

Address to Siemens Digitalize Conference 2018
By Ai Group Chief Executive Innes Willox
“TWO ROADS TO A NEW INDUSTRY”

Introduction

Good morning everybody, and particularly to my distinguished panelists and colleagues in the Industry 4.0 Advanced Manufacturing Forum. I'd like to set the scene for the discussion to come with some thoughts on the roads to renewal for industry in Australia.

Our national conversation about the future of Australian industry tends towards the depressing, perhaps the very depressing. It is often a conversation filled with fallacies and furbies, based on out-dated ideas, theories and images. Often it is a long way from the reality of our industrial base as a whole and the stories of the many individual companies who make up that base, many of whom are here.

Perhaps a good reference point for the conversation is the story of 'The Road' - a post-apocalyptic Cormac McCarthy novel and Viggo Mortensen film of desperate people who, having outlived the ecosystem they depend on, stagger pointlessly onward up the crumbling highway to the inevitable end of all things.

In the industry context, this is the idea that Australian manufacturing is dead but doesn't know it yet – that it will fall away whatever we do, lost to other more competitive economies, and that to sustain ourselves nationally we should concentrate instead on digging stuff up, becoming a tourist information bureau and perfecting making lattes.

Put baldly, this view is rubbish. Reality is a long way from the perception of many. Ai Group's Performance of Manufacturing Index has shown the sector in expansion for 22 consecutive months. Manufacturing employment grew by nearly 50,000 workers in the year to May 2018, surpassed only by Health and Construction. The turning down of the mining boom reminded many people of the enduring value of a diverse economy. And the post-mining boom normalization of our exchange rate, together with shifts in the cost structure of China, has made it much more obvious that Australia can be a globally competitive and innovative place to make sophisticated products if we choose to be.

But the apocalyptic vision of The Road is still widely felt, not least in too many parents and careers counsellors dissuading their kids from entering what they see as a dying industry. Images of saw-dust floors, accidents, manual repetitive labor and industries leaving the country because we can't compete still prevail among many. Sadly.

The reality is we have now before us a better vision of a better road. We can have a manufacturing sector that does not just survive, but thrives by transforming itself and taking advantage of the possibilities of new technology. This is not just a pathway for a handful of self-consciously high-tech businesses. It is a road of digitalization, business model innovation and high performance that can manufacturing business can take to become more advanced. It is the road of new collar jobs, fusing a wonderful new array of skills and processes, with innovation, problem solving and potential global impact at their heart. And at the core of all that is Industry 4.0

What is Industry 4.0

Most of you will already be familiar with Industry 4.0. But in short, this is the latest wave of profound change to reshape industry over the past few centuries. Previously industries have risen, fallen and been radically transformed as they unlocked the potential of steam power, then electricity, then computers and basic automation. Today they are grappling with the possibilities of full digitalization, where both production processes and the ultimate products themselves are connected, data rich and controllable. Production and products can be more efficient, tailored and flexible than ever before.

What will be needed

Individual businesses and Australia as a whole need to get a few things right to walk the road of Industry 4.0 and to take advantage of the opportunities it presents.

We need the **ambition** to excel, grow and learn, rather than settling for stasis or decline.

We need to cultivate **innovation** at every level, whether that is moving to the state of the art or advancing it.

We need **collaboration** between businesses, researchers, governments, institutions and workers to make the most of our resources.

We need a robust **technical infrastructure** of standards and frameworks that give us global compatibility and local access.

We need rock solid approaches to **cyber security** if every part of production and every product is potentially hackable.

And we need the **skills** in our current and emerging workforce and management to make the most of all this.

Update about the Taskforce

That is a tall order and meeting it will require concerted efforts by industry, civil society and every level of government.

In April 2016 the Federal Government established the Prime Minister's Industry 4.0 Taskforce to broaden awareness of Industry 4.0 and accelerate the pace of its diffusion. Part of the initial effort was to build official and ongoing links between Australian industry and the German Platform Industrie 4.0. The Taskforce has achieved this, but also much more.

Workstreams have been established under expert leadership to advance standards, innovation, security, work, education and training and Test Labs.

Major reports and recommendations for action have been developed on standards and test labs.

The Industry 4.0 higher apprenticeships project – a partnership between Siemens, Swinburne and Ai Group has been overwhelmingly successful and has generated significant interest across the country. Further rollout is planned for 2019 and Ai Group is currently working with companies and sourcing candidates to help this get underway.

But ultimately the future of industry is the responsibility of industry and the stakeholders we work with. It is therefore highly appropriate that the good work of the Prime Minister's Taskforce will continue in a new form as the **Industry 4.0 Advanced Manufacturing Forum**. While this initiative retains strong relationships and engagement with government, the Forum is convened by Ai Group, and works closely with:

- the Advanced Manufacturing Growth Centre,
- the Innovative Manufacturing Cooperative Research Centre (IMCRC),
- AustCyber,
- Engineers Australia,
- Standards Australia,
- Swinburne University and
- the Australian Manufacturing Workers Union.

The Industry 4.0 Advanced Manufacturing Forum will retain and further build on the workstreams established in its incarnation as the Taskforce:

- Reference architectures, standards and norms led by Dr Bronwyn Evans (CEO, Standards Australia);
- Technology & Application Scenarios, led by David Chuter (CEO, IMCRC);
- Security of networked systems, led by Michelle Price (CEO, AustCyber);
- Work, Education & Training and Test Laboratories, led by Professor Aleksander Subic (Deputy Vice Chancellor, Swinburne University) and Andrew Dettmer (National President, Australian Manufacturers Workers Union).

