Aotearoa Open Finance and Digital Equity

THE PATH TO FAIRER FINANCE AND A MORE INCLUSIVE NEW ZEALAND




An analysis of the potential of Open Finance for New Zealand and its role in ensuring Digital Equity.

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About FinTech New Zealand

Emerging fintech is redefining the way we borrow, lend, save, spend, store and transfer money. Disruptive technologies are revolutionising traditional financial services, creating opportunities for start-up entrepreneurs and corporate innovators.

The New Zealand Financial Innovation and Technology Association (FinTechNZ) is a purpose-driven industry working group and inclusive community that is funded by members. We bring together the community of financial services providers, technology innovators, investor groups, Government regulators, financial educators and people who care about financial technology innovation and adoption.

Our purpose is to contribute to the prosperity of New Zealand through financial technology innovation.

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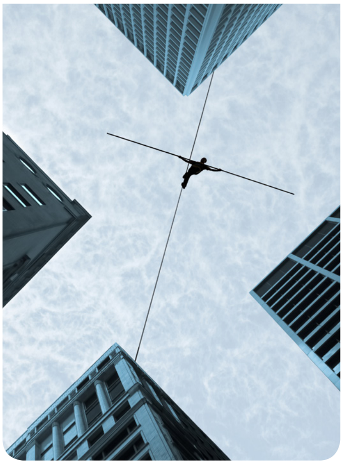

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INTRODUCTION:
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FOREWORD

FinTech New Zealand

Fintech is the financial technology that will transform how we consume finance as we change the way we work, live and play. These transformations will build over time, continuing to improve the wellbeing of all New Zealanders.

Fintech is the financial technology that will transform how we consume finance alongside the significant shifts in how people work, live and play. These transformations will build into the future to improve well being of all New Zealanders. It enables better product choice, improves business productivity, and improves the lives of its customers. The sector is creating new jobs, and by putting customers first, can improve New Zealanders' financial literacy, decision-making , enable cost savings and support financial wellbeing.

The COVID-19 pandemic has accelerated global trends towards cashless societies. For some Kiwis, adopting digital financial services is a new and uncomfortable prospect. On the other hand, the needs of some financial services customers are becoming more complex, with higher expectations. Increasingly, they are looking to specialised and innovative fintech solutions to meet these needs.

As a society, in order to ensure financial wellbeing for all, we must first improve our financial and digital literacy skill sets to ensure all New Zealanders can participate in new digital models. This includes reaching diverse demographics with different financial agendas and priorities, ensuring everyone has the access and skills to participate in digital ecosystems and making sure new models for financial services uphold the values of Te Ao Māori and Te Tiriti.

Every sector in our society touches finance at some point - from enterprise to small business, through charity to individuals – the opportunities are vast.

Technology and data are changing the world and no more so than in Fintech. If we partner to enable collaboration, support and define best practice frameworks and accelerate networking with innovation pipelines within the industry, we have the opportunity to improve the lives of every New Zealander.

Carmen Vicelich
Co-Chair, FinTechNZ

Andrew Dentice
Co-Chair, FinTechNZ

FinTechNZ

Executive Summary

The relationship between finance and technology is rapidly evolving.

From international payments, lending and wealth management at the macro level, all the way down to mobile banking and personal finance tools at the micro – fintech applications are becoming indispensable tools in the daily lives of millions of people. This is especially evident in those economies that have embraced 'open data,' 'open banking' and 'open finance' as means of developing powerful personalised financial products and services and, by extension, flourishing tech-hubs.

While the experience of these economies is by no means complete, or without difficulty, what is clear is that digital transformation in the financial industry, when managed correctly, offers a strong value proposition. Equitable access to financial products; broad transparency in decision-making; increased competition; and ease of switching between service providers like utilities, telco, insurance and banking. These developments beckon the empowerment of customers, consumers and financial actors – ultimately, every one of us.

New Zealand is a far-flung paradise at the edge of global supply chains. Improvements in the connectivity of financial systems, computing power and data collection offer a unique opportunity to overcome this tyranny of distance and manoeuvre closer to the centre of the emerging framework of digital trade and finance. Indeed some of our most successful international fintech's are already leading the way.

