forces of an ageing workforce, a slower rate of younger people entering the industry and projected future growth provide a solid platform for long-term employment. However, significant skill gaps could arise unless a conscious effort is made to attract new entrants (both first time employees and more skilled and experienced employees from other industries) to the industry.

No single strategy alone can provide the supply of new workers needed to ensure that the industry is positioned to take advantage of future opportunities. A combination of strategies ranging from building the attractiveness of manufacturing careers to young people, through to attracting skilled and experienced workers from other industries to work in manufacturing need to be considered.

6.1 Priority areas identified by the manufacturing industry in Ipswich

A strong message that emerged through the consultation process was the difficulty finding suitable candidates for a wide variety of roles across the industry.⁵⁸ A number of reasons were provided for the decrease in suitable candidates with key themes emerging from the responses informing the following areas of priority.

Positioning manufacturing as an attractive career option

Many businesses felt that the broader community retains outdated perceptions of manufacturing as hard, laborious, unsafe, unclean and repetitive work and a 'last-resort' employment option. Lack of awareness by those outside of the industry of the range of employment opportunities available now is perceived as further discouraging people from entering the industry.⁵⁹

There are many positive and attractive elements that underpin the value proposition that the manufacturing industry offers its workforce. This could be used to position manufacturing as an attractive career option amongst the future workforce in Ipswich and begin to build a steady supply of local talent.

Building the profile of manufacturing careers across the Ipswich region should be a shared priority of industry, stakeholders and government.

⁵⁸ Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

⁵⁹ Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for Manufacturing in the Wider Ipswich Region*.

Table 3
Debunking myths about the manufacturing industry

Myth	Reality
<p>Manufacturing is a dying industry <i>Manufacturing is being outsourced to lower labour cost countries.</i></p>	<p>Manufacturing is growing and evolving The region has a strong history of being a manufacturing hub and the industry is a strong economic contributor. Manufacturing is the region’s third largest employing industry with high retention rates and a strong focus on developing its workforce.</p>
<p>Manufacturing jobs are dirty and low tech <i>Manufacturing factories are dirty and require only brawn, not brains.</i></p>	<p>Manufacturing offers a range of high skilled jobs and is innovative Higher standards have improved the safety, cleanliness and conditions of the manufacturing industry. Automation has decreased some of the repetitive nature and physically demanding requirements of manufacturing work.</p>
<p>Robots will take my job <i>Automation and robotics will take over.</i></p>	<p>Technology will create opportunities Manufacturing is one of the largest investors in new technologies. Employees have the opportunity to participate in innovation as the industry transforms from broad-based to advanced manufacturing. Automation and robotics will take more of the repetitive and lower value tasks. There will be opportunities for upskilling existing workers and reshaping traditional roles.</p>
<p>You don’t need good maths or grades to work in manufacturing <i>Manufacturing is for people who didn’t do well at school.</i></p>	<p>Higher level skills are valued in modern manufacturing An increased need for digital literacy and capability skills have changed the nature of work in the industry. The ability to analyse information, problem solve and plan for change are vital for a rapidly evolving industry. Many entry level manufacturing roles require skills and academic aptitude equal to that required for university entry.</p>
<p>Manufacturing is a last choice industry <i>Manufacturing is a job while people wait for something better.</i></p>	<p>Manufacturing has a stable workforce Low-skilled and entry-level roles are still available and opportunities exist for various development and promotion opportunities. Manufacturing offers stable work and the opportunity to develop a career path to a range of careers – technical; management; and research, etc.</p>

Apprenticeships and traineeships

The apprenticeship and traineeship system provides strong entry level pathways into trade and technical occupations for manufacturing in Ipswich. Businesses recognised the role that apprenticeships and traineeships play in providing skills development for the industry. They were generally positive about their experiences employing apprentices and trainees⁶⁰ and could be encouraged to take on more apprentices and trainees to help avert potential skills shortages.

