New Zealand's Generative AI opportunity

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Executive Summary (1/2)

The Generative AI era presents a significant economic opportunity for New Zealand.

Leveraging recent advances in machine learning techniques, Generative AI models possess capabilities that can add tens of billions to New Zealand's GDP. These models can transform the way New Zealand's businesses operate, how New Zealanders learn, explore, and analyse information, and unlock opportunities to grow and develop the economy in ways that were not previously possible. This report outlines the Generative AI opportunity for New Zealand and the key enablers required to achieve it.

Generative AI can help renew economic progress in New Zealand and directly address long standing structural economic challenges.

Current economic conditions in New Zealand are challenging. Economic growth is sluggish at 0.6% and productivity growth is currently negative at -0.4%.[1] Generative AI can address these challenges by driving higher rates of GDP and productivity growth. It can do this by unlocking more time for workers to focus on high-value tasks by automating routine ones, and by enhancing workers' existing capabilities and skills, allowing workers to produce more in the same amount of time.

We examined over 19,000 tasks performed across 400 occupations to model how their productivity might be improved by Generative AI.

This analysis revealed that:

❖ **24% of tasks could be augmented** by using Generative AI as a copilot to enhance worker capabilities

❖ **14% of tasks could be automated**, reducing time spent on routine, menial tasks

This means the average worker in New Zealand could free up 275 hours each year to reinvest into higher value activities. With higher productivity, organisations in New Zealand would have the potential to increase output, even when operating with limited resources.

This productivity boost will add substantial value to New Zealand's economy by 2038.

We find that Generative AI could add NZ$76B in value to the New Zealand economy by 2038. This means that GDP would be 15% larger relative to the baseline forecast of NZ$495B, an increase equivalent to twice the size of the construction industry.[2] Productivity and GDP growth rates are expected to almost double with adoption of Generative AI. The size of the economic benefit that is ultimately realised will depend on the scale, speed, and approach to adoption, and how workers are supported to adapt to new ways of working.

1 **Generative AI could significantly boost annual productivity growth, meaning New Zealand's productivity will be 15% higher by 2038**

2x
Increase in annual Productivity growth

275 hours
unlocked annually per worker to reinvest on high-value tasks

2 **Generative AI is expected to add NZ$76B to New Zealand's annual GDP by 2038**

Annual GDP

+15%
higher relative to baseline

Annual GDP Growth Rate

+45%
higher relative to baseline

Executive Summary (2/2)

New Zealand has competitive advantages in Generative AI across three key areas: openness to trade, potential for innovation, and network infrastructure.

New Zealand's advantages could be leveraged to speed adoption and create new economic opportunities with Generative AI. Openness to trade facilitates technology transfer and has created leading export firms that act as a 'lighthouse' example to new, AI-powered export companies. This, coupled with a pro-innovation economy and excellent network infrastructure, means that New Zealand is well placed to build new export industries that make the most of the capabilities of Generative AI to compete on global scale.

New Zealand benefits from high adoption of Generative AI by its workforce. However, there are opportunities to increase digital maturity and confidence to harness the potential benefits.

Knowledge workers in New Zealand have enthusiastically embraced the Generative AI revolution, with 84% reporting they already use it at work. On this metric, New Zealand is the world's third fastest adopter of Generative AI.[1] However, only 19% of workers in New Zealand who use Generative AI use tools provided by their employer, trailing the global average by 4

percentage points, and the global leader, the United States, by 18. Addressing digital maturity, as well as trust and confidence in Generative AI, is essential for New Zealand to close this gap. New Zealand currently lags many advanced economies on measures of digital maturity, while corporate leaders have highlighted limitations in their confidence to implement the technology.

To fully realise the opportunity of Generative AI, New Zealand should focus on six enabling factors.

The scale and complexity of the Generative AI opportunity means that the degree to which New Zealand can capture its benefits depends on many factors. To increase the odds of success, New Zealand should focus on six key enablers: access to infrastructure, a skilled workforce, enterprise readiness, a collaborative ecosystem, a clear policy framework, and public trust and license to operate.

By focusing on its strengths and ensuring that the key enablers are in place, New Zealand can use Generative AI to create greater prosperity and transition to a more diversified, digitally-focused economy.

(3) New Zealand's export driven economy and skilled workforce smooths the path to adoption, but it must strengthen digital maturity and enterprise confidence

Digital Maturity Index

20th
in the OECD

74%
of NZ corporate leaders worry that their organisation lacks a plan to implement Gen AI

(4) Focusing on six key enablers is critical to ensure New Zealand can fully realise the benefits of Generative AI

6 enablers of Gen AI

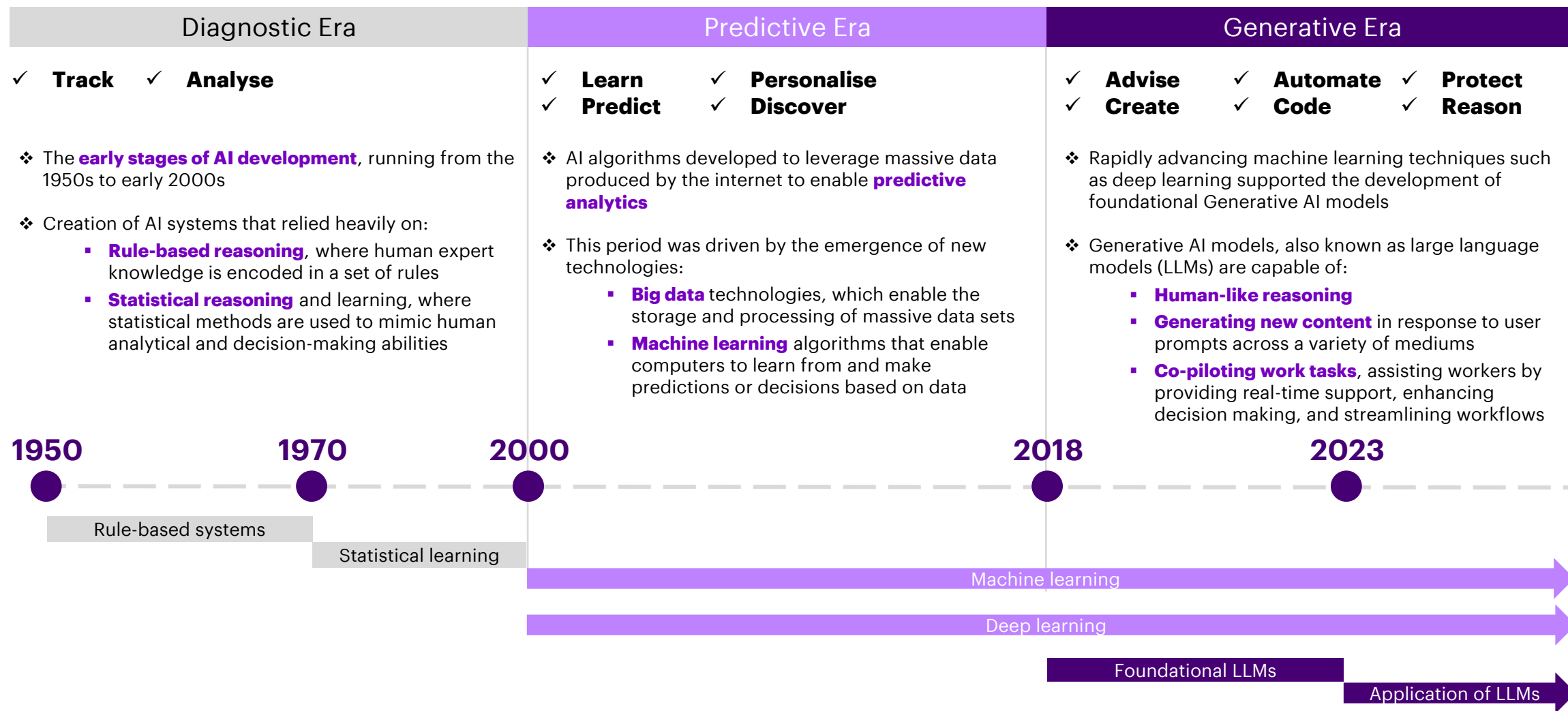|	
Access to infrastructure	Collaborative ecosystem
Skilled workforces	Clear policy framework
Enterprise readiness	Public trust and license to operate