But fintech can only thrive when regulation allows it to. While time is of the essence, if New Zealand is to seize on the grander opportunities presented by open finance, it's critically important that our fintech ecosystem is set in a foundation of trust, clear rules around liability, terms of access and privacy, technical standards and collaboration between established actors and Government. Policy failure in this respect could delay the uptake of new financial services, lead to the procuring of data and engender mistrust on the part of consumers who stand to gain the most from granting open access to their personal financial information.

But for New Zealand, a country that has historically been at the forefront of equity, be it financial or otherwise, the path toward open finance presents less an obstacle than a continuation of our ability to adapt, lead and succeed in a new era of global digital transformation. Clearly, the time to act is now.

The following report considers how open finance could make Aotearoa's financial services industry more transparent, equitable and competitive and provide access to more products and solutions, even to those who are not digitally literate. Moreover, it provides compelling evidence in support of progressive and controlled adoption of open finance – and with it, New Zealand's position as a global hub for open finance innovators and investors.

Key Highlights

Globally, fintech is growing rapidly

The global fintech market was worth ***$7 trillion*** in 2020.

The global fintech market is forecast to grow at ***27%*** CAGR to 2026.

Global investment in fintech almost reached ***US$100b*** in the first half of 2021 alone.

Consumers are increasingly comfortable using fintech services

Global consumer adoption of fintech products and services is ***doubling*** each year.

64% of global consumers were using a fintech service by 2019.

It has been predicted that almost ***200m*** Americans will use digital banking by 2022.

Despite COVID-19, there is a global move to open banking and open finance

Multiple countries have introduced ***regulation*** to drive open banking.

Globally, open banking users doubled over the last two years to ***40 million*** in 2021.

132 million users of open banking are forecast globally by 2024.

New Zealand has a very fast growing fintech ecosystem

Fintech has been the ***fastest growing*** NZ tech sector for the past five years

The NZ fintech sector is growing at ***31%*** compound annual growth

The timing is right for open finance growth in New Zealand

A stable and ***fast growing*** fintech sector as a foundation.

Key tech enablers such as ***cloud, mobility, analytics and open banking APIs*** are ready.

Financial sector incumbents are ***collaborating and investing.***

Open finance brings opportunities for all New Zealanders

Open Finance presents an opportunity for greater consumer and SME **participation and financial wellbeing.**

Open Finance provides opportunities to bring **financial control** back to the consumer and SMEs.

Open Finance provides the opportunity to address **financial inclusion** gaps.

Open Finance has a broad sweep of use cases that will drive **economic growth.**

Research participants want to see a bigger shake-up and redesign of the finance system for a uniquely Aotearoa environment — from values, ethics and accessibility through to co-design of algorithms, user interfaces, marketing and education about what Open Finance could offer.

Summary Recommendations

With open finance in its infancy, Aotearoa is in a prime position to seize the opportunity to leverage this technology to help contribute to reducing financial exclusion and lay down the foundations for a strong digital economy.

Open finance, if done right, provides an enormous opportunity to address inequities – both now and in the foreseeable future. At the same time, open finance presents an economic opportunity for New Zealand to become a global hub for open finance innovators and investors. With open finance tipped to become the standard for consumers' financial welfare and empowerment, the opportunities for employment growth cannot be ignored; those with the right skills will become highly sought-after.

The full recommendations page 85.

1 *Creating a Competitive and Thriving Open Finance Ecosystem and FinTech Innovation*

The Goal: Create an environment that incentivises collaboration, innovation and competition for a thriving open finance ecosystem.

Recommendations

1.1 Encourage Action Now - pre-Consumer Data Rights

- Clearly communicate data use/access expectations under an open finance regime.
- Confirm as soon as possible whether current open finance standards used by Industry will be adopted in a CDR regime.
- Look for currently available solutions to accelerate moves to open finance.

1.2 Develop a Regulatory Framework for Open Finance

- Encourage broad engagement in open finance innovation.
- Look into sector wide approaches to liability.