Three key barriers were identified as reducing attractiveness to employing apprentices and trainees by manufacturing businesses in Ipswich:

1. Businesses perceived that due to the specialisation of their processes, they would be unable to provide the full scope of work and training required for employees to achieve the qualification. Many businesses were unaware of recent reforms to the Queensland apprenticeship and traineeship system, which included provisions for permanent and temporary transfers between employers or Group Training Organisations.⁶¹
2. Businesses indicated that they had a desire to employ apprentices or trainees but supervision requirements were sometimes difficult to meet as the qualified workers were unavailable to provide the required supervision to apprentices and trainees.⁶² This issue is not unique to either Ipswich or the manufacturing industry as there is a broader need to ensure that workers (particularly those nearing retirement) kept their skills up to date and be available to mentor and supervise the trainees and apprentices of the future.⁶³ Smaller businesses also indicated that long-term employees may not necessarily be trade qualified to supervise apprentices and trainees.
3. Training quality issues were also raised with some businesses stating that trade-qualified applicants often had not developed or maintained the range of specific trade skills and level of digital literacy required to operate and program new equipment, which may impact on their employability as a tradesperson. Some employers believe the equipment apprentices were being trained on at a training college were outdated or not used in their workplace.

60 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

61 Ibid.

62 Ibid.

63 The Australian Industry Group, 2016, *Making Apprenticeships Work*, http://cdn.aigroup.com.au/Reports/2016/15160_apprenticeships_policy_full.pdf.

School-industry links

A key mechanism identified for improving the supply of a local manufacturing workforce was to improve the relationship between industry and schools. Improving the relationship between these parties would increase the opportunities for young people to engage with and experience the manufacturing industry, help to 'myth bust' misconceptions, improve the perception of the industry and raise awareness of the diverse long-term career opportunities it offers.

Many businesses stated that improving the relationship between industry and schools was important and that they were interested in engaging with schools either by attending information sessions, providing industry tours, hosting students for work experience or providing opportunities for school-based apprenticeships. Similarly, schools and trade training centres expressed a high desire to improve their industry links and source work experience and workplace exposure opportunities.

However, throughout the consultation process, three main barriers were identified that impacted the individual capability of businesses to improve their linkages with schools and engagement with students:

1. Not knowing who to contact to create and maintain relationships with schools. This was a particular barrier when the relationship between business and school relied upon rapport built between people rather than established partnerships or programs.
2. Previous experience of engaging with students who did not have the desired interest, employability skills, basic industry knowledge or literacy and numeracy skills required for working in the manufacturing industry.
3. The loss of productivity and associated costs due to the time and coordination required for engaging with schools.⁶⁴

Most businesses were very interested in being involved in a program that improved the pathways from school to industry. Stakeholders expressed a strong interest in working further to develop a Gateway to Industry Schools Program (GISP) presence for Ipswich manufacturing. The GISP program supports projects, led by industry organisations to develop and implement school engagement activities in line with industry's key skills and workforce priorities.⁶⁵

Industry stakeholders also stated they would like to see the scope of entry-level programs broadened with more structured pathways to local manufacturing jobs. Examples were provided by manufacturers of successful industry and school partnerships in other industries that provided students with a week of work experience; full induction programs including workplace health and safety; and exposure to the appropriate attitudes and aptitudes to work in the environment. The Certificate II in Manufacturing Technology, along with electives from the Certificate II in Competitive Systems and Practices, was also proposed as a desirable pathway to manufacturing careers for local school students.⁶⁶

64 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

65 For more information see: <https://training.qld.gov.au/employers/gatewayschools>.

66 Jobs Queensland, 2018, *Ipswich Manufacturing Environmental Scan*.

CASE STUDY

WesTEC Trade Training Centre - Engaging the future workforce

The WesTEC Trade Training Centre (WesTEC) at Springfield offers trade-related certificate training with TAFE Queensland South West for Year 10, 11 and 12 students from local schools. Run by four local partner schools – Forest Lake, Springfield Central and Redbank Plains State High Schools and Woodcrest State College – WesTEC is a modern, well-equipped facility where students can undertake manufacturing-related training in Certificate II in Engineering Pathways while they are at school.

Students interested in applying for the engineering qualification are expected to have a strong and keen interest in the industry; commit to meeting structured workplace learning requirements; be self-motivated; and able to work independently. As at May 2018, there were 22 students enrolled in the engineering program out of 220 student enrolled across all of WesTEC programs.

Designed to increase the employability of students by teaching basic skills like the operation of tools and equipment and workplace health and safety, the program sees students use a variety of machinery and learn about the fabrication, mechanical, production and technical areas of manufacturing.

WesTEC aims to increase the job readiness of students by contextualising the learning and training centre to simulate a workplace with training delivered by industry-qualified trainers. Students also undertake two weeks of work experience in the industry to ensure they gain high quality knowledge and on-the-job skills relevant to manufacturing and engineering. Upon completion of the engineering program at WesTEC, 90 per cent of students seek a school-based apprenticeship, further study or a combination of both, in the engineering and manufacturing sector.

