

# ECONOMIC OVERVIEW SPECIAL TOPIC

**Artificial Intelligence.**

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# SPECIAL TOPIC: ARTIFICIAL INTELLIGENCE

## The thinking person's machine

**Firms that embed Artificial Intelligence (AI) will generate productivity and efficiency improvements and gain a competitive edge. AI will change the nature of work, changing the way labour is used and how workers are developed. Firms that most effectively incorporate AI have a bright future due to improved productivity, competitiveness, and agility.**

Artificial Intelligence (AI) is here. Machines that think like humans, able to perceive, recognise, solve, and learn can be found in our smartphones, digital voice assistants, smart home devices and navigation applications. They power up our social media interactions, our streaming services, and are in many of the games that we play on consoles.

AI can also be found in every sector of the economy, from public to private, from agriculture and manufacturing to services, and everywhere in between.

Despite this, the adoption of AI in New Zealand has lagged. In 2021, for example, only 19% of firms in New Zealand<sup>1</sup> had fully embraced AI, compared to 25% in Australia, US and UK. Most firms here are still trying to work out what AI is and how it might be used. Some have started to experiment with it, while others have dabbled with AI applications like ChatGPT, BARD and DALL-E.

There are some exceptions. Many larger firms in New Zealand, for example, have been active adopters, but tend to use AI in specific end uses. AI powered Chatbots bear testimony to this. Firms are also using AI in other areas of their business, such as procurement, inventory management, processing, distribution, and marketing.

For a minority of firms, AI is more instinctive. What sets these mostly small tech-savvy firms apart is their willingness to put algorithms and big data at the core of their business. AI determines what is produced, how it is produced, for which customer and at what price. Together with technologies such as robotics process engineering and Internet of Things, AI drives the machinery that turns widgets into products.

To that extent, we think that AI has the potential to level the competitive playing field. AI is not only encouraging new market entrants, it's allowing smaller firms within the same industry to compete head-on with larger firms. Whether this poses a threat to larger players is uncertain as large firms have the access to massive proprietary data sets, a large customer base and an established market presence that AI could leverage more.

The benefits of AI depend on the extent to which it has been adopted. In general, firms that transform themselves and put AI at the core of their business

are likely to see more benefits than those that limit AI to specific use areas. Much though depends on the quality of implementation and the sophistication of AI tools employed, as well as the cost.

These benefits are typically couched in terms of productivity gains at the firm level that deliver a competitive edge and better profitability. AI, for example, is good at repetitive tasks, such as data entry, report generation and customer service queries. Businesses can also use AI to predict demand more accurately and gain greater efficiencies in procurement and inventory management. Other applications include preventative maintenance, which reduces equipment downtime.

Further efficiencies will be achieved by changing the role of humans in the production process, freeing up workers to focus on higher value-added work. This will require workers to develop different skills and competencies. In an AI-driven world, EQ counts just as much as IQ, with a premium placed on workers that are creative, collaborative and show empathy. Workforce management and development approaches will need to evolve to build a workforce with skills to add value in an AI-centric production process.

Despite these benefits, adopting AI can be challenging for many businesses. Some have an inbuilt resistance to change. Discarding tried and trusted practices requires a big change in mindset. There is also the issue of when to invest, given how quickly AI is moving and the risks of obsolescence. And that is before we get to the technical challenge of integrating AI within existing data and systems architecture. The cost of incorporating AI, could be prohibitive, especially for sophisticated customised solutions. Lastly, it can take time for AI to bed in and deliver the value needed to push returns on investment above the hurdle rate.

However, for those that get AI right, the future looks good. Firms that don't are likely to struggle against rivals that use AI to reduce their unit costs of production, while at the same time delivering products and services tailored to unique customer requirements.

<sup>1</sup>State of AI in NZ 2021 ([qrious.co.nz](https://qrious.co.nz))

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