The future of business for Aotearoa New Zealand:

An exploration of two trends influencing productivity and wellbeing – purpose-led business and use of blockchain technology

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INSIGHTS – what are the trends and their implications?

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Complex global trends such as climate change and technological change present challenges and opportunities for Aotearoa New Zealand.

Businesses are responding through shifts in strategy, business models, and exploring new combinations and uses of technology.

The major productivity and wellbeing challenges of the future cannot be solved by business or government alone. We need to think differently about the traditional roles of business and government.

This Long-term Insights Briefing by the Ministry of Business, Innovation and Employment (MBIE) explores how the future of business in Aotearoa New Zealand may be shaped by two trends over the next 10 years and beyond:

› growth in purpose-led businesses
› use of blockchain technology

The insights presented here were developed in 2021–22 through research and engagement with business owners, industry leaders, entrepreneurs, academics, community representatives, regulators, government officials, youth/rangatahi, and members of the public.

Te Kāwanatanga o Aotearoa
New Zealand Government

Purpose-led businesses
Committed to achieving wider outcomes than just profit

› The number of purpose-led businesses will continue to grow steadily, even though many businesses will continue to focus on profit. This trend is likely to benefit overall productivity and wellbeing.
› This reflects a history of social responsibility among New Zealand businesses led by community-focused small businesses and Māori businesses which tend to take an intergenerational view.
› Growth will be driven by increasing pressure from employees, investors and consumers (particularly young people) for businesses to be more socially and environmentally responsible.
› There may be erosion of support for businesses which are not seen as purpose-led, or which make false claims to gain market position.
› Common low-cost, simple and accessible tools for measuring and demonstrating successful purpose-led outcomes is key.
› The growth of purpose-led business may lead to a broader range of business models, as the roles of business, government and community become more intertwined.

Blockchain
A type of database, with data stored in chains that cannot normally be deleted or changed

› Use of blockchain is growing in the finance sector and in supply chains to support secure transactions, traceability and digital identity. Its uses are much broader than Bitcoin and other cryptocurrencies.
› Over the next 10 years blockchain will probably become more embedded as a technology in business and across systems in Aotearoa New Zealand. Its role will be as a technology option as part of a broader set of decentralised and distributed ledger technologies (DLT) and a new web3 generation of the internet.
› Blockchain is enabling peer-to-peer and networked business models, such as decentralised autonomous organisations (DAOs).
› Uses of blockchain include growing 'for good' applications that address social and environmental challenges, and use by Māori businesses.
› Blockchain has benefits and challenges for productivity and wellbeing. Governance and regulation will need to address risks and opportunities in an integrated, adaptive and socially connected way.

Growing diversity of business models

› Our exploration of the two trends indicates that while traditional business forms will persist,
  • there is likely to be more and a wider range of values-oriented, networked, open, and peer-to-peer/decentralised organisational business forms
  • these new forms will span the traditional domains of business, government, and community.
› Any further exploration of evolving business models is likely to benefit from a system view, and effective government collaboration with business and communities.

Purpose-led businesses
Committed to achieving wider outcomes than just profit

› Support awareness and information
› Actively incentivise purpose-led
› Require businesses to contribute to wider societal objectives

Blockchain
A type of database, with data stored in chains that cannot normally be deleted or changed

› Continue as is, with roles in regulation and broad settings
› Support greater awareness and knowledge about blockchain
› Enable optimal use of blockchain for Aotearoa New Zealand to achieve goals and address challenges

Growing diversity of business models

› Keep a watching brief on the changes
› Test if regulatory, governance and organisational settings are fit for purpose
› Shape the settings for new business models to meet society's objectives

Illustrations of some ideas shared by youth at a workshop to support this work.

Let's focus on + PEOPLE + PLANET + PURPOSE +

FOCUS ON SKILLS, APTITUDES INSIGHTS (NOT JUST UNI!)

TRANSFERABLE SKILLS

the concept of WELLBEING IS SO MUCH BIGGER THAN PRODUCTIVITY

TECHNOLOGY CAN BE USED TO OPEN DOORS TO MORE INCLUSION

MORE ACTIVE ENGAGEMENT with RANGATAHI and YOUTH

INNOVATE CREATE NEW SOLUTIONS IN AN ENVIRONMENT THAT ALLOWS FAILURE

MĀORI BUSINESS SUCCEEDS BECAUSE OF CONNECTION TO MOANA TE TAIAO and WHAKAPAPA EG: MĀORI MODELS TE WHARE TAPA WHA

Foreword

Kia ora koutou,

I am delighted to present MBIE's first Long-term Insights Briefing that explores the future of business for Aotearoa New Zealand.

In this Briefing, we lift our gaze from the day to day and look ahead to the challenges and opportunities that future decision makers in government, business and communities will need to turn their minds to in the years to come. Our aim is not to provide solutions but to bring together diverse perspectives and prompt thinking on the range of choices we might have to improve our productivity and wellbeing.

The future of business is a big subject, so with the help of a wide range of contributors we decided to explore two very different emerging trends to shed some light on what the future might bring. These are purpose-led business (where businesses balance profit with achieving wider social good), and use of blockchain technology (a new, possibly disruptive technology that not many people understand).

As we explored these trends, we found that many Aotearoa New Zealand businesses are fundamentally rethinking their role in society (their 'why') and how they organise themselves in the context of global drivers such as climate change, shifts in technology and demographic change. We heard how Māori businesses lead the way by weaving te ao Māori values into their collective purpose to enhance wellbeing for the long term. And how tech-enabled businesses with purpose is second nature to young people and rangatahi.

Aotearoa New Zealand will need to be prepared to accommodate a growing diversity in business types, ranging from traditional models, right through to more decentralised, networked or participative forms that may not easily fit into current institutional and legal systems. This shift in the nature of business brings with it new opportunities for government, business and communities to work together to meet the great challenges of our times.

I would like to acknowledge and give heartfelt thanks to over 200 people and organisations who gave their time to help us to develop the insights in our Briefing.

Nāku noa, nā
Carolyn Tremain
Secretary
Ministry of Business, Innovation and Employment

Tāwhia tō mana kia mau, kia māia

Ka huri taku aro ki te pae kahurangi,
kei reira te oranga mōku

Mā mahi tahi, ka ora, ka puāwai

Ā mātau mahi katoa, ka pono, ka tika

Tihei Mauri Ora

Retain and hold fast to your mana, be bold, be brave

We turn our attention to the future,
that's where the opportunities lie

By working together we will flourish
and achieve greatness

Taking responsibility to commit to doing things right

Tihei Mauri Ora

MĀIA BOLD & BRAVE

PAE KAHURANGI BUILD OUR FUTURE

MAHI TAHI BETTER TOGETHER

PONO ME TE TIKA OWN IT

1. Introduction

1.1. Developing long-term insights about the future of business for Aotearoa New Zealand

This Briefing shares ideas about the future of business for Aotearoa New Zealand. It is the product of work led by MBIE as its first Long-term Insights Briefing (Box 1).

In it you will read how business is changing in response to global drivers and megatrends and take a deep dive into two trends – the growth of purpose-led business and the emerging use of blockchain technology.

We then share some long-term insights about how business in Aotearoa New Zealand may change over the next 10 years and beyond, the implications this may have for productivity and wellbeing, and some strategic choices that arise for government.

This Briefing has been developed through engagement and analysis, and with the use of futures thinking tools (see **Annex One** for more detail on methods). It has also drawn on Māori concepts about time and the interconnections between the past, present and future. Each section presents information in three time horizons:

› **Pae mahara** – the past, to remember or bear in mind
› **Pae herenga** – the present, an obligation or connection, which for this work refers to the challenges and opportunities arising from global drivers
› **Pae tawhiti** – the future, or in the long-term.

Box 1: What is a Long-term Insights Briefing?

Departmental chief executives are required to publish Long-term Insights Briefings at least once every three years. This is a requirement of the Public Service Act 2020. The purpose of the Briefings is to share:

› information about medium and long-term trends, and risks and opportunities that affect or may affect New Zealand and New Zealand society
› information and impartial analysis, including policy options for responding to these matters.
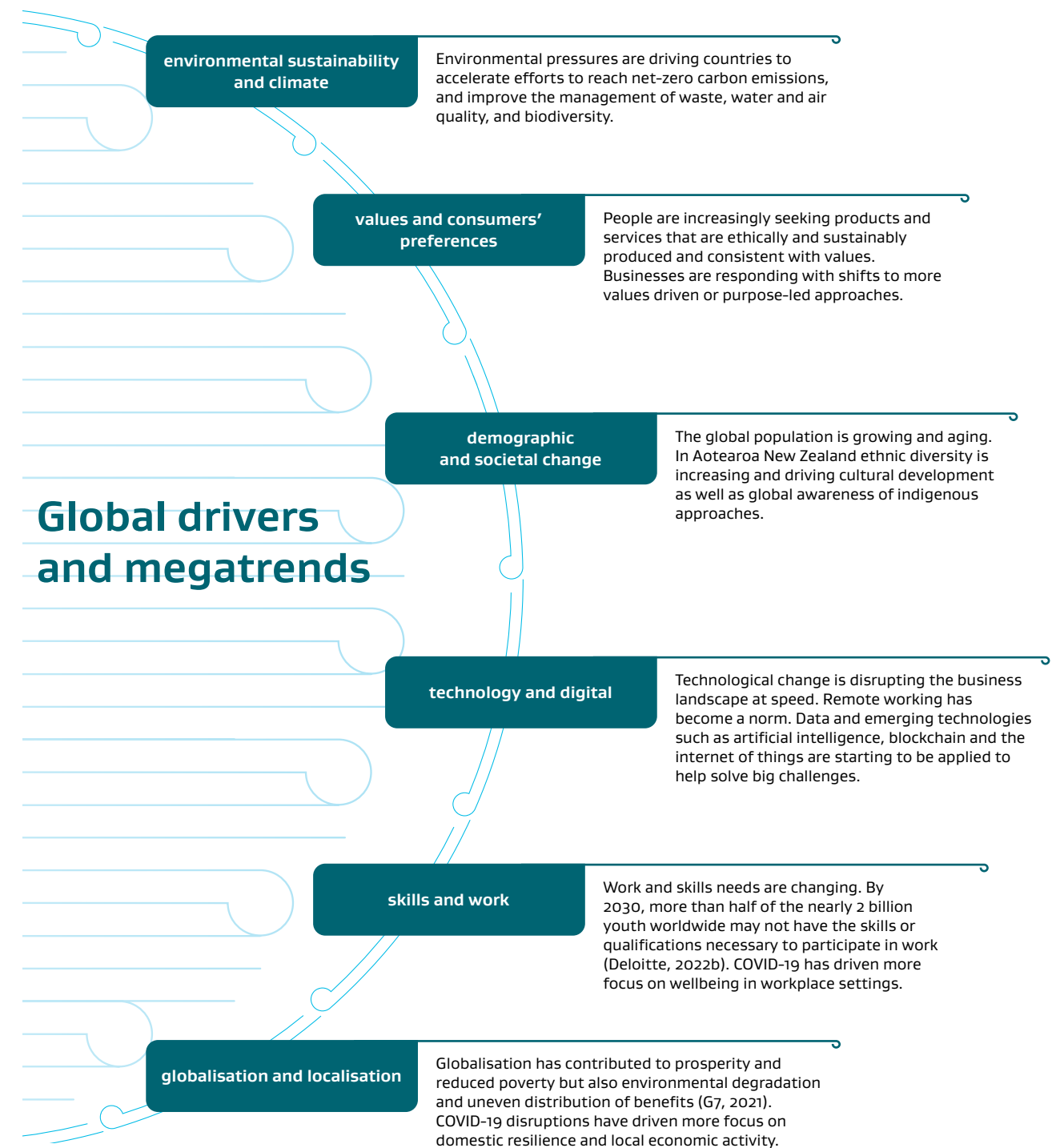
Long-term Insights Briefings are submitted to the House of Representatives. They are not government policy and are prepared independently of ministers.

The Briefings provide an opportunity to enhance public debate on long-term issues and to usefully contribute to future decision-making — not only by government but also by Māori, business, academia, not-for-profit organisations, communities and the wider public.

1.2. A context of change

The COVID-19 pandemic has shown us how the future is inherently uncertain and hard to predict. What we do know is that global drivers will continue to shape our economy and society, presenting both challenges and opportunities for Aotearoa New Zealand. **Figure 1** below displays some of the global drivers and megatrends that we heard through our consultation were impacting people and business, both globally and in Aotearoa New Zealand.

Figure 1: Some global drivers and related megatrends

Global drivers and megatrends

environmental sustainability and climate
Environmental pressures are driving countries to accelerate efforts to reach net-zero carbon emissions, and improve the management of waste, water and air quality, and biodiversity.

values and consumers' preferences
People are increasingly seeking products and services that are ethically and sustainably produced and consistent with values. Businesses are responding with shifts to more values driven or purpose-led approaches.

demographic and societal change
The global population is growing and aging. In Aotearoa New Zealand ethnic diversity is increasing and driving cultural development as well as global awareness of indigenous approaches.

technology and digital
Technological change is disrupting the business landscape at speed. Remote working has become a norm. Data and emerging technologies such as artificial intelligence, blockchain and the internet of things are starting to be applied to help solve big challenges.

skills and work
Work and skills needs are changing. By 2030, more than half of the nearly 2 billion youth worldwide may not have the skills or qualifications necessary to participate in work (Deloitte, 2022b). COVID-19 has driven more focus on wellbeing in workplace settings.

globalisation and localisation
Globalisation has contributed to prosperity and reduced poverty but also environmental degradation and uneven distribution of benefits (G7, 2021). COVID-19 disruptions have driven more focus on domestic resilience and local economic activity.

1.2.1. Business strategy is evolving to respond to change

Businesses are adapting to respond to risks and to capture opportunities associated with these major changes. This includes developing new products and services, considering environmental and social impact and more ethical ways of working, using new technology, and responding to changes in worker, investor and consumer demand caused by shifting demographics and value systems.

These kinds of changes in business are not new or unusual. Since its beginnings, business has evolved in role and form in response to new technologies or paradigm shifts in the way business is done. **Figure 2** shows some events in the evolution of business over time.

External forces and trends immensely shape the way businesses contribute to society. A once-in-a-century global pandemic, economic inequality, changes brought about by major trends in science and technology, education, lifestyle and life expectancy all determine the role of business in society – New Zealand Trade and Enterprise (NZTE)

1.2.2. Governments are broadening focus to wellbeing

Increasingly, governments are realising a sole focus on growth or productivity will not address the challenges presented by global drivers and will not achieve all the outcomes that society wants. An emphasis on sustainability and wellbeing is becoming more commonplace worldwide. This is highlighted by the United Nations (UN) member states' ambitious Sustainable Development Goals that aim to end poverty, promote peace, share wealth, and protect the planet by 2030. The COVID-19 pandemic has also provided countries with a once-in-a-generation opportunity to reset their economies. Many, such as the European Union (EU), United States (US) and South Korea, have plans to 'build back better'.

Aotearoa New Zealand is also developing a focus on wellbeing which considers a range of outcomes beyond productivity **(Box 2)**.

Box 2: The Living Standards Framework focuses on wellbeing

Treasury published the first Living Standards Framework in 2011. It expresses a broader approach to living standards than Gross Domestic Product (GDP). It includes financial/physical, human, social and natural capital. The 2021 version of the Living Standards Framework also includes three levels of wellbeing, as follows:

› Our individual and collective wellbeing: the things that are important for our wellbeing as individuals, families, whānau and communities.
› Our institutions and governance: the role our organisations play in facilitating the wellbeing of individuals and collectives, as well as safeguarding and building our national wealth.
› The wealth of Aotearoa New Zealand: how wealthy we are overall, including wealth not fully captured in the system such as human capability and the natural environment.

1.2.3. How do we understand and navigate this change?

The scope and magnitude of the changes outlined above are profound. Just like the major changes that came before, they will affect how we live our lives in ways that are difficult to imagine. To navigate change successfully, we need to understand its patterns and think about what we may need to do over the coming years to guide us to long-term success.

In this Briefing, we tackle these difficult questions by delving into two trends: **growth in purpose-led business** and the emerging **use of blockchain technology**.

The two trends are very different, and they do not represent all change that is occurring. But by looking at two different trends we hope to generate insights about the future of business for Aotearoa New Zealand to help guide long-term actions by government.

Box 3: Two deep dives into changes that will affect future business

Purpose-led business

Although it is not revolutionary for businesses to enhance their purpose beyond profit, it is becoming more mainstream and even an expectation among consumers and investors.

A wider purpose will look different for each business — but it can generally be understood to be contributing to or taking responsibility for an aspect of wellbeing beyond financial benefit for the business and its stakeholders.

In this Briefing we discuss the evolution of purpose-led businesses and ask the questions:
› What are the wider implications of growth in purpose-led business?
› What might the future role of business be in contributing to wider productivity and wellbeing?