01

Generative AI can transform the New Zealand economy

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Generative AI represents a new era in computing that allows the creation of novel content in response to user prompts

Diagnostic Era	Predictive Era	Generative Era

Diagnostic Era
- ✓ Track ✓ Analyse

- ❖ The **early stages of AI development**, running from the 1950s to early 2000s
- ❖ Creation of AI systems that relied heavily on:
  - ▪ **Rule-based reasoning**, where human expert knowledge is encoded in a set of rules
  - ▪ **Statistical reasoning** and learning, where statistical methods are used to mimic human analytical and decision-making abilities

Predictive Era
- ✓ Learn ✓ Personalise
- ✓ Predict ✓ Discover

- ❖ AI algorithms developed to leverage massive data produced by the internet to enable **predictive analytics**
- ❖ This period was driven by the emergence of new technologies:
  - ▪ **Big data** technologies, which enable the storage and processing of massive data sets
  - ▪ **Machine learning** algorithms that enable computers to learn from and make predictions or decisions based on data

Generative Era
- ✓ Advise ✓ Automate ✓ Protect
- ✓ Create ✓ Code ✓ Reason

- ❖ Rapidly advancing machine learning techniques such as deep learning supported the development of foundational Generative AI models
- ❖ Generative AI models, also known as large language models (LLMs) are capable of:
  - ▪ **Human-like reasoning**
  - ▪ **Generating new content** in response to user prompts across a variety of mediums
  - ▪ **Co-piloting work tasks**, assisting workers by providing real-time support, enhancing decision making, and streamlining workflows

1950   **1970**   **2000**   **2018**   **2023**

Rule-based systems

Statistical learning

Machine learning

Deep learning

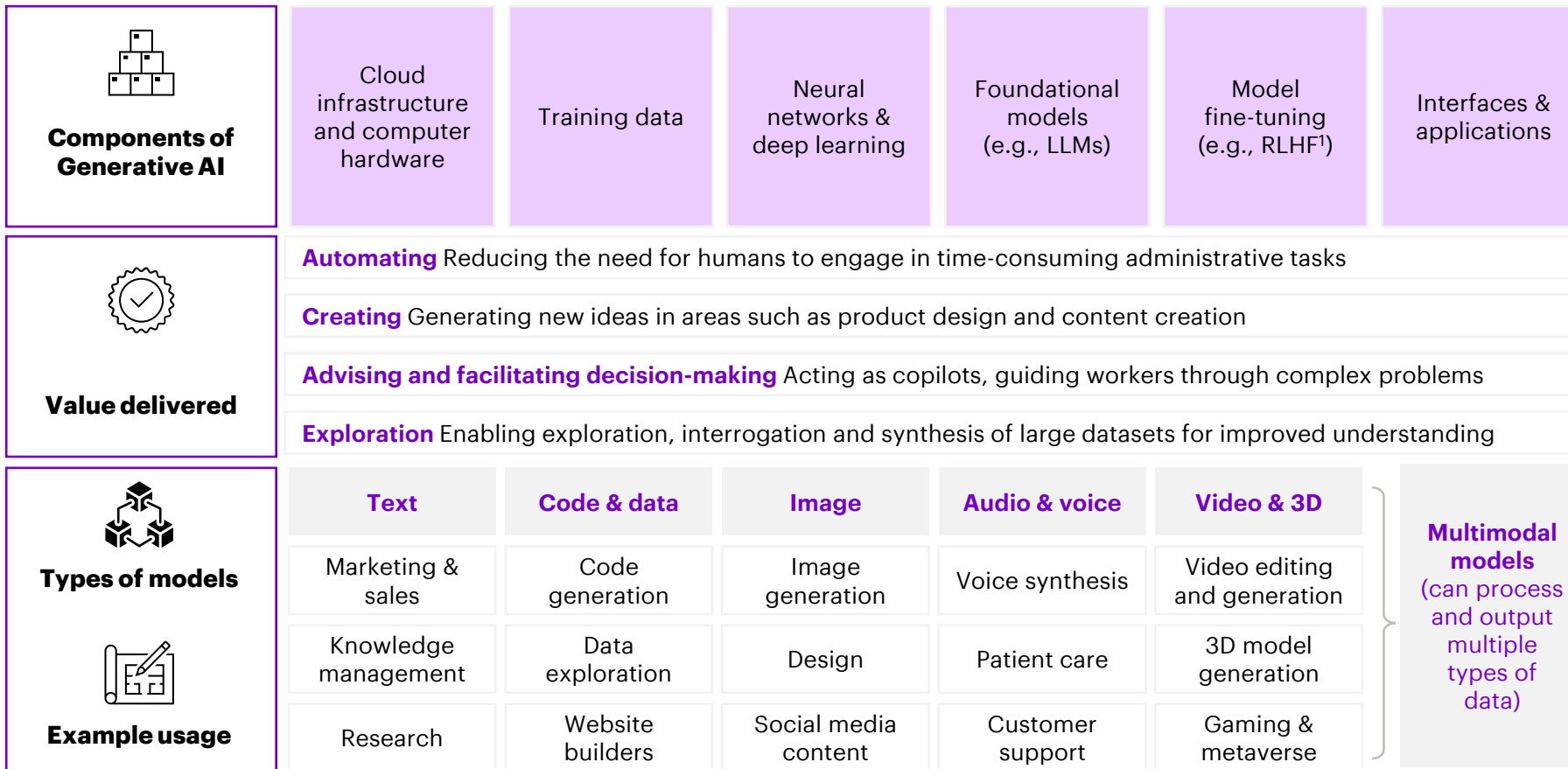Foundational LLMs

Application of LLMs

Generative AI models can perform an impressive array of tasks with the ability to automate, create, advise and explore to support human productivity

Foundational Generative AI models are built on robust computing infrastructure (like cloud) and depend on large datasets for training.

They can then be fine-tuned for specific use cases and act as a base for applications.

These models can be used across a variety of domains, creating value by automating mundane tasks, aiding in the creation and generation of new ideas, advising on complex problems, and enabling enhanced exploration of large amounts of data.

An overview of Generative AI

Components of Generative AI

Cloud infrastructure and computer hardware	Training data	Neural networks & deep learning	Foundational models (e.g., LLMs)	Model fine-tuning (e.g., RLHF[1])	Interfaces & applications

Value delivered

Automating Reducing the need for humans to engage in time-consuming administrative tasks

Creating Generating new ideas in areas such as product design and content creation

Advising and facilitating decision-making Acting as copilots, guiding workers through complex problems

Exploration Enabling exploration, interrogation and synthesis of large datasets for improved understanding

Types of models / Example usage

Text	Code & data	Image	Audio & voice	Video & 3D	Multimodal models (can process and output multiple types of data)
Marketing & sales	Code generation	Image generation	Voice synthesis	Video editing and generation	
Knowledge management	Data exploration	Design	Patient care	3D model generation	
Research	Website builders	Social media content	Customer support	Gaming & metaverse	

Generative AI can address declining productivity and GDP growth in New Zealand by unlocking new business models and uplifting productivity

New Zealand currently faces economic challenges characterised by low GDP and productivity growth, and rising cost pressures. Productivity growth has been negative since the last quarter of 2022, while GDP growth is approaching zero. Generative AI can help renew economic progress in New Zealand and directly address long standing structural economic challenges.

Generative AI can support the development of new, globally scalable business models in New Zealand. New Zealand's size and geographic isolation places a natural limit on the ability of firms in some industries to reach a sufficient scale to compete with firms in larger nations.