WesTEC also engages with and builds positive relationships and key partnerships with industry and businesses through industry breakfast and site tour events. These provide an opportunity for people to learn more about the training students receive and view the onsite training workspace and equipment.

Businesses interested in employing program participants are given the chance to take part in their training and development by providing feedback on training provided to ensure it meets local needs. Manufacturing businesses see this partnership opportunity as a positive way to build their future workforce and ensure participants they invest in are job ready, skilled and committed.

WesTEC programs aim to increase the job readiness of students by contextualising the learning and training centre to simulate workplace with training delivered by industry-qualified trainers.

Photographer: Mick Richards Photography.



Employability skills and work readiness

Research suggests that employers place at least as much importance on employability skills as they do on technical skills when looking to recruit potential candidates. For example, for Structural Steel and Welding Trades Workers the research showed that employers seek employees who are: reliable, work well in a team and have good communication skills.⁶⁷

Ipswich manufacturing businesses shared similar values, as it was consistently stated that qualities such as reliability, motivation, willingness to learn, personal pride and presentation were of equal importance to possessing technical skills. A number of businesses specifically stated that when seeking to fill lower skill level positions, they placed more importance on a job seeker having a positive attitude and displaying the appropriate workplace etiquette, than a post-school qualification.⁶⁸

Almost all businesses interviewed provided on-the-job training such as induction training programs or in-house training for equipment and systems, and were happy to train the right candidate to gain the technical skills needed. However, many businesses stated that it was difficult to find suitable candidates with the aptitude, attitude and employability skills they desired.

Businesses also stated they were facing challenges attracting entry level applicants with a mechanical aptitude and exposure to using tools. With training applied on-the-job, knowledge of tools and mechanical processes made job seekers more attractive to employers.⁶⁹

Many of the school and jobs services sector stakeholders in Ipswich recognised the importance of these skills and incorporating these skills into their programs. There were a range of resources available for school students and jobseekers to prepare them with these skills which included industry specific resources such as those produced as part of the GISP, Jobs Pathways charts or more generic resources such as myfuture.⁷⁰

The Skilling Queenslanders for Work program was specifically designed to add the support and soft skills needed for jobseekers to find employment and be attractive to employers with the accredited training to provide contextual understanding of the industry.⁷¹ Between July 2015 and December 2017 there were two Skilling Queenslanders for Work projects specifically targeted towards the manufacturing or food processing industry in the Ipswich area. Businesses might wish to consider further engagement with this program as a pathway for suitable candidates to enter the manufacturing industry in Ipswich.

67 Department of Jobs and Small Business, 2018, *Australian Jobs 2018*, <https://docs.jobs.gov.au/system/files/doc/other/australianjobs2018.pdf>.

68 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

69 Ibid.

70 For more information see: <https://myfuture.edu.au/>.

71 For more information see: <https://training.qld.gov.au/community-orgs/funded/sqw>.

Attracting skilled and experienced employees from other sectors

As structural changes take place in other sectors within the economy, the manufacturing industry could position itself as a source of high quality and stable employment within the region. There is a significant number of Ipswich residents that commute outside of the region for work. The prospect of employment closer to their place of residence may appeal to this cohort making them a readily available skilled workforce.

The industry's increased focus on transferable skills, coupled with efforts to escalate the perception of manufacturing in Ipswich as the 'employer of choice', might help attract these entrants into the workforce.

The analysis presented in this report suggests that there are cohorts of employees in the manufacturing labour market that possess significant skills and experience but hold no formal qualifications. These include trade assistants and long-term employed labourers. This creates a potential cohort that could be upskilled to provide additional skilled labour to address identified shortages in growth sectors within the region, particularly in relation to trade skills. In many cases, the skills and experience means that these people could achieve competency in a shorter timeframe than might otherwise be needed.

Attracting a diverse workforce to the manufacturing industry

While businesses interviewed demonstrated efforts through succession planning to improve the diversity of their workforce, myths about the dirty and labour intense nature of the work was seen as prohibiting attempts to improve diversity.⁷²

A male-dominated and ageing workforce and an increased need for employees to be digitally competent will require businesses to plan and recruit for a new workforce. Engaging with potential workforce cohorts (students, those transitioning from other sectors, the unemployed) and their wider community will allow businesses to build awareness of how the industry has changed and the career opportunities that are available. This will allow businesses to identify more suitable candidates.