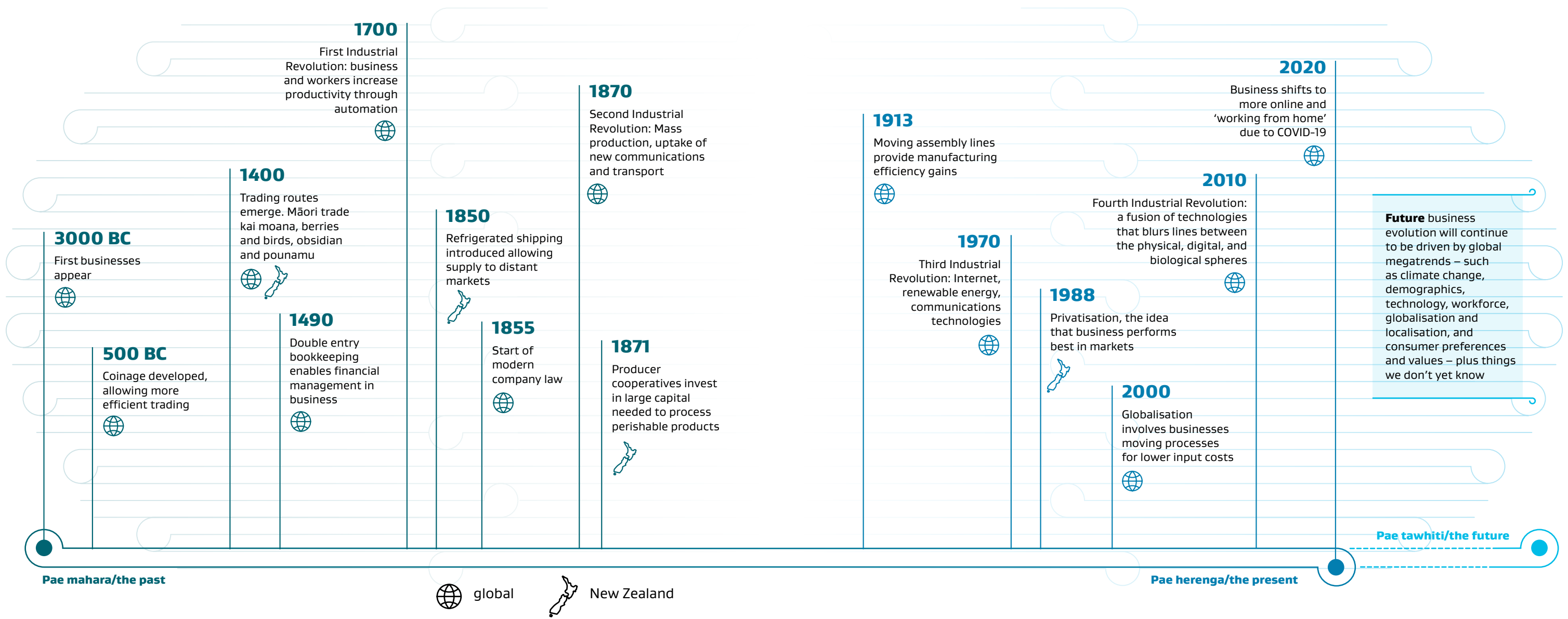We also explore some choices governments might have to encourage, incentivise or drive this trend.

Use of blockchain technology

The 2020s are likely be a decade of unprecedented speed and scope of technological change. A period of change like this presents enormous opportunities and challenges to business, for example to lift productivity by shifting to digital functions. It also presents choices for business and government about how technological change may be governed and shaped.

In this Briefing we explore the emerging use of blockchain technology for a broadening range of applications including new business organisational forms.

The opportunities and challenges arising from this trend are presented along with some choices government could consider to enable responsible use of blockchain and leverage its potential for Aotearoa New Zealand.

Figure 2: Business evolution over time

1700
First Industrial Revolution: business and workers increase productivity through automation

1870
Second Industrial Revolution: Mass production, uptake of new communications and transport

2020
Business shifts to more online and 'working from home' due to COVID-19

1913
Moving assembly lines provide manufacturing efficiency gains

1400
Trading routes emerge. Māori trade kai moana, berries and birds, obsidian and pounamu

2010
Fourth Industrial Revolution: a fusion of technologies that blurs lines between the physical, digital, and biological spheres

1850
Refrigerated shipping introduced allowing supply to distant markets

3000 BC
First businesses appear

1970
Third Industrial Revolution: Internet, renewable energy, communications technologies

Future business evolution will continue to be driven by global megatrends – such as climate change, demographics, technology, workforce, globalisation and localisation, and consumer preferences and values – plus things we don't yet know

1490
Double entry bookkeeping enables financial management in business

1855
Start of modern company law

1988
Privatisation, the idea that business performs best in markets

500 BC
Coinage developed, allowing more efficient trading

1871
Producer cooperatives invest in large capital needed to process perishable products

2000
Globalisation involves businesses moving processes for lower input costs

Pae tawhiti/the future

Pae mahara/the past

Pae herenga/the present

🌐 global   New Zealand

2. Trend one: purpose–led business

How might the trend of business adopting a wider purpose evolve over the next 10–20 years? We take a deep dive into the future of purpose-led business in New Zealand, with a focus on the implications for productivity and wellbeing.

2.1. What is a purpose-led business?

A purpose-led business is one that wants to achieve both positive financial returns and wider social outcomes, balancing profit and purpose.

People we spoke to said that most businesses are motivated by more than just profit. They provide products and services that benefit society, employ others, contribute to taxes and meet regulatory standards. Many also do extra to mitigate their own impacts beyond what is expected. Some actively contribute beyond their own impacts to the greater good.

The idea of 'purpose' beyond profit in business is a spectrum. A purpose-led business could range from a company with some charitable initiatives, through to an organisation that is transforming from a traditional capitalist mindset to pursue what Porter calls 'shared value' — where business success and social progress are interdependent (Porter & Kramer, 2011).

In this Briefing our interest is in businesses that are shifting to the transformative end of this spectrum where **societal impact is integrated into business function and is a key part of the measure of business success**. In such companies 'shared value' is integrated into all areas – business products and services, the way the business is governed and operated, and the way that the business supports its wider community and environment.
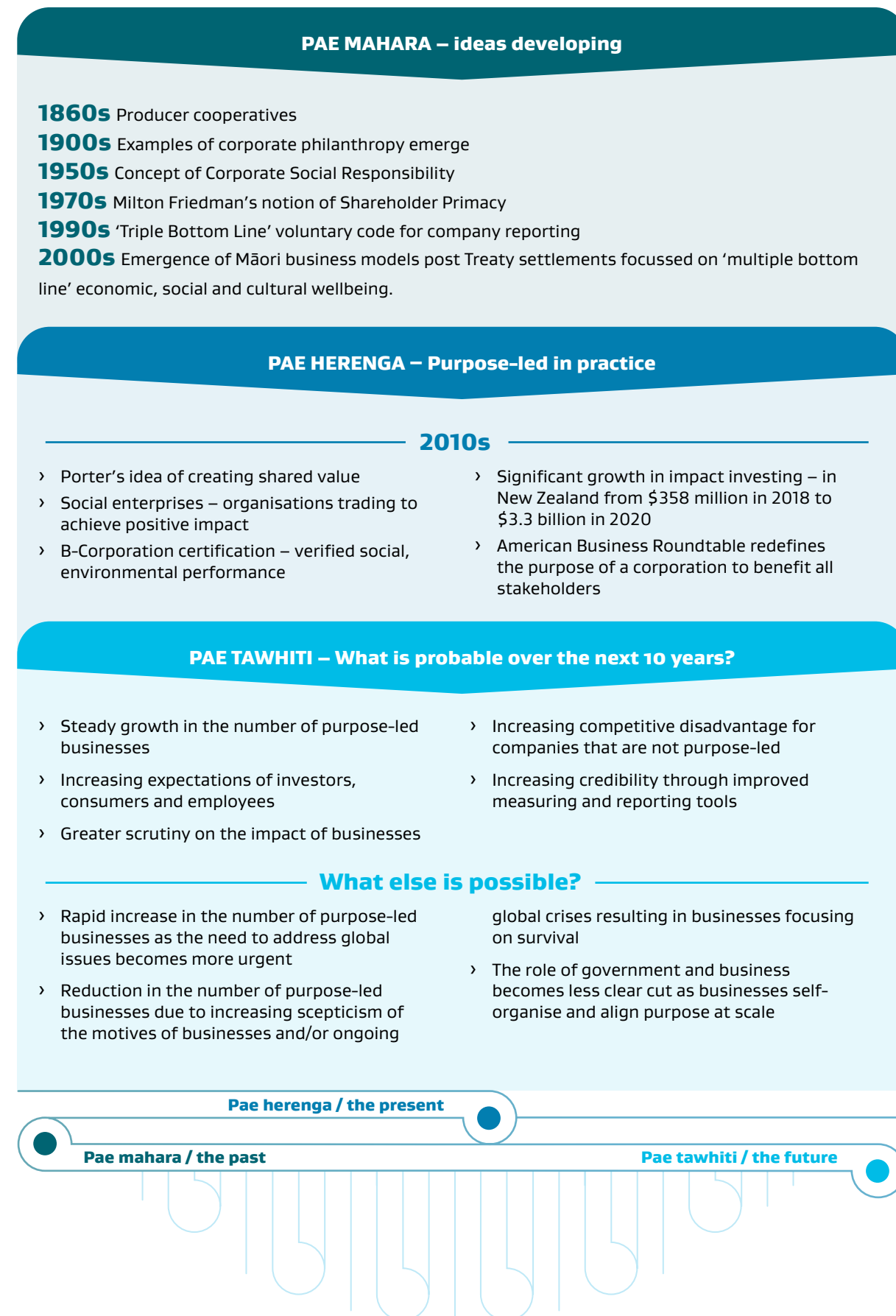
2.2. A visual: purpose-led business over time

For this Briefing we group insights into past, present and future stages:

Pae mahara/the past	1870–2010	Developing ideas about purpose-led business
Pae herenga/the present	2010–2022	Emerging examples of purpose-led business in practice
Pae tawhiti/the future	2022–2050	A range of probable and possible future developments

Figure 3 illustrates some of the ways in which the notion of business purpose has changed over time and indicates some probable and possible future developments. In the next sections we explore this trend and what it might mean for the future of business.

Figure 3: Changes in approach to business purpose over time

PAE MAHARA – ideas developing

1860s Producer cooperatives
1900s Examples of corporate philanthropy emerge
1950s Concept of Corporate Social Responsibility
1970s Milton Friedman's notion of Shareholder Primacy
1990s 'Triple Bottom Line' voluntary code for company reporting
2000s Emergence of Māori business models post Treaty settlements focussed on 'multiple bottom line' economic, social and cultural wellbeing.

PAE HERENGA – Purpose-led in practice

2010s

› Porter's idea of creating shared value
› Social enterprises – organisations trading to achieve positive impact
› B-Corporation certification – verified social, environmental performance

› Significant growth in impact investing – in New Zealand from $358 million in 2018 to $3.3 billion in 2020
› American Business Roundtable redefines the purpose of a corporation to benefit all stakeholders

PAE TAWHITI – What is probable over the next 10 years?

› Steady growth in the number of purpose-led businesses
› Increasing expectations of investors, consumers and employees
› Greater scrutiny on the impact of businesses

› Increasing competitive disadvantage for companies that are not purpose-led
› Increasing credibility through improved measuring and reporting tools

What else is possible?

› Rapid increase in the number of purpose-led businesses as the need to address global issues becomes more urgent
› Reduction in the number of purpose-led businesses due to increasing scepticism of the motives of businesses and/or ongoing

global crises resulting in businesses focusing on survival
› The role of government and business becomes less clear cut as businesses self-organise and align purpose at scale

Pae herenga / the present

Pae mahara / the past

Pae tawhiti / the future

2.3. Pae mahara/the past

2.3.1. Purpose-led businesses aren't anything new

A focus on purpose beyond profit is not a new concept. In the 1950s and 1960s it was common for businesses in developed economies to consider not just shareholders but everyone who has a stake in the success of a firm (Schwab & Vanham, 2021). This concept of 'Corporate Social Responsibility' can be traced back to Howard Bowen in 1953. He explored the importance of a 'social contract' between business and society based on the idea that a business functions because of public consent (Bowen, 1953).

These philosophies led to the idea that companies create a mission, vision, values and principles to guide the organisation, aimed beyond delivery of the product or service they offer. By the 1990s, the concept of Triple Bottom Line reporting formalised this into a voluntary code for company reporting, covering the three 'bottom lines' of financial, social and environmental performance.

From the 1970s this approach was tempered by economist Milton Friedman's notion of 'shareholder primacy' as the global organising principle for business. Friedman is quoted as saying "the business of business is business" and "the social responsibility of business is to increase its profits" (Friedman, 1970). Friedman argued that businesses are spending somebody else's money (shareholders, customers or workers' money) to achieve these social outcomes and compares this to a tax.

Box 4: Over a century of business philanthropy

For over a century business owners have taken a philanthropic approach to the use of business profits to benefit wider social objectives.

In 1900, chocolate maker George Cadbury founded the Bournville Village Trust with a gift of 313 houses set at affordable rent to "alleviate the evils of modern, more cramped living conditions". (www.bvt.org.uk/our-business/the-bournville-story/)

New Zealand corporate philanthropy developed later, starting with family trusts like the Todd Foundation. These distributed funds gained from success , often in retail business.

2.3.2. Purpose-led businesses aren't new to Aotearoa New Zealand

While a shareholder primacy approach has been a dominant organising principle for business in Aotearoa New Zealand, Māori businesses have provided leadership in the area of wider purpose beyond profit. Examples of purpose-led businesses included iwi-owned companies formed post Treaty settlements to sustainably invest settlement funds and manage returned land and resources. These companies introduced an ultra-long-term strategic vision into business practices, focused widely on economic, social and cultural wellbeing. The earliest example is the Ahu Whenua Trusts operating under their own management before Treaty Settlements were made.

*Māori businesses have always been innovative. They optimise their assets without selling them...This allows these businesses to develop a whole different way of thinking – **Federation of Māori Authorities***

In 2010, the New Zealand Business Council for Sustainable Development found that corporate responsibility was often woven into the way New Zealand companies do business, but not necessarily using a formalised approach – "for most businesses... they feel it's the right thing to do... rarely is a small-medium enterprise decision to get involved in a social capacity based on some strategic analysis of the company's purpose or a business case" (New Zealand Business Council for Sustainable Development, 2010).

Many smaller businesses in Aotearoa New Zealand are purpose-led but act more informally

Many businesses, particularly small and medium enterprises (SMEs), often have more informal approaches to purpose beyond profit. This doesn't involve measuring or reporting – just doing. We heard that many small business owners, especially in rural areas, tend to be strongly connected to their local communities. They often use their business as a vehicle to support the local community – such as sourcing products and services from suppliers with shared values, driving local community projects, reducing environmental impact and encouraging staff to participate in volunteer community work (eg volunteer fire brigade). Some businesses noted that doing these things also motivated their employees. The wide range of motivations for small business is illustrated in **Figure 4**.

*Small businesses support their communities, but they might not articulate it in the same way. They are humble and don't push their purpose… they do more than is seen – **Small Business Advisors***

Figure 4: Motivations of small creative businesses in New Zealand (generated from MBIE – WeCreate workshop June 2022)

2.4. Pae herenga/the present

2.4.1. As stakeholders respond to global drivers, businesses are having to rethink their role and purpose

Shareholder primacy has led to tremendous economic progress but has equally brought about major social, economic and environmental challenges. Expectations are mounting from all types of stakeholders for businesses to play a leading role in addressing these challenges **(Table 1)**.

Table 1: Demands from business stakeholders to become more purpose-led		
Employees	**Investors**	**Consumers**
Values are key to Generation Z (Gen Z) and Millennial employees. Half (46%) of Gen Zs and Millennials in senior positions have rejected a job and/or assignment based on their personal ethics (Deloitte, 2022c). More widely, two-thirds (65%) of leaders are feeling pressure from their employees to act on sustainability issues (Deloitte, 2022c).	Impact investment has grown globally and in New Zealand, reflecting investor interest in the wider social impact of their investments. Total investment market: › **2018**: US$502 billion › **2020**: US$715 billion › **2022**: US$2.1 trillion or 2% of global assets under management (Global Impact Investing Network, 2022). NZ investment market: › **2018**: NZ$358 million › **2020** NZ$3.3 billion or 1% of total funds under management (Banhalmi-Zakar, Boele, & Bayes, 2021). 71% of leaders are feeling pressure to act from shareholders or investors (Deloitte, 2022c)	Consumers are increasingly choosing to purchase products and services from businesses that can demonstrate sustainable and ethical practices. New Zealanders are actively engaged in sustainability with 29% of New Zealanders actively seeking out 'do good' brands and 87% of New Zealanders seeing sustainability as a key concern (Sustainable Business Council, 2019). This trend is likely to increase, reflecting data that 64% of Gen Zs would pay more to purchase an environmentally sustainable product (Deloitte, 2022c). The idea of 'effective altruism', where individuals are actively making personal choices that benefit wider society, is also gaining traction.

*For many businesses it is about maintaining a social licence to operate, in the face of increasing community expectations and maintaining an authorising environment to work within – **Institute of Directors***

2.4.2. Young people will drive the change

As noted in Table 1, Generation Z and Millennials, as future business owners, employees, consumers and investors, are seeking a greater commitment from businesses to make a positive societal impact. During our discussions we heard that young people and rangatahi have clear expectations that businesses should empower communities and take a holistic approach to extend environmental and social benefits to consumers.

When it comes to employment, young people we talked to have a strong expectation that "the energy of the business needs to be palpable" and should provide opportunities for people to use their position of influence for good. A strong theme was an expectation from rangatiraga that we should move away from western values to a wider integrated and inclusive world view of 'people, planet and purpose'. They also noted that businesses should step up to proactively help young people to understand viable pathways into business and provide them with 'bubbles of support'.

This drive for change is reflected in the increase in global movements responding to issues such as the Me Too movement, Black Lives Matter, Action for Climate Change and indigenous rights. We are entering a time when collective action and impact matters, and the ability to join and participate in causes is borderless and fuelled by access to near instant information… aligned to this movement is the rise of purpose-led organisations and leadership" (New Zealand Education, 2022).

*Young people want purpose, they want a north star, and they want developmental opportunities along the way – **Global Enterprise Experience***

Box 6: Global Enterprise Experience

New models for education are beginning to respond to the desire of young people to influence change. The Global Enterprise Experience is shifting its focus from 'courses to causes'. University students lead and participate in global teams, supporting their own learning through by developing a business concept for a profitable venture that addresses a UN sustainable development goal.

