

ARTIFICIAL INTELLIGENCE

Shaping a Future New Zealand



Artificial Intelligence Forum of New Zealand

Harnessing the power of AI to enable a prosperous, inclusive, thriving future New Zealand



The Tech Alliance



Representing technology associations across New Zealand. Working together to create a prosperous New Zealand, underpinned by technology.

The New Zealand Tech Alliance is a group of independent technology associations from across New Zealand that work together to ensure a strong voice for technology. Coordinated by NZTech, the Alliance currently represents 20 associations and over 800 organisations that collectively employ more than 100,000 New Zealanders who provide the voice of a tech ecosystem that is redefining the world we live in.

www.techalliance.nz

OTHER GROUPS
IN ALLIANCE





Collectively, we see a prosperous future

for New Zealand underpinned by technology



A united voice for technology in New Zealand





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An Analysis of the Potential Impact and Opportunity of Artificial Intelligence on New Zealand's Society and Economy

TOP 5 DRIVERS OF AI UPTAKE IN NEW ZEALAND

- Make sense of vast amounts of data
- Automate tedious or dangerous work
- Support decision making with speed and accuracy
- Reduce business costs by automation
- Optimise business processes

By 2035, AI has the potential to increase New Zealand GDP by up to

\$54 billion

44%*

consider education as a key barrier to AI adoption.

52%*

say that AI will be, or already is, a game changer in their organisation.

Just 36%*

say their company's board is discussing AI.

Over the next **40** years AI-driven job displacement will account for only **10** per cent of normal job creation and destruction.

AI frees people up to focus on more complex, higher-value tasks.

Canada, China, France, Singapore, South Korea, UAE and UK have all developed multi-million dollar **national AI investment strategies**.

New Zealand currently does not have a **national AI strategy**.

New Zealand ranked **9th** among **35** OECD countries for Government AI Readiness (2017).

Adoption of AI by New Zealand Government is **disconnected and sparsely deployed**.

AI raises many **new ethical concerns** relating to bias, transparency and accountability.

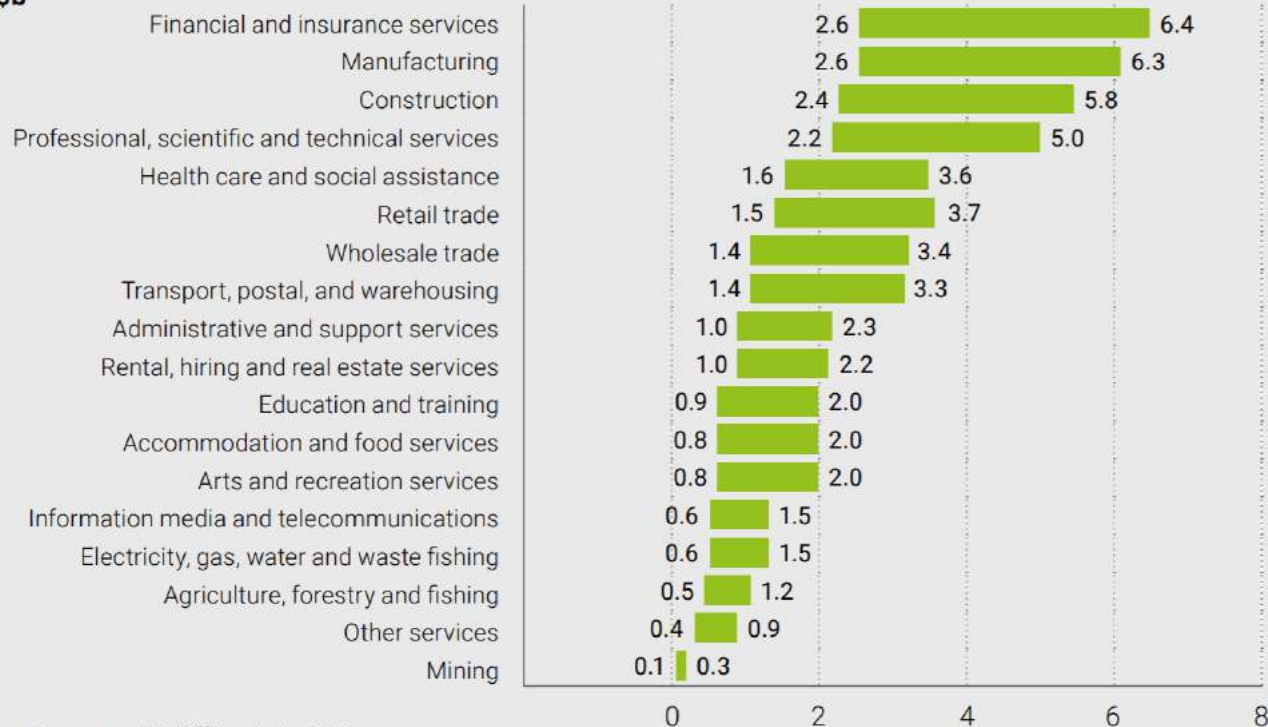
AI will have **long term implications** for **core legal principles** like legal responsibility, agency and causation.

There is an **acute worldwide shortage of machine learning experts** with competition for talent. Machine learning is the **highest demand growth** tech skillset globally.