2 Consumer Awareness and Understanding

The Goal: To improve New Zealanders' financial wellbeing by building awareness of, understanding of, and adoption of digital finance solutions.

Recommendations

2.1 Build awareness and trust

- Ensure the whole financial sector participates in open finance.
- Collaborate on consumer awareness raising campaigns.

2.2 Build understanding and access

- Continue to invest in building New Zealander's digital financial literacy.
- Consider a trustmark for open finance and data sharing services.

3 Equity and Inclusion

The Goal: Create equitable and inclusive access to digital financial services.

Recommendations

3.1 Design for equity and inclusion

- Co-design our future open finance system now with input from the digitally excluded.
- Ensure Te Tiriti and values such as data as a taonga are understood by the fintech sector.

3.2 Ensure it is part of broader inclusion and wellbeing activities

- Maintain a nationwide focus on addressing digital exclusion.
- Promote how open finance is about improving New Zealander's financial wellbeing.
- Build open finance into existing dispute resolution frameworks.

What is Open Finance?

Open finance is about enabling consumers and businesses to use their financial data and money when and how they want to; it's about giving consumers increased control over their financial lives.[1]

Open finance is based on the principle that individuals and businesses should be able to access and use (and potentially control) any financial data supplied by them or created on their behalf by their provider. According to the United Kingdom (UK) Financial Conduct Authority (FCA), it is the term used to describe the extension of Open Banking data-sharing principles to enable third-party providers to access customers' data across a broader range of financial sectors and products, including savings, investments and insurance.[2] However, the true definition of open finance extends beyond banking and would allow improved integration of payment, accounting, and lending platforms for internal management, leading to greater cash flow control.[3] Additionally, in open finance, any re-use of an individual's data by other providers should take place in a safe and ethical environment with informed consumer consent.[4]

Open finance empowers consumers to securely access their financial data beyond just bank accounts and transactional data, but to extend into other accounts, industries and use cases including, payments, investments, superannuation, insurance, energy, telecommunications and much more.[5]

For example, Ngaire has an everyday banking account and savings account. She has a credit card with another bank, a personal loan for her car, and a KiwiSaver account. With open finance, Ngaire requests her financial services providers to share her data with a new fintech called MyBudgetNZ. MyBudgetNZ's app lets

Open Finance is based on the principle that individuals and businesses should be able to access and use, (and potentially control), any financial data supplied by them or created on their behalf by their provider.

Ngaire view her incomings and outgoings from her different accounts together. It also provides tailored advice to help her pay debts faster and maximise her savings.

Open finance lets any organisation create new financial services. This might be a traditional bank developing new services, an insurance company, a utility or a tech start-up. Technology start-ups often have the fresh perspective, structure and technology in place to quickly commercialise digital-first ideas.

Introduction: Finances and Inclusion

Aotearoa's Financial Heritage

Over time the New Zealand financial system has evolved, prevailed through adversity, and grown through reform. In recent years, disruption and innovation in the sector is burgeoning, driven by a rapidly emerging FinTech market.

Early Financial Systems

According to Te Ara, the Encyclopedia of New Zealand, Māori financial systems used the concept of utu, which is about reciprocity and balance. Trade was for the betterment of iwi and communities, rather than individual benefit. Trade might be pragmatic and used to improve relationships or political standing. Often trade was seen as reciprocal gift-giving – koha. During gift exchanges, the emphasis was on the relationships of the people transacting, rather than the goods changing hands.[6]

European colonists brought their existing financial systems to New Zealand. This includes financial concepts around currency, international trade, banking, and the structure of a market-based economy. The arrival of these new systems led to the establishment of New Zealand's first bank – the Union Bank of Australia, in 1840.[7] By the 1860's New Zealand was experiencing an economic boom fuelled by the discovery and recovery of gold in this country.[8] By then, there were six banks in operation across New Zealand, including the Bank of New Zealand (BNZ) which still exists today. Shortly other financial services emerged, insurance, for example, made its New Zealand debut in 1880.[9]

Around this time Māori established their own banks, the most well-known was Te Peeke o Aotearoa established in Parawera in 1886 by the Māori King Tāwhiao. Te Peeke o Aotearoa provided services to Māori until at least 1905.[10]