2.4.3. Leadership in purpose from Māori and Pacific businesses

Māori businesses continue to expand the concept of purpose-led business

Māori entities and businesses often incorporate Māori values and principles into their strategic goals and the governance, management and operations of their business (The Impact Initiative, 2021). Some of the values, principles and concepts identified as relevant and beneficial to Māori businesses include kaitiakitanga (guardianship), rangatiratanga (leadership, ownership), manaakitanga (hospitality), and whanaungatanga (relationship/kinship) (Mill, 2021).

A recent BDO survey of Māori businesses found that kaitiakitanga is central to many Māori businesses and that other businesses can learn much from this aspect of te ao Māori (BDO, 2021). Kaitiakitanga reflects te ao Māori understanding of humans as part of a wider social, ecological and spiritual ecosystem that needs to be in balance in order to thrive.

Intergenerational wellbeing is also central to Māori values, which in turn is reflected in long-term business strategies and approaches. Māori businesses and iwi commonly refer to a "multiple bottom line" approach. This approach balances multiple values and objectives spanning social, cultural, financial, environmental, spiritual and political domains (Mill, 2021). The BDO survey found that Māori businesses measure success using three distinctive measures: happy and healthy whānau, financial performance and cultural wellbeing (BDO, 2021).

*Iwi enterprises are predominantly values driven. Not only are the commercial entities guided by their values, but the profit from such entities is often channelled toward social and cultural priorities. For instance, for many Māori land trusts, their obligations to the land, and land preservation, is paramount and will take priority over short-term profits. For many Māori and Iwi businesses, ignoring environmental, cultural or social impacts for financial gain is often not an option to be considered – **Whāriki***

Te Ōhanga Māori (the Māori economy) is estimated to have grown from $16.5 billion to almost $70 billion in the last 20 years (APEC, 2021). There has also been significant growth and diversification of the Māori asset base (MBIE, 2021). Note: A range of characteristics may lead to a business identifying itself as a Māori business, such as Māori ownership or directorship, employing Māori workers, and/or adopting Māori philosophy, tikanga, principles and practices.

Pacific businesses have also introduced a unique world view into the New Zealand system

Common Pacific cultural values and world views focus on family and collectivism. These values shape how Pacific businesses contribute to both social cohesion and business sustainability. The Pacific Business Trust advises that these values have also influenced business practices, with Pacific businesses predominantly hiring other Pacific people, leading to more employment opportunities. A holistic view of wealth also plays into the way in which wealth (money, time, knowledge or goods) is shared amongst the wider community (Moana Research, 2020).

Being able to create our own ecosystem is important, this involves developing the capability within the business and the connections to others we work with – Pacific Business Trust member

In 2017, there were 1,500 Pacific businesses with employees and 4,100 self-employed Pacific individuals in New Zealand. These organisations (businesses and not-for-profit) produced $3.1 billion in goods and services. The asset base of the Pacific economy was $8.3 billion (The Treasury, 2018).

2.4.4. The global business community is encouraging a shift toward wider purpose

This shift is occurring worldwide, with many business leaders in positions of influence signalling a need for change.

*Society is demanding that companies, both public and private, serve a social purpose… [companies] must benefit all of their stakeholders, including shareholders, employees, customers and the communities in which they operate – **Larry Fink, CEO of BlackRock, the world's largest financial asset manager, 2018 letter to CEOs (Fink, 2018)***

*The purpose of a business has eroded over time to a preoccupation with profit and shareholder value, and there are calls for businesses to redefine their purpose – **Colin Mayer, professor at Saïd Business School at Oxford University (Mayer, 2019)***

*"[t]he purpose of the corporation must be redefined as creating shared value, not just profit per se. This will drive the next wave of innovation and productivity growth in the global economy – **Michael Porter, a professor at Harvard Business School (Porter and Kramer, 2011)***

*…redefine the purpose of a corporation to lead companies for the benefit of all stakeholders (customers, employees, suppliers, communities and shareholders) – **American Business Roundtable statement to 181 chief executives 2019 (Business Rountable, 2019)***

*Business has a responsibility because it takes advantage of common resources and has contributed to (or in some cases even caused) the social problems that affect everyone – **(Eggers & Macmillan, 2013)***

*[w]e have an opportunity to shift the economy to have a whole economy transition, turning an existential risk into what is, in my view, probably the greatest commercial opportunity of our time, and one that puts people and planet first – **Mark Carney, former governor of the Bank of England (Carney, 2020)***

*The principle of profit maximisation espoused by Friedman has contributed to overall reductions in wellbeing and concentration of wealth into the hands of a few – **(Cappelen & Kolstad, 2006)***

*. . . a new social contract between individuals, government and businesses that can better respond to changes in technology, demography and the climate, and which provides security for all, investment in capabilities and the fair sharing of risk – **Minouche Shafik, professor at the London School of Economics and Political Science, (Shafik, 2021)***

2.4.5. But there are also views that business already does enough to contribute to societal objectives

While there are strong incentives for business to consider wider purpose, we also heard that we should not underestimate the significant role that business already plays in society or the role of government in ensuring social and environmental objectives are met.

*Companies are not a substitute for effective government. It is the state that ensures markets are competitive and not skewed by monopolies or corruption. Only governments can tax externalities such as pollution and build a social safety-net – **(Economist, 2021)***

Whether purpose-led or not, businesses have a legal responsibility to pay taxes, pay workers, run a safe and healthy workplace, respect privacy, and be clear on goals and deliverables.
*We may want more positive contributions but delivering on basics would be a start – **Participant, Long-term Insights Briefing public workshop***

*Remember making money is quite important – you can't have extra purpose unless you work out the commercial imperative. . . The best way for business to contribute is to provide choice for consumers, enabled by an environment of certainty and low compliance costs – **Business New Zealand***

*Employers already do a lot of good for society. The jobs they provide help their employees to also have purpose in their lives apart from just pay – **Participant, Long-term Insights Briefing public workshop***

2.4.6. The evolution of purpose – recent developments

Social enterprises — the development of purpose driven business

More recently, social enterprises (or community enterprise or impact enterprises) are becoming part of the business landscape. These are organisations that trade to achieve positive social, cultural and environmental impact (The Impact Initiative, 2021). While there is no formal legal definition of a social enterprise in New Zealand, they usually have the following characteristics:

› the majority of income is derived from trading a product or service (this distinguishes them from charities)

› the social, cultural and/or environmental mission provides public or community benefit, often aligned with government priorities, and is the primary purpose of the organisation

› the majority of either expenditure or profit is spent in the fulfilment of the purpose of the organisation.

In 2018 there were up to 6,600 social enterprises in New Zealand, contributing as much as NZ$1.7 billion to GDP and creating a wider impact of NZ$2.9 billion (BERL, 2019). The Ākina Foundation has been influential in this area, for example in convening 1,600 people in 2017 for the Social Enterprise World Forum in Christchurch.

> ### Box 7: Examples of social enterprises
>
> **Whenua Iti Outdoors:** Offers experiential learning programmes that focus on personal and social development in the outdoors to achieve positive change in individuals and communities.
>
> **Oak Tree Devanning:** Employs ex-offenders to unpack products from shipping containers.
>
> **Loomio:** An app that aims to reduce inequity by making it easy for anyone to participate in decisions that affect their work and lives.
>
> Source: (The Impact Initiative, 2021)

Partnership approaches between businesses

We heard of a number of examples of businesses collaborating and sharing for wider purpose. The Pacific Business Trust encourages an ecosystem approach, supporting businesses to work together to achieve collective objectives, in keeping with a Pacific focus on members of the community helping each other. Participants in our workshop with WeCreate members noted that networks or hubs of like-minded businesses created a whole, or ecosystem, that is greater than its parts – an example given was the digital gaming hub in Dunedin.

*It will be good if businesses see themselves more as peers rather than competitors. This would encourage more collaboration – **Participant, Long-term Insights Briefing public workshop***

A direct example of larger businesses working together to link environmental, social and governance (ESG) performance to financial performance is a A$100 million sustainability-linked loan agreement between the ANZ Bank and Kathmandu (ANZ, 2021). Under the terms of the loan, Kathmandu has committed to various ESG targets and the costs of the loan are adjusted (either up or down) according to how well it then performs against the targets.

*More purpose-led businesses leads to opportunities for cross-organisation collaboration and pooled resources towards tackling larger societal issues – **Romain Mereau***

Shifts in thinking about governance

A number of contributors pointed out that the responsibility to set future direction and purpose in an organisation usually falls to those with a governance role. They noted that considering wider interests in order to maintain the social licence to operate is a fundamental role for company directors who are responsible for ensuring that the business thrives over the long term.

*Governance best practice suggests that boards need to lead strategy development for organisations, including businesses – **Institute of Directors***

The Institute of Directors noted the importance of good governance and is exploring the idea of a "best-interests" statement where directors define the long-term best interests of the company. Such a statement would be a mechanism for a more transparent relationship with stakeholders as it would set out an agreed understanding on company purpose.

In recent years there have also been calls to expand governance settings to better recognise the changing business context. A current Private Member's Bill calls for modification of the Companies Act 1993 to clarify that directors can take into account wider matter than the financial bottom-line, including the principles of the Treaty of Waitangi, environmental impacts, good corporate ethics, being a good employer and the interests of the wider community. At the time of publication this Bill was at first reading stage.

2.4.7. Formal and informal approaches to demonstrating wider purpose are continuing to develop

Concerns about "purpose-washing"

Many people told us that with an increase in demand from consumers, employees and investors for businesses to develop a wider purpose, there will inevitably be some businesses that make false claims, in order to maintain or build on market position ("purpose-washing"). Our engagements with stakeholders identified concerns that this may be enabled due to a lack of consistency and integrity in the metrics and methods businesses use to report on wider outcomes, and a lack of checks and assurances of accuracy.

*The risk of purpose-washing or greenwashing is high especially if capability and capacity trails ambition, and when companies are left to set their own definitions and standards about purpose and impact – **B Lab Australia & Aotearoa New Zealand***

Reporting is a growing trend for businesses to formally demonstrate wider purpose

To demonstrate wider purpose and to build trust, some businesses are voluntarily reporting on corporate social responsibility (CSR) or Environment Social and Governance (ESG) factors alongside their financial reporting. This report is often called a "sustainability report".[1] Sustainability reports cover a broad range of factors (eg carbon emissions, waste, health and safety, diversity, business ethics and tax transparency).

Although sustainability reporting is increasing in Aotearoa New Zealand, our companies have been slow to improve the quality of their reporting compared to global organisations. **See Box 8.**

Box 8: Some data on sustainability reporting

Worldwide:
› 80% of businesses worldwide and 96% of the world's largest 250 companies publish sustainability reports (KPMG, 2020).

Aotearoa New Zealand:
› 74% of the 100 largest (based on revenue) organisations in New Zealand reported on sustainability performance. Although this number was up 5% from 2017, New Zealand was still below the global average (KPMG, 2020).
› Of the 50 companies listed on the S&P/NZX 50 Index, 28 companies reported on climate change risk and 40 companies reported on a range of social issues from gender diversity to pay equity (NZX and Wright Communications, 2019).
› A survey (by BDO) of Māori businesses found about half currently report on ESG metrics (BDO, 2021).

Sustainability reporting frameworks are evolving rapidly and are not perfect

There are efforts to consolidate sustainability reporting frameworks to bring greater consistency and coherence. For example:

› An International Reporting Framework (presented at the United Nations Climate Change Conference COP26) is aiming to provide a global baseline for climate-related and broader sustainability disclosures.
› The International Financial Reporting Standards Foundation's International Sustainability Standards Board has published draft sustainability and climate-related standards for reporting (IFRS, 2022).
› In Aotearoa New Zealand, the External Reporting Board sets reporting standards for accounting, audit and assurance, and climate including the disclosure requirements for large listed debt and equity issuers, and for large financial sector entities under the Climate-related Disclosures and Other Matters Amendment Act 2021.

Many businesses are interested in undertaking sustainability reporting, for example a BDO survey of Māori businesses noted that there was growing keenness for a specific tool to help them manage and report on ESG factors, with many saying they would use such a tool if one were available (BDO, 2021).

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1 For a more detailed overview of sustainability reporting see: MBIE, International Developments in Sustainability Reporting, Occasional Paper, June 2021. www.mbie.govt.nz/dmsdocument/15110-international-developments-in-sustainability-reporting-pdf

Guidance is being developed for businesses to help with sustainability reporting. For example, the Global Reporting Initiative provides standards and best practice for impact reporting and the United Nations (UN) provides a toolbox for businesses to act on and report against the UN's Sustainable Development Goals. The Value Reporting Foundation is now consolidated into the IFRS Foundation and also provides methods and tools to help businesses integrate their values into their reporting systems[2].

*Globally, climate is the current focus for reporting but broader sustainability topics are also high on the agenda. Entities are looking for ways to demonstrate their creation of value and impact beyond a monetary perspective – **External Reporting Board (XRB)***

There is a wide range of certification options to choose from

Businesses that measure and report on their impact are also seeking to provide evidence to support their claims that they are having a positive impact on social objectives. They can use independent auditors and certifiers to do this. This helps businesses to differentiate themselves in the market and build trust. There are many certification options:

› **Certified B-corporations** are businesses that meet high standards of verified social and environmental performance, public transparency and legal accountability to balance profit and purpose. Globally there are over 4,600 B-corporations, the majority of which are small to medium-sized businesses. In New Zealand there were 64 B-corporations as at June 2022 with an additional 60 in the process of becoming B-corporations, compared to 22 in 2019, and 1 in 2014. New Zealand examples include KiwiBank and Ecostore (B Lab Global, 2022).

› **Other independent certifiers** offer certification of sustainability, traceability, and cultural and ethical practices to help businesses prove their commitment to their chosen wider purpose. These labels range from:
  - *Comprehensive labels* – eg Environmental Choice New Zealand focused on whole lifecycle assessments of products, offered by the NZ Ecolabelling Trust
  - *Climate labels* – eg CarboNZero, offered by Enviromark
  - *Comparative labels* – comparing with other similar products, eg the Energy Star NZ energy efficiency mark, offered by the Energy Efficiency Conservation Authority (EECA)
  - *Production labels* – verifying a production process, eg organic produce labels
  - *End of life labels* – eg the Australasia Recycling label, which can be expected to develop further as circular economy practices develop
  - *Source of origin labels* – traceability and source of origin, eg Marine Stewardship Council fishery labels
  - *Social or ethical labels* – ethical behaviour of traders, eg Fairtrade.

› **Industry certifications** offered by industry associations, eg QUALMARK for the tourism industry covering sustainable, cultural and ethical practices.

Despite these developments, we heard during our consultations that many businesses, especially smaller ones, are deterred from adopting sustainability reporting and certification practices because of the confusing array of options, high compliance costs, and the time and technical expertise required.

2.5. Pae tawhiti/the future

In the remainder of this section we suggest a range of ways in which purpose-led business could develop, assuming a status quo government response.

2.5.1. Probable future: The most likely future

Table 2: Probable future – 10 years+	
The number of businesses adopting a wider purpose continues to grow steadily. However, many New Zealand businesses still focus on financial returns.	› Investors, consumers, employees, customers and communities increasingly see businesses as key to improving social problems. › Greater public scrutiny on the wider impact of all businesses. › Businesses that are not purpose-led are at a competitive disadvantage – they find it more and more difficult to access foreign markets, investment, finance and talent, or face reduced sales or an erosion in their social license to operate. › There is international convergence on measuring and reporting on wider impact by businesses. This provides greater confidence and credibility for purpose-led businesses. › Meanwhile, new technologies, innovations and data are developed to aid transparency, measurement and credibility.

### 2.5.2. Possible futures: Futures that could happen given the bounds of uncertainty

Table 3: Possible futures – 10 years+	
The number of purpose-led businesses declines.	› Investors, employees and consumers become increasingly sceptical of how genuine purpose-led businesses are. › There are more and more challenges for businesses due to ongoing crises (such as ongoing pandemics, wars, natural disasters, economic shocks or other major disruptions). Many businesses focus on survival or maintaining their position.
The number of purpose-led businesses increases rapidly.	› Society becomes increasingly disillusioned with the slow pace of government action, while businesses are seen as a credible alternative to government to solve major social problems. › As the impact of global change becomes more urgent there is a rapid growth in demand from investors, employees and consumers for businesses to contribute to solutions. › Meanwhile, new innovations emerge that significantly reduce the cost and effort associated with becoming purpose-led.

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2   www.integratedreporting.org

We've added a third type of future to stretch ideas about what kind of change might come about as a result of businesses shifting their focus from profit to purpose. This is built on our observations of current trends, and incorporates our exploration of blockchain technology in the next part of this Briefing, which demonstrates that new technological tools will enable businesses to develop more decentralised and networked governance systems.

Table 4: Another possible future – 10 years +	
The role of governments and businesses becomes less clear cut.	› Technology increasingly replaces some of the roles of government by enabling more automated functions and cross-border "virtual networks". This challenges the current geographic region-based world order. › A few mega-global businesses emerge to assume the role of governments in some areas, using their access to capital and resources (which is greater than many countries' GDP) and their mastery of the new virtual networks. › Global cooperatives of impact businesses use enabling technologies to self-organise with one another and begin to align purpose at scale.