Women returning to work were already a target group for the food processing sector which cited high productivity, reliability and commitment to their employer as advantages to employing from this group.⁷³ Identifying opportunities for this cohort in other manufacturing sectors in Ipswich offers employers a significant pool of workers to draw from.

As managers age, succession planning and engaging a new cohort of talent in the management structure of businesses becomes increasingly important. One large family-owned manufacturing operation saw its next generation of family managers – millennials working in the company – as a major competitive advantage.

72 Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

73 Ibid.

6.2 Addressing the priority areas

A range of existing resources and initiatives are being offered by governments and other stakeholders that the industry could access to engage and build the future workforce. A list of existing resources is included at Appendix A.

The following table proposes actions that could be taken by stakeholders to leverage the existing resources and initiatives that are available to help engage and build the future workforce of Ipswich manufacturers.

Engaging and building the future workforce – Actions

7. Actively promote Ipswich as a hub for a highly skilled manufacturing workforce and the diverse range of career opportunities available within the manufacturing industry in a manner that targets both potential employees and the community more broadly.
8. Through the suite of existing programs and initiatives, implement a regionalised strategy that places priority on providing structured pathways into the manufacturing industry that prepare participants for manufacturing careers, including through programs such as Skilling Queenslanders for Work and VET in Schools.
9. Hold an event to connect schools and other relevant organisations in the region with manufacturing employers and:
 - promote the outcomes of this project and the opportunities within the manufacturing industry
 - develop mechanisms for ongoing communication and engagement between industry and schools to support pathways into the industry
 - drive greater opportunities for site visits, work experience and work placements for students to see and experience manufacturing workplaces.
10. Develop and/or promote a career tool that lays out the pathways into a range of manufacturing sectors and promote to schools, industry and other relevant stakeholders within the region.
11. Develop and implement strategies to connect existing local programs providing jobseekers and young people with work readiness skills, exposure to using tools and mechanical skills with manufacturing businesses.





7. Industry support and networks

Despite the diversity and growth of the Ipswich manufacturing industry, many businesses interviewed were tackling similar issues and facing the same workforce challenges. Although smaller and larger businesses address challenges in differing ways according to their capacities and capabilities, many of the workforce and capability issues they experience are consistent.

Government, training providers and industry representative bodies provide or have access to a range of support, information and advice to businesses to address these issues. Industry stated that they did not see a coordinated approach in promoting the programs and assistance available to them. In particular, smaller businesses find government support complex and time consuming to navigate.

There is an opportunity for businesses that have successfully navigated the support network and reaped the benefits available to share the positive experiences and help build awareness of the network for other businesses.

For Ipswich to be clearly recognised as a hub for a highly skilled manufacturing workforce and to position manufacturing as an attractive industry for employment, there needs to be ongoing partnership and collaboration across a wide range of stakeholders.

7.1 Priority areas identified by the manufacturing industry in Ipswich

Manufacturing industry support

A wide range of support was already available for manufacturers to assist in addressing current and potential issues. The level of knowledge and understanding of these supports by the local industry varied across manufacturing businesses, but in general was limited.

At the Jobs Queensland Advancing Manufacturing forum held in Ipswich in late 2017, manufacturers stated that there was a good opportunity for businesses in the region to do more together and join up to address industry skills issues.⁷⁴ In consultations undertaken for this project it became apparent that there is a thirst for information and support from industry.

Industry networking opportunities were considered by manufacturers as a very important means to share information and promote business capabilities, and two thirds of manufacturers surveyed by Jobs Queensland expressed interest in wanting more information about the impacts of Industry 4.0.⁷⁵

There is an extensive amount of industry support and information specifically on workforce issues. However, this information is dispersed across numerous federal, state and local government, community organisations and industry peak body websites. This fragmentation of information made the process of locating business specific support, resources and networks time consuming for businesses. Knowledge of mechanisms to coordinate support, such as the Business and Industry Portal, was limited amongst businesses interviewed by Jobs Queensland.

⁷⁴ Jobs Queensland, 2017, *Summary of Main Themes from the 12 Jobs Queensland Workshops*.