Generative AI can help to overcome these barriers by enabling business models that were previously unviable due to high capital or labour requirements. This can be achieved by leveraging AI to reduce and streamline the inputs required to carry out key business activities. Some examples of this include:

❖ AI-driven innovation and product development

❖ Personalised marketing and content creation

❖ Use of AI agents able to plan and execute tasks or entire workflows end to end.

As an export driven economy, New Zealand could exploit these properties of Generative AI to build the next frontier in export industries. In addition to creating new economic growth, this would also diversify export revenues beyond the agricultural and resources industries.

Generative AI has the potential to reinvigorate declining GDP and productivity growth in New Zealand. Falling productivity growth has been a national economic challenge since the early 2000s.[2]

Automation of low-level tasks with Generative AI offers a new way to boost productivity by allowing workers to spend more time on high-value tasks. It can also give workers tools that augment their capabilities. Some examples of how this can lift productivity include:

❖ **Educational professionals** leveraging AI capabilities such as personalised learning, virtual tutoring, automated marking, or instant student feedback to free up time to focus on student instruction and create new learning experiences that are more engaging and effective.[2]

❖ **Workers in primary industries** expanding their access to expertise by consulting virtual advisers that pair automated data analysis with tailored advice and recommendations on issues such as agronomy, safety and risk management, or pest and disease control.[3]

GDP and productivity growth in New Zealand

Annual % growth[1]

— GDP growth
— Productivity growth
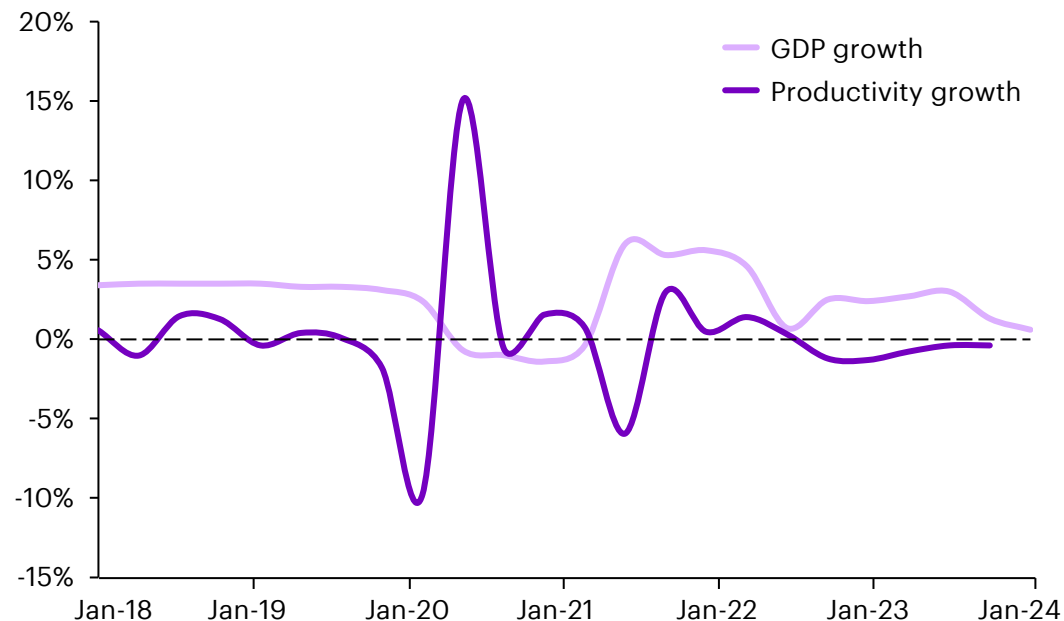
"Lifting productivity will be our government's focus, whether that be through raising educational achievement, delivering better infrastructure, enabling investment, or any of the multitude of areas that need addressing."

- Nicola Willis, Minister of Finance, 30 May 2024

Early adopters of Generative AI are demonstrating value in New Zealand

## Redefining productivity in customer service centres

Genesis Energy boosted productivity and engagement with Copilot for Microsoft 365, with 70% of 300 employees participating in a trial saving 1-5 hours weekly. Genesis has also developed in-house AI tools for call analysis and knowledge base creation, emphasising robust data and ethical frameworks. AI is now integral to their operations, positioning them as a leader in the NZ market.

The next frontier in the fight against livestock parasites

Currently, New Zealand's farmers have no way to tell which of their animals are impacted by some parasites and diseases, forcing them to administer treatments indiscriminately. This increases disease resistance to medication, costing farmers an estimated $98 million annually. Techion, a Mosgiel-based company, has used AI and Microsoft's cloud tech to revolutionise parasite and disease detection to slash treatment costs and fight medication resistance. Techion is partnering with Awanui Labs to extend this technology to human medicine, making tests faster, cheaper, and more accessible.
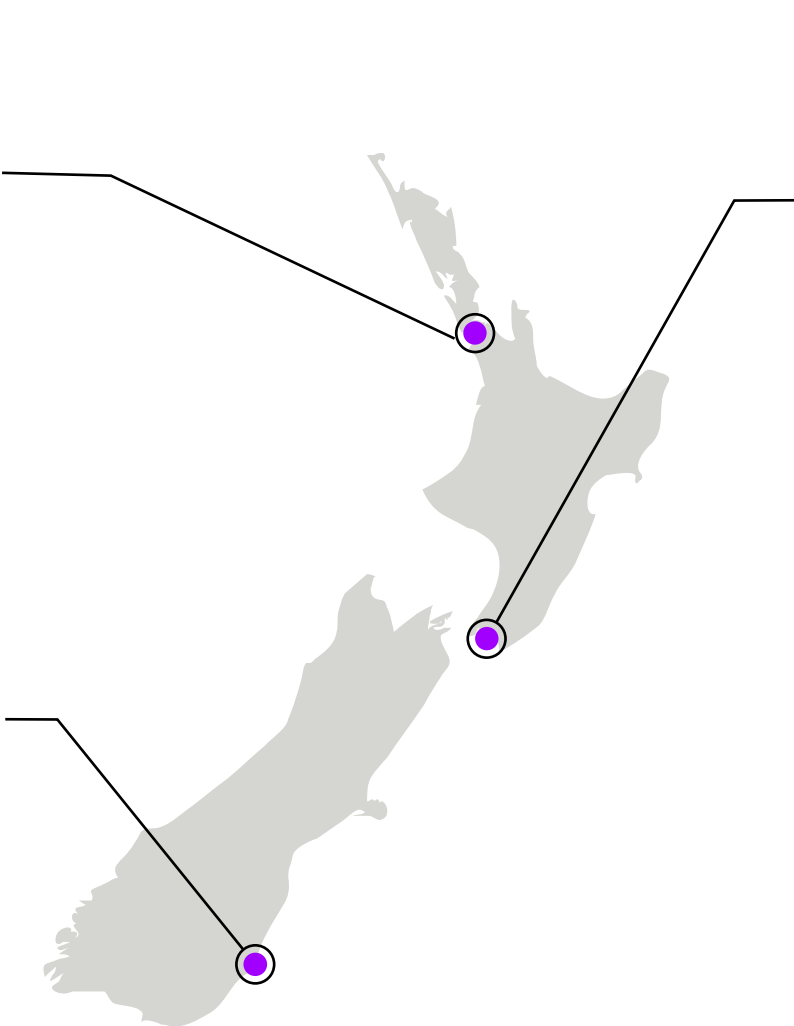
Translating te reo Māori at scale