I am optimistic that we can go down the more socially responsible and accountable route... as other possible futures belong in dystopian fiction – **Jennifer Ross**
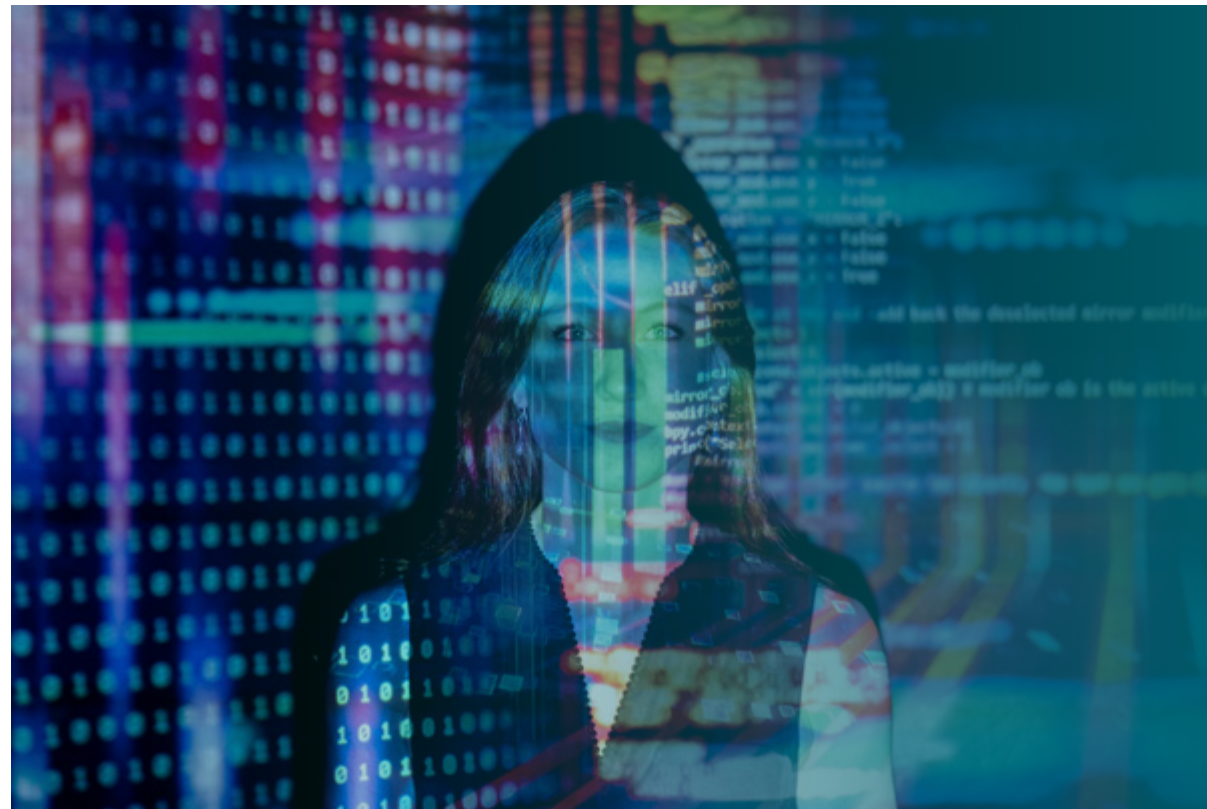
2.6. So what? Implications for productivity and wellbeing

In our consultation on these possible futures, the people who we talked with overwhelmingly agreed that there is likely to be a steady growth in purpose-led businesses. We briefly explore some implications of this trend for productivity and wellbeing in **Table 5 below**.

Table 5: Implications for productivity of a steady growth in purpose-led businesses	
Opportunities	**Risks**
Financial performance may be positively impacted by a purpose-led approach	Businesses could be disadvantaged if they fail to demonstrate wider purpose
There is evidence that adopting wider purpose is associated with enhanced financial performance, especially over the longer-term. A meta-analysis of over 1000 studies by the NYU Stern Centre for Sustainable Business found that over half (58%) of the studies found a positive relationship between ESG and financial performance, as measured by return on equity, return on assets or share price (Whelan, Atz, & Clark, 2021).	Given the expected gradual shift in expectations of investors, consumers, customers and workers (both in New Zealand and overseas) if businesses do not demonstrate a wider purpose in the future, then this may put them at a competitive disadvantage. This means they may face, for example, limited access to foreign markets, difficulty attracting investment, finance and talent, and reduced sales. This has the potential to impact on New Zealand's economic productivity more generally if our major trading partners and competitors move faster than New Zealand.
Improvements in resilience and viability	Erosion of social licence to operate
A few people we talked to mentioned that they thought being a purpose-led business helps them identify risks or opportunities that they wouldn't otherwise consider, which improves their long-term viability and resilience.	Large businesses in particular are perceived by many as a key cause of many of society's ills today. Businesses choosing not to be purpose-led may erode the current social licence that enables businesses to operate.
Implications for wellbeing of a steady growth in purpose-led businesses	
Opportunities	**Risks**
Positive contribution to the resolution of important social issues	Purpose-led business may not result in significant improvements in wellbeing
Businesses choosing to contribute positively to social outcomes have the potential to improve outcomes for wellbeing in the area that is the subject of their purpose, for example in reducing carbon emissions, improving inclusiveness and equity, or improved intergenerational wellbeing outcomes. Currently there is limited information on the overall impact of purpose-led business on wellbeing.	How effective purpose-led businesses are depends on how many businesses engage and the level of effort and resource they want to put in. In particular: › businesses may choose purposes that do not match wider social expectations › business actions may not be coordinated and therefore have limited overall impact › purpose-led business may reduce government effort due to confusion over roles (Bebchuk, 2020).

2.7. Now what? Some strategic choices for government

2.7.1. So far, government action has been limited

Action at government level appears to be limited. In recent years, some countries have enacted laws introducing mandatory corporate philanthropy and mandatory governance structures, and making Corporate Social Responsibility a director's duty. The effectiveness of these approaches is unclear. "At least for now, the major function of the mandatory CSR laws appears largely expressive rather than regulatory or adjudicative" (Li-Wen, 2020).

Following the COVID-19 pandemic, as many countries "build back better", there have been calls for governments to consider ways they can tap into the willingness of purpose-led businesses to assist with recovery. For example, in July 2020, the Social Purpose Institute wrote an open letter to the Canadian Government to accelerate and scale social purpose business in communities across Canada (Social Purpose Institute at United Way, 2020). There is some action internationally aimed at encouraging more social enterprises. For example, Australia is investigating a national social enterprise strategy.

To date, New Zealand governments have not taken a systematic approach to supporting business to build purpose into their business models, but have supported some initiatives:

> Some efforts have been made to upskill and build capability, for example information for purpose-led companies is provided on the government's business information website, business.govt.nz. B Lab Australia and Aotearoa New Zealand is also working with New Zealand Trade and Enterprise, the Ministry for the Environment and business.govt.nz to scale up a pilot programme, 'Business for Good' which trains business owners and decision makers to measure and improve their impact.

> Government procurement processes now include priorities and assessment of broader outcomes (www.procurement.govt.nz/broader-outcomes/).

> Companies can deduct the total amount of donations to approved donees from their yearly taxable income.

New Zealand has also seen calls for governments to take a stronger role in encouraging businesses to be more purpose-led. In April 2021 the Ākina Foundation published findings from a social enterprise sector development programme, containing 15 recommendations on ways that governments could encourage the growth of social enterprises, including through social procurement, impact measurement, impact investment and tools and support (The Impact Initiative, 2021). In a set of essays about reimagining business, Moe also explores the importance of encouraging purpose in business (Moe, 2021).

2.7.2. Government has strategic choices about its role

The question now is – is it enough that business continues to steadily move towards purpose-led approaches – or should we do more to leverage the benefits of this trend for future productivity and wellbeing?

If future decision makers want to shape and influence this trend, we have presented a spectrum of options depending on whether decision makers choose to support, incentivise or drive change. The options are not discrete "either/or" options, nor are they a complete list of possible options. They have been generated through ideas suggested by the wide range of people who participated in the development of this Briefing. They are also not policy recommendations; any government would need to explore these (and no doubt other) options further before making any decisions.

The contribution of purpose-led businesses to government's goals should be recognised – Ākina Foundation

Strategic choices for government – purpose-led business

SUPPORT

Support awareness and information for purpose-led businesses.

Why? Many businesses want to be purpose-led but do not have the resources or knowledge.

Ideas for action:

› Information and education – using existing channels eg business.govt.nz

› Provide infrastructure for support networks

› Learn from best practice models unique to Aotearoa such as Māori values-led approaches to doing business

› Facilitate common voluntary monitoring and reporting systems so businesses can prove claims

› Assist particular groups like small businesses and Māori and Pacific businesses – using existing support programmes

› Upskill company directors on addressing non-financial risks and ways to drive purpose and impact

INCENTIVISE AND ENCOURAGE

Also actively incentivise purpose-led businesses.

Why? Government and society benefit if business contributes voluntarily to social problems.

Ideas for action:

› Support access to finance, funding and grants – eg build into Regional Partners Business Network

› Awards systems – rewarding successful business

› Tax or other incentives – eg similar tax incentives as for charities

› Government/business collaboration and partnership programmes to deliver on agreed social outcomes

› Continue to build purpose into government procurement

› Strategic approach to keeping abreast of developments

DRIVE CHANGE

Also require business to contribute to wider social objectives.

Why? Government needs more levers to generate transformational change.

Ideas for action:

› Develop a strategy to grow purpose-led businesses

› Set standards for purpose-led claims

› Set mandatory reporting requirements

› Require directors to produce a 'best-interests' statement to make their purpose transparent

› Redefine role and functions of directors

› Reassess legal business structures to better accommodate purpose-led business

› Incorporate non-financial reporting on impact into the government's taxation system

› Simplify governance legislation to make roles and responsibilities more consistent regardless of the nature of the organisation

2.7.3. What the people we talked to thought about the different choices

We heard a lot of feedback on the possible role of government in encouraging this trend in future, should it choose to do so.

Should government support awareness and information?

All submitters would like to see the government play a more active role in supporting purpose-led business with **tools, information and education**, particularly for SMEs, for example highlighting success stories to inspire others. Many agreed that best practice from Māori businesses and social enterprises could be shared more widely.

Government also needs to provide more education about different business models rather than purpose-led business having to put money towards helping people understand their model – ***Edmund Hillary Fellowship***

Businesses need support in switching to more sustainable operating models (many don't know where to start) – ***Environmental Choice New Zealand***

Many contributors would like a government-driven **common approach to measuring and reporting** on impact for purpose-led business. Some contributors suggested using existing organisations and infrastructure, such as the External Reporting Board, to assist with this. Others noted that international standards should be followed to reduce transaction costs.

We can't change what we don't measure, and there is currently a skills gap in business around impact measurement and management... Businesses need to know what kind of data to collect and how to go about it in order to understand their impacts and take steps to improve them — otherwise efforts to improve could be futile – ***B Lab Australia & Aotearoa New Zealand***

Some contributors went a step further and suggested that **impact could be built into financial reporting**, even ultimately feeding into taxation and other government systems.

Build purpose into the balance sheet and core ways of working – ***Redvespa***

People also noted the importance of quality reporting to **reduce the chance of purpose-washing**, and the role that government has to ensure that businesses do not make false claims that could reduce trust and therefore the overall benefit that might accrue from businesses participating in solutions.

Any reporting or certification programme must be well-considered to avoid becoming a misleading marketing tool (like greenwashing) — ***Ākina Foundation***

There were differences in view as to whether impact reporting should be voluntary or mandatory for business. Contributors cautioned that **future decision makers should be mindful of the administrative burden associated with reporting** particularly for Pacific and Māori businesses, and also for SMEs.

I have a serious concern about the implications of measuring, and the burden of any reporting and regulatory requirements. Reporting can be expensive and a challenge – ***WeCreate Workshop***

Most contributors agreed that government could play a useful role in **bringing people together or partnering for collective impact**. Many talked about governments creating an 'ecosystem of support' where government works with business to set collective strategy and provides the infrastructure for businesses to collaborate with each other to deliver on the agreed social objectives, in partnership with government.

If the government were to play a role in supporting purpose-led business in New Zealand, we consider it could most effectively do this by using its convening power (along with business peak bodies) to bring businesses together to help develop and embed an innovative, flexible, purpose-led business culture in New Zealand. Our experience suggests such a culture would not only improve engagement and performance among existing staff, but could help attract talent from around the world – ***Fonterra Co-operative Group Limited***

Government can play a role in bringing everyone together. Government can provide space for collaboration, coming together, like hubs which allow joint efforts of multiple people/businesses – ***WeCreate Workshop***

All businesses in a region or a city are part of one ecosystem, or as it is also referred to as "business landscape" and encouraging or sustaining one part of the ecosystem will have positive impacts on other parts – ***Rebel Business School Aotearoa***

Government has many programmes that might benefit from tapping into the willingness of purpose-led businesses to help solve difficult problems. Submitters noted that government currently does not actively integrate and align government programmes where there is synergy with purpose-led business. They noted that such an approach requires a mindset shift and changes in policy capability, including new ways of organising within government, and working across government, business and community sectors.

There is siloing in government – we need a systems-based approach and this has to be across the whole of government – ***Go Well Consulting***

Should the government actively incentivise the growth of purpose-led business?

The people we talked to were also generally supportive of governments considering **incentives** to encourage purpose-led businesses (eg **grants, funds, tax incentives**) as they see these businesses as supporting government to achieve its outcomes. From some quarters, particularly those already working in the social impact space, there were **calls for better access to finance and capital**, as targeted funding to encourage purpose-led businesses is not easily available.

Innovative "for purpose" business models find it hardest to attract low-cost non-extractive investment and capital when they are starting out and entering growth – ***Red Hat Impact (Australia and Aotearoa).***

To create growth in this sector, the government needs to change the present legal framework (including taxation incentives) to encourage more investor funding into this sector, as we see in other countries – ***Dr Ani Kartikasari, Director, Yunus Social Business Centre, Lincoln University***

There were **mixed reactions to the idea that the government could use its procurement processes to encourage purpose-led businesses**. While some thought that "responsible impact procurement" could help government to be a role model and achieve a range of objectives, others cautioned that this may narrow the pool of suppliers due to the costs for businesses of measuring and monitoring impact.

Government can play its part through role modelling and responsible procurement – ***Participant, Long-term Insights Briefing public workshop***

Should the government drive change?

Many submitters were keen to see the **government take a more strategic role**, working with industry to set the overall approach and direction, and develop a more purposeful direction for business in Aotearoa New Zealand.

The government of the day needs to work more collaboratively with our business community to find solutions and create a framework to enable greater momentum to achieve these outcomes – Roz Henry, Cooperative Business NZ

While some contributors were keen to see the government mandate change to drive purpose-led business, most cautioned that **mandatory approaches may not be effective** as purpose "must be born from a desire to create broader value rather than from a short-term compliance culture" – (Institute of Directors).

*Any attempt to "regulate" for a social purpose could backfire. Regulation takes away the opportunity for businesses to compete and innovate to achieve a social outcome – **Andrew Jackson, Te Herenga Waka Victoria University of Wellington***

*Mandating purpose-led business could harm the "unseen" and unrecognised social contributions of the small businesses – **Small Business Advisors***

Those already working in social impact businesses noted that **current business structures are presenting challenges for purpose-led businesses**. For example, many social impact companies we spoke to have to form both a charity (to be able to take advantage of tax benefits and funding sources) and a limited liability company. This increases overall compliance costs and is a disincentive to becoming purpose-led (Moe, 2017). Some also noted that in the future, the current legal infrastructure may not support new models of doing business such as those that utilise new technologies to combine and self-organise at scale.

*The existing continuum is between charities at one end and profit-focused businesses at the other. In between these two extremes there is a wide range of different businesses with varying levels of community and profit focus – **Flaxroots***

*Social impact businesses need a fit for purpose legal structure and vehicle that supports their business model – **Edmund Hillary Fellowship***

*What is missing is the tools to enable businesses to establish relationships with one another or to self-organise with one another at scale or digitally/non-linearly – **Aletheon***

Contributors also noted the **critical role of good governance** in driving purpose in businesses and the need to encourage directors to look beyond short-term profit and to consider the best interests of the organisation over the long-term, as this may automatically lead directors to think about building in wider objectives. There were mixed views about whether this should remain voluntary or whether to mandate requirements to incorporate purpose into company constitutions.

*The opportunity to build board capability to embrace stakeholder governance and to be accountable for the outcomes of their business is crucial for unlocking the potential of purpose-led businesses in driving an impact-focused economy – **B Lab Australia & Aotearoa New Zealand***

*Company constitutions should include a section about their mission and have them report on it – Steven Moe, **Parry Field Lawyers***

*Directors as governors need to be focused on their organisation's purpose and this could be supported by a "best interests of the organisation" statement that defines long term direction and purpose – **Institute of Directors***

3. Trend two: use of blockchain technology

How might New Zealand businesses use, and be shaped by, technologies in the future? We take a deep dive into the emerging use of blockchain technology, with some insights into its role in productivity and wellbeing.

3.1. Why are we focusing on blockchain?

Technological change has always been with us and, in today's times, is being driven by the exponential growth in and availability of data, the ways in which technologies are being combined, and the demand for solutions to pressing global and local challenges. As new technologies (digital and other) emerge and develop, they are applied in ways that change how businesses operate and create value (Policy Horizons Canada, 2021).

Blockchain is an emerging technology that offers businesses and other users new ways to store data, carry out transactions, and organise work. Use of blockchain can support efficiencies in time and cost savings, as well as having more transformational impacts, for example enabling digital trust that can support peer-to-peer transactions.

Yet blockchain is unfamiliar and hard for most people to understand. How do we make sense of the wide range of perspectives, from enthusiasm to scepticism, and new words such as web3, metaverse, DAOs, NFTs, DeFi, and tokens? What is it used for now and where is it heading? And how might this matter to the future of business here in Aotearoa New Zealand? These were some of the questions that led us to this part of MBIE's Long-term Insights Briefing.

This section provides an overview of some of the trends in the current uses of blockchain, here in New Zealand and elsewhere, and what is likely or possible in future. It also provides broader insights about the future digital environment that businesses will need to be ready for.