⁷⁵ Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

Stakeholders consistently identified a misalignment between their skills, training and workforce needs, and their expectations and understanding of the VET system (including government supported training). Stakeholders also reported challenges in navigating and interpreting information and expressed a preference for accessing information and support through localised networks and contact points.⁷⁶

Industry stakeholders also noted the value of industry networks for the sharing of information and business development opportunities.⁷⁷ A Manufacturing Networking Group – Ipswich and Surrounds (the Group) – has been established by the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) focused on improving business capability and facilitating networking opportunities for business directors. The Ipswich City Council Office of Economic Development coordinates a range of events that focus on industry development and support programs for businesses, and shares information with local businesses on events happening in the local area.

While workforce, skilling and training issues are a specific focus for these existing networks, the coordination of the local industry will provide a catalyst for further discussions (be they through or outside the Group) about the skills and workforce development priorities to ensure the industry remains competitive.

Collaboration

Businesses understand the importance and benefits of industry collaboration to address a range of the workforce issues. They also see benefit in collaboration on an emerging requirement to provide whole and completed products rather than components to be assembled by a prime contractor.⁷⁸ There are examples where consortiums of businesses were coming together to collaborate on fulfilling these requirements from a prime contractor perspective but there was a lack of knowledge on the implications of such arrangements at an individual business level.

Stakeholders also identified opportunities to establish mechanisms for improving coordination of clustered training solutions to facilitate skills development in regional locations.⁷⁹ The manufacturing industry is interested in connecting with other businesses and industries to reduce costs through economies of scale when accessing common training needs. However, support would be needed to coordinate this. The planned implementation of the Regional Skills Investment Strategy in the Ipswich region has the potential to address barriers to VET participation at the regional level.

The opportunity to position Ipswich as a hub for high level skills in manufacturing and increase the attractiveness of the industry was evident throughout the consultations. Networks that provide information and support have been successfully coordinated in other regions to the benefit of the local businesses. Information sharing and building of knowledge on the supports available will build awareness of the range of existing support programs available in Ipswich.

⁷⁶ Jobs Queensland, 2018, *Research for the Workforce Report and Action Plan for the Wider Ipswich Region*.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Ibid.

CASE STUDY

The Manufacturing and Engineering Gateway to Industry Schools program (GISP): Promoting the manufacturing industry to the next generation of workers

The manufacturing industry has an ageing workforce and there are misconceptions that it is a dirty industry and an industry in decline. Attracting more young people is also an ongoing challenge.

In response to this, the Manufacturing and Engineering Gateway to Industry Schools program (GISP) is a partnership between industry and schools to raise the profile and diversity of careers in manufacturing and engineering. The program helps address this challenge through a number of activities including:

- industry-based professional development for teachers incorporating science technology, engineering, art (design) and mathematics (STEAM), including robotics and coding
- manufacturing and engineering-related activities across industrial technology and design, STEAM and other key learning curriculum areas
- structured learning workplace program, including meaningful work experience
- pathways into school-based apprenticeships and traineeships, and employment
- helping to reposition manufacturing careers as technology-rich and diverse, and update young people's and parents' understanding of advanced manufacturing workplaces
- providing young people with the knowledge and experience to make informed decisions about their future.

These activities, and GISP itself, are key to positioning the industry as one making dynamic contributions to Queensland's economy. Further, manufacturing is also an industry creating new opportunities for young people and existing staff to use higher level thinking, problem-solving and flexible approaches to daily work.

Marc Cleave, from industry partner Bustech, shows students the connections between their studies and the industry as part of the Gateway to Industry Hub for Engineering.

Photo courtesy of QMI Solutions.



7.2 Addressing the priority areas

A range of existing industry support and network initiatives are being offered by governments and other stakeholders that the industry could access. A list of existing resources is included in Appendix A.

The following table proposes actions that could be taken by stakeholders to leverage the existing industry support and networks that are available to Ipswich manufacturers.

Industry support and networks – Actions

12. Establish and maintain a regional manufacturing industry network (or expand an existing one) to enable coordination and promotion of responses to workforce challenges; coordination of training demand; and information on programs and resources to strengthen the systems and capabilities of manufacturing businesses in the Ipswich region.
13. Establishing a regional leadership group as a governance mechanism to drive the collaboration, cooperation and collective action required to address the priority areas.
14. Establish and maintain a cross-agency network for government and other relevant stakeholders to coordinate engagement with, and information provision to, the manufacturing industry in the Ipswich region, to identify workforce needs and promote joined up responses to identified areas of priority, including through:
 - establishing and promoting a clear communication channel that manufacturers in the region can access to obtain information about matters relevant to skills and capability development
 - promoting the suite of government support and programs available for manufacturers within the region and the skills and capability development initiatives that result from this report.