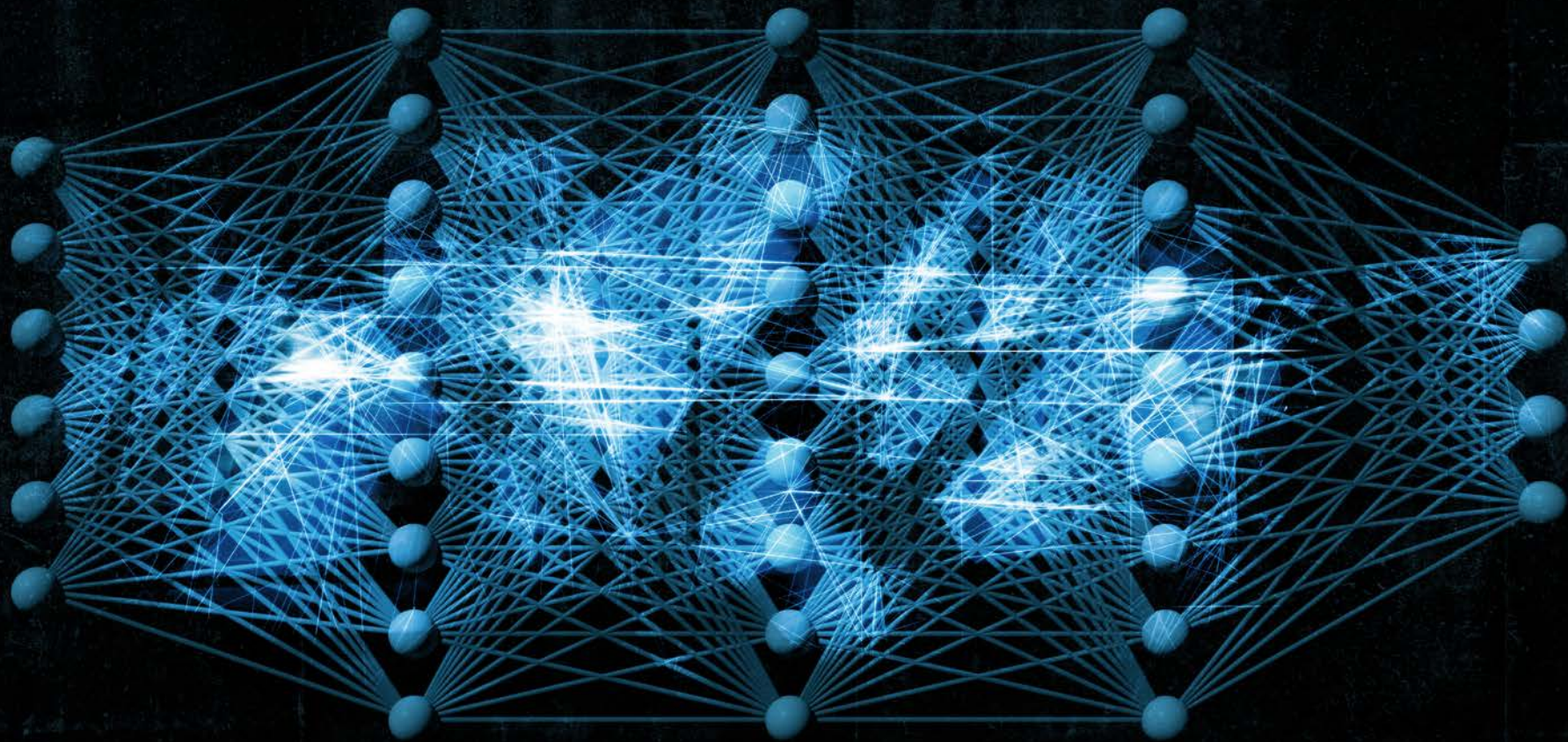
AI and the New Zealand Economy

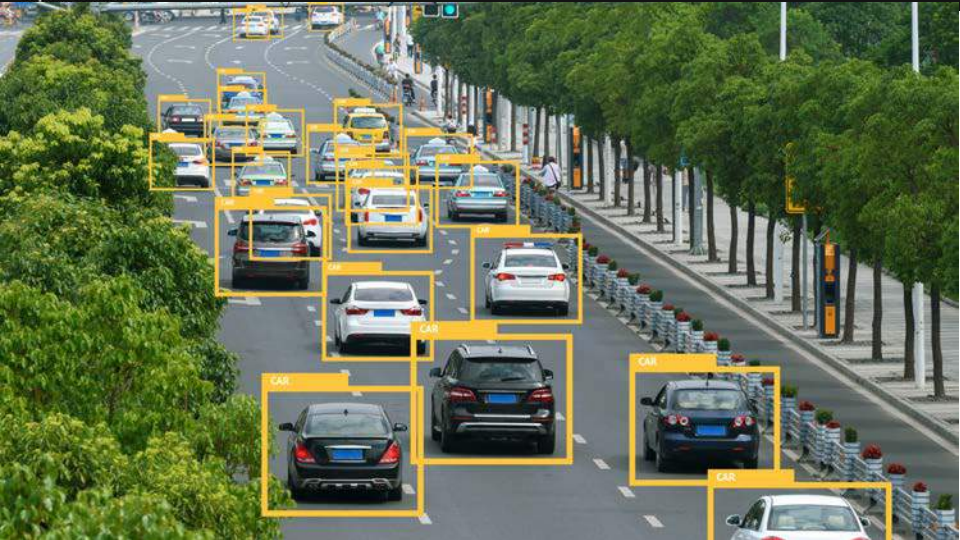
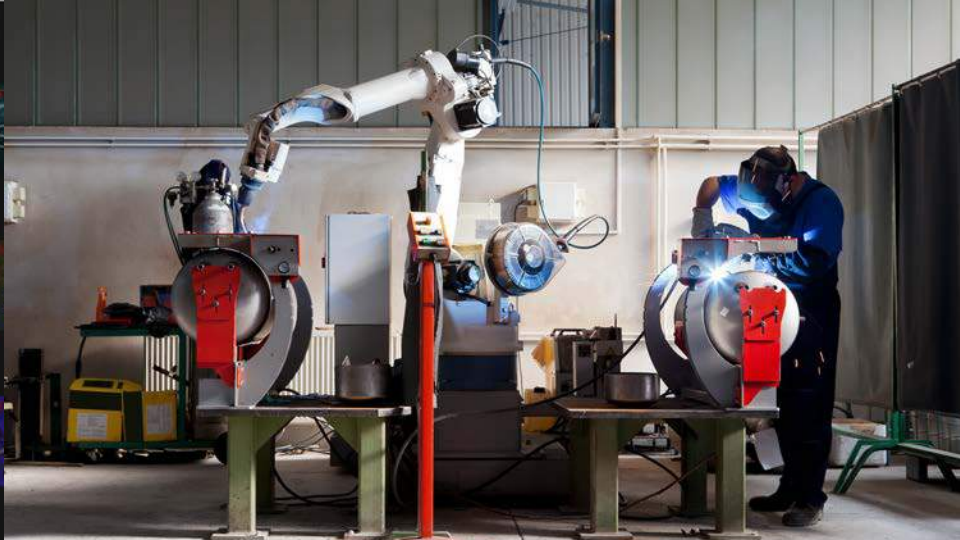
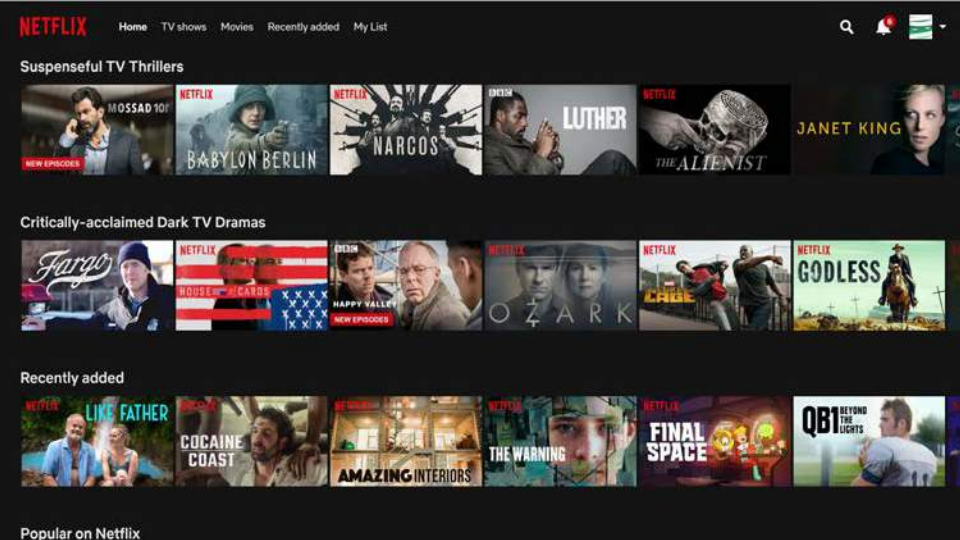
Figure 4 – Estimated Ranges of Economic Benefits of Labour Efficiencies from AI in New Zealand Industries in 2035

2015 \$b



Source: Sapere and Schiff Analysis, 2018





 **Ask Oscar**



Was Oscar helpful? [Rate Oscar](#)

Kia ora! I'm Oscar, Air New Zealand's chatbot. What can I help you with? By the way, there's a travel alert on right now: Latest information on international flight schedule changes due to 787-9 maintenance.



[Open Travel alert details](#)

Chat with Oscar

Send





"Mm-hmm."



"Sure, give me one second."

Friday, 16 February 2018 09:55

Your farm as viewed from space every week

Written by Nigel Malthus

font size 🔍 🔍 | Print | Email

LIC has launched a satellite-based pasture evaluation service, calling it a giant leap forward for pasture management.

