



According to the Welding Technology Institute of Australia (WTIA), welding touches countless parts of our lives but remains generally misunderstood.

Welding is many things at the same time: an art, skill, trade, engineering discipline and a science, all rolled into one.

“People see welding as a trade, and it’s an extremely complex process. It involves strict adherence to standards, you need to worry about pre-heat treatment, post-heat treatment, different types of electrode and so on,” explains Geoff Crittenden, Chief Executive Officer of the WTIA.

It’s hard to look around and miss its influence. There’s about 3 billion tonnes of steel infrastructure in Australia, by WTIA’s count, and it’s all put together by welding.

This multidisciplinary skill is critical for the country’s industry, and deployed by nearly every manufacturer joining steel.

The WTIA was established in the 1920s and the spread of responsibilities is, like the subject it deals with, also broad. The welding peak body is an industry association, training provider, certification body, technical institute and consulting organisation.

It is a voice for an industry that is transforming due to technology, globalisation and economics. Between 2005–2015, for example, the volume of imported fabricated steel grew from 5 to 30 per cent of the total, shrinking local fabrication businesses by a third.

The use of robotics is increasing in nearly every area of welding, Crittenden points out. In general, due to challenged margins and revenues, many local fabricators have not invested enough in technology.

However, there are local examples of world-class companies, seizing on the enormous benefits offered by robotics and other assistive technologies. Crittenden cites one member in Queensland which has taken the number of man-hours to produce a welded steel beam down to 1.5 man-hours. Other companies are at 12–15 man-hours, thereby becoming quickly uncompetitive.

“They have seven people working in their organisation, of which one works on the shopfloor,” explains Crittenden.

Some are seizing on Industry 4.0-style connectivity in their operations as a way to increase their global competitiveness. For instance, a Hunter Valley business making parts for heavy mining equipment companies like Caterpillar.

“One of the mines needs a particular component, and they email the order to Caterpillar in the States, who email a specification to this company in the Hunter Valley. They quote, and nine times out of ten they’re cheaper,” the WTIA boss explains.

“**Effectively, they are part of a global supply chain, but the whole process is managed over the internet. And that’s really where I see the future of Australian manufacturing.**”

Getting industry prepared for this exciting future, where Australian companies can seize on international opportunities based on technical sophistication rather than labour costs, is part of the reason why the WTIA has joined the Australian Manufacturing Growth Centre (AMGC).

Crittenden says that the WTIA is impressed by the AMGC’s research, its understanding of what the future of manufacturing will look like, and its advocacy for the industry.

“They’ve spoken up for manufacturing, and I think this is absolutely critical; too many of our leaders over the years have talked about manufacturing as being dead,” he says.

“The fact of the matter is manufacturing is not dead and the AMGC is talking up, is standing up for manufacturing, and their influence with government is absolutely critical. We need a voice for manufacturing and the AMGC is that voice.”



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Geoff Crittenden, CEO of the WTIA