8. Appendices

Appendix A Manufacturing initiatives and resources

Initiative/Resource	Sponsor	Type
<p>Department of Employment, Small Business and Training</p> <p>Advice and support for employment, small business and training</p>	Department of Employment, Small Business and Training (DESBT)	Advice
<p>Jobs Queensland</p> <p>Provides strategic advice to Government on skills demand, future workforce planning and development, and traineeships and apprenticeships</p>	Department of Employment, Small Business and Training (DESBT)	Advice
<p>Advance Queensland</p> <p>Focuses on the growth of innovative Queensland businesses, particularly in the emerging industries of tomorrow</p>	Department of Innovation, Tourism Industry Development and the Commonwealth Games (DITID)	Business tools / resources
<p>Advanced Manufacturing</p> <p>The Advanced Manufacturing Roadmap supports Queensland's manufacturers to help them to increase their international productivity and competitiveness, and adopt innovative processes and technologies</p>	Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)	Business tools / resources
<p>ATO – help for small business and family enterprises</p> <p>Services and resources covering BAS, TFN and superannuation</p>	Australian Taxation Office (ATO)	Business tools / resources
<p>Australian Business Licencing Information Service</p> <p>Find government licences, permits, approvals, registrations, codes of practice, standards and guidelines—create and download a personalised report, and locate more help and information</p>	Australian Business Licencing Information Service (ABLIS)	Business tools / resources
<p>Business Section - ACCC</p> <p>Information and resources covering business rights and protections, pricing, customers, advertising and promoting your business</p>	Australian Competition & Consumer Commission (ACCC)	Business tools / resources
<p>Business.gov.au</p> <p>Online information to help plan, start and grow your small business - government information, assistance, forms and services</p>	Australian Government	Business tools / resources

Initiative/Resource	Sponsor	Type
Department of Jobs and Small Business Resources for Employers Access information on employing staff, workplace relations, wages and a range of small business resources	Australian Government Department of Jobs and Small Business	Business tools / resources
Education Programs - ACCC Online education program designed to help small businesses learn more about their rights and obligations under the <i>Competition and Consumer Act 2010</i>	Australian Competition & Consumer Commission (ACCC)	Business tools / resources
Family Business Australia Resource centre, find an adviser, professional development, advocacy for family businesses	Family Business Australia	Business tools / resources
Future Learn Links to skills development sites for management	Future Learn	Business tools / resources
Growing Queensland's Companies Provides CEOs and executives with the knowledge, skills and frameworks to enable them to develop their businesses	Advance Queensland	Business tools / resources
Ignite Ideas Fund Supports start-ups and small to medium Queensland businesses to commercialise market ready innovative ideas that will help them grow and compete in a global market and create new jobs	Advance Queensland	Business tools / resources
Improving Customer Service Find out how to provide good customer service to have a greater chance of keeping and increasing your customer base	Business Queensland	Business tools / resources
Information and Support Online resources to assist you with all issues related to small business and family enterprise	Australian Small Business and Family Enterprise Ombudsman	Business tools / resources
QMI Solutions Works working with entrepreneurs, industry, research organisations and governments, bringing together a wealth of knowledge to help businesses improve and grow	QMI Solutions	Business tools / resources
Queensland Chamber of Commerce and Industry Supports businesses Queensland businesses with a range of advice and services	Queensland Chamber of Commerce and Industry (QCCI)	Business tools / resources
Running a Business Provides new businesses access to professional advice and support in the critical early stages of establishing a business	Business Queensland	Business tools / resources