Stuff Group partnered with Te Puna, Straker, and Microsoft to leverage Generative AI to expand its offering of te reo Māori content and scale its ability to publish real-time breaking news in the language. While bilingual articles aren't new at Stuff, the use of Generative AI will provide a step-change in output. This is part of Stuff's broader effort to support the revitalisation of te reo Māori.[1]
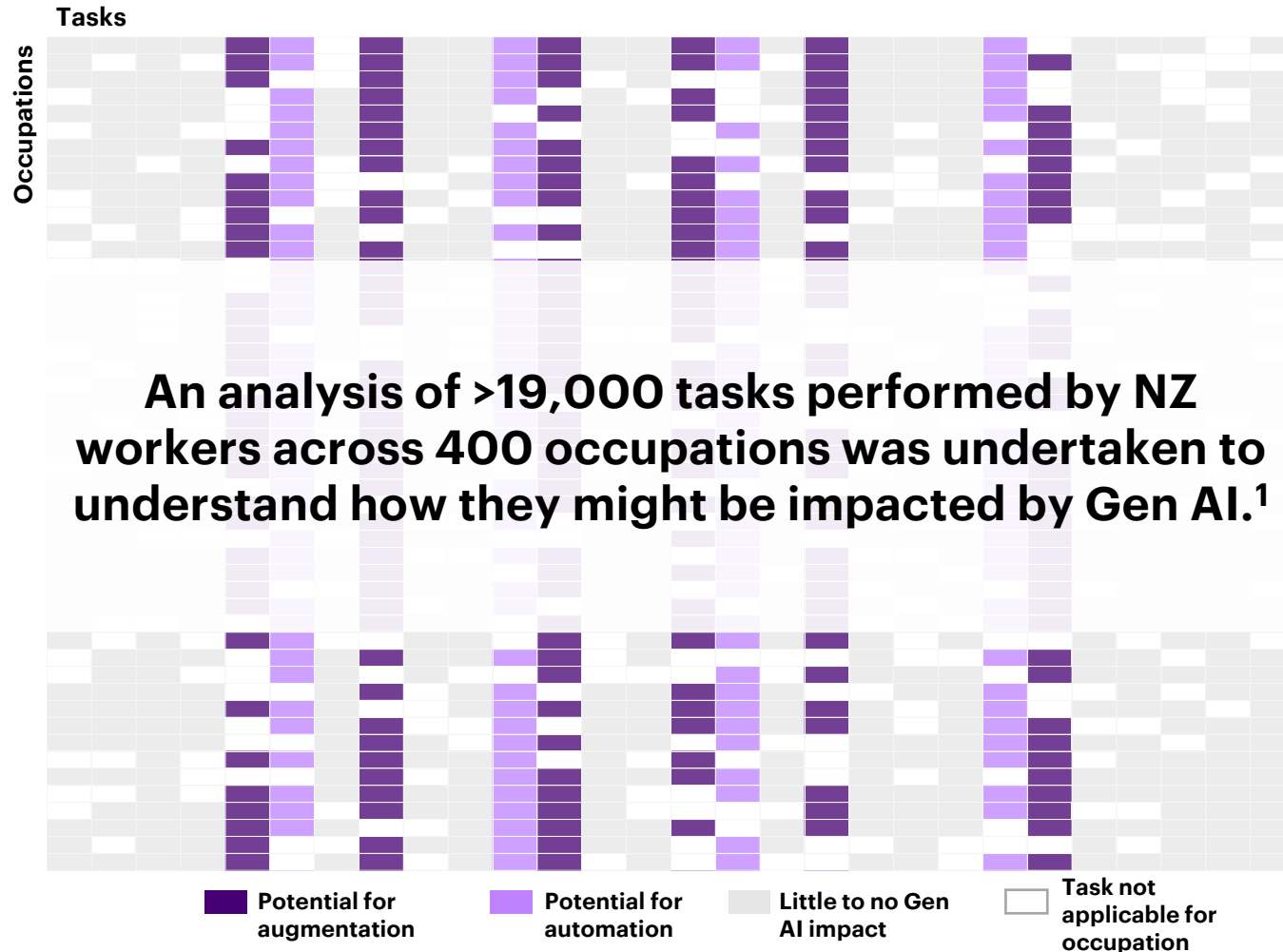
02

The economic opportunity of Generative AI in New Zealand is expected to be $76B by 2038

Generative AI's productivity-boosting potential could help with 38% of work tasks across the economy

Tasks

Occupations

An analysis of >19,000 tasks performed by NZ workers across 400 occupations was undertaken to understand how they might be impacted by Gen AI.[1]

■ **Potential for augmentation**   ■ **Potential for automation**   ■ **Little to no Gen AI impact**   □ **Task not applicable for occupation**

We found that Generative AI could help with 38% of tasks

▶ **24%** of tasks could be **augmented** by Gen AI.

▶ **14%** of tasks could be **automated** by Gen AI.

This means less time spent on routine, menial tasks

Customer support agent

Small business owner

A Gen AI support agent guides customers through simple troubleshooting.

If an issue is complex, a human support agent steps in.

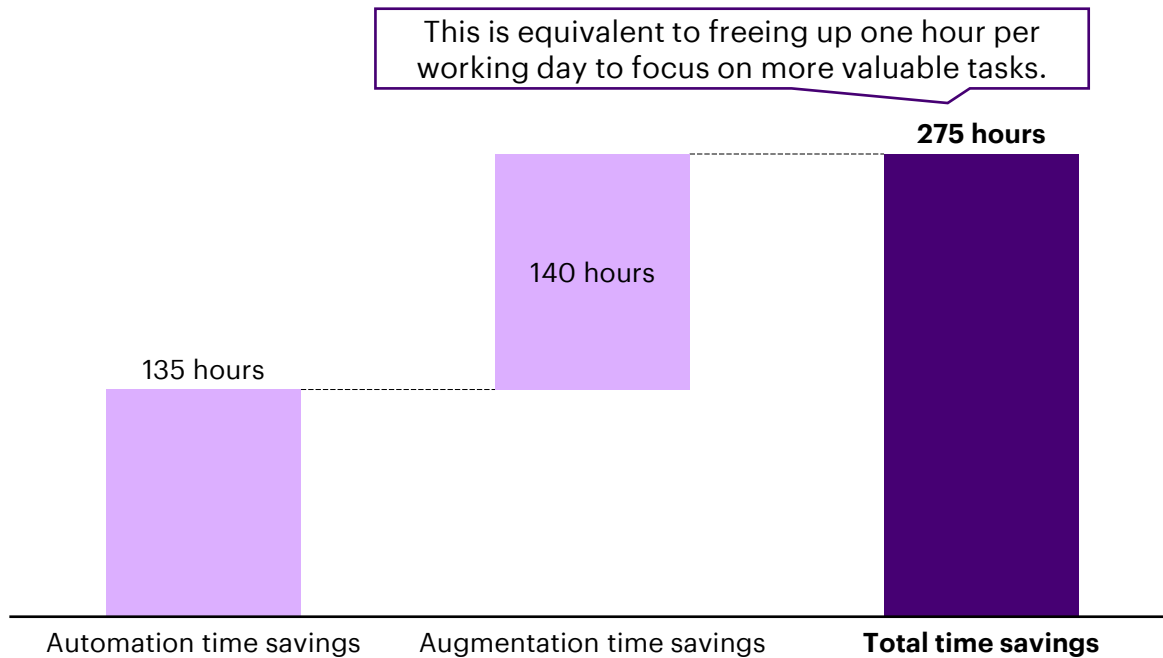Post-call, Gen AI analyses the conversation, providing feedback to the agent.
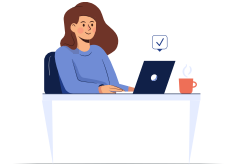
Gen AI helps plan and execute a social media marketing campaign end-to-end.

Creative and strategic direction is determined by the business owner, but a Gen AI assistant helps draft the programmatic details.

Note: (1) We classified tasks based on three criteria: (A) requires human to human interaction; (B) non-routine and/or non-well-defined; (C) requires human involvement enforced by law, ethics, or social conventions. We used a combination of human and machine learning classification to classify all the tasks.
Source: Accenture analysis.