Note: In this Briefing we cover the broader uses of blockchain technology, rather than focusing on Bitcoin or currency aspects of blockchain. At the time of preparing this Briefing, Parliament was holding an "Inquiry into the current and future nature, impact and risks of cryptocurrencies", and the Reserve Bank of New Zealand was leading work on a central bank digital currency. We therefore chose to not focus on these areas.

3.2. What is blockchain?

Blockchain can be thought of as a type of database, shared across a network of computers. The majority of blockchains hold data in blocks that are linked together. What makes blockchain distinct from a regular database is the way in which data saved to a blockchain cannot normally be changed and is usually open to be viewed by anyone[3].

Together these features give blockchain its ability to keep data secure and provide digital trust so that transactions can be peer-to-peer, with less need for intermediaries such as banks or central agencies. Blockchain can therefore be useful in situations where transparency, provenance and security is valuable.

Digital assets created on a blockchain come in different forms such as:

› cryptocurrencies or payment tokens, which are used as a means of payment (and sometimes called cryptoassets)

› security or asset tokens, held for investment purposes, and which include NFTs (non-fungible tokens)[4]

› utility or consumer tokens, that support exchange or access to services.

Blockchain is one type of distributed ledger technology (DLT), a decentralised peer-to-peer digital system to record transactions between parties, with data stored across nodes. Blockchain is a subset of DLT, with features of generally being public and permissionless. Blockchains can, however, also be private and permissioned, giving more control over who can participate. It is useful to consider blockchain as part of wider DLT as it has similar implications with respect to shifting business and economic activity toward more decentralised, open and networked forms.

Web3 is another term commonly used in association with blockchain. Enabled by blockchain infrastructure, web3 is an emerging new phase of internet which has more decentralised features compared with the current internet. Web3 will, for example, allow more user control of digital content and assets and integrate other advanced technologies such as artificial intelligence.

In this Briefing, we use the term blockchain most often, but also refer to DLT and web3 to encompass these related, though wider, domains.

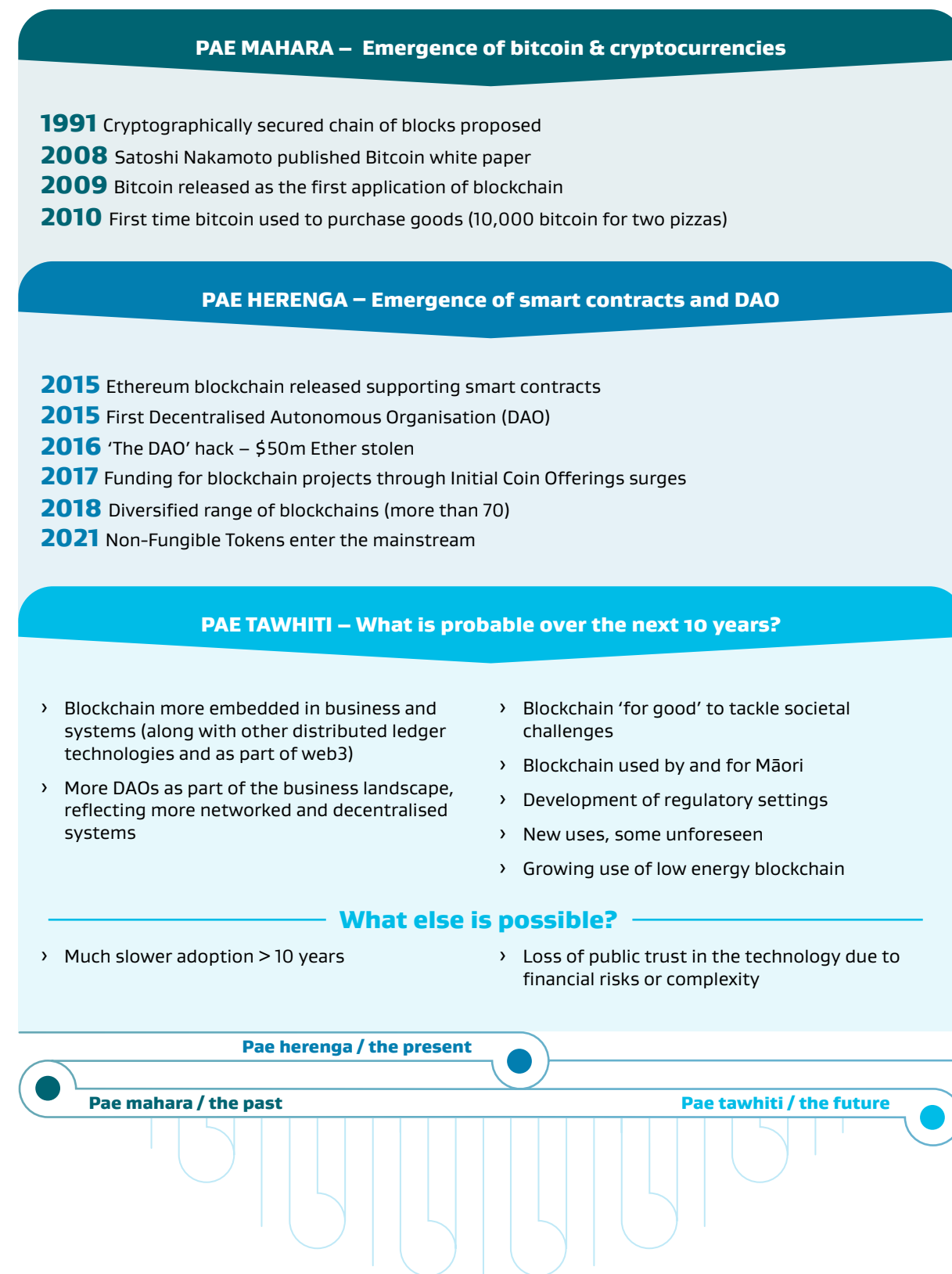## 3.3. A visual: use of blockchain technology over time

For this Briefing we group insights into past, present and future stages:

Pae mahara/the past	1990–2014	Emergence of Bitcoin and cryptocurrencies
Pae Herenga/the present	2015–2022	Emergence of smart contracts and decentralised autonomous organisations (DAOs)
Pae tawhiti/the future	2022–2050	A range of probable and possible future developments

These stages and key events are described further in the following sections and shown visually in **Figure 5.**

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3   For more on how blockchain works see BlockchainNZ: www.blockchain.org.nz/; Callaghan Innovation (2018), or the OECD's Blockchain Primer: available at www.oecd.org/daf/blockchain/.

4   NFTs are a unit of data on a blockchain that can be sold or traded. Non-fungible means unique. NFTs can be associated with anything digital, including digital art, computer game or virtual world assets, music, film, and tickets for access to services or events.

Figure 5: Use of blockchain technology over time

PAE MAHARA – Emergence of bitcoin & cryptocurrencies

1991 Cryptographically secured chain of blocks proposed

2008 Satoshi Nakamoto published Bitcoin white paper

2009 Bitcoin released as the first application of blockchain

2010 First time bitcoin used to purchase goods (10,000 bitcoin for two pizzas)

PAE HERENGA – Emergence of smart contracts and DAO

2015 Ethereum blockchain released supporting smart contracts

2015 First Decentralised Autonomous Organisation (DAO)

2016 'The DAO' hack – $50m Ether stolen

2017 Funding for blockchain projects through Initial Coin Offerings surges

2018 Diversified range of blockchains (more than 70)

2021 Non-Fungible Tokens enter the mainstream

PAE TAWHITI – What is probable over the next 10 years?

› Blockchain more embedded in business and systems (along with other distributed ledger technologies and as part of web3)

› More DAOs as part of the business landscape, reflecting more networked and decentralised systems

› Blockchain 'for good' to tackle societal challenges

› Blockchain used by and for Māori

› Development of regulatory settings

› New uses, some unforeseen

› Growing use of low energy blockchain

What else is possible?

› Much slower adoption > 10 years

› Loss of public trust in the technology due to financial risks or complexity

Pae herenga / the present

Pae mahara / the past

Pae tawhiti / the future

3.4. Pae mahara/the past

Blockchain originated through the novel combination of various existing technologies, such as cryptography, game theory and algorithms.

Bitcoin was the first application of blockchain and was intended as a peer-to-peer e-currency, as an alternative to electronic cash. It was released in 2009, following publication in 2008 of a white paper by Satoshi Nakamoto titled "Bitcoin: a peer-to-peer electronic cash system"[5], and before widespread awareness of blockchain as a technology.

Although Bitcoin wasn't widely adopted in its early years, it laid the foundations for the development of blockchain and associated applications, such as NFTs and the use of "tokens". What we now refer to as blockchains (eg Ethereum, Cardano, NEO and Stellar) are essentially developments of the underlying technology used for Bitcoin.

3.5. Pae herenga/the present

The period from 2015 until 2022 was marked by the emergence of the Ethereum type of blockchain and with that a range of new uses and market activity.

3.5.1. Emergence of smart contracts enabling decentralised applications

The market release of the Ethereum blockchain in 2015 enabled smart contract functionality of blockchain. A smart contract is a computer protocol that digitally facilitates, verifies, or enforces the negotiation and/or performance of a contract (which may or may not be a legal contract). A smart contract's programmable rules must be met before any data can be validated and added to the blockchain. Smart contracts allow less or no human involvement so they can make business transactions faster and more efficient.

The addition of these programmable software elements has driven a lot of innovation and meant that blockchain has become known as digital infrastructure, an underlying platform for decentralised applications and business models.

Smart contracts are currently used in supply chains (**see Box 9**) and in the finance sector. Their use is also expanding to other purposes, such as data management, digital identity, copyright verification and royalty payments, and in areas such as healthcare, government administration, environmental management, and supporting online web3 environments.

Box 9: Walmart's Food Traceability system

In 2016 Walmart initiated their Food Traceability system, which uses smart contract functionality, to support food security and safety. The system has reduced the time required to trace contaminated food from days to seconds. Corporations such as Nestlé, Dole, Tyson Foods and Unilever have implemented similar systems, expanding on track-and-trace functionality to make more informed decisions across their supply chains (Rejeb, 2020). Recently, Walmart expanded their use of blockchain to create an automated process for handling invoices and payments of its 70 third-party freight carriers. This change, has resulted in significantly fewer invoice discrepancies and faster carrier payment times for carriers.

Smart contracts also form the basis of non-fungible tokens (NFTs). Currently these are best known for their role in verifying digital art and collectibles (and as a speculative asset), but are increasingly used for other purposes such as ticketing for access to services, such as sporting, music and cultural events.

New Zealand-based examples of NFTs use include the Rhythm and Vines music festival, which is using collectible NFTs to support authenticated access to event experiences, and the Voxel virtual world, one of the first metaverse platforms.

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5 This work can be accessed at https://bitcoin.org/bitcoin.pdf

In part driven by the business opportunities opened up through Ethereum and similar programmable blockchains, blockchain venture investment grew from US$3.1 billion in 2020 to US$25.2 billion in 2021.[6] Investment slowed in 2022, but grew for web3 firms. Gartner has estimated that blockchain will generate US$3.1 trillion in business value by 2030[7].

There is more to blockchain than cryptocurrency. Just as we don't use internet for just email, we don't use blockchain for just cryptocurrency – **Alison Mackie, BlockchainNZ**

3.5.2.   DAOs can enable more networked approaches to governance

The advent of decentralised autonomous organisations (DAOs) based around smart contracts has been another key development in recent years. First created in 2015, DAOs are a new organisational form for business, economic or social activity. In a conventional firm, a board of directors makes decisions. With DAOs, agreement on proposals is reached through token-holders representing a wider network community, and to rules set and enforced by a smart contract. A fully automated version of DAOs would eliminate managers and directors from any operational or corporate governance decisions allocated to the DAO.

DAOs are being used in decentralised finance, for investment, charitable fundraising, and NFT purchase, and to offer services of members, such as training.[8] DAOs also have the potential to be used to manage access to resources such as water.

DAOs could extend the capabilities and reach of corporate and network governance, reduce transaction costs and allow more participatory governance and operations (Sims, 2021). The challenges of DAO governance are being worked through, as removing centralised governance and allowing more participatory decision-making is complex.

As DAOs do not fit with current governance practice and regulatory regimes, they are turning to legal recognition to allow them to fully operate as businesses and to limit their token holders' liability (Sims, 2021). This is raising questions for countries about whether and how to provide that legal recognition. A number of US states, including Wyoming and Vermont, enable legal registration of DAOs, and Australia is working toward this following a 2021 Parliament recommendation (Parliament of Australia, 2021).

In July 2022, there were 103 DAOs world wide with investments worth more than US$1 million. This group of DAOs had a total of 3.8 million token holders, and assets valued at US$9.7 billion.[9] Amongst these is Metacartel DAO, which was co-founded by New Zealanders and supports app development, and Decentraland DAO, which supports governance of the Decentraland virtual world.

Besides DAOs, blockchain/DLT can also support collective work through the use of consortium blockchains. An example is R3, which supports collaboration amongst financial institutions.

Decentralised organisations are not new but they have been relatively few and far between because creating and operating a decentralised organisation is far more difficult and complex than using a centralised organisational structure. Properly designed DAOs now offer a viable alternative to centralised organisational structures – **Associate Professor Alex Sims, University of Auckland**

Corporations have shaped the world over the last few centuries, DAOs have the potential to do the same – **Joshua Vial, Enspiral**

3.5.3.   Hypes, risks and challenges are driving the need for quality governance

The development of uses of blockchain over the past few years has been accompanied by the sort of cultural experimentation, market turbulence and hype that is typical of early-stage technology adoption. Many regard these patterns as evidence of a risky, "wild west" of blockchain; others accept them as typical of the hype cycles and innovation that accompany emerging technology.

An example of this activity is what is known as the "The DAO hack" in 2016. This high-profile incident occurred three months after the 2016 launch of "The DAO", a venture capital initiative, and involved the stealing of US$50 million of cryptocurrency ether (which was later recovered).

Non-fungible tokens (NFTs) provide another example. In 2021, sales of NFTs grew tenfold from US$1.3 billion to US$10.7 billion.[10] COVID-19 lockdowns were one driver for this growth, as artists used NFTs to reach new audiences and markets. At the same time there were, and still are, concerns that NFTs, and cryptocurrency investments more generally, are a bubble and there is a need for measures to manage financial risks, particularly for less experienced investors.

Blockchain also presents a range of risks and challenges at a societal level (Frizzo-Barker, 2020) (Bodo, Brekke, & Hoepman, 2021). For example:

› Distributed data systems such as blockchain can inhibit the policing and prevention of criminal activities such as money laundering (although, it can also be easier to track criminal usage of cryptocurrencies than it is to track usage in banking systems).

› There is potential for increased inequality if limited digital skills impact on business development or employment options, or through algorithmic execution of blockchain activities that reinforce inequities or privilege certain demographic groups over others.

› Private blockchains could consolidate power, and could lead to, or reinforce, inequities.

› the inability to change or delete data means blockchain is unsuitable for all data storage systems, with sensitive information held off-chain.

› Reduced use or the changing nature of intermediaries, for example less of a role for banks, could impact negatively on things such as consumer protections and conflict resolution that are part of the role of conventional intermediaries.

Some of these risks may seem paradoxical: if blockchain supports secure data and digital trust, why is there still risk of harm? Some of the answers to this relate to pre-existing risks: incorrect or fraudulent data can still be saved to a blockchain; bad actors who use hacks or scams to extract money from people vulnerable to these methods can do so equally with blockchain. Contributors to this Briefing also told us that blockchain can, because of its complexity, obscure and compound some of these risks, or be a partial solution that means that more important underlying issues are not resolved.

The risks also reflect the fact that blockchain is an emerging technology, which still has many technical challenges related to scalability, interoperability, security, and energy use (**Box 10**). In recent years, new types of blockchain have been developed to overcome these challenges and there are now more than 70 types of blockchain[11]. An example is the Red Belly Blockchain developed in Australia which is reported to be completing 30,000 transactions per second in large-scale experiments, which is much higher than the 20 per second rate of Ethereum (Australian Government, 2020).

There is a need to avoid the current hype and tread carefully as we respond to the risks and challenges the technology presents – **Institute of Directors**

6   www.cbinsights.com/research/report/blockchain-trends-2021/

7   www.gartner.com/en/newsroom/press-releases/2019-10-23-gartner-identifies-the-four-phases-of-the-blockchain-spectrum

8   For a visual see DAO Landscape: https://coopahtroopa.mirror.xyz/_EDyn4cs9tDoOxNGZLfKL7JjLo5rGkkEfRa_a-6VEWw

9   https://deepdao.io/organizations

10   www.reuters.com/article/fintech-nft-q3-idCAKBN2GU298

11   Blockchain Consensus Encyclopaedia: https://tokens-economy.gitbook.io/consensus/blockchain-consensus-encyclopedia-infographic

Box 10: Energy usage

The world has an urgent need to reduce carbon emissions. In this context, the very high energy usage of the computer 'mining' process involved in the most widely used types of blockchain — Bitcoin and Ethereum — is a front of mind issue about blockchain for many. We heard from a number of people who were concerned about this.

Those working with blockchain technology expect environmentally friendlier blockchains, such as those using 'proof-of-stake' methods, will grow in use in the coming years (Sedlmeir, Buhl, Fridgen, & Keller, 2021). The widely used Ethereum blockchain shifted to new methods in September 2022, a move they say will reduce its energy footprint by 99 per cent.

These challenges and opportunities are driving countries to develop governance[12] approaches for blockchain applications. These take various forms, for example:

› Switzerland has established a legal framework for cryptocurrency and cryptoassets.
› Japan has sandbox programmes which provide test environments for innovation and associated regulatory change.
› Australia released a National Blockchain Roadmap in 2020, with a focus on regulatory systems, standards, skills and investment, and is moving toward legal recognition of DAOs.
› The US issued an executive order in March 2022 to develop policy on cryptocurrency, covering aspects such as consumer protection and responsible innovation, and an assessment of the potential for a central bank digital currency that could encompass cryptocurrency.
› China has introduced bans on cryptocurrency transactions.