Initiative/Resource	Sponsor	Type
Small Business Guide Guide for owners and managers of small businesses to put in place some good online security practices	Stay Smart Online	Business tools / resources
Small Business Solutions TAFE Queensland can help design and implement your big business ideas through workshops and one-on-one mentoring	TAFE Queensland	Business tools / resources
The Ai Group Provides advocacy, support and assistance to businesses and industry	Ai Group	Business tools / resources
Job Pathways Charts Shows career pathways and qualifications for entrants to the industry, with specific information on: <ul style="list-style-type: none"> • Manufacturing (including Process, RV, Surfacing) • Meat processing • Manufactured Mineral Products • Plastics, rubber and cabling 	Australian Apprenticeships Pathways	Career development
myfuture Supports people to make career decisions, plan their career pathway and manage work transitions	Education Services Australia	Career development
Advance Queensland Community Digital Champions Provides opportunities for volunteers to share their experiences and encourage others in the community to explore the benefits that digital technologies can bring to their lives	Advance Queensland	Digital capability
Digital Scorecard Designed to help businesses identify ways to improve their digital capability and become more competitive in today's global digital economy	Business Queensland	Digital capability
Doing Business Online A website is your business's virtual shopfront – these resources will help guide your website creation	Business Queensland	Digital capability
Online marketing A range of ideas and resources to help develop or support an online marketing presence	Business Queensland	Digital capability
Jobactive Provides business with free access to jobactive services which can help them advertise job vacancies and find employees	Australian Government	Employment services

Initiative/Resource	Sponsor	Type
<p>Gateway to Industry Schools program – Manufacturing and Engineering</p> <p>Building partnerships between schools and industry to enable young people to acquire the knowledge, skills and attributes to participate effectively in the Queensland manufacturing and engineering industries</p>	Department of Employment, Small Business and Training (DESBT)	Engagement / attraction program
<p>Fire Station 101</p> <p>Ipswich entrepreneurship hub</p>	City of Ipswich	Entrepreneurship / innovation
<p>Export Market Development Grants</p> <p>Government grants to support export activities</p>	Austrade	Export Grants
<p>Austrade Exporting</p> <p>Range of resources to support export</p>	Austrade	Export Skills
<p>Austrade Services</p> <p>Range of services to support export</p>	Austrade	Export Skills
<p>VET Investment Plan</p> <p>Details the Queensland Government’s investment in vocational education and training (VET) to ensure Queenslanders continue to have access to quality, supportive, and affordable training that meets the ongoing needs of both individuals and employers</p>	Department of Employment, Small Business and Training (DESBT)	Funding policy
<p>Accelerate Small Business Grants</p> <p>Provides targeted assistance to small businesses that demonstrate high-growth and employment aspirations, to enable them to engage high-level experts and strategic advisors to work closely with them in their business</p>	Business Queensland	Grants/funding
<p>Back to Work</p> <p>Provides support for employers who hire a long-term unemployed or young unemployed jobseeker in regional or South East Queensland</p> <ul style="list-style-type: none"> • Employer Support Payments • Youth Boost Payment • Mature Aged Boost Payments 	Department of Employment, Small Business and Training (DESBT)	Grants/funding
<p>Business Development Fund</p> <p>Focuses on the growth of innovative Queensland businesses, particularly in the emerging industries of tomorrow</p>	Advance Queensland	Grants/funding
<p>Grants and Business Support</p> <p>The Queensland, Australian and local governments offer funding programs, often in the form of grants, and business support services to help new and established businesses grow and succeed</p>	Business Queensland	Grants/funding

Initiative/Resource	Sponsor	Type
<p>Made in Queensland Queensland Government initiative supporting our manufacturing sector to become more internationally competitive and adopt innovative processes and technologies</p>	Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)	Grants/funding
<p>Regional Skills Investment Strategy Queensland Government initiative to target regional skills interventions to better align skills supply with job demand</p>	Department of Employment, Small Business and Training (DESBT)	Grants/funding
<p>Skilling Queenslanders for Work – WorkStart An incentive program that rewards eligible private sector employers with a one-off \$10,000 payment, if they employ a Queenslanders in a traineeship or apprenticeship who has previously participated in a specified SQW program</p>	Department of Employment, Small Business and Training (DESBT)	Grants/funding
<p>Small Business Digital Grants Provides small businesses with access to digital technologies and services to enable them to work smarter, engage with the global economy and make the most of online business opportunities arising from digital disruption</p>	Business Queensland	Grants/funding
<p>Training in Emerging and Innovative Industries Fund Provides assistance to industries impacted by digital disruption by supporting a transition and adoption of new practices by existing workers</p>	Department of Employment, Small Business and Training (DESBT)	Grants/funding
<p>Accelerate Indigenous Small Business Grants Provides targeted assistance to established Queensland-based Aboriginal and Torres Strait Islander small businesses that demonstrate growth and employment aspirations to enable them to engage high-level expertise for their business</p>	Department of Employment, Small Business and Training (DESBT)	Indigenous business support
<p>Black Business Finder Directory of Indigenous businesses to encourage the growth and development of Indigenous businesses as a critical pathway for economic independence</p>	Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP)	Indigenous business support
<p>Business Development and Assistance Program Assists Aboriginal and Torres Strait Islander peoples to access the skills, knowledge and resources required to start and grow viable and sustainable businesses</p>	Indigenous Business Australia	Indigenous business support
<p>Enterprise Development Provides a range of services to help strengthen and grow Aboriginal and Torres Strait Islander businesses in Queensland</p>	Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP)	Indigenous business support
<p>Youth Employment Program An employment support program for young Aboriginal and Torres Strait Islander people who are finishing high school and looking for work or considering further education</p>	Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP)	Indigenous employment support