Generative AI is expected to give the average worker 275 additional hours per year to dedicate to high-value tasks, improving productivity 15.5% by 2038
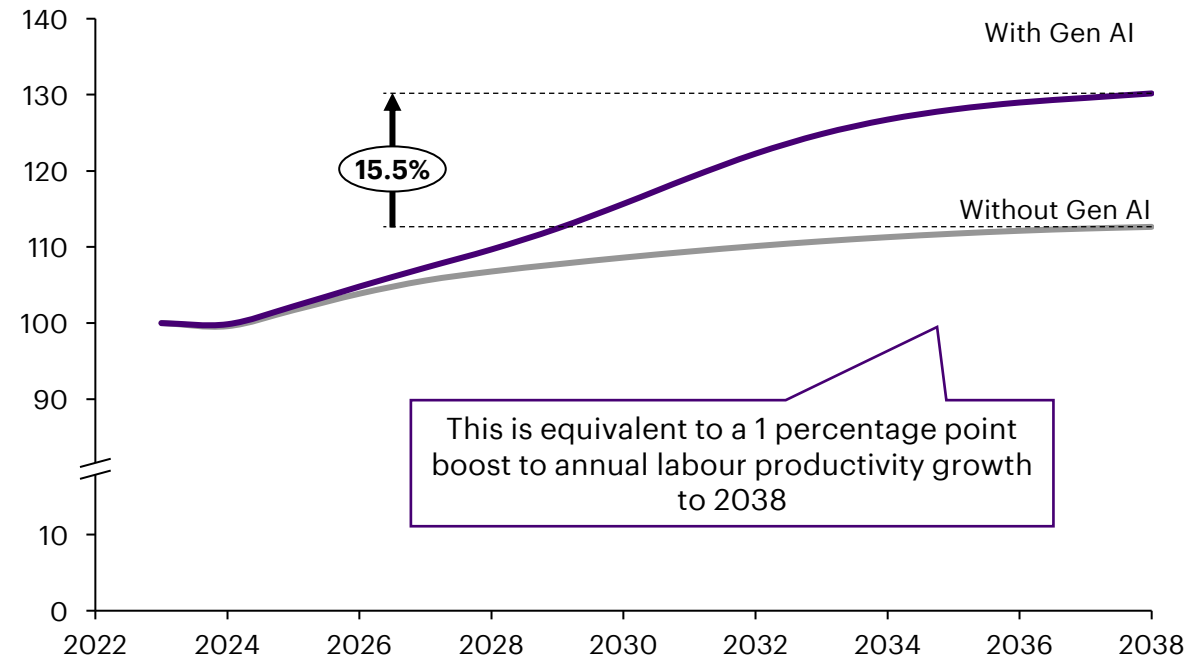
Time unlocked for workers to reallocate to high-value tasks every year

Average hours unlocked per worker per year by 2038[1]

> This is equivalent to freeing up one hour per working day to focus on more valuable tasks.

275 hours

135 hours

140 hours

Automation time savings   Augmentation time savings   **Total time savings**

Economy-wide labour productivity improvement

Index (2023 = 100)[1]

With Gen AI

15.5%

Without Gen AI

> This is equivalent to a 1 percentage point boost to annual labour productivity growth to 2038

Generative AI is projected to raise worker productivity by 15.5% by 2038 by unlocking time spent on routine tasks, freeing workers to reinvest their time into complex and important ones. Modelling suggests that this could add 1 percentage point to labour productivity growth in New Zealand each year to 2038. This represents a significant uplift in the context of labour productivity growth of only 0.2% over the last decade.[2] The two ways in which Generative AI achieves this is by either automating tasks – completely removing the need for workers to complete them themselves – or by augmenting workers' ability to do tasks, meaning they can complete their work faster and to a higher standard. For example, one study found that ChatGPT, a free-to-use Generative AI tool, decreases the time taken to complete a professional writing task by an average of 40%.[3] **Ultimately, this could translate into higher wages, greater business value, and better, more efficient products and services for New Zealanders.**

Modelling suggests that Generative AI will enable workers in critical sectors of New Zealand's economy to spend more time on their most important tasks

Modelled time unlocked each year for high-value tasks by Generative AI for workers in five critical occupations[1]

Generative AI can assist workers in two key ways. First, by automating well-defined and highly repetitive tasks, workers can dedicate more time to the most complex aspects of their jobs. Importantly, this is likely to improve job satisfaction for all workers. Second, Generative AI can augment and assist workers to complete these complex tasks. For example, the ability to suggest step-by-step problem-solving instructions means Generative AI is helping workers build new skills and discover new ways of approaching problems.

High school teachers

224 hours unlocked annually

+13% increase in productivity

Generative AI could provide New Zealand with a new way to tackle its teacher shortage and reverse declining learning outcomes. Teachers could reduce administrative overheads like lesson preparation and review, enabling them dedicate more time to students. AI-Generated instant feedback can improve lessons by helping students to critique their work while waiting for their teacher to review.[2] Generative AI could also provide personalised learning, answer student questions, and give instructions tailored to a student's level. This could help teachers to focus their attention on the most at-need students.

Construction managers
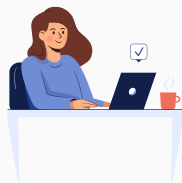
215 hours unlocked annually

+12% increase in productivity

Generative AI could help improve operational effectiveness in New Zealand's construction industry. It could do this by augmenting project managers' ability to monitor site safety, forecast material needs, and manage resources efficiently, as well as automating tasks like scheduling and purchase orders. This would allow managers to focus on higher-value activities such as strategic planning, client relationship management, workforce training, and providing oversight during complex phases of their projects.

Livestock and dairy producers
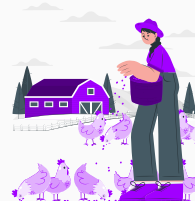
218 hours unlocked annually

+13% increase in productivity

Generative AI could provide farmers with hyper-personalised analysis and guidance to improve their operations. This includes how to optimise feeding schedules, monitor animal health, predict outbreaks, and customise breeding plans, leading to enhanced farm productivity and animal welfare. It can also help improve environmental sustainability by autonomously monitoring data streams on soil health, carbon emissions, and biodiversity to provide advice on managing risks as they emerge.

Nursing professionals

157 hours unlocked annually

+9% increase in productivity

Generative AI could help to relieve pressure on New Zealand's hospital staff by reducing the time nurses need to spend on critical but burdensome administrative tasks. It can assist in creating individualised patient care plans, predicting changes in patient condition, optimising staff scheduling, and providing summarised views of patient records. Additionally, it can support nurses with real-time language translation for diverse patient interactions and speed up work on paperwork like referral letters post-consultation.

Business administration managers

327 hours unlocked annually

+19% increase in productivity

Generative AI could significantly enhance the role of business administration managers by automating tasks and accelerating routine workflows. It could do this by helping to manage schedules, monitor compliance, and develop plans and procedures. AI can also provide data-driven insights and predictive analytics, aiding in decision-making and resource allocation. This would help managers allocate more time to enhancing team coordination, supporting staff development, refining administrative systems, and boosting overall productivity.