A July 2022 study of the macroeconomic impacts of regulatory possibilities for cryptocurrency identified that "allowing cryptocurrency to play a regulated role in the economy" would bring the highest net benefit to society (compared with other scenarios of "let present trends continue", "ban the use of cryptocurrency", and "make legal tender") (World Economic Forum, 2022). This assessment found that regulatory certainty could enable innovation through the broader uses of blockchain and protect against illicit activity.

3.5.4. Use of blockchain in Aotearoa New Zealand

In Aotearoa New Zealand, blockchain is being used mainly by entrepreneurs and early-adopter businesses in the technology and creative sectors. There are lower levels of awareness, use and capability in the wider business community, in universities, and in government. We heard that young people were driving the use of blockchain/DLT/web3 in other countries but not so much here.

Awareness and use is growing. BlockchainNZ[13] has seen membership numbers grow from 16 in 2019, to 73 in 2022. Business consultancies and government agencies are growing their knowledge to help clients and other users understand and manage the risks and opportunities of blockchain technologies.

As with digital technologies more broadly, skills will be one factor influencing the use of blockchain in New Zealand (**Box 11**). The development of blockchain solutions requires business skills in two main areas:

› A general understanding of its potential, for example the situations where it can, and cannot, add value and how suppliers and customers are using the technology.
› Technical skills, particularly in software engineering and coding.

Internationally, both of these skills are in high demand from business, and a lack of talent has been reported as a persistent barrier for business (ESRI, 2021). Contributors to this Briefing indicated that New Zealand has pockets of excellence, but not widespread capability.

Box 11: Digital technology in Aotearoa New Zealand

Digital technologies have significant roles in Aotearoa New Zealand's society and economy. In 2020 the digital technologies sector was valued at $7.4 billion in 2020 (StatsNZ, 2020), with exports growing 27% over 2019-20 to reach $2.2 billion in 2021 (StatsNZ, 2021).

Reflecting the impact and potential of digital technologies, the Government has developed a Digital Strategy for Aotearoa. This sets out a vision and a plan to support our people, communities, economy and environment to flourish and prosper in the digital era. The Strategy is framed around the pillars of Mahi Tika — Trust ; Mahi Tahi — Inclusion ; and Mahi Ake — Growth.

An important issue cutting across all three pillars of the Strategy is the need to focus on and invest in skills development, training and education. One action to support this comes through the Digital Technologies Industry Transformation Plan (ITP), under which industry and government are working together to develop solutions to known issues in the digital technology sector's skills and talent pipeline, such as a mismatch between supply and demand at various skill levels and a lack of diversity and inclusion.

MBIE has roles in the development and implementation of the Digital Strategy, alongside partner agencies, including the Department of Internal Affairs, the Department of Prime Minister and Cabinet, and StatsNZ, and is leading work on the ITP.

Table 6 outlines several current uses of blockchain/DLT in New Zealand – some are in the market while others are in development stages. Blockchain/DLT won't be useful for any or all business activity but there are trends of growing use and a broadening range of applications.

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12 By governance we mean the set of regulatory rules, standards, incentives, institutions, and other mechanisms that shape the development and use of technology.

13 A not-for-profit membership organisation, part of the NZTech Alliance. BlockchainNZ's membership includes blockchain technology developers and solution providers, government agencies, artists, individuals, and larger New Zealand businesses, banks and law firms.

Table 6: Examples of current uses of blockchain / DLT		
Domain	**Role of blockchain/DLT**	**New Zealand examples**
Supply chains and logistics	Can optimise performance by saving time and reducing risk through smart contracts, which support traceability and transparency for: › quality and provenance assurance › accessing finance › environmental and social sustainability assurance, including preventing modern day slavery.	**Trust Alliance New Zealand (TANZ)** is a consortium of primary sector growers and producers developing more efficient and trusted data sharing through decentralised technology systems, which includes use of blockchain/DLT. **TrackGood** is a supply chain tracking solution using blockchain to display and share sustainability impact data. **Fonterra** has piloted electronic bills of lading, using blockchain technology to speed up transfer processes and reduce costs.
Energy	Enable direct to consumer (peer-to-peer) transactions to reduce the need and number of intermediaries, and help shift to distributed and renewable energy to support decarbonisation. Adoption is currently not widespread in energy sectors, but use of digital identifiers are expected to enable this.	**Vector** has trialled Australian-owned Powerledger's blockchain-based platform to allow consumers to trade surplus energy from solar panels and batteries directly with each other without using an electricity retailer.
Finance, digital assets	Supports start-up financing, eg through initial coin offerings (ICOs), digital money, and a basis for digital assets, such as NFTs, for trading.	**Centrality** supports start-ups with the tools and resources to create digital assets and applications using the CENNZnet New Zealand based public blockchain and decentralised application platform. They also have involvement in **Futureverse**, a new open metaverse platform that brings together functionalities of tokens and AI.
Banking	Cryptography-based systems can allow faster cross-borders transactions, without the need for an identity-based bank account and complex inter-bank relationships.	The **Reserve Bank of New Zealand** is exploring a central bank digital currency, which includes consideration of the potential role of blockchain/DLT. **ANZ Bank NZ** has developed a proof-of-concept blockchain for reconciliation of data for insurance policies.
Voting	Enables transparent and unalterable data where the public can track and scrutinise their votes, submissions, and engagement.	**Horizon State** uses the tamper-resistant and transparent qualities of blockchain to enhance security, public trust and participation in elections. The system has been used by the governments of South Australia and New Zealand.
Health	Emerging applications include use for health records, medical supply chains, remote monitoring vaccination certificates (eg COVID-19), and staff credentialing.	**Centrapass** is exploring a digital identity for healthcare providers to support portable credentialing and a reputation score to enable verification of the individual and their skillset.

3.5.5. Governance of blockchain use in Aotearoa New Zealand is at the early stages

New Zealand's approach to blockchain and related technologies is in the early stages. Regulation covers uses classified as financial services or products through the Financial Markets Authority, virtual asset service providers[14] and cryptoassets (also known as digital assets) for taxation. Cryptoassets and NFTs are not directly regulated, but New Zealand's Council of Financial Regulators, which includes the Reserve Bank of New Zealand and other government agencies, is actively looking at whether existing regulatory regimes are fit-for-purpose.

The development of New Zealand's digital identity system[15] is supporting discussion about the governance of identity technologies, including approaches to data sovereignty for Māori data as taonga. While not focused on blockchain, this work is likely to offer lessons for the future governance of blockchain/DLT/web3.

Box 12: A local approach to technology governance

Aotearoa New Zealand's Veracity Lab is developing local approaches for a 'digital public infrastructure' that can support trusted, secure, inclusive, and human-centred use of data and digital tools (Lab, Veracity, 2021). Their approach is not just about minimising risk but also about reflecting who we are as people, building wellbeing, and helping to ensure that we live well alongside an increasing amount of technology in our lives.

While not specific to blockchain, this initiative is part of a growing dialogue about the need for governance of digital and other technologies with a national or whole system approach, underpinned by a social contract, that enables digital innovation that is values-based and equitable.

3.6. Pae tawhiti/the future

While there is a lot we don't know about how the use of blockchain will develop, we have drawn insights about the long-term implications from current trends and New Zealand's past experience with technological development. This has been supported through the input we received during our engagements and by published research. It builds in assumptions that the oversight and use of blockchain by government and businesses will develop, but will be similar in nature and scale to what it currently is.

This section focuses on the uses of blockchain that we are likely to see in Aotearoa New Zealand over the next 10 years and more – a probable future. To this we add some of the other possibilities arising from some of the unknowns about how this technology will develop and be adopted.

*Like with any tech development, the story we tell about it now will be different from the one we tell in the future – **Inland Revenue***

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14 This includes activities such as cryptoasset wallet provision, investment services and exchanges but does not cover cryptocurrency and NFTs which are not viewed as financial products. Virtual asset service providers have responsibilities as part of the Anti-Money Laundering and Countering Financing of Terrorism Act 2009, and are supported in meeting these by the Department of Internal Affairs.

15 Work in this area includes the development of a legal framework for digital identity, through a Digital Identity Services Framework Bill.

3.6.1. Blockchain becomes more embedded in businesses and systems

With the current patterns of investment and diversification of applications, we anticipate that the use of blockchain is likely to continue to grow over the long term, rather than decline in use or development. As seen with the mid-2022 significant drop in market value of some blockchain-based assets, this growth is not likely to be steady.

Blockchain will be used at an individual business level, but also increasingly in broader systems, such as across industries or economies. In these broader settings blockchain may be used to lower the cost of coordination and governance between firms or people, and also provide a platform to build in incentives and network effects through tokens (**Box 13**).

*Blockchain technology will increasingly become ubiquitous, like other technology we will use it without even realising – **Associate Professor Alex Sims, University of Auckland***

Box 13: A token economy

A token economy describes a system that uses digital tokens, like NFTs or coins, to reward user or network participation, such as content creation, and also creates value in a company or broader system (Kim & Chung, 2019) (Lee, 2019). Tokens earned can be used for access to services and products. Unlike conventional loyalty systems, tokens based on blockchain systems have flexibility to be used in wider networks and exchanges and can therefore incentivise participation.

The social networking site Steemit was an early user of tokens, releasing these in 2016 to reward users for their content. As an example of more recent use, the Futureverse open metaverse platform includes a Mycelium Token to enable its governance, security, in-game economy, and data marketplace (www.futureverse.xyz/whitepaper).

Tokenisation can be used not only by business but by any system to incentivise and scale action, for example, potentially by government as a kind of policy tool, and by communities to support local economies, reinforce values and support data sharing. The use of tokens can raise ethical issues, and relies on responsible and user-focused development in order for them to have useful social value.

Broader system applications of blockchain could include uses such as water rights management, construction waste management, renting out underutilised land for car parking, tracking parts and ticketing across air travel systems, improving efficiency of energy systems, enabling a circular economy and carbon emission tracking (**Box 14**). Uses for government services could be in areas of regulation, health services such as immunisation systems, public contracts, taxes and accounting (AWS, 2020) (Jennath, 2019) (CB Insights, 2022). In Estonia, a significant portion of its public administration is now based on its own blockchain technology, and other countries and cities are also beginning to implement blockchain-based solutions across public systems (U4SSC, 2020).

As part of these wider system developments, blockchain is also likely to become more integrated, and perhaps less visible, as part of a wider suite of tools that support distributed and decentralised data systems and business forms. Blockchain will serve functions in these systems, such as to support security and transparency, though won't be useful in all cases, and in any case will be only one layer in multi-layered, open, technology-enabled systems. As described by a number of contributors to this Briefing: "it's not all about blockchain".

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*Developments in existing barcode technology will revolutionise distributed data exchange for consumers, businesses, and governments, and do not necessarily need the use of blockchain which is currently an energy intensive ledger – **Nick Allison, GS1 New Zealand***

Box 14: Enabler for a circular economy?

Blockchain/DLT is likely to be an important enabler for a shift to a more sustainable and low-waste circular economy. Implementation has to date been challenging, but benefits are likely to outweigh costs over time (Upadhyay, 2021).

Over the next 10-20 years we are likely to see use of 'digital product passports' that provide consumers with scannable information about the makeup and journey of a product through its supply chain. They could, for example, include information about carbon emissions, water usage, labour practices, and advice on reuse, repair, or recycling.

With the addition of sensors, dynamic NFT technology could allow products or building materials to reflect changes in their composition throughout their life. This functionality could be used to deter or detect unethical or illegal activities, enable recovery of rare earth elements back to manufacturers, or incentivise manufacturers to make long-lasting products through royalties from secondary sales.

Service-based models that enable peer-to-peer reuse or sharing of products, rather than ownership, could be enabled by blockchain/DLT-based token systems. Youth-led scenarios for 2040 have imagined systems where waste reduction, or reuse and recycling of materials is tagged to government administration systems that then allow tax reductions, or even fines for incorrect actions (Wolf, 2022).

Decentralised digital identifiers (DIDs) are an example of one of these technology-enabled systems. DIDs are a type of unique identifier which are likely to become more commonly used to verify the credentials of, and support traceability of, products in value chains, and to support the identity of people and organisations (Decentralised Identity Foundation, 2022).

DIDs are being enabled by international regulatory and policy developments, including the development of standards, particularly in Europe, US and Asia. DIDs are based on the self-sovereign identity paradigm which puts users in control of their data. They are designed to work with any decentralised data system, which may or may not involve blockchain.

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*The opportunity to turn a brand promise into a brand proof for New Zealand's primary sector can be solved with DIDs. Farmers and growers can benefit from compliance work and turn it into real value through the decentralised data sharing framework. DID's can be used to prove digital identity for almost everything such as individuals, organisations, paddocks, tractors, IoT devices, certification/ consent or any other data point – **Klaeri Schelhowe, Trust Alliance NZ**.*

3.6.2. DAOs are a growing part of the business landscape

Accompanying the embedding of blockchain in the business environment, decentralised autonomous organisations (DAOs) are likely to become more common, most often integrated with current business operations, but also as stand-alone business forms. The emergence of DAOs is likely to lead to:

› growing numbers of distributed and network-based organisations

› more decentralised systems that can support people to work together, developing their own customs and rules, and managing resources through a token economy

› changes in work, with loss of some administrative tasks as well as creation of new or different jobs, such as establishing or working for DAOs

› organisations having less need for auditing, as unauthorised actions cannot take place.

Regulatory and related policy settings for DAOs will develop in parallel to these changes, with some countries moving proactively to support DAOs for economic development.

New Zealand's small and largely experimental use of DAOs is likely to grow gradually in the years ahead. If settings change to enable legal registration of a DAO in New Zealand, then more use of this novel business form in New Zealand could be expected.

3.6.3. Blockchain 'for good' to help tackle big challenges

Low energy blockchain technology is starting to be used to improve environmental sustainability and address climate change. This can be seen in examples of its use to support supply chain transparency for the fishing industry, decentralised resource management, and sustainable finance (UNEP, 2020) (PwC and World Economic Forum, 2018). Blockchain technology is also being applied to support Sustainable Development Goals, such as financial inclusion for unbanked people, healthcare, and legal identity (UNDP, 2019).

Going further, some proponents suggest that the decentralised nature of blockchain/distributed ledger technology (DLT) could help transform the structure of our economy to one that is more regenerative and circular, rather than extractive. This idea captures the way in which peer-to-peer approaches could support a cooperative commons-based economy with local production systems (Bauwens, M and Pazaitis, A, 2019).

These 'for good' developments have potential as enablers for scaling community and business action, though come with caution that, like all digitally-enabled networks they may not in themselves be as good at sustaining communities and social cohesion as real-world human connections.

MBIE learned of several innovative Aotearoa New Zealand initiatives that are developing 'for good' uses of blockchain/DLT (**Box 15**).

Box 15: Aotearoa New Zealand tech for good initiatives

› **The Wellbeing Protocol** is exploring approaches to empower communities to solve their own problems through bottom-up blockchain-enabled approaches. In 2021 a trial in Porirua's Cannons Creek used a digital wallet on a smartphone, loaded with 'Cannon Coin', for participants to spend on fruit and vegetables, trade among themselves, or to put towards community initiatives. This work is now being progressed through the development of a Community Development DAO, identified as a world-first.

› **Āhau** provides an archive tool, designed to enable individuals, whānau and iwi to keep secure records of whakapapa, and with wider applications for digital identity. By using distributed data technology (similar to blockchain) the data is held by the users and marae and stored in Aotearoa, consistent with Māori data sovereignty principles.

› **Toha** is developing an investment platform for regenerative climate solutions for New Zealand and global application. This platform is enabled through a blockchain-based Toha Network Token and involves data collected from a network of landowners that have made and demonstrated environmental impact, that then incentivises capital investment into regenerative projects.

3.6.4. Blockchain by Māori, for Māori, with Māori

In preparing this Briefing we heard about the potential of blockchain/DLT for Māori. These included insights from the founders of Āhau (**Box 15**) and Blockchain Māori, an enterprise supporting rangatahi to use blockchain technology creatively and safely through the development of Aotearoa-focused NFT art. Both founders were motivated by the potential of distributed data technology for Māori and the desire to ensure Māori are seizing opportunities to develop and own technology businesses.

Aotearoa New Zealand's Māori digital sector is growing and has successful businesses that are embedding Māori values into creative and high-tech ventures. Like Māori business generally, many Māori digital start-ups can be described as purpose-led, with a distinctive focus on environmental, social and cultural outcomes as well as commercial bottom lines. While the sector is growing, it is proportionally small – Māori constitute only four per cent of the IT workforce.[16][17]

Being decentralised, blockchain/DLT has important potential to enable Māori-led initiatives, particularly through the ownership of data consistent with Māori needs and interests.[18] There is also potential for blockchain/DLT to enable iwi-owned or Māori business to support the security and provenance of supply chains, for example in fisheries and agriculture.

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*Technology for good is a growing trend. Where New Zealand is a leader is the emergence of Māori techpreneurs, the role of the Māori value system, and for storytelling – **Āhau***

3.6.5. Other possibilities for the future of blockchain

There are many other ways in which blockchain/DLT/web3 may develop depending on events, often uncertain, in the wider economic or social environment.

One of these areas of uncertainty is the extent to which public trust and confidence in blockchain may develop. Based on experience with other digital technologies in the past, it is likely that confidence in blockchain will gradually increase with familiarity and improved functionality.

It is also possible that blockchain suffers a major loss of trust and use. While blockchain itself has uses in societal contexts characterised by low trust in authorities, what we are considering here is loss of trust in the technology itself. This could be a result of ongoing market volatility, a security challenge due to criminal activity, or developments in other technologies such as quantum computing, the new ultra-powerful computer technology that may challenge all systems that use encryption. Loss of trust could also arise if blockchain was used by corporations or other actors to strengthen control of data in ways that undermine privacy or autonomy. Misuse of other technologies, for example through deepfakes, could spill over and affect trust and confidence in blockchain and other technologies.