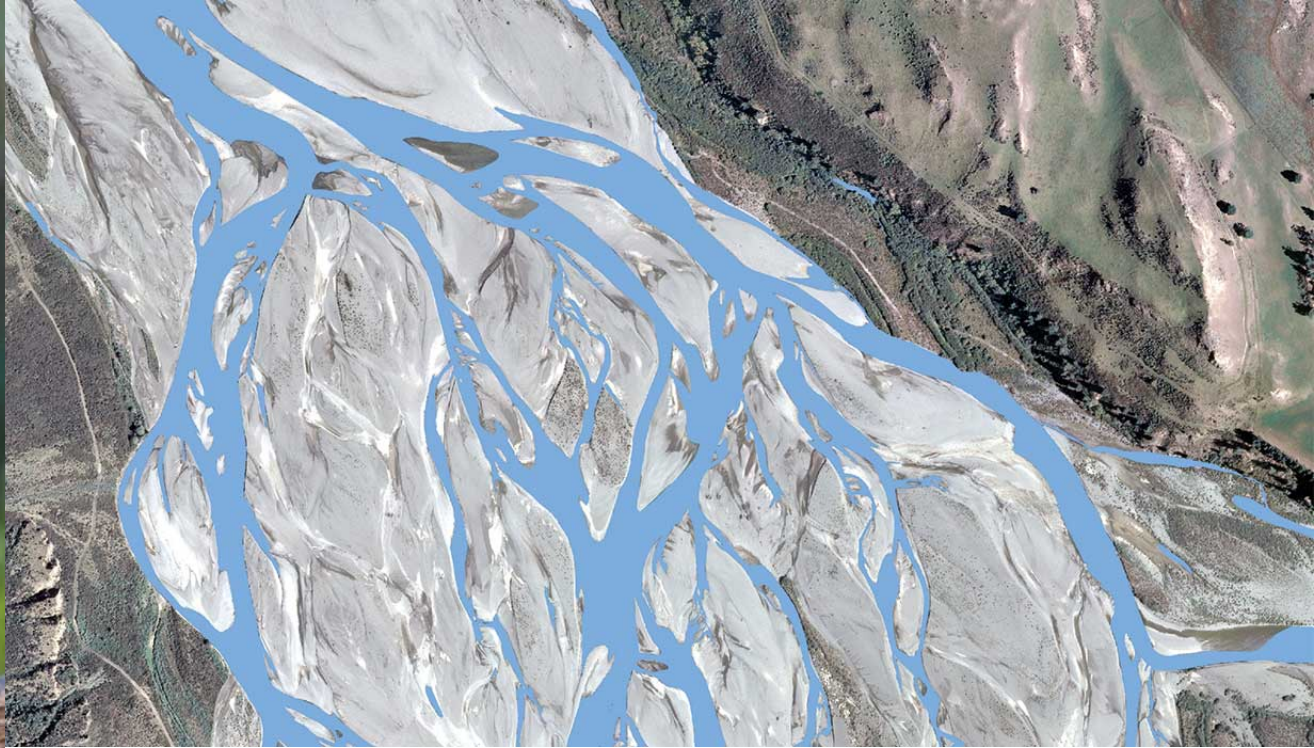
SPACE (satellite pasture and cover evaluation) uses satellite images to measure pasture, emailing detailed reports directly to subscribing farmers.

LIC says it can save farmers several hours a week by replacing the current practices of either walking the farm or towing instruments behind a vehicle.

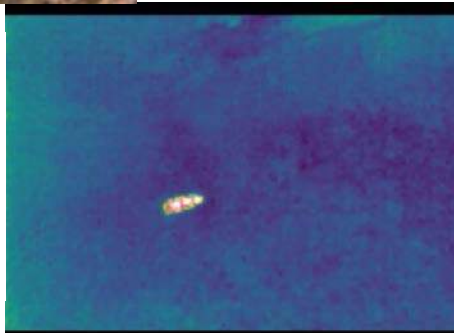


Lincoln University demonstration farm manager Peter Hancox.



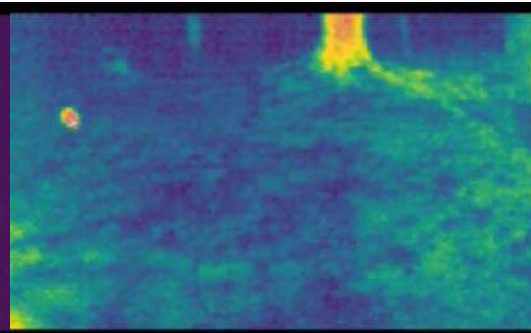


Department of
Conservation
Te Papa Atawhai



rat (9.4)

(6.2 x 0.5)



hedgehog (9.6)

(2.8 x 0.5)



DeepMind AI Reduces Google Data Centre Cooling Bill by 40%

From smartphone assistants to image recognition and translation, machine learning already helps us in our everyday lives. But it can also help us to tackle some of the world's most challenging physical problems -- such as energy consumption. Large-scale commercial and industrial systems like data centres consume a lot of energy, and while much has been done to [stem the growth of energy use](#), there remains a lot more to do given the world's increasing need for computing power.

Reducing energy usage has been a major focus for us over the past 10 years: we have built our own [super-efficient servers](#) at Google, invented [more efficient ways to cool our data centres](#) and invested



31 OCTOBER 2017

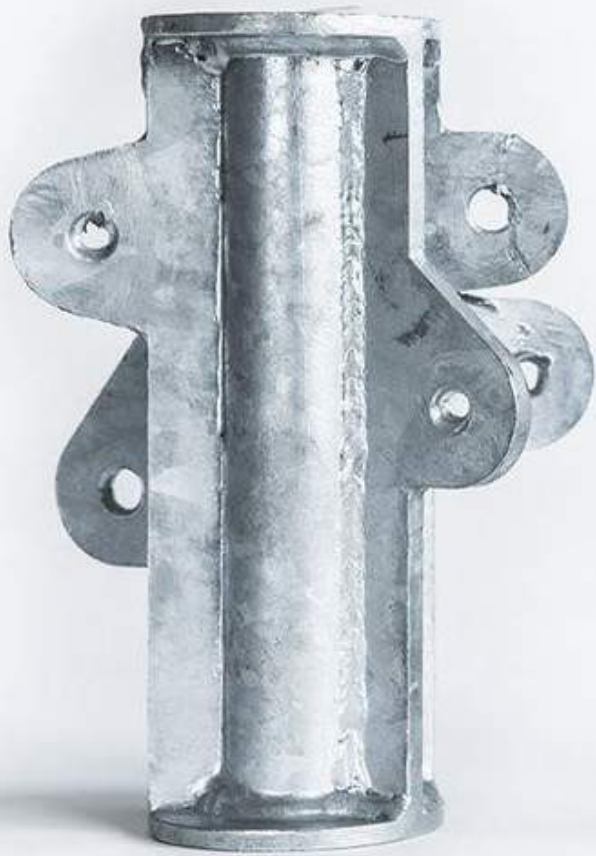
VECTOR LAUNCHES ARTIFICIAL INTELLIGENCE SYSTEM TO MANAGE AUCKLAND'S ELECTRICITY NETWORK