(1) Statistics derived from Accenture analysis – refer to appendix for method; (2)

Productivity improvements from Generative AI are estimated to add between NZ$39-102B in annual value to the New Zealand economy by 2038

GDP Growth Impact of Generative AI by 2038

GDP of New Zealand, NZ$ 2023[1]

NZ$39-102B
in additional GDP by 2038

- Upside case
- Central case
- Conservative case
- Baseline
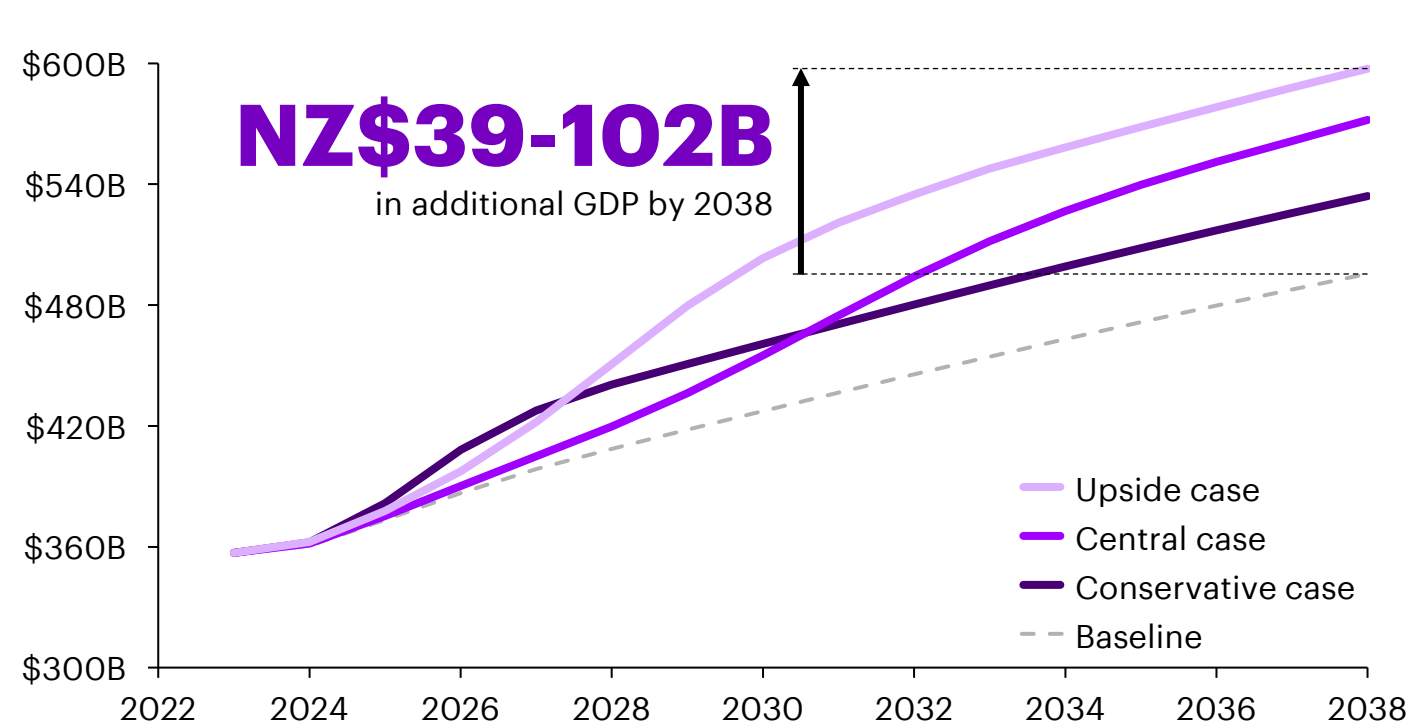
Depending upon the approach of businesses and speed of adoption, New Zealand's GDP could be 8-21% higher by 2038

Upside case	**+NZ$102B** higher GDP than baseline	**+1.3%** higher annual GDP growth
Central case	**+NZ$76B** higher GDP than baseline	**+1.0%** higher annual GDP growth
Conservative case	**+NZ$39B** higher GDP than baseline	**+0.5%** higher annual GDP growth

Generative AI could deliver between NZ$39-102B in value to the New Zealand economy by 2038. This means that GDP, which is forecast to reach NZ$495 billion by 2038, could be 8-21% larger. The central case estimate is equivalent to twice the size of the construction sector as a share of the economy.[2] Productivity and GDP growth, which are projected to be 0.9% and 2.2% respectively on an average annual basis, will instead reach 1.4-2.2% and 2.7-3.5% with adoption of Generative AI. The variation in these estimates reflects the fact that New Zealand's relative degree of success will depend on how it approaches Generative AI adoption. Rapid adoption focused solely on using automation to drive cost efficiencies will limit benefits to the lower end of potential. To realise productivity and economic growth in line with the upside case, adoption should proceed at a more moderate pace to focus on augmenting New Zealand's workforce capabilities making strategic use of automation to allow workers across the economy to spend more time on high value tasks.

03

New Zealand can double down on its strengths and bolster its weaknesses by focusing on 6 enablers of success in Generative AI

>

An assessment of New Zealand's advantages and opportunities was undertaken to establish enablers for capturing the Generative AI opportunity

Identify New Zealand's **competitive advantages**

Assess New Zealand's **opportunities** for improvement

Determine **key enablers** for New Zealand to capture the Generative AI opportunity

Assessing New Zealand's competitive advantages and opportunities for improvement is crucial in leveraging the economic potential of Generative AI. By recognising strengths such as openness to trade, innovative research capabilities, and network infrastructure, New Zealand can strategically position itself as a leader in AI development and application. Simultaneously, addressing areas for improvement, like investing in organisational digital maturity and capabilities, can pave the way for capturing the full economic benefits of Generative AI. In this context, key enablers have been identified that underpin the creation of a supportive environment for Generative AI in New Zealand, facilitating advancements in Generative AI technologies and their integration across various sectors.

New Zealand has competitive advantages in Generative AI across three key areas: openness to trade, potential for innovation, and network infrastructure

New Zealand's competitive advantages in Generative AI

Competitive advantage	Description

1 Openness to trade	• **New Zealand is an open, export driven economy** underpinned by high performing industries such as agriculture and tourism with a strong record of success in key global markets. Some examples include:
	  • **Dairy products** accounting for $21.3 billion or 29% of total exports in 2023
	  • **Natural resources** including timber, minerals, and energy resources worth $8.7 billion
	  • **Meat and fish products** worth $11.5 billion or 16% of total exports[1]

2 Potential for innovation	• **New Zealanders are leaning into the Generative AI opportunity**, as evidenced by the fact that New Zealand's workers have been among the fastest adopters of Generative AI at work, and the emergence of innovative AI-driven firms, such as Techion, an agritech startup.[2] • **While New Zealand's AI research community is small, its leading members are recognised internationally** for their work in areas like symbolic AI and deep learning.[3] This provides a platform to build a domestic pipeline of AI graduates and facilitate global knowledge transfer. • **New Zealand is viewed as a responsible global citizen,** a perception that was reinforced by its care-based public health response to the COVID-19 pandemic.[4] This positions it to provide global thought leadership on key issues like AI regulation, AI-related intellectual property, and responsible use of AI. • **New Zealand is an ideal global test-bed** for emerging Generative AI use-cases due to its high digital penetration, diversified economy, skilled workforce, and small size, which allows for cost effective testing of new products at a national scale.[5]
3 Well-developed network infrastructure	• **New Zealand's domestic network infrastructure is highly developed and enjoys a significant quantity of spare capacity,** allowing space for a significant ramp up in network traffic created by data intensive Generative AI applications.[5] • **New Zealand benefits from good access to global subsea cable infrastructure** which provides access to the high-bandwidth, high-speed network connections needed to exchange and process large datasets at low-latency across international boundaries.[5] • **New Zealand's access to hyperscale cloud will soon expand** with companies such as Microsoft launching local data centre regions, giving companies access to the infrastructure needed to deploy Generative AI at scale.

Leveraging 'lighthouse industries' to grow and diversify the economy with Generative AI

New Zealand's export strengths are particularly emblematic in high performing 'lighthouse' industries where firms are more likely to be export oriented and to invest in innovation to remain globally competitive. For example, New Zealand's dairy industry captures around one quarter of the global market.[6]

Generative AI can support the growth of these industries, but also the development of new business models and industries in burgeoning fields like agritech, biotech, and commercial space industries. This will benefit New Zealand by creating new sources of economic growth and diversifying its export sector.