Surviving Crises and the Impacts of Reform

Early banking regulation took root during the Long Depression — an economic crisis lasting from the 1870's to the 1890's. During this time banks faced large debts from overlending. In 1894, the Government bailed out BNZ, which was on the brink of collapse. The Government then moved to impose new regulations on the financial sector to prevent banks from overlending.[11] These regulations came alongside a significant period of economic growth, fueled by exports of meat and dairy products.[12]

The Reserve Bank of New Zealand (RBNZ) commenced operations in 1934. RBNZ oversees and regulates registered banks and insurance companies, and ensures continued economic stability.[13] The New Zealand financial system was run through British rule until 1946, using the British Pound until 1967.

Financial and banking sectors faced significant regulation from the 1930's to the establishment of New Zealand's free-market economy in the 1980's.[14] This expansion in the 1980's led to further segmentation of the financial sector, with financial institutions branching off to specialise in different types of loans and products.[15] The Fourth Labour Government of New Zealand loosened restrictions on financial services in 1984.[16] Subsequently the New Zealand exchange rate became unfixed, creating increased competition and increased demand from foreign investors.[17] The opening of New Zealand's free-market economy came alongside the expansion of the global credit market with the arrival of credit cards in the 1970's and 1980's respectively.[18]

The 1980's Government reform impacted people's financial wellbeing. Many lost their manufacturing jobs as tariffs were removed, and some farmers lost their farms as subsidies were quashed. Māori were disproportionately affected by wide-sweeping regulation as many held jobs in previously Government-managed industries. Māori unemployment soared to 25 percent by 1992, when the overall rate was 10 percent.[19]

Some New Zealand banks struggled to maintain profits in the wake of the Black Monday stock market crash of 1987.[20] Overall, the New Zealand financial sector remained resilient, surviving yet another economic crisis.

The Global Financial Crisis in the 2000's was tied to the real estate boom sweeping the world, including New Zealand. Property prices and domestic credit were continuing to grow, as investment in real estate seemed like a safe bet.

New Zealand experienced the flow-on effects of the crisis through the collapse of large international finance organisations, including Fannie Mae, Freddie Mac, Lehman Brothers, Merrill Lynch, and AIG. The bulk of the impact was placed on fixed income investors and property developers. In New Zealand, the crisis meant approximately 50 finance companies went into liquidation or receivership with flow-on effects to their customers and investors.[21]

The crisis led to tighter regulations in the financial sector. Meanwhile, the Government acted to support system liquidity, funding banks to keep them operational via the use of Government-backed guarantees and liabilities. These new regulations aimed to strengthen the sector against a variety of seen and unforeseen financial shocks.

Early Financial Sector Innovation

The earliest forms of credit arrived in New Zealand through the form of “Charge Coins” in the 1900’s and “Charga-Plates” in the 1930’s. These were the precursors of early debit and credit cards in the 1940’s.[22] New Zealanders could now spend beyond their immediate means – a valuable tool, but only when used prudently.

BNZ recognised that while women often managed household finances, the banking sector was inherently patriarchal. BNZ opened The Ladies Bank in 1958 catering specifically to women customers.[23] It was an early innovation in personalised banking services. BNZ stated that, at the time, this was a world first.

The first Credit Unions started in the early 1900's, and their popularity increased in the 1950's. These co-operatives, owned by their members, had a common member bond such as their employer or home region.[24] Credit unions, such as The Cooperative Bank (formerly PSIS), are not-for-profit; they distribute profit back to members through better rates and fees.[25] While credit unions originated in Europe their success in New Zealand illustrates consumer demand for alternative financial services.

In 1969 Auckland Savings Bank (ASB) was the first New Zealand bank to link its branches to a central computer in real-time. Branches had up to date customer data, rather than periodic updates.

