ADVANCED MANUFACTURING GROWTH CENTRE

MEMBER PROFILE

MAGNETICA

Magnetica was established in 2005 to commercialise magnetic resonance imaging (MRI) innovations originally developed at The University of Queensland.

"The University of Queensland has been a collaborative partner, as well as our largest investor, via UniQuest, the university's commercialisation arm, since the beginning," explains Duncan Stovell, Magnetica's CEO since 2017.

Signal correction technology developed by Professor David Doddrell and the company's founding inventor and Chief Technology Officer, Professor Stuart Crozier, has been licensed to the biggest names in healthcare technology. This technology has been used in billions and billions of scans around the world to date.

The next big innovation by Crozier, who is also the university's Director of Biomedical Engineering and a 2012 Clunies Ross Award winner, was a way to shrink the size of superconducting magnets. This enables a more deployable MRI scanner, and for clinicians to offer extremity scans using a dedicated MRI system. Among other benefits, it spares patients the potentially claustrophobic experience of having to lie 'inside a tunnel' within a whole-body MRI system.

Though Magnetica makes use of world-leading scientific knowhow and has a significant global impact, it is relatively small. The company holds nearly 40 national patents, but at the same time, it employs 15 people: a mix of contract, full-and part-time engineers and scientists, as well as professional and support staff.

The focus on cutting-edge innovation is large, while actual product output is currently small.

As a small company commercialising innovative and market disrupting product, our current product volumes are low," says Stovell. "Over time, manufacturing volumes will increase as market take-up occurs."

Crozier and the team have pioneered medical technologies enabling clearer MRI pictures, early detection of diseases and cancers, and better outcomes for countless patients. Recent development efforts have been focused around further disruptive innovations for smaller, lightweight extremity imaging machines.

"An extremity scanner can undertake about 25 per cent of the typical workload of a whole-body machine and is complementary to it. This can free up the larger machine up for the jobs where it is really needed", explains Stovell. "With shorter set-up and scanning times and high-quality images, a smaller dedicated machine makes more sense to scan a wrist, ankle or knee, for example."

"Our intellectual property portfolio, in particular our asymmetric magnet technology, provides us with a competitive advantage and is well suited to the smaller, lighter and hence more deployable extremity MRI system applications," he adds.

The company is currently working to commercialise a 3 Tesla Extremity MRI system with a global MRI systems integration partner. As is the case with many Australian advanced manufacturers, this new, highly-complex product will solve the problems of a multinational company through technical leadership, using highly specialised knowledge and processes, and be sold within a global supply chain.

Asked about where the Advanced Manufacturing Growth Centre fits into all this, Stovell says,

"A focus upon developing the manufacturing community's capabilities to remain competitive on the world-stage requires the adoption of new innovations and harnessing them to drive efficiency. The AMGC plays an important role in furthering the achievement of this goal."

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Duncan Stovell, CEO