Initiative/Resource	Sponsor	Type
<p>Consider Your Idea</p> <p>Resources to help determine the viability of a business idea and provide clear steps to turn your idea into a reality – you can also meet with a business mentor</p>	Business Queensland	Marketing / innovation
<p>Mentoring for Growth</p> <p>Offers eligible businesses access to a panel of volunteer business experts who during a meeting offer insights, options and suggestions on business challenges relating to growth and innovation</p>	Business Queensland	Mentoring
<p>Pathways workshops</p> <p>For SMEs that want to drive business growth with new products and services, have an idea but don't know how to take it to market, or have existing product development activities and want to 'refresh' their thinking</p>	Advance Queensland	Mentoring
<p>Working with business advisers</p> <p>This guide explores what types of business advisers are available, how to find the right adviser, how to build a successful working relationship with your adviser and, when necessary, when to end your involvement with an adviser</p>	Business Queensland	Mentoring
<p>Advancing Regional Innovation</p> <p>Aims to turn our regions into hubs for innovation and enterprise. It will enable local entrepreneurs, business leaders and key industries to collaborate closely and with government to harness innovation and unlock business potential, strengthen existing industries and prepare regional Queenslanders for jobs of the future</p>	Advance Queensland	Regional partnerships
<p>Regional Business Angels Support Program</p> <p>Linking investors with entrepreneurs to create new economic opportunities and jobs in Queensland's regions</p>	Advance Queensland	Regional partnerships
<p>Regional Skills Adjustment Strategy</p> <p>A Queensland Government funded initiative delivered by TAFE Queensland to support regional workforces to gain foundation, employability and technical skills to transition to the jobs of the future</p>	Department of Employment, Small Business and Training (DESBT)	Skilling for future changes
<p>Queensland Skills Gateway</p> <p>Training options for the manufacturing industry</p>	Department of Employment, Small Business and Training (DESBT)	Skills development
<p>ICN Gateway</p> <p>ICN helps bring Australian suppliers and project owners together by giving exclusive access to an online database and network of Business Growth consultants</p>	Industry Capability Network (ICN)	Supply opportunities



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EQUIPMENT

Appendix B

Abbreviations and definitions

Accredited training	Accredited training is the provision of training that has been assessed by ASQA as meeting the Standards for VET Accredited Courses 2012. Training is nationally recognised and listed on the national register, www.training.gov.au .
Employability skills	Employability skills is a term used to cover a broad range of personal attributes and transferable skills that are important to employers such as teamwork, problem-solving, communication, self-management, motivation and 'people skills'.
Non-accredited training	Informal training including training delivered by equipment manufacturers, <i>ad hoc</i> training delivered on-the-job (e.g. induction) that can be structured, but not accredited
Regional Skills Investment Strategy (RSIS)	A new commitment from the Queensland Government in the 2017–18 Annual VET Investment Plan to target regional skills interventions to better align skills supply with job demand.
Registered Training Organisation (RTO)	A training provider that is registered by the Australian Skills Quality Authority (ASQA) to deliver vocational education and training (VET). RTOs include TAFE colleges and institutes, adult and community education providers, private providers, community organisations, schools, higher education institutions, commercial and enterprise training providers, industry bodies and other organisations meeting the registration requirements.
Sector	For the purpose of this report, sector refers to the whole manufacturing sector.
Small and medium enterprises (SMEs)	Businesses employing fewer than 200 employees.
Sub-sector	For the purpose of this report, sub-sector refers to a specific sector of manufacturing e.g. Metal Product Manufacturing.
Training in Emerging and Innovative Industries Fund (TEII)	A \$4 million commitment from the Queensland Government providing assistance to eligible organisations with strategies to support industries undergoing transition and upskilling existing workers impacted by digital disruption.



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