EFTPOS arrived in 1984 reducing the need for people to carry cash and improving consumer spend tracking with bank statements. The popularity of electronic card transactions continues to grow with around 160 million electronic card transactions per month in early 2021.[26]

The financial sector saw further growth with the advent and application of modern information and

communications technology. For example, the arrival of early telephone banking services in 1991, internet banking in 1997, and online share trading in 1999.[27] These services revolutionised how New Zealanders interact with the finance sector.

Today's Financial Services Sector in New Zealand

New Zealand's financial sector is mainly composed of banking services, which accounts for nearly 84 percent of the total financial assets in New Zealand as of February 2021.[28]

Recent developments in electronic payments and mobile banking have reshaped how customers interact with the banking sector in a new, digitally integrated world. Through these innovations, the financial sector has expanded through the further division of services, addressing more unique customer needs than ever before. In the last decade, digital service enablers such as cloud services, artificial intelligence (AI), and ubiquitous internet connectivity have enabled the growth of new financial services

and products. In New Zealand, we are seeing the rise of new businesses in the financial services sector. These include solutions for cloud-based accounting software, financial data integration services, digital investment platforms, online peer-to-peer lending, buy-now-pay-later services, online giving and tithing services, and new data-enabled insurance models.

The New Zealand market for ethical investing is also growing, increasing by 28 percent in 2020 to $142 billion.[29] The number and proportion of sustainable investments continues to rise, as well as improvements in the allocation of capital as more investment managers target sustainability outcomes and become practice leaders.[30]

COVID-19 Accelerates Change and our Financial Services Remain Resilient

The COVID-19 pandemic is changing New Zealand's relationship with money. Lockdowns mean more contactless payments, with 60 percent of New Zealanders always using contactless payments as at September 2020.[31]

The 'working from home' trend is leading to the transfer of some business costs to employees, for example, increasing home energy costs. People spend less time driving on the roads which is changing the shape of motor vehicle claims and how consumers think about insurance.

Since the pandemic outbreak, banks have offered customers reduced loan repayments and deferrals, alongside offering loan restructures and short-term funding to business customers.[32]

The RBNZ continues to use annual stress testing to ensure financial system stability.[33] Moreover, it continues to address vulnerabilities in the financial system while supporting the resilience of the financial sector to assist during the post-COVID-19 recovery.[34]

Despite uncertainty driven by COVID-19, the New Zealand financial sector remains strong, surviving an extended period of weak demand. It is during this uncertainty that customers are looking for financial security. As noted by the RBNZ, the robust nature and strong history of New Zealand's financial sector becomes critical to the operation of a post-pandemic nation.[35]

The Importance of Financial Inclusion

Financial inclusion means that all people have an equal opportunity to access financial products and services that are appropriate to their needs and to participate meaningfully in improving their financial wellbeing.

Improving Our Relationship With Money

A key reason for driving the growth of the open finance ecosystem is to improve the financial wellbeing of New Zealanders.

Often people who are financially vulnerable and experience hardship are unaware of, or unable to, access the financial services and tools they require. Almost half of New Zealanders consider themselves to have challenging financial circumstances.[36] This lack of awareness, access, and choice leads to exposure to predatory lending, high-interest loans, and worsening financial hardship.

Inclusive financial services should support and empower all people to make good financial decisions for themselves and their whānau. Participants in the recent FinTechNZ community engagement workshops in support of this research expressed the need for a new open banking system. This open banking system needs to be inclusive and accessible across a wide range of access points including cost, content, presentation, digital connectivity and marketing. Inclusion would require the system to be usable and engaging to a wide range of communities, including Māori, Pasifika and young people.[37]

Financial inclusion today includes digital inclusion. Recent research around New Zealanders' digital skills shows that 700,000 adult New Zealanders (about 20 percent) lack the essential digital skills they need to use the internet safely and effectively.[38] While most have basic skills to communicate and transact, many lack skills around how to use the internet to solve problems, to handle digital information and content, and to do so safely. The Digital Skills for Life in Aotearoa report shows New Zealanders are less likely to have these essential digital skills if they are from a low-income household, have received less education, or have a disability. However, at a basic level, the research conducted to support this study shows seven in ten New Zealanders consider themselves very confident when using devices to manage their finances, a large factor here is the relative ubiquity of online banking.[39]

In New Zealand, despite Government and industry programmes designed to bring high-

> ***"This kind of application could be a game-changer for a large proportion of our communities that never get engaged. And if you can design it for those that live in the regions and those who don't have consistent regular access to fibre, then you're already designing better."***
>
> Quote from community engagement panelist

speed internet access to most households, there are still groups of people that lack equitable access to the internet – access that's required to participate in an open finance environment.