Other areas of uncertainty are the pace of business adoption and how blockchain will be used by businesses. Some people think blockchain/DLT/web3 will herald a highly transformed and decentralised economy; others consider it is unlikely to become mainstream as existing or competing methods provide adequate alternatives.

Scenarios are a tool to support thinking and decisions in the face of uncertainties. We used some pre-existing scenarios about blockchain to inform our insights about the range of ways in which blockchain and business could co-evolve, extending to more unlikely futures (**Box 16**).

Box 16: Four possible scenarios for blockchain

The Institute for the Future created four possible scenarios to provoke imagination about Blockchain Futures (www.iftf.org/blockchain/). These were based on uncertainties about the degree of decentralisation, and business and public relationships with the technology. The scenarios are in summary:

The Commons Win
Food, water, energy, healthcare and other 'commons' are managed by DAO and smart contracts.

Value is Everywhere
Multiple cryptocurrencies and tokens express the value of everything in real time.

Humans Battle Machines
Machines own most of global capital, with humans using smart contracts to coexist alongside machine intelligence.

Supercorporations Rules
Large corporates have consolidated blockchain into just two: FinCoin and LifeChain.

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16 NZ Digital Skills Forum, 2021

17 One of the goals of the draft Digital Technology Industry Transformation Plan is to build Māori participation in the sector.

18 A Māori data governance model for government data is underway as part of the development of a digital strategy. This work is co-led by the Data Iwi Leaders Group and Stats NZ and aims to develop an approach to data governance that reflects Māori needs and interests in data.

3.7. So what? Implications for productivity and wellbeing

From these ideas about probable and possible future development for the use of blockchain/DLT/web3, we consider some implications for business, and more broadly for productivity and wellbeing in Aotearoa New Zealand.

A changing environment for business

It is unclear how much change blockchain/DLT/web3 will bring to the business environment, and how fast. Any significant shifts toward more open and decentralised systems will bring challenges as well as opportunities.

For example, growth in DAOs could compete with traditional organisations for employees, as well as create new markets and opportunities for participation. Intermediaries that have long been part of an economic system may be less needed or bypassed altogether. This may have upsides for efficiency, but also implications for loss of functions in a system.

Over the longer-term, government may take on different roles in the economy if more work can be coordinated directly in smaller units and through digital channels. Looking back to the past, we know that nation states are relatively new and that much smaller units, such as city states, were the norm for thousands of years. Decentralisation at significant levels would also challenge our notions of power in society and organisations, underlining a need for societal dialogue to anticipate and manage impacts.

*Decentralised technologies give us an opportunity to rethink how we, as a society, make decisions and organise ourselves – **The Wellbeing Protocol***

*Things like data sovereignty, classes of data and their processing will need to be understood and may challenge existing systems and processes. How will lock-ins and monopolies be avoided, and how might "trust" be migrated from platform to platform, and why? In peer-peer token economies and communities, what are the long-term implications for taxation and government funding? On the flip-side, might the technologies enable different, agreed value systems in new ways – for example, if "wellness" is the founding principle for a token, might "gross national happiness" be measurable and implementable in novel ways? – **Redvespa***

Low awareness could bring risks

MBIE's work on this Briefing suggests there is low awareness about blockchain/DLT/web3 technologies in New Zealand. This will be partly because there has been limited uptake of the technology in New Zealand. But we think that low awareness is also due to some distinct features of the technology: it is technically complex, sometimes contentious and polarising, and with its peer-to-peer capabilities and growing embeddedness is less visible to those not directly involved.

Sometimes it can be a good thing not to be at the frontier of a new technological wave as this can allow others to develop real world uses and iron out risks. But blockchain/DLT/web3 is borderless and, like other digital technologies, New Zealand businesses and the public will be exposed to them through global digital platforms and supply chains.

The expanding use of blockchain for applications such as NFTs and DAOs is giving rise to new risks and opportunities, and regulatory measures are being considered. However, governments can sometimes be risk-averse, leading to either over- or under-regulation of uses of new technologies. Striking the right regulatory and legislative balance is crucial to the adoption, implementation and successful use of a new technology.

*All kinds of strange things are going on – it is important for the public to be able to understand the technologies as well as the surrounding cultural context – **Walter Langelaar, Te Herenga Waka Victoria University***

Slow adoption could be a barrier to business

Aotearoa New Zealand will need the skills to use and benefit from blockchain, as with other emerging technologies. Those we spoke with indicated that business capability to adopt and embed blockchain solutions are limited and skills are in short supply, both internationally and in New Zealand. We heard that government is also at early stages of understanding and that this is limiting its ability to provide financial and legal guidance to businesses.

Low or slow uptake of blockchain and related technologies in Aotearoa New Zealand could become a barrier to firms and industries that rely on global markets and supply chains. Uptake of advanced digital technologies is already relatively slow among New Zealand firms, with the provision of digital services (including cloud computing services) comprising only 1% of value added, half the OECD average.

International research has indicated that only 20 per cent of adoption barriers with blockchain are technology related, with 80 per cent due to current business practices and models that result in costs of switching and lack of familiarity with blockchain (Frizzo-Barker, 2020). Those we spoke with indicated that the same is likely to be the case in New Zealand if marked improvement in adoption does not occur. In their experience, the biggest challenge is implementing blockchain solutions across supply chains and in systems, and building workers' familiarity with this new technology and new ways of thinking.

However, we can also anticipate that the challenges of adopting blockchain/DLT/web3 will increasingly be something that will be addressed by the market, for example through platforms, services, and "wallets" that streamline accessibility.

Multiple impacts on productivity and wellbeing

There are a range of ways in which blockchain/DLT/web3 could impact on productivity and wellbeing. **Table 7** lists some of these impacts and notes both the benefits and challenges. These impacts are indicative as the links between use of the technology and outcomes are highly complex and not readily generalisable.

The system level and transformational potential of blockchain/DLT/web3 is an important lens to these considerations. If leveraged responsibly, it could enable step changes in efforts toward national productivity and wellbeing goals.

3.8. Now what? Some strategic choices for government

The preceding discussion indicates the way in which blockchain is likely to develop globally and in Aotearoa New Zealand, and some of the implications.

These insights suggest that government could consider, at a high level, a strategic choice about the extent to which it wants to realise and shape the potential benefits, and manage the risks, of uses of blockchain technology. On page 51 we present three sets of ideas about what different choices for government could look like. Each builds on the previous one, rather than being a distinct alternative.

These ideas are offered as inputs to any work that may be initiated in the next few years by government, not as a recommended framing or advice.

Because this is a fast-moving technology, any new work should carry out additional scoping to assess how things may have changed.

Table 7: Indicative impacts of blockchain on productivity and wellbeing

Likely or possible benefits ✔ and challenges ✘ that need to be/are being addressed or may limit adoption.

Properties of blockchain	Features/impacts	Potential for productivity	Potential for broader outcomes and wellbeing
Decentralised/ peer-to-peer transactions	✔ Lowers the transaction and coordination cost of activities ✔ Reduced need for intermediaries and increased system resilience ✘ Requires change from current systems, with jobs/tasks lost and gained	✔ Business efficiencies ✔ Network and system efficiencies ✔ Can allow for less wastage of energy and materials (if low energy/green blockchains used) ✘ Adoption/ switching costs may be prohibitively high for some firms	✔ Empowers community-led solutions and participation ✔ Reduces inequality if adoption is broad-based ✔ Supports coordination of action for social impact ✔ Users control their personal information ✔ Increases resilience with no single point of failure ✘ Could divert action from addressing an underlying problem, eg lack of societal trust ✘ Change may outpace social license ✘ Loses benefits of traditional intermediaries
Unalterable records	✔ Reliable and robust data records ✔ Reduction in human error ✘ Irreversible, so not suited to all data management needs	✔ Business or service efficiencies, eg less mistakes, faster traceability and product stewardship ✔ Digital identity	✔ Increases consumer/citizen trust and confidence if used appropriately ✘ Reduces confidence if adoption affects the right to forget
Encrypted data/ transparency	✔ Security, digital trust ✘ Vulnerabilities, eg losing private blockchain reference key	✔ Reduced fraud/ asset protection ✘ Fraud or losses can still occur through hacks or scams	✔ Supports inclusion in low trust environments ✔ Strengthens confidence and trust in a context where this is lost or not possible ✔ Strengthens data sovereignty ✘ Huge energy cost and environmental impact of current commonly used 'proof of work' blockchains
Platform for smart contracts and other applications	✔ Flexibility of use, eg smart contracts supporting automation and efficiencies ✘ Complex and immature technology, new skills required	✔ Reduced labour inputs and faster processes ✔ Lower operating expenses	✔ Enables new ideas and innovation to respond to opportunities and challenges ✔ Economic diversification ✘ May increase digital divide if not inclusive ✘ Loss of human agency through automation

Strategic choices for government – use of blockchain

OVERSIGHT

Continue as is with roles in regulation and broad settings

Why? To allow business to lead development and adoption

Ideas for action:

› Maintain and develop governance approach to blockchain/DLT/web3 as part of overarching technology settings
› Monitor international regulatory developments
› Continue to develop fit for purpose regulatory settings using regulatory stewardship approach
› Public information about safe use
› Broad-based settings that can support blockchain/DLT/web3 innovation as part of wider economic and innovation policy

ACTIVE MONITORING AND ADVISORY

Also support awareness and knowledge about blockchain/DLT/web3

Why? To support timely good decisions and innovation that acts on opportunities and/or risks

Ideas for action:

› A horizon scanning function across government, covering technology broadly, or wider
› Opportunities for blockchain/DLT/web3 developers and users to engage/work with government
› Public and consumer literacy about blockchain/DLT/web3
› Support start-ups and established business with trusted technical and strategic information or advisory services
› Support equitable access to opportunities and capability development for Māori and Pacific business
› Sandbox trials with industry, government and others working on regulatory or policy challenges
› Technology or policy analysis to assess particular risks and opportunities
› Government use of blockchain/DLT/web3-enabled solutions
› Participation in standard setting forums

ACCELERATE CAPABILITY BUILDING AND LEVERAGE

Also enable optimal use of blockchain/DLT/web3 in Aotearoa New Zealand to help achieve goals and address challenges

Why? To support and transform industry/economy, address complex challenges, and remain relevant to global markets

Ideas for action:

› Youth/rangatahi focused initiatives, such as training to support them to lead and participate in innovative, tech-enabled purpose-led ventures
› 'Tech for good' or challenge platforms, involving business and government partnerships
› Skills development, for example accelerating formal and informal training, use of skilled migration, engagement with international partners and training for groups under-represented in traditional business
› Position Aotearoa New Zealand as a place for values-driven and impactful solutions, including use of only low energy blockchains
› Action plan or roadmap for blockchain/DLT/web3, learning from Australia's initiatives
› Blockchain/DLT/web3 considered as enablers to address important New Zealand challenges such as climate change
› Review regulatory settings to ensure accommodation of existing and new emerging business forms, including DAO

3.8.1. What the people we talked to thought about the different choices

Here we outline some additional ideas on what these strategic choices could involve, including what we heard from contributors.

Continue as is with roles in regulation and broad settings

With this choice, we assume that worldwide developments in blockchain/DLT/web3 would continue, as would activities by New Zealand business and industry to develop and use blockchain where opportunities are evident and as skills allow. Initiatives led by industry to support awareness of blockchain/DLT/web3 would also continue to develop. Government would proceed with steady development of technology governance and regulatory settings to provide more certainty and oversight.

The early stage, turbulent and borderless nature of blockchain underlines the importance of **technology governance approaches that consider both opportunities and risks**, are flexible, and allow participation for multiple stakeholders including users and citizens. This type of approach has been identified in OECD work on policy for blockchain (OECD, 2019), and is also broadly suited to other emerging technologies characterised by uncertainty.

The Digital Strategy for Aotearoa provides a suitable high-level framework with its focus on Mahi Tika – Trust, Mahi Tahi – Inclusion, and Mahi Ake – Growth. We heard we could also take guidance from New Zealand's experience with space industry regulation and its use of principle-based, technology-neutral and adaptive regulatory approaches (Hutchinson, MacNeill, Mumford, & Sim, 2017). As with emerging technologies generally, **good regulatory design and stewardship will manage risks yet also enable innovation** to support broader social value.

Contributors noted that with blockchain/DLT/web3 there is a particular role for national level governance and policy activities to **signal ethical and legitimate uses** of the technology to the market, developers, and business and public users, as this can support timely and responsible development and adoption. For Aotearoa New Zealand this signalling would have regard to Te Tiriti o Waitangi obligations, respect Māori data as taonga, and reflect te ao Māori perspectives where relevant. Regulation can have a role, but so too can other policy levers and communications.

Contributors suggested that communications about the technology could usefully **build from already familiar uses**, for example internet 'cookies' are a type of token.

As this strategic choice would not involve significantly more active or targeted government interventions, it would be unlikely to allow New Zealand to realise the full potential of the technology and some contributors suggested that it could carry some risks of loss of business or economic opportunity. Government familiarity and use of blockchain/DLT/web3 for government services would develop to an extent but not substantively. Contributors to this Briefing indicated this was similar to our current approach. Some said that we were about two to three years behind other countries such as Australia which are taking more proactive approaches.

Support greater awareness and knowledge about blockchain/DLT/web3

This choice would involve greater investment in **communications, plus horizon scanning of emerging technologies and developments**, and related policy analysis/advisory capability. It would build government's awareness of the technology and strengthen connections with the technology sector. **Support for SMEs and business** could be incorporated, for example to develop their awareness of technology developments, help them navigate regulatory requirements, or use a DAO model for a start-up.

A watching brief could cover not only applications of blockchain/DLT/web3 but also other established and emerging technologies (such as AI, the internet of things, and manufacturing technologies) and how a changing global context (and global challenges) is influencing the use of technologies. With this breadth, it could also provide an input to future Long-term Insights Briefings.

Integral to this choice is the need for **government and business to work more closely together**, and to build government's own capability for innovation in government services. There is potential, for example, for the use of blockchain/DLT to strengthen the value and performance of regulatory systems. This could be done through using these technologies to support information gathering and sense-making, or as a store for validated information viewable across parties to provide cost and time-savings, and improved security. Co-benefits of government use of technology include the support for broader based learning that can inform robust regulatory and policy responsibilities, and the regulatory certainty it can provide to the market.

Contributors noted that achieving opportunities for Māori business would require efforts to ensure equitable access to opportunities and capability development, consistent with Te Tiriti o Waitangi and Māori aspirations that enable ambitious success. These opportunities should build on strengths, as well as recognise the socio-economic context for many Māori which may limit their ability to fully participate. In a similar way, Pacific business would also benefit from measures to support capability and access to opportunities, and in their context also recognise that their current levels of engagement with purpose-led business or advanced technologies are likely to be low or at an early stage.

Specifically with respect to DAOs, New Zealand researchers suggest government should **monitor the developments in DAOs and build capability to advise and regulate appropriately** (Jayasuriya, 2020) (Sims, 2021). As noted by the Institute of Directors, these sorts of developments matter for governance as they are a signal that current settings may be too costly or not fit for purpose, and could also reflect a lack of confidence in current settings (Institute of Directors, 2022). They suggest consideration of a generic governance approach reflected in legislation that could provide for incoporation, limited liability and governance settings for DAOs as well as other existing and emerging business and other organisational forms.

If we think about how business relates to government this should be our superpower – Centrapass

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We are interested in boards' ability to steer their organisations through emerging technological changes. We see the use of blockchain within a wider technology and digital transformation context that embraces developments such as the Metaverse, and more generally – Institute of Directors

Enable optimal use of blockchain/DLT/web3 in Aotearoa New Zealand to achieve goals and address challenges

This choice would encompass activities that are focused on technology firms, as well as business and other users as adopters, and across systems. This more active choice would in itself require further consideration of New Zealand's approach – for example **where could we position ourselves as a leader, and where should we be a fast follower?** This choice may offer more upsides, but could involve trade-offs with resources, with a risk that government is unable to deliver.

A number of contributors to this Briefing noted the leadership potential that Aotearoa New Zealand has in 'for good' uses of blockchain/DLT/web3 technology that is responsible, ethical and innovative. We heard how New Zealand could lead on values-driven, zero-carbon solutions that could both address real-world societal challenges and encourage investment and skills development in New Zealand. Use of only next generation low energy blockchains was an expectation of contributors on this topic.

Contributors also noted New Zealand's ability to operate as a **test bed for the development of technology**.

More work would be needed to fully understand where and how New Zealand could leverage blockchain/DLT/web3, and what barriers to this there may be. A key barrier mentioned by some contributors was current thinking that solutions need to be centralised. With respect to compliance, Callaghan Innovation is also aware of a number of New Zealand web3 and blockchain businesses that are concerned about legal, regulatory and taxation costs, which for some had involved more than $100,000 in legal fees or up to 70% of their initial capital.

Young people/rangatahi were commonly mentioned as holding the key to any leadership role for Aotearoa New Zealand, but this relied on them having the chance to develop the skills they need to support their future wellbeing.

We heard suggestions that the growth of skills for the development and use of blockchain/DLT/web3 in New Zealand could be supported through a range of training and qualifications, designed around the needs of industry and learners. Approaches could include **integrated learning, place–based and online courses, informal learning**, and approaches that seek to support inclusion **of groups currently under-represented**. An existing model is the innovative cross-disciplinary Blockchain Bootcamp taught through Victoria University of Wellington's School of Design.