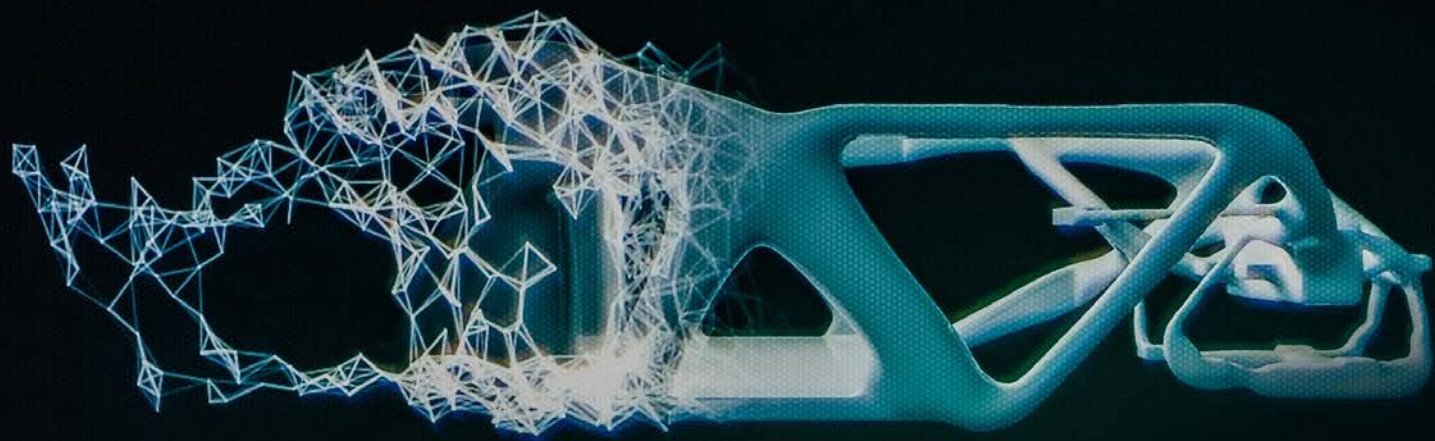
INNOVATION

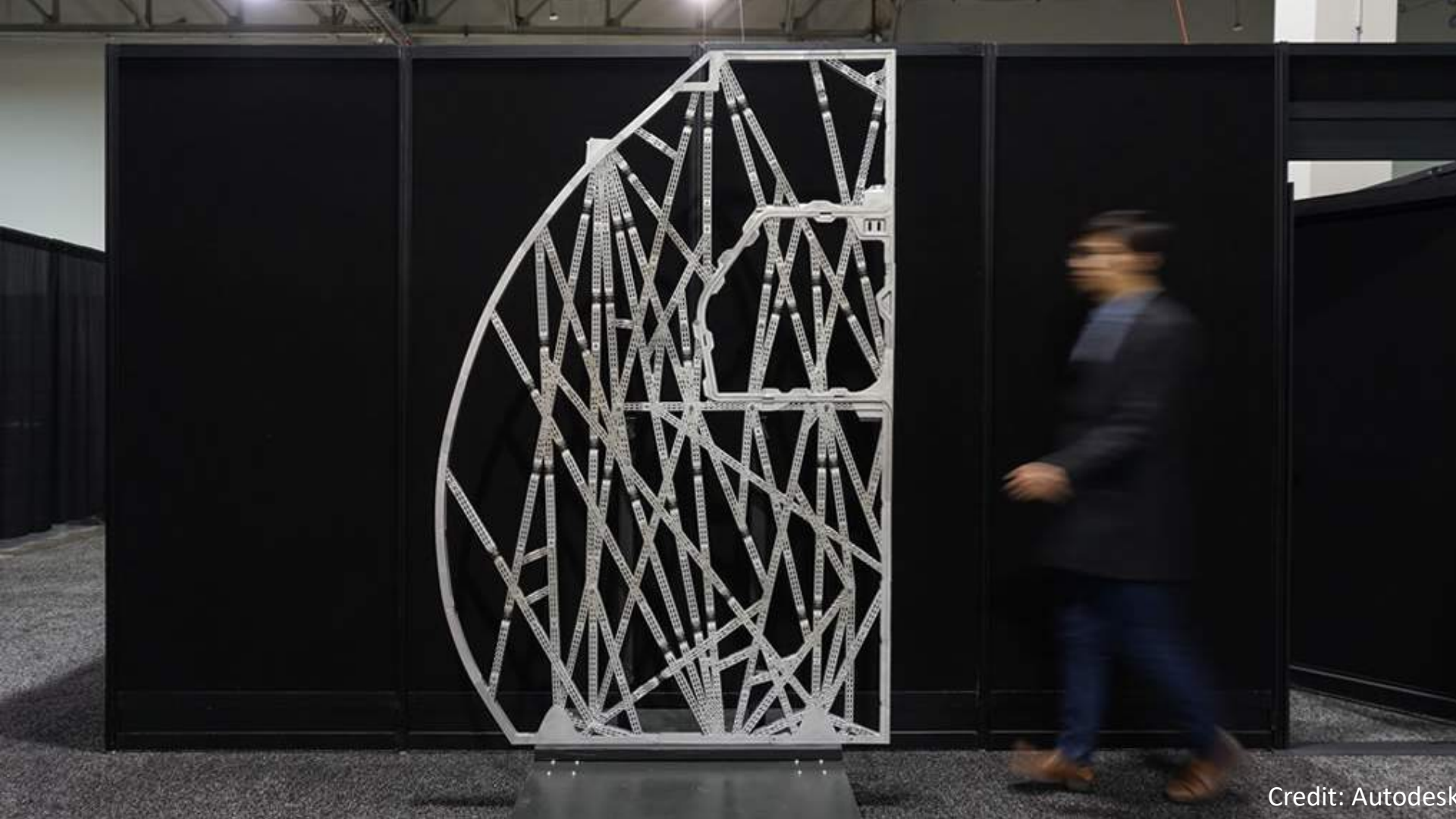
MEDIA RELEASES

Vector today announced it has expanded its partnership with Israeli technology company mPrest, to continue to develop and apply a machine learning and artificial intelligence system that will better manage Auckland's changing energy demands.

