



STEM Community Partnerships Program

Fairfield local scenario

Industry 4.0

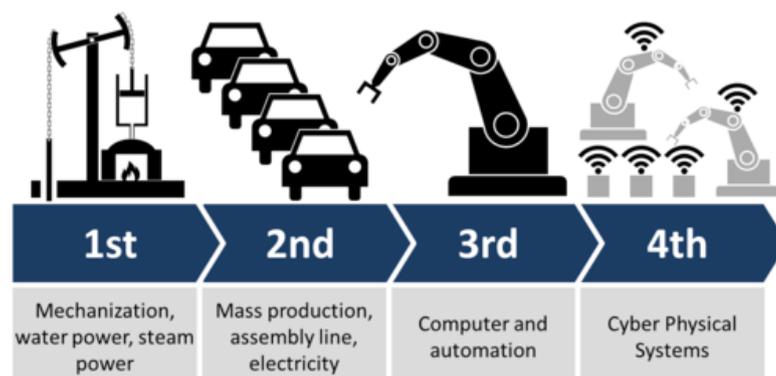
Industry 4.0 refers to the Fourth Industrial Revolution. It is the ongoing digitisation of traditional manufacturing and industrial practices and the integration across the entire production chain. Adoption of Industry 4.0 can lead to greater productivity and can help address common business challenges such as labour access and costs and distance to market.

Not all manufacturing businesses have embraced Industry 4.0 at the same rate. COVID-19 has highlighted the importance Industry 4.0 in enabling businesses to respond to disrupted supply chains, worker availability or increased demand, with those who had already scaled digital technologies in a better position to respond to the crisis.

As the world moves to more sustainable choices, businesses are required to innovate and better utilise their resources and materials. By utilising new technologies, businesses can turn their waste into a profit as well as provide cheaper resources to other businesses who can use the by-products and repurpose materials that would otherwise end up in landfill. This is the circular economy. Fairfield has the opportunity to add significant value as it is already an established manufacturing hub in Western Sydney.

The Modern Manufacturing Strategy by the Australian Government outlines six areas as its national manufacturing priorities, including Resources Technology & Critical Minerals Processing, Food & Beverage, Medical Products, Recycling & Clean Energy, Defence and Space. Fairfield is situated in one of the fastest growing regions in NSW and within its proximity to the Western Sydney Aerotropolis (Bradfield), is well equipped to take advantage of opportunities arising from Industry 4.0.

How your Council tackles the complexity of this issue impacts you and your community, now and in the future.



¹ EPA 2014b, NSW Waste Avoidance and Resource Recovery Strategy 2014–21, NSW Environment Protection Authority, Sydney www.epa.nsw.gov.au/wastestrategy/warr.htm

Your task

Your task is to use the information above and resources provided below as a start to identify a local problem and design a STEM-focussed solution.

(Question, Design, Explore, Communicate)

Resources

CSIRO research

- Advanced Manufacturing Roadmap, CSIRO, January 2021 <https://www.csiro.au/en/Do-business/Futures/Reports/Advanced-manufacturing-roadmap>

Reports

- Industry 4.0, Department of Industry, Science, Energy & Resources, December 2020 <https://www.industry.gov.au/funding-and-incentives/industry-40>
- Fairfield profile, Industry sector of employment <https://profile.id.com.au/fairfield/industries>
- Economy, Jobs and Business Insights <https://app.remplan.com.au/fairfield/economy/industries/value-added?state=oJVjFJ!yJ2vFVx1WCzy5W8iqevWAcNcLH24JIR8o82FQ5x5GFLHxQTKHAS11J8Spzq>

Articles and other resources

- Australian Government Modern Manufacturing Strategy <https://www.industry.gov.au/data-and-publications/make-it-happen-the-australian-governments-modern-manufacturing-strategy/our-modern-manufacturing-strategy>
- Research collaboration with Western Sydney manufacturer, Maxton Fox, to focus on circular economy. Western Sydney University, December 2020 https://www.westernsydney.edu.au/newscentre/news_centre/more_news_stories/research_collaboration_with_western_sydney_manufacturer_maxton_fox_to_focus_on_circular_economy
- New technology diploma to teach 'INDUSTRY 4.0' in NSW, August 2020 <https://www.stuartayres.com.au/media/media-releases/new-technology-diploma-teach-%E2%80%98industry-40%E2%80%99-nsw>
- Will the Construction Industry Survive Industry 4.0?, Western Sydney University – School of Build Environment, 2020 https://www.westernsydney.edu.au/schools/sobe/research/centre_for_smart_modern_construction/news/will_the_construction_industry_survive_industry_4.0
- Advanced Manufacturing Success stories, NSW Government <https://www.business.nsw.gov.au/industry-sectors/industry-opportunities/advanced-manufacturing/success-stories/capral>