I'd like to pay tribute to the work that Jeff Connolly of Siemens has done as Chair of the Taskforce, and that he will continue to do as part of the Forum. The Federal Government remains heavily involved and invested in advancing Australian industry through the forum, as do a range of other stakeholders who can see the economic benefits continuing the advance of Australian industry can provide.

I am delighted to chair the Forum, and even more delighted that the Workstream leaders are here with us today to discuss the issues and the work ahead.

But before I hand over to them and the facilitation of Jens Goennemann of the Advanced Manufacturing Growth Centre, I have a few further thoughts on the state of Australia's progress.

Thoughts on state of 4.0 in Australia

Speaking at a recent Ai Group function, the Governor of the Reserve Bank of Australia, Philip Lowe, commented on the nature of recent technological progress, noting that it has been heavily focused on software and information technology and, drawing on OECD research, that there was a wide dispersion of take up of these technologies between leading and lagging firms.

Mr Lowe also expressed confidence that over time there would be a greater diffusion of these technologies beyond the leading firms thus boosting aggregate productivity and incomes. These observations provide a useful point of reference on both the current status of Industry 4.0 in Australia and what the future holds.

It is fair to say that substantial progress in embracing Industry 4.0 has so far been confined to a relatively small number of leading firms – both multinational and domestically-based. Embracing Industry 4.0, whether under that name or others, has stretched the gap between these leaders and the majority of businesses.

In many cases these businesses are the usual suspects – those who are known to be proactively on the lookout for opportunities to improve and develop their businesses. In an important sense these businesses self-select. They are switched on, aware of the latest developments and they allocate time and resources to “working on the business”. They are also more generally aware of various policies, programs and measures available to support industry development and innovation.

Their experiences are being emulated by the early adopters and this diffusion is assisted by important intermediaries including businesses supplying, servicing and optimising capital equipment and a considerable range of business service providers. The diffusion process is evident in the number of conferences, the extent of coverage of Industry 4.0 related articles in industry-focused media and by the flow of reports by different levels of government and their agencies.

Key to accelerating the diffusion of Industry 4.0 is ensuring there is a sufficient and growing supply of appropriately skilled people for businesses to draw on as they embrace Industry 4.0. This involves industry and education and training organisations working closely to design and develop an appropriate range of training opportunities both for the existing and future workforce.

The increasing frequency of reports of skills shortages relating to the adoption of Industry 4.0 approaches suggests that current capacity is constrained. But more encouragingly it also points to an increased pace of adoption and further diffusion of Industry 4.0 beyond the leading firms. In this sense there is reason to be optimistic that with appropriate policy support, including in relation to workforce development initiatives, there is strong scope for further acceleration over the next few years.

What more is needed?

There are other barriers. We have heard anecdotally from members about possible reasons for the slow adoption of digital technologies, particularly among SMEs:

- They do not have the time to assess digital technologies to know what's relevant to them and what the benefits may be;
- They do not know where to start or whom to trust;
- They would like to know what others are doing to determine the benchmark; and
- The speed of change makes it hard to keep up and adapt, even for innovative manufacturers.

We have also heard from both end users and suppliers that while there may be interest from businesses in digital technologies, the real challenge is the development and implementation of a real business case. This is harder where skills or knowledge of industry 4.0 are thin.

In a report that Ai Group published in May last year, we proposed areas where government and public support could be of value to industry, including:

- The disappointing closure of the Industry Skills Fund leaves a gap in support for building workforce digital skills and this gap should be rectified.

- Other public programs targeted at improving employee skills in use of workplace technology and other foundational skills will help businesses and people transition and develop their capability in the immediate term.

Complementing this, businesses need to understand better the longer-term benefits of digitally upskilling staff. Government initiatives (such as the Entrepreneurs' Programme and Industry Growth Centres) could be avenues of support. Skills growth and capture, including through greater industry collaboration with universities and vocational education providers, are absolutely fundamental to the national challenge of meeting the demands of industry for the workforce of the future.

Incentives could be created to encourage businesses to take risks to determine how investment in technologies can benefit their business and people. Options include grants or tax concessions for investment in digital transformation, including demonstration projects.

What Ai Group is doing

For our part, Ai Group is putting Industry 4.0 and industry transformation at the core of our work with members and stakeholders. We offer members online resources and connections on industry 4.0, skills development and more. We are a leading provider for the Entrepreneur's Programme, which is lifting the capability of businesses across Australia.

Ai Group provides the online Digital Business Kits (DBK) service, originally developed in partnership with the Australian Government. DBK provides SME manufacturers with a resource of information on building capability in digitalisation.

Ai Group is also running a range of short courses across the country. These courses focus on *Digital Strategy for Managers in Industry 4.0*, covering *What is Industry 4.0?* and *Strategy for Digital Transformation*. These programs are designed to develop industry 4.0 capability and strategy inside each business.

Conclusion

I think that everybody in this room agrees that there can be a bright future for industry in Australia. The road we have before us does not lead to apocalypse. But it isn't the Yellow Brick Road either – a simple path that you just need to follow, follow, follow. Implementing Industry 4.0 in Australia is making great strides, but there is much more to be done within our organisations and in partnership together. The skills, the standards, advancing and diffusing technology and business models; there is plenty to get on with, not just for the Forum but for all of us. I look forward to working with you all as we head down this road together. The reality is that we as businesses and Australia as a nation has little option but to walk it.