The mDERMS programme, developed by Vector Ltd. and mPrest engineers, uses the latest technology to better monitor, analyse, and control Auckland's energy network, which connects traditional infrastructure like electricity lines and substations with new technology like solar and battery energy solutions, or DERs (Distributed Energy Resources), to power more than half a million (555,100) homes and businesses.

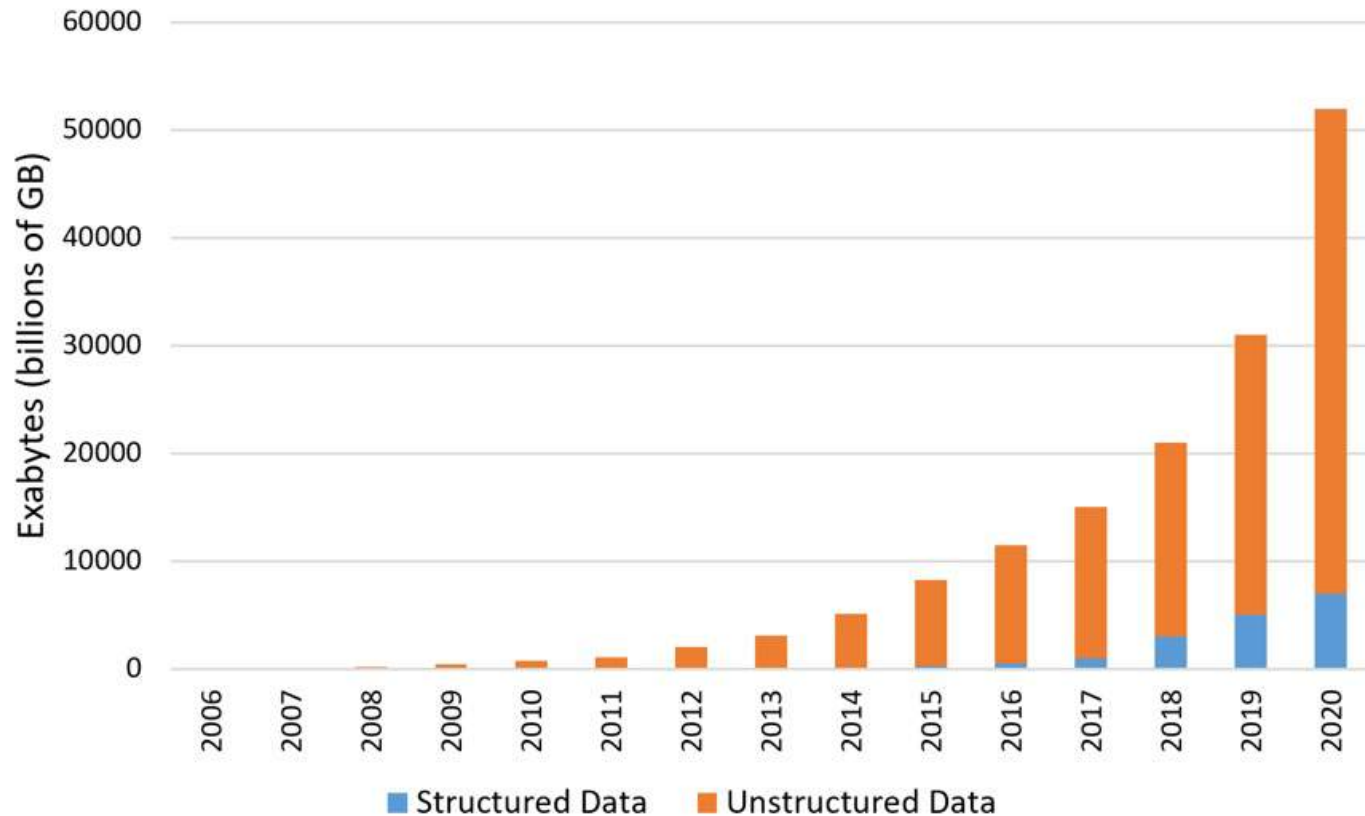






Credit: Autodesk

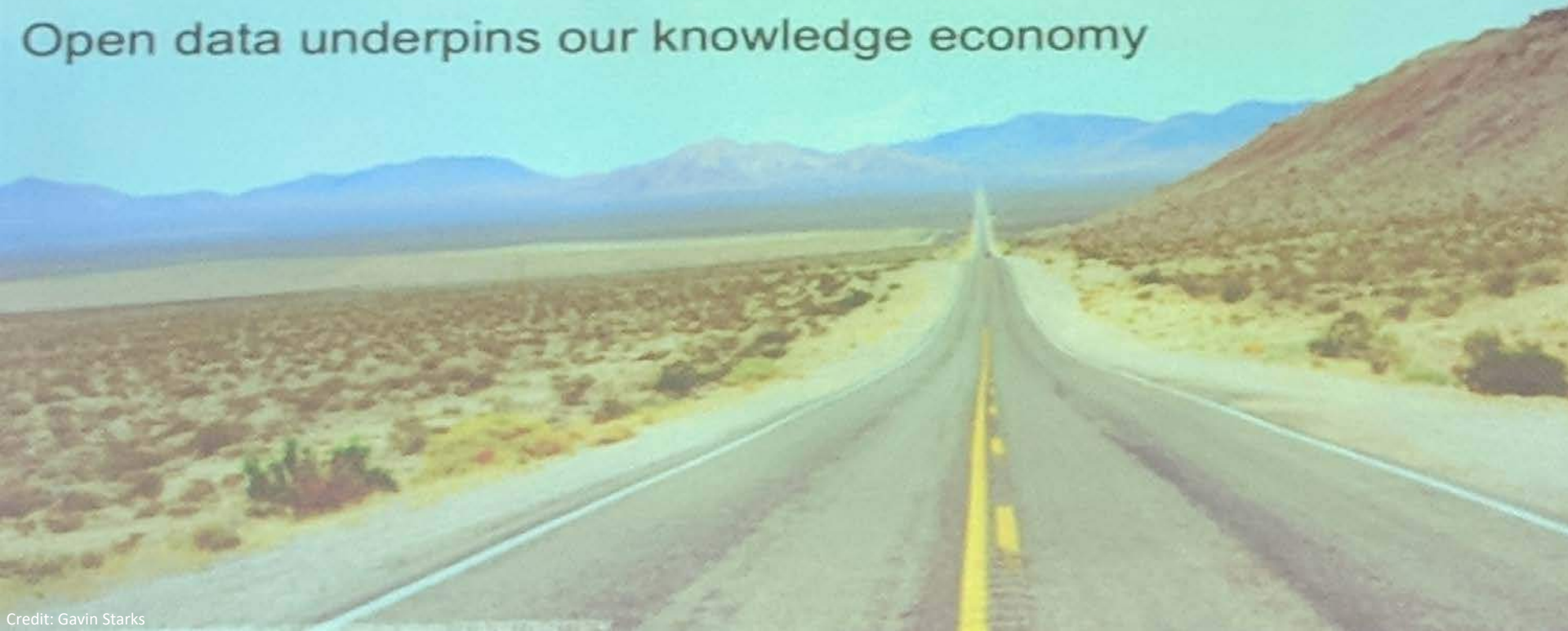
The Cambrian Explosion...of Data



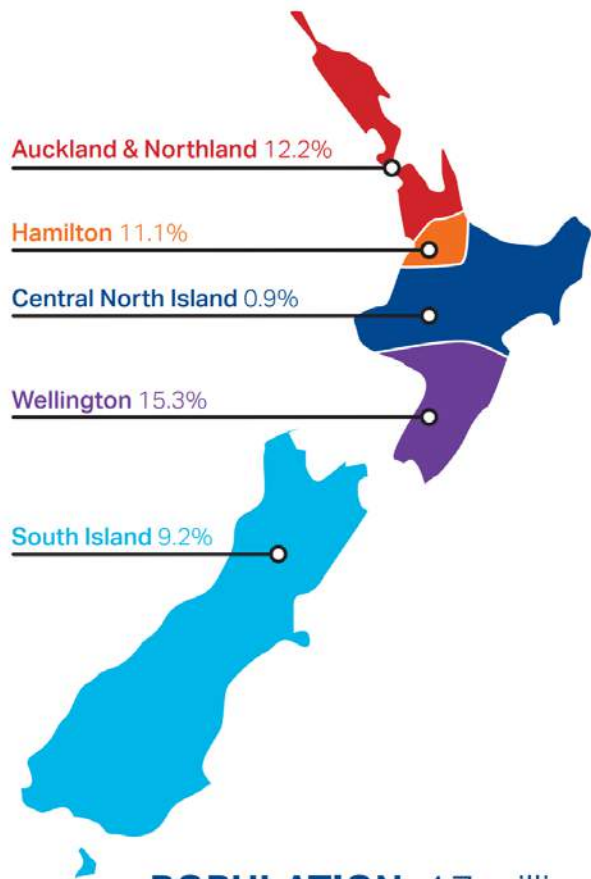
Open roads underpin our physical economy

Open networks underpin our digital economy

Open data underpins our knowledge economy



% Revenue growth (2016)



POPULATION: 4.7 million

A record year for investment (2016)

Foreign investment

239% increase in the past year
in early stage technology companies



Record capital raise

\$1.0B¹
raised by funds for NZ private equity and
venture capital investment.



A technology sector on the rise. Growth for the top 200 revenue-earning technology firms (2016):

Speed of growth

12%
revenue growth in the past year (over \$1B).



Spread of growth

Growth is evident across every
New Zealand region.



Highest growth sectors

FinTech **23.1%** Digital Media **15.9%**



Scale of growth

\$6.9B
generated in offshore revenues.



Technology is New Zealand's
3rd largest export sector.

Company sizes are growing rapidly

21% now have annual revenues exceeding \$50m.

In total, the New Zealand technology sector

Contributes:

16.2B of national GDP*.



Consists of:

28,749 firms*.



Employing:

98,900 workers*.



*Digital Nation New Zealand: From Tech Sector to Digital Nation, NZ Technology Industry Association (June 2016).

¹NZ Private Equity and VC Monitor, NZVCA (May 2017).

INQUIRIES

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What's wrong with our productivity?