*Rangatahi need digital skills – they are leveraging technology to start a business, but they need to build business development experience around that to fully realise the opportunity – **Pacific Business Trust***

*With the increase of remote work it is certainly conceivable that we could become known for having an innovative ecosystem in this area. There is no putting these technologies back in the box. They will grow and lead to more innovations. The question is whether we want to be part of that conversation and lead the way forwards proactively – **Steven Moe, Parry Field Lawyers***

*This is not just about finding use cases for traditional business models to utilise. The explosion of innovation we are seeing overseas on the back largely of Ethereum's development (largely in the USA) is creating a whole new ecosystem and way of doing business. The question should be "How can Aotearoa take advantage of these new web3 business models? – **Sally Hodges***

*New Zealand can win as values matter more than size – **Centrapass***

*There is an opportunity for the New Zealand Government to provide clarity and certainty on regulation and taxation of digital assets which will also make New Zealand a highly attractive location for new and emerging international web3 businesses – **Callaghan Innovation***

4. The future of business – a diversity of models

In this Briefing we have traversed two different trends to explore how businesses are approaching their role in society, and how the ways that they organise themselves might change in future.

In our exploration of purpose-led business, we heard many examples of businesses that were challenging the prevailing role and function of business, driven by changing values from their employees, customers and investors, as well as a desire to be part of the solution to global challenges. Often these businesses do not readily fit conventional organisational models.

We were also given examples of businesses exploring the use of blockchain and other DLT to enable new business capabilities or forms, such as decentralised autonomous organisations (DAOs). A number of people mentioned ways in which technology generally, or blockchain/DLT, could support sustainable or purpose-led activities (**Box 17**).

Box 17: Purpose-led and blockchain — how could these trends converge?

Blockchain is and could be used by purpose-led business to:
› help with the 'start-up' of their business or enterprise, for example to raise finance
› enable networked organisational forms, such as a DAO, and through this support more inclusive governance, for example involving participants in decisions about the use of funds
› support supply chain transparency
› improve sustainability reporting through the ability to hold and use data on financial, social and environmental dimensions for investment or consumer decisions
› enable Māori-led solutions through decentralisation of information and governance
› support impact at scale by enabling replication of business models.

*Data is at the core of sustainability practices, and encouraging responsible information sharing can assist in purpose-led business – **Amazon Web Services***

*DAOs have given us a way to wrap an economic model around open source. We can now create incentives for people to start and invest time into growing purpose driven organisations or communities – **The Wellbeing Protocol***

These insights signalled to us that the future of business is likely to be made up of an increasingly diverse range of business models and organisational forms. Firm structures that are common today will persist, but there is likely to be more values-oriented, networked, open, peer-to-peer and decentralised organisational forms, as business responds to drivers such as changing values, environmental pressures, and technology (Figure 6). These can be categorised in many different ways, for example:
› 'Sustainable business models' which have been classified into 16 different types, such as exchange platforms and product use rather than ownership (Niessen & Bocken, 2021).
› 'Decentralised business models' which include collaborative business networks and partnerships, as well as newer technology-enabled platforms that allow peer-to-peer activity and include some purpose-led business and those enabled by blockchain/DLT (Barker & Chiu, 2021). The typically networked forms of decentralised models mean their practices often span traditional domains of business, community and government, use more 'open' approaches to participation, and can as a result require complex contractual or governance arrangements. Calls for new governance and regulatory frameworks for decentralised business models are being made to enable them to contribute to responsible value creation and social goals as well as to provide guard rails to avoid exploitative or unsustainable business risk-taking (Barker & Chiu, 2021).

Diversity in business models is not a new trend. As part of wider economic activity, business form has, over time, always been diverse and evolving to meet business objectives and support livelihoods. Research into diverse economies is bringing more understanding and visibility to this landscape, and, in capturing activities that are unpaid or volunteer, covers a more varied range of economic activities than we illustrate in figure 6 (Gibson-Graham and Dombroski, 2020).

Figure 6: Some examples of business models and organisational forms (centre of graphic) and global drivers (outer circle) that may be influencing their use or emergence.
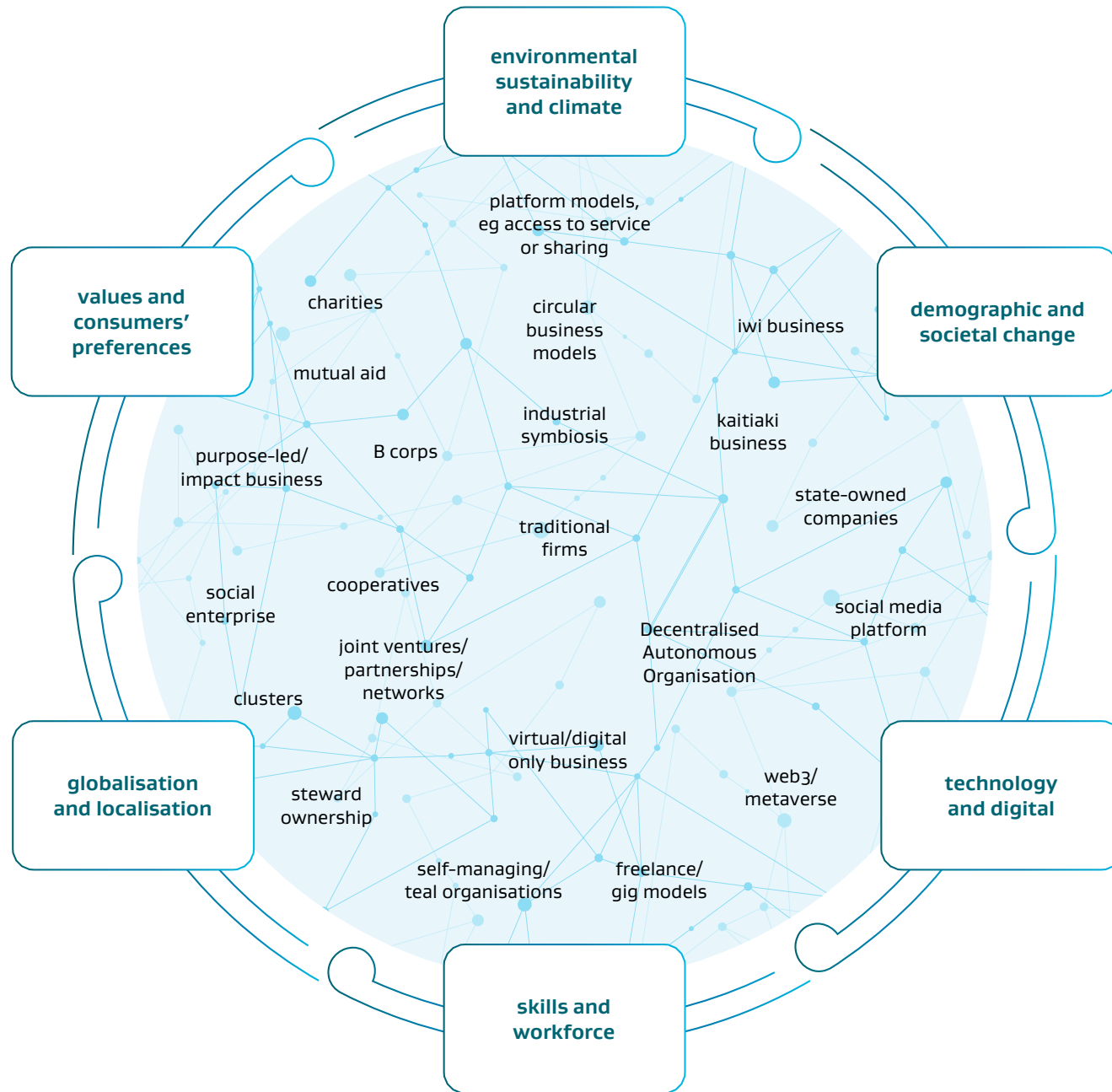
4.1. Now what? Choices for government around evolving business models

This diversity in business models and structures provides economic and social possibilities to help address the important challenges of our times. Government has choices around its role and intensity in engaging with this:

› **Watching brief:** this could involve maintaining an awareness of developments, potentially as part of a broader scanning function of government, to inform advice and decisions, as required.

› **Exploring whether regulatory, governance and organisational settings are fit for purpose:** this could involve assessing current settings under different future scenarios and considering whether these provide appropriate protections, as well as enabling the sort of innovation that contributes to a dynamic, inclusive and resilient economy and society. New Zealand research teams could contribute to this work.

› **Actively shape the settings for new business models to enable them to meet society's objectives:** this could involve developing a more detailed understanding of the likely changes to come, and the development of a roadmap to guide direction.

New Zealand businesses and government are on similar journeys characterised by a greater focus on purpose, broader outcomes, and the long term, but with a lack of connection or effective working together between the two (Beatson, 2021).

Any work on business models is likely to benefit from effective government collaboration with business, communities and across agencies.

There are numerous models for working together, including partnership-based, collaborative or mission-oriented approaches between government, business and community. Aspects of these are covered in the Long-term Insights Briefings from the Public Service Commission on *Enabling Active Citizenship* and from the Department of Internal Affairs on *How can community participation and decision-making be better enabled by technology?* Their insights include suggestions to strengthen capability, recognising the critical role that participation has in building trust and addressing societal challenges.

*From collaboration and collectivism, unique things can come – **Pacific Business Trust***

4.2. The last word from young people/rangatahi

In the longer term, with democracy evolving and decentralising in many forms and the role and form of business, government and community continuing to blur, it is likely that individuals or networks will lead certain social/economic movements. As citizens, employees, kaitiaki, consumers or shareholders, they will have a strong interest in ensuring that common goals in society are met, and are also drivers of much change.

We leave the last word in our Long-term Insights Briefing to young people (Figure 7). They are our future decision makers, and their vision for the future of business will be the ultimate driver for any change to come.

*Rangatahi are tech natives, who care about environment and society. The next generation will demand different approaches – **Izzy Fenwick***

Annex One: Process and methods for developing this Briefing

Process of development

This Briefing was developed in accordance with the Public Service Act 2020 requirements for Long-term Insights Briefings, and informed by guidance prepared by the Department of the Prime Minister and Cabinet (DPMC). The development of a Long-term Insights Briefing requires two steps of public consultation: the first to inform the Chief Executive's selection of a subject, and the second on a draft Briefing.

Our approach to this has involved seeking written submissions during public consultation phases, as well as meeting in person with a range of people and organisations to inform our thinking throughout the process. We grouped our work into three main phases. See www.mbie.govt.nz/final-ltib for copies of all key documents.

Phase 1: Selection of the subject of the Briefing

MBIE began engaging on its proposed subject at the end of July 2021, supported by a consultation document published on MBIE's website, www.mbie.govt.nz/have-your-say/what-does-the-future-of-business-for-aotearoa-new-zealand-look-like/. This engagement tested six potential trends that could be explored in the context of the Future of Business. These were: stakeholder capitalism, Māori business, Pacific business, social/purpose-driven enterprises, circular business, and advanced digital businesses.

We received feedback from 31 individuals or organisations: 15 businesses or business groups; six Māori businesses; seven government agencies; one academic and two labour/population representative groups. A summary of feedback from Phase 1 is published separately on the MBIE website, www.mbie.govt.nz/draft-ltib.

Following this process, MBIE chose the subject Future of Business for Aotearoa New Zealand, with two 'deep dive' themes: purpose-led business and the use of blockchain technology. This decision took into consideration the consultation feedback, as well as other factors such as resourcing, expertise and where MBIE could add the most value.

Phase 2: Development of draft Briefing

For the development of the draft Briefing MBIE received input from an additional 32 individuals or organisations (most different to those involved in the subject selection stage); 12 businesses or business groups; eight Māori businesses; five government agencies; and seven academics/thought leaders.

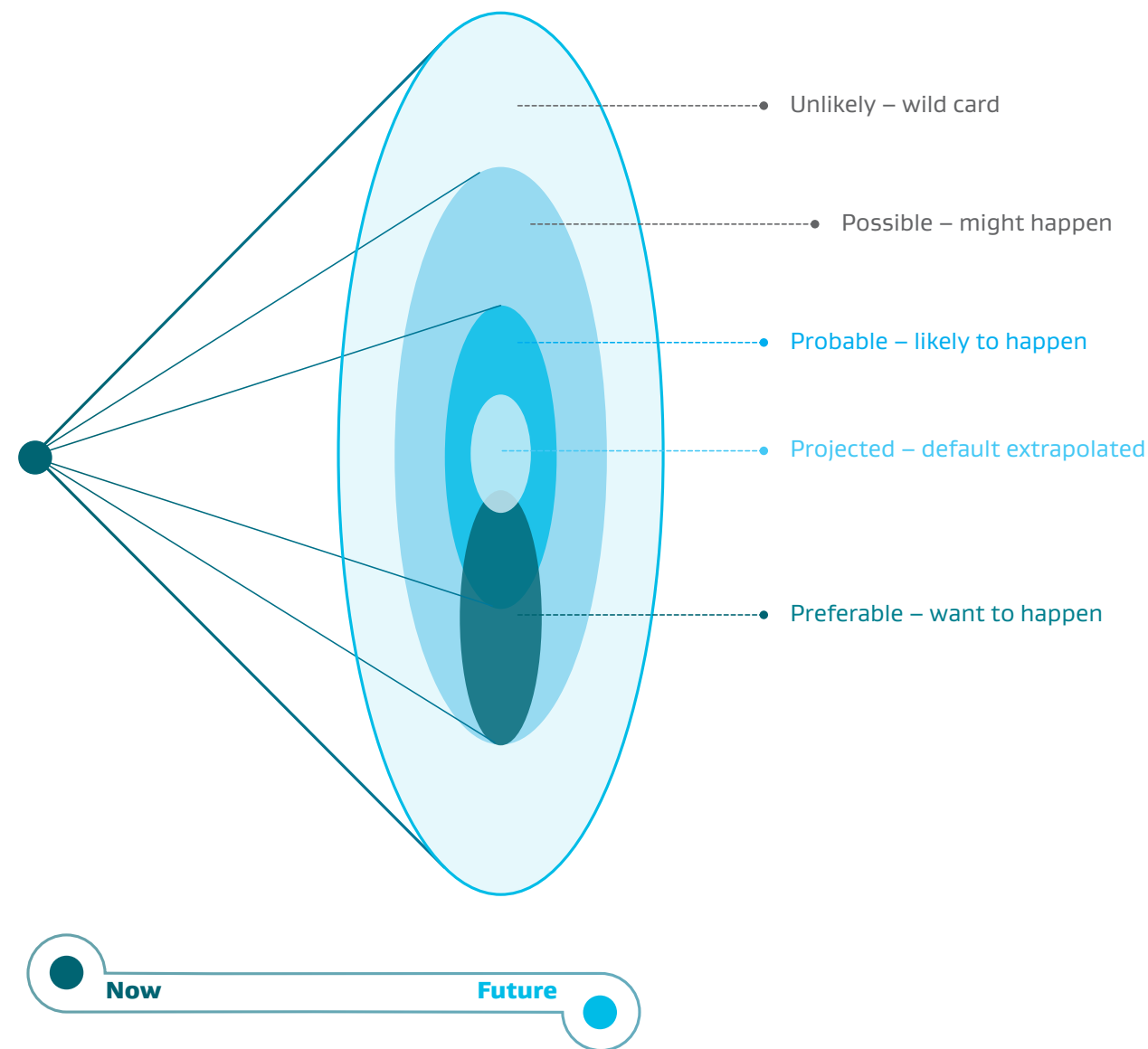### Phase 3: Finalisation of the Briefing

A second public consultation period in May–June 2022 allowed us to test our ideas more widely. This involved publishing the draft Briefing on MBIE's website and inviting submissions or engagement with us through public and targeted communications. Through this period we hosted two public webinars, 15 meetings or workshops, and received 23 written submissions. A summary of the feedback received is available separately on the MBIE website.

Futures thinking tools

We used a range of long-term or futures thinking tools to develop our insights, supported by guidance from DPMC (DPMC: The Policy Project, 2022).

Scanning	Used at the early stages of the project to structure our identification of drivers, megatrends and business trends using a range of types of information, from formal to informal or speculative, and across 'STEEPV' categories of 'social, technological, economic, environmental, political, and values'.
Trend analysis	Drawing on a LEnS model which recognises trends as being linear, cyclical or exponential, the latter driving complex system-wide impacts (World Economic Forum, 2021).
Futures triangle	We drew on the futures triangle framework, a foresight tool developed by Sohail Inayatullah that uses three forces: the weight/strength of history, the push of today, and the pull of the future. We modified this by drawing on Māori concepts of past, present and future, represented as pae mahara, pae herenga and pae tawhiti: **Pae** means a platform, or horizontal surface. We think of this as a vantage point for considering the future. **Mahara** means to remember or bear in mind. For Māori, the memory and mana of tūpuna is taken into consideration in decisions for the future, reflected in the whakataukī "ka mua, ka muri" – walking backwards into the future. We used this to reflect on how business has evolved over the past hundreds of years in Aotearoa and how this creates patterns of business practice that may have persisted or be changing. **Herenga** means obligation, requirement, connection. This relates to the global drivers such as climate change and demographic change that are influencing the context for business. **Tawhiti** means the distance, horizon, or in the long term. The pae tawhiti sections draw on the thinking developed as part of pae mahara and pae herenga. Pae tawhiti is important to envision the future, as well as to inform pae herenga, the decisions of today.
Futures cone	The Futures cone model, Figure 8 is often used to classify a range of alternative futures (Voros, 2003). This Briefing has a focus on trends that inform probable futures, as well as some wider possible or unlikely futures reflecting uncertainties and assumptions. We have not focused on projected or preferable futures.

Figure 8: Adaptation of the Futures cone, used to explore the Future of Business in this Briefing.

- Unlikely – wild card
- Possible – might happen
- Probable – likely to happen
- Projected – default extrapolated
- Preferable – want to happen

Now   Future

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