

BOOSTING TOMORROW'S PRODUCTIVITY WITH GREATER UPTAKE OF TECHNOLOGY

Each time a construction company sends up a drone to inspect hazardous areas of a site, it saves time and money and reduces risk to workers. Harnessing the power of technology to perform tasks like this can significantly boost productivity. Through researching and sharing the best steps for readying an organisation to adopt technology, BRANZ hopes other enterprises can do so more easily.

Discovering what makes fertile ground for the uptake of digital and technological advances meant examining the use of technology such as drones, computer modelling and artificial intelligence by local tech-savvy companies.

It also meant exploring how ready the industry is for the new and emerging technologies disrupting traditional ways of working so others can fast-track their adoption – and ultimately boost productivity.

The research project *Technology adoption roadmap for the New Zealand construction sector* began in 2019. Extensive data collection included an international literature review, a state-of-play survey of 428 architectural, engineering and construction organisations, 38 indepth interviews and five case studies.

These were deep dives into the technology adoption and digital transformation journeys of five large construction companies. Their technology included computer-aided design, cloud-based technology, global positioning systems, building information modelling, internet of things, smart sensors and virtual reality, with interest in automation, artificial intelligence and digital twinning.

Insights generated will prove helpful for industry planning. For instance, the top-performing engineering and construction companies in terms of technology adoption had over 100 employees and were ahead of their smaller peers by about 30% in technology readiness.

Cost and client interest mainly influence businesses' decisions on whether to introduce technologies. Innovation was driven by project need, followed by the lure of greater productivity.

Findings highlighted that digital literacy is central to technological transformation. It identified skill gaps in the industry – building information modellers, data analysts, software programmers and digital project managers. Industry investment in capability building and skills training will be the most impactful enablers to technological and digital competence.

The research team from the University of Auckland, Callaghan Innovation and Victoria University of Wellington is now working on a roadmap for how to implement technologies, featuring the core capabilities a business needs for success. This will incorporate a key recommendation, which is to take a systemic approach. This means evolving a business model with a people-focused talent strategy, an operational plan and a culture of technology adoption.

With pressure on the industry to alleviate the housing crisis and deliver major infrastructure, this advice about how to work smarter, not harder brings timely guidance.

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