New Zealand knowledge workers are leaders on adoption of Generative AI, but employers lag in developing their own Generative AI solutions

Organisations that employ enterprise Generative AI tools have the opportunity to capture additional value

One way to gauge the maturity of Generative AI adoption at the enterprise level is the extent to which workers 'bring their own AI' (BYOAI)[1] or use enterprise Generative AI solutions provided by their employer. Enterprise-scale Generative AI solutions bring several advantages, including:

❖ **Scalability**, allowing models to be applied to tasks that go beyond interacting with and responding to requests from individual human users.

❖ **Security,** allowing Generative AI programs to be tailored to contexts where generic models don't comply with measures to protect sensitive commercial, government, or personal data.

❖ **Customisability**, for example with Retrieval-Augmented Generation (RAG), allowing Generative AI models to be adapted to proprietary datasets and specific tasks for which generic models are not designed.[4]

A high proportion of New Zealand's knowledge workers use AI at work, but there is an opportunity to expand use of enterprise grade solutions
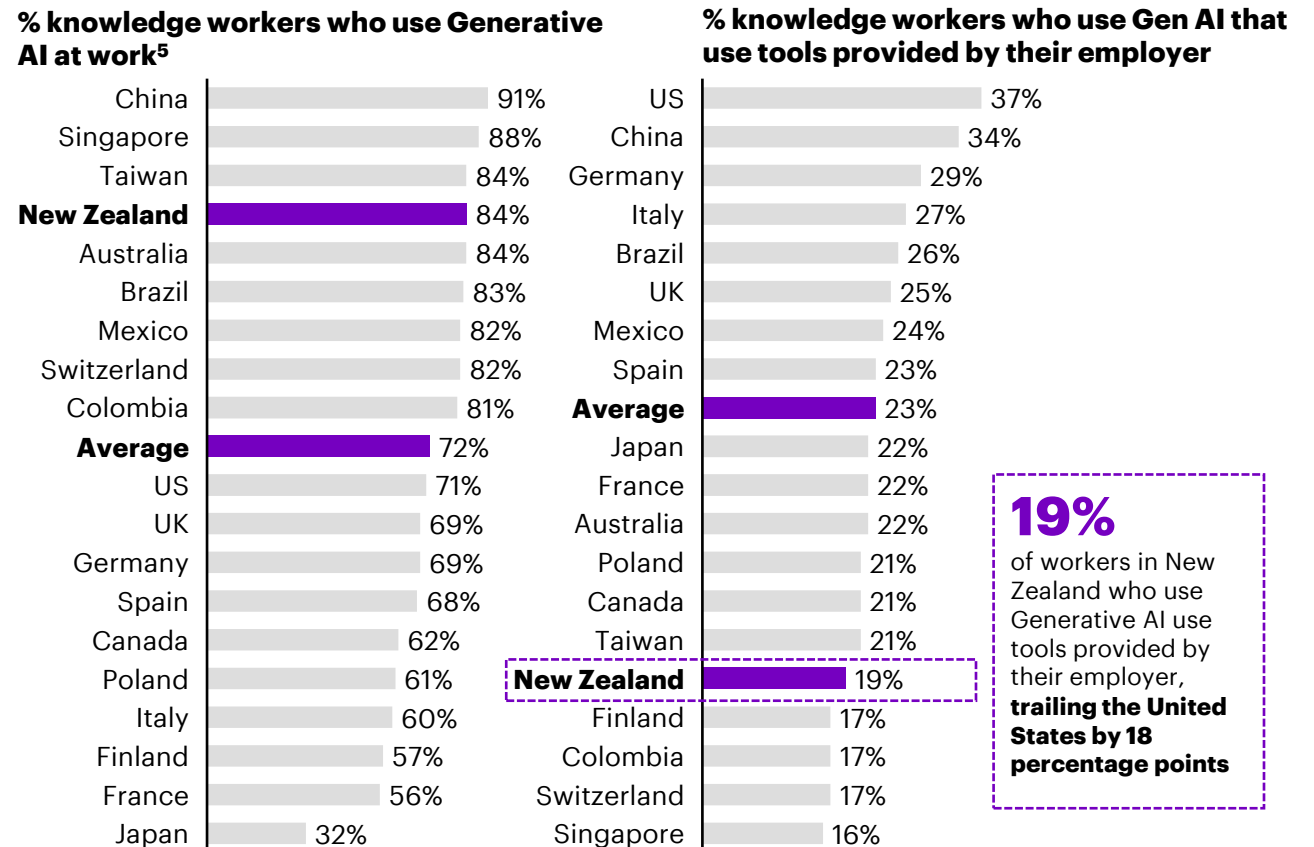
New Zealand ranks equal 3rd alongside Australia and Taiwan on the proportion of knowledge workers who use Generative AI at work (84%). This suggests that:

❖ Workers are willing and possess the skills required to use the technology for work purposes

❖ Workers are likely to be supportive of their employer's efforts to scale and mature their use of Generative AI.

However, only 19% of knowledge workers in New Zealand who use Generative AI use tools provided by their employer. **This means that New Zealand's companies are lagging global peers on the adoption of Generative AI at the enterprise level.**

Proportion of knowledge workers who use Generative AI versus the proportion who use custom AI tools provided to them by their employer[2,3]

% of survey respondents

% knowledge workers who use Generative AI at work[5]

Country	%
China	91%
Singapore	88%
Taiwan	84%
New Zealand	**84%**
Australia	84%
Brazil	83%
Mexico	82%
Switzerland	82%
Colombia	81%
Average	**72%**
US	71%
UK	69%
Germany	69%
Spain	68%
Canada	62%
Poland	61%
Italy	60%
Finland	57%
France	56%
Japan	32%

% knowledge workers who use Gen AI that use tools provided by their employer

Country	%
US	37%
China	34%
Germany	29%
Italy	27%
Brazil	26%
UK	25%
Mexico	24%
Spain	23%
Average	**23%**
Japan	22%
France	22%
Australia	22%
Poland	21%
Canada	21%
Taiwan	21%
New Zealand	**19%**
Finland	17%
Colombia	17%
Switzerland	17%
Singapore	16%

19% of workers in New Zealand who use Generative AI use tools provided by their employer, **trailing the United States by 18 percentage points**

Organisations in New Zealand have an opportunity to increase their digital maturity to drive confidence in implementing Generative AI

Organisations in New Zealand generally lag global leaders on digital maturity– a prerequisite for integrating Generative AI across the enterprise
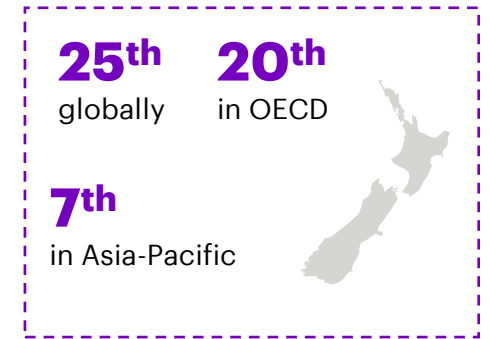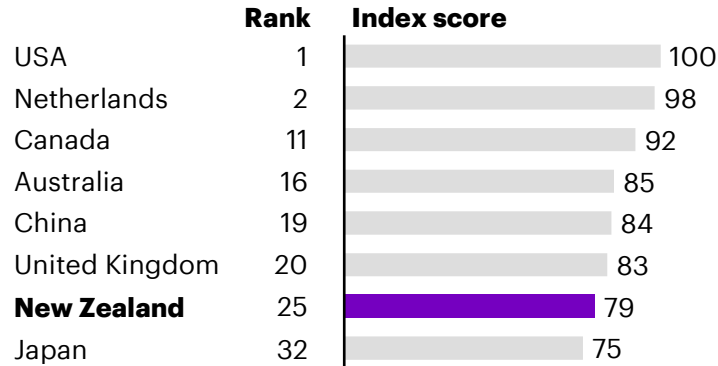
A strong digital core characterised by an effective, enterprise-wide data platform and modern, cloud-based infrastructure is foundational to leveraging Generative AI at the organisational level.[1] New Zealand ranks slightly above the global average on measures of digital maturity but lags most advanced economies. Many organisations in New Zealand have invested in foundational capabilities, such as data management and cloud infrastructure.[4] However, research shows that full organisational readiness for Generative AI requires a digital core at the leading end of maturity.[1] This partially explains why New Zealand's workers have been faster to adopt Generative AI than their employers, who may not possess the necessary digital infrastructure to deploy custom internal tools.

