AMGC
ADVANCED MANUFACTURING GROWTH CENTRE LTD

BRISBANE-HEADQUARTERED PRODUCT DEVELOPMENT SPECIALIST

The EVOLVE group

Evolve Group is a prosperous, Brisbane-headquartered product development specialist, with several internationally-renowned releases. Its manufacturing business unit, Marco Engineering, is collaborating with several firms to redevelop, relaunch and reshore production of various polymer products. The University of Queensland will contribute knowledge and IP on incorporating new materials in the relaunched products.

How has the Growth Centre helped?

Advanced Manufacturing Growth Centre will make a total $221,000 co-investment in this project, which will provide an example of how plastic injection moulded products can be reshored from low-cost locations. Marco Engineering has lauded the connections AMGC has helped it make, and its support for this and future reshoring-themed initiatives.

What's changed?

The project will lead to a forecast 1.2 million units per month being produced in Brisbane by 2019, compared to current monthly volumes of 500,000. Quality and supply chain responsiveness will also improve as a result. Based on forecasts, Marco Engineering, which is investing $2,440,550 in capital equipment and $244,000 in development costs, estimates 44 new jobs will be created as work is reshored.

Success story overview

Marco Engineering, which Evolve Group acquired in 2013, is the group's manufacturing division. Evolve is an end-to-end commercialisation and manufacturing house, and specialises in production including in plastics, composites and steel.

A conversation on design work for a separate project between Evolve owner Ty Hermans and multiple clients turned to the topic of reshoring; this includes finding local manufacturing solutions for internationally renowned baby product suppliers designed for all age markets and uses.

Despite its reputation as a "low-cost" manufacturing country, production in China has drawbacks. These include but are not limited to IP theft, inconsistent quality, currency fluctuations, and large inventories and holding costs. Australia's pluses include world class design and continual improvement capabilities, and a strong "clean, green" image: particularly advantageous for sensitive items that are marketed to children and the elderly.

The project of improving manufacturing in injection moulding will move from Technology Readiness Level (TRL) 4 to 9, with Marco developing expertise in robotic automation for injection moulding, digital design, and advanced materials, deployable in other applications.

Hermans believes that production in Australia, for the right products and with the right approaches, can provide bottom-line benefits to local companies.

"There are certain things that Australia has strengths and weaknesses in, like any other country. It's about knowing what those strengths are, understanding what our weaknesses are, and focussing exclusively on our strengths," he explains.

The project is concerned with where strengths in design for manufacture, engineering, and advanced processes can make reshoring viable.

The project aims to redesign and to take manufacturability and logistics into account. It is part of a holistic understanding of where cost and value are added, guided by Lean manufacturing principles.

"It's redesigning the part itself so we can make it more efficient, but also redesigning the manufacturing process right the way through to how that product is presented to the retailer," he adds.

This includes how an unfinished part enters a machine, how it comes out, what features can be included to assist robotic picking and placing, how it is assembled, how the packaging it goes into is assembled, the size of packaging, how this will fit a pallet, and factors all along the supply chain.

The project will also see TPE (thermoplastic elastomer) replace silicon in straws. Material science expertise will be contributed by University of Queensland as well as of jigs and automation tooling.

Employment increases at Marco alone are estimated at two engineers, six robotics operators, six packaging operators, and 30 semi-skilled plant personnel. Marco is investing in $2,440,550 in capital equipment on top of development costs worth $244,000.

Hermans sees reshoring as incredibly realistic with the right approach, as well as a "silver bullet" for manufacturing jobs creation. He plans to deploy profits resulting from this successfully completed project into further reshoring projects.

He praises the Advanced Manufacturing Centre for its support, including $221,000 in co-funding, in bringing production by to Australia.

"The guys from the AMGC have been fantastic. Obviously, beyond the funding, the networking – so helping us meeting other people in the network; other government officials, other people that can give us advice," he says.

"I guess the other thing is that identifying other opportunities where we can help each other is a great thing, and welcoming our suggestions and input as well, to other projects."