VISION 2020: FUTURE LABOUR MARKETS

The future is here. It’s just not very evenly distributed.*

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There are many factors driving the changing structure of Australia’s labour market, with some industries affected more than others. Ensuring our labour force has the necessary skills to take our industries into the future is essential for our economy to remain competitive.

What is occurring in Australia’s manufacturing industry?

Set against a backdrop of high-profile factory closures, including iconic car factories, one could be forgiven for thinking that manufacturing in Australia is terminally ill.

Manufacturing in Australia is alive. Australia produces more than $100 billion of value-added output each year, and exports more than $25 billion of that output – this in the face of a stubbornly high Australian dollar.

It may no longer be the dominant employing industry in Australia, as it once was in the mid-20th century, but the value of what it produces has grown strongly. The growing wedge between these two trends is attributable to increases in productivity. This should be celebrated. Productivity increases flow through to higher incomes for manufacturing workers, spurring demand for new goods and services – travel, dining-out, home renovations – and reduced prices for the goods that are made here or abroad.

The decline in the relative importance of manufacturing in Australia is a global phenomenon among developed countries. Over the last two decades, manufacturing as a share of total output has fallen in all OECD countries bar Hungary and South Korea, while services as a share of total output has grown in all OECD countries bar Norway. The same phenomenon has also begun to occur in some developing countries, including China.

* A quote attributed to the famous science fiction writer, William Gibson.
Structural change—to be embraced, not feared

Structural change will continue to occur in Australia, due to global forces like offshoring and domestic factors such as the greying of the population. The relatively modest job losses in manufacturing and in agriculture over the past two decades have been dwarfed by hundreds of thousands of new jobs in other industries that are, on the whole, higher paying.

Figure 1: Employment growth and contraction in low to high paying industries.

Source: ABS Cat. No. 5204.0 & 6291.0.55.003.
How we talk about structural change

Of course, someone at the margins may not be so sanguine about the virtues of structural change. It is galling to a Ford factory worker made redundant in Geelong to know that thousands of new jobs were created across Australia that same month, or that there is a shortage of bus drivers in Darwin.

This example illustrates an important facet of the concept of change. In most instances, reported measures of change are net. The month to month changes in employment reported by the ABS is the net outcome of gross changes in the circumstances of tens of thousands of individuals: TAFE graduates entering work, baby boomers retiring, women taking time out from the workforce to raise children, workers made redundant, friends opening up a new pop-up shop, and so on.

The scale of this gross change is immense. Using linked Census data from the Australian Longitudinal Census Dataset, we find that more than 400,000 people working in manufacturing in 2011 had been working in other industries in 2006 or were new entrants to the workforce. They were offset by more than 500,000 people who left manufacturing to work in other industries or retired.
Training for a changing economy

A large part of what training providers do, and must keep on doing, is to provide people with the skills they need to allow these movements to occur with minimum friction.

VET graduates tend to find jobs in the larger employing industries (figure 2).

Department of Industry projections are that three of the four industries with the most job openings through to 2020, whether from growth or from replacement demand, are the same industries in which the highest number of VET graduates are employed: construction, health care and social assistance, and retail trade.

Figure 2: 2011 employment of VET graduates with new qualifications since 2006

Note: Population is people with no post-school qualifications in 2006 and with a VET or higher education qualification in 2011.
A workforce adapting in the face of technological change

A lively debate among economists has been taking place over recent years on the impact of new technologies on work, prompted by the advent of new technologies just over the horizon, such as 3D printing, energy storage, the Internet of Things, and advanced robotics.

It is now well established that in many developed countries, including Australia, there has been a “hollowing-out” in the structure of the workforce, with rapid growth in high-skilled occupations, solid growth in some low-skilled occupations, and a relative decline in the middle.

The accepted explanation for this phenomenon is to categorise jobs as involving, on the one hand, some mix of routine and non-routine tasks and, on the other, some mix of cognitive and manual tasks. The jobs that are the most susceptible to technological displacement, usually by computers, are those that are heavily routinized and those that are neither cognitively intensive nor manually intensive. Contrast keyboard operators and hairdressers. Twenty years ago there were three times as many keyboard operators as hairdressers in Australia. Now they are roughly equal in number. The tasks in these two occupations are heavily routinized and not cognitively intensive. Hairdressing is manually intensive whereas typing is not. Jobs that are holding out to being displaced are ones that are changing in form, acquiring more diagnostic and servicing attributes.

How long might they hold out? A new bout of end-of-work millenarianism has taken hold in some quarters with the publication of The Second Machine Age earlier this year. The authors argue that advances in digital technologies, especially in artificial intelligence, robotics, and analysis of big data will spur economic growth and potentially displace many jobs that are commonly regarded as non-routine and cognitively intensive.
New technologies and the future of work—do we need to be concerned?

The advent of driverless cars is seen as emblematic of what the future holds. A recent study, conducted by Carl Frey and Michael Osborne, estimates the probability of computers or robots substituting for workers for 700 different occupations, based on the extent to which those jobs required perception and manipulation, creative intelligence and social intelligence. For the United States, the study finds that close to half of all employment is at high risk of being displaced over the next decade or two.

In my view there is good cause for circumspect about these scenarios of the future. In a brilliant and caustic essay, Dave Graber rails on behalf of all baby boomers, “Where are the flying cars we were promised?” He argues that the pace of technological innovation has not matched what occurred in the late 19th and early 20th centuries, that information technologies are not genuinely transformative of our society as were electricity, refrigerators, plastics, telephones, cars and penicillin.

While change can be disruptive it is rare that new technologies are so disruptive that the future entirely displaces the present overnight. The first automated telephone exchange was introduced in Australia in 1911. The last manual one closed in 1991. The focus on which jobs may be displaced means that we discount too much the possibilities of the future, including new jobs that we have not yet imagined. Disruption sounds pejorative: the lesson of economic history is that “technology is not our enemy, it is our best hope.”
Food for thought—implications for how we train Australia’s future workforce

What does all this mean for the education and training that takes place within TAFE institutes through to 2020?

1. In the period ahead to 2020, growth in non-routine work will continue to outpace growth in routinized work. Is TAFE adequately equipping people with the suite of capabilities to master non-routine work, such as flexibility, judgement, common sense, and fluent communication?

2. How well do TAFE institutes really understand their market? Their customer base is both students and industry. Important considerations are where students are taking up jobs, the sectors they are going into, and the types of jobs these are. Are TAFE institutes servicing this market and adapting to its changing needs?

3. Employer satisfaction with the VET system is falling. That has to be a concern. TAFE institutes are better placed than universities to connect, understand and help local businesses. Which are the ones that have the potential to thrive? How might TAFE institutes help them? How might TAFE institutes help students start-up their own businesses and promote a local culture of innovation and entrepreneurship?
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Further Reading