Research suggests New Zealand's corporate leaders believe Generative AI is a priority but are less prepared to implement it than global peers

77% of New Zealand's corporate leaders see Generative AI as a strategic priority. However, a high proportion are also concerned their organisation lacks a concrete plan to implement it.[3] This lack of confidence compared to peers in other markets is one factor that explains the slower progression of adoption at the enterprise level. Companies in New Zealand have an opportunity to advance the maturity of their digital core by investing further in foundational data and cloud infrastructure capabilities. This could then strengthen organisations' ability to plan and implement Generative AI.

Digital maturity, New Zealand versus select countries

Score, IMD Digital Competitiveness Index[2]

	Rank	Index score
USA	1	100
Netherlands	2	98
Canada	11	92
Australia	16	85
China	19	84
United Kingdom	20	83
New Zealand	25	79
Japan	32	75

25th globally   **20th** in OECD

7th in Asia-Pacific

Share of corporate leaders who worry their organisation's leadership lacks a plan and vision to implement it

% of survey respondents who selected agree/agree somewhat[3]

15%

Global Average	59%
New Zealand	74%
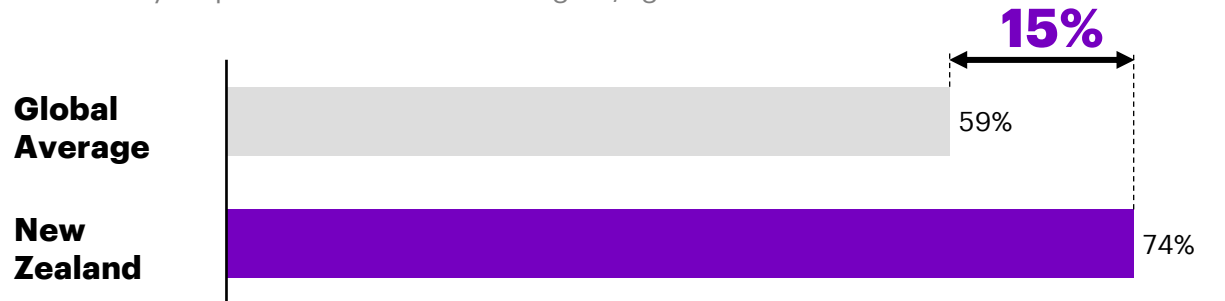
Focussing on six key pillars will be critical for New Zealand to fully realise the benefits of Generative AI

Enablers of Generative AI adoption in New Zealand

Access to infrastructure	Skilled workforces	Enterprise readiness	Collaborative ecosystem	Clear policy framework	Public trust and license to operate
❖ **Continue to maintain high-speed network infrastructure** to connect users to AI service providers	❖ **C-Suite knowledge** of Gen AI and how it can be deployed	❖ **Clarifying strategies** to drive whole-of-enterprise reinvention and redefine the performance frontier	❖ **Cross-sector engagement** among domestic stakeholder groups to share knowledge and surface opportunities and risks	❖ **Global regulatory interoperability** to avoid erecting barriers to international investment and cooperation	❖ **Transparency and accountability** around how models function and how they are used for decision making
❖ **Access to local supercomputing capacity** to deliver secure, low-latency access to advanced, resource intensive models	❖ **Workforce digital literacy** and skills that enable workers to make use of Gen AI applications	❖ **Creating an AI-enabled digital core** that seamlessly integrates AI and enables new capabilities	❖ **Inclusion of Māori perspectives** to promote culturally relevant and ethical AI use	❖ **Regulatory certainty** to enable investors, enterprises, and users to commit to AI in NZ	❖ **Safeguarding privacy and data security** to ensure users feel safe when using AI
❖ **Access to hyperscale data centres** onshore to enable fast, secure, and legally compliant transmission and storage of massive datasets	❖ **Managing training and workforce transition** to allow workers to reskill towards high-value tasks when low-level tasks are automated	❖ **Willingness to take risks** to develop proven use cases to that deliver real value beyond technological novelty	❖ **International collaboration** to enhance knowledge transfer and align with global best practice	❖ **Balancing safeguards and support for innovation** to contain risks while incentivising adoption	❖ **Ensuring equitable access** to Generative AI to ensure its benefits are fairly distributed across all communities

04

Methodology

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Measuring the economic value impact of Gen AI

To estimate the annual economic contribution of Generative AI in New Zealand by 2038, we analyse the impact of Generative AI on labour market productivity. To do this, we combine data on the average wage and number of workers for each occupation in the New Zealand economy with the Occupational Information Network (O*NET) database, which provides an overview of tasks performed by over 900 occupations. We then examine how each task will be impacted by Generative AI to build a bottom-up picture of how productivity will be transformed in each occupation in New Zealand.

Estimated time savings	Likely job transitions	High quality jobs	Reshuffling by scenario	GDP forecasting
Each **occupation** is differently exposed to Generative AI based on how the tasks they do can be more or less automated. Following available **experimental evidence** on how using Generative AI contributes to saving human worker time in completing work tasks, we estimated **time savings** for all tasks using task data from the Occupational Information Network of the US Department of Labor and occupation data from Statistics New Zealand.	Since not every switch between job roles is equally likely, we first developed a **predictive model** of likely job transitions based on the **skill distance** between all possible pairs of jobs and used that to guide simulations of changes between excess supply and excess demand occupations.	We also identify **net better off** occupations as a proxy for high quality jobs, which is used in the upside case, measured with innovative survey-based indicators of financial, physical, and mental wellbeing and perceived purpose, the employability of used skills, and the relational nature of the role.	We envision **3 scenarios** based on the pace and nature of adoption and innovation of the technology. For each scenario, we calculate a productivity boost as the ratio between **wage bills** before and after the adoption of Generative AI based on simulated **labor reshuffling** assuming constant capital and labor shares. The machine learning simulation allowed us to track how workers would move between occupations based on the **share of time** saved in tasks. Wages data at the 4-digit ISCO occupation level was obtained from Statistics New Zealand.	The long-term economic value impact of Generative AI was calculated by weighting consensus **Gross Domestic Product (GDP) forecasts from Oxford Economics** by the estimated productivity boost, in a logistic S-curve fashion resembling gradual adoption, for the three hypothetical adoption scenarios. The plotted results show how much each country would grow each year on top of its baseline forecast.

Three scenarios used in our modelling

The scenarios modelled in this report simulate the different ways in which Generative AI adoption could unfold, considering the pace of adoption, likelihood of job transitions, job quality, innovation focus, and displacement of roles.

Conservative	**Central**	**Upside**
• We assume a very fast adoption rate of the technology **(5 years to full adoption)**.	• We assume a slow adoption rate of the technology **(15 years to full adoption)**.	• We assume a moderate adoption rate of the technology **(10 years to full adoption)**.
• The simulated reshuffling of the labor market occurs based on automation potential only.	• The simulated reshuffling of the labor market occurs based on both augmentation and automation potential.	• The simulated reshuffling of the labour market occurs based on both augmentation and automation potential.
• The talent supply remains rigid: workers are unable to adapt their skills to meet Generative AI needs.	• There is no unemployment in our simulation: workers from all occupations find somewhere to go, which may include lower quality jobs.	• There is no unemployment in our simulation: workers from all occupations find somewhere to go AND the algorithm privileges higher quality jobs.
• The simulation allows for unemployment to rise: some workers won't be able to find employment if their jobs are fully automated.		