Date: 16/07/2018

Paul Conway sheds light on the causes and solutions for New Zealand's poor long-run productivity.

Jason Walls from interest.co.nz interviews Paul Conway, the Commission's Director of Economics & Research on why New Zealand has such a poor long-run productivity performance. How did we get to this position? What are the causes and how can we lift our game? What are the key opportunities and risks?

[Watch the interview here - New Zealand's economic Achilles heel - what's wrong with our productivity?](#)

Or read the article [How too many SMEs, cooperatives and immigrants are contributing to NZ's productivity woes on interest.co.nz here.](#)



This interview follows the publication of Paul Conway's recent paper for the International Productivity Monitor [Can the kiwi fly? Achieving productivity lift-off in New Zealand.](#)

Artificial intelligence: €20bn investment call from EU commission

Move to boost AI research amid concerns Europe is losing ground to US and China



▲ The commission distanced itself from proposals to give the most advanced robots the legal status of personhood. Photograph: Sirjan Saku/UPA

Brussels has called for a €20bn (£14bn) cash injection for artificial intelligence research, while pouring cold water over controversial plans to give robots human rights.

The European commission wants governments and private companies to boost research and innovation spending on AI, amid rising concern that Europe is losing ground to the US and China, where most leading AI firms are based.

The Download

What's up in emerging technology



China Has a New Three-Year Plan to Rule AI

The national artificial-intelligence ambitions of China have just evolved into a detailed three-year action plan, building on a [sweeping scheme announced in July](#).

On Thursday, the country's Ministry of Industry and Information Technology [published](#) a document on how to foster the development of artificial intelligence from 2018 to 2020. But it's far from simply a summary of

UK positioned to become world leaders in AI

Greg Clark, government minister for artificial intelligence strategy, says the UK can claim a multi-billion-pound economic prize as world leaders in AI

By STEPHEN ARMSTRONG - MAY 23, 2018

RCMT.EU/UKIST



Automated robots stacking pallets of paint stand at the end of the production line at Akzo Nobel paint factory in Ashington, Northumberland.

SPECIAL REPORT

According to a 2017 report from PwC, 2018 marks the year artificial intelligence (AI) can finally be applied widely. The report warned that 30 per cent of the country's jobs might be under threat from the technology, but predicted the UK could see productivity boosted by up to 30 per cent and savings generated of up to 10 per cent.

by PwC staff

eGovInnovation

MANAGEMENT TECHNOLOGY VERTICALS CMO

CMO Innovation

eGov Innovation

FinTech

eGOV

SMBASIA

Singapore launches national Artificial Intelligence programme

By Tan Wee Kwang | 2017-05-05

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The National Research Foundation (NRF) Singapore will launch AI.SG, a national programme in Artificial Intelligence (AI) to catalyze synergize and boost Singapore's AI capabilities. Up to \$150 million will be invested in AI.SG over the next five years.

The initiative will be driven by a government-wide partnership comprising NRF, the Smart Nation and Digital Government Office (SNDGO), the Economic Development Board (EDB), the Infocomm Media Development Authority (IMDA), SGInnovate, and the Integrated Health Information Systems (IHIS).

AI.SG will bring together research institutions, AI start-ups and companies developing AI products, to grow knowledge, create tools and develop talent to power Singapore's AI efforts.

AI.SG has three objectives:

1) Use AI to address major challenges that affect society and industry

For example, AI can be used to increase traffic throughput during peak hours, or to address healthcare challenges that are to come with an ageing population.

Mr Bruce Liang, Chief Executive Officer of IHIS and CIO of Ministry of Health said: "We see significant applicability of AI in the future for safeguarding the health of Singaporeans. AI could play a big role in

flow

y & Industry Review - www.syncedreview.com || www.jiqizhixin.com || Subscribe:

1Q4cP3B

in read

South Korea Aims High on AI, Pumps \$2 Billion Into R&D



AI Forum Working Groups Agenda 2018

THEME 1

Forging a Coordinated AI Strategy for New Zealand

Recommendations:

- 1.1 Develop a coordinated national AI strategy as part of New Zealand's wider Digital Strategy.
 - 1.2 Ensure AI features strongly in the national cybersecurity strategy.
-

THEME 2

Creating Awareness and Discussion of AI

Recommendations:

- 2.1 Advance AI awareness and understanding.
-

THEME 3

Assisting AI Adoption

Recommendations:

- 3.1 Develop 'how to' best practice resources for industry and Government.
 - 3.2 Accelerate Enterprise AI deployment.
 - 3.3 Support SME adoption of AI.
 - 3.4 Support AI startups and exporters.
-

THEME 4

Increasing Trusted Data Accessibility

Recommendations:

- 4.1 Increase data availability and accessibility.
-

THEME 5

Growing the AI Talent Pool

Recommendations:

- 5.1 Increase the supply of AI talent.
 - 5.2 Encourage AI student diversity.
 - 5.3 Teach AI in schools.
-

THEME 6

Adapting to AI effects on Law, Ethics and Society

Recommendations:

- 6.1 Establish an AI ethics and society working group.
 - 6.2 Review employment practices, law and obligations.
 - 6.3 Review high priority legal implications of AI.
-

10 AI Ideas For Infrastructure

1. Design and construction automation
2. Project plan optimisation, prediction
3. Simplifying contracts
4. Capturing project progress
5. Modeling geology – “solve” tunnels
6. Health & Safety – automated monitoring / alarming
7. Quality control
8. Risk management
9. Counting everything
10. Swarm bots (digging / earth moving)

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Thank you!

Download a digital copy of our report:

<https://aiforum.org.nz/research/>



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