When it comes to digital skills and financial health, people with higher digital skills are twice as likely to understand compound interest and 1.5 times more likely to regularly save money.[40] In New Zealand, over half of the population have never sought financial advice, despite around half living in financially challenging circumstances. This suggests financial advice is viewed as a domain of the wealthy.[41]

In New Zealand our older generations (65+) and those in a financially vulnerable situation require the most support as we transition to an open finance ecosystem. Older consumers are reluctant due to low digital competence; financially vulnerable people due to having little perceived need and potentially being 'exposed' financially.[42]

> *"One – access is major. It's always the last consideration and yet it's the main barrier. Two – a fair chunk of Pasifika people do not have a device or there's one device that is shared for the entire family. So if you're looking at someone that's running a business, chances are that there is one device for the entire household. And there are so few opportunities for young Pasifika people to even know that this kind of option is available to them. If this system is not using terminology that they understand they will never go there. So how do you educate this community so that they can leverage this tech to thrive*
>
> Quote from community engagement panelist

New Zealand's National Strategy for Financial Capability, He Rautaki-ā-motu mō te Āheitanga Ahumoni, recognises that people's financial behaviours are influenced by the design and accessibility of financial products, services and support. There are several key aspects involved in making our financial services and systems more inclusive. These are:

- **Education** – 'Demystifying money' is a large part of financial inclusion. Financial capabilities are key to ensuring people can make choices for their financial wellbeing and gain better financial outcomes. Currently, eight out of ten New Zealanders don't feel they have an excellent level of financial knowledge.[43] Around half of New Zealanders feel they have challenging financial circumstances. Researcher Clarity Insight says these two facts mean that the "willingness and capability to maximise opportunities within the existing financial paradigm is limited."[44]
- **Accessibility** – People have options for the financial services they wish to access, and clear pathways for this access. These services are affordable, appropriate for their needs, and meet the needs of different communities.
- **Equality of opportunity** – People have equal access and equal opportunity to engage with financial services. The Government, the financial services industry, and community organisations partner to create or innovate on tools and services that meet the needs of underserved communities.[45]
- **A more responsive and accountable financial services system** that learns from its customers and adjusts and adapts its services to meet the best interests of customers, especially those experiencing hardship or vulnerable circumstances.

As the world around us changes so does Kiwi's relationships with money and the financial services sector. This sector is unique in that it touches every New Zealander across their lives. Our financial needs and goals change over our lives and are also shifting with each new generation.

To continue to improve the financial wellbeing of Kiwis, their organisations and the economy, Aotearoa needs to turn to digital technologies and new finance models. Open Finance and fintech solutions can enable better outcomes for New Zealand, it's people and communities.

"I don't know anything about shares or budgeting and that kind of stuff. But I guess I would like to know more about my finances. If there was something in Open Banking that made it easier to understand things like how to pay your student loan off quicker. You know – general financial education would be good if it was part of the package."

Quote from community engagement panelist

PART ONE:
Fintech and Open Finance

What is Fintech?

Financial technology (fintech) describes new technology that aims to improve financial outcomes for consumers and businesses. From new currencies, payment methods, budgeting apps, to faster and more accurate credit checks, fintech is disrupting the traditional financial services industry.

With the generation of new business models based on the use of big data, fintech can disrupt established financial intermediaries and banks in particular. Big data can be analysed by algorithms using AI, profiting from advanced computing power (including cloud computing, mobile storage through the cloud, and mobile hardware, which allows continuous accessibility). Fintech solutions can lower costs of financial intermediation and improve products for consumers.[46]

"Fintech is technology-enabled financial innovation, which is changing the way financial institutions provide – and consumers and businesses use – financial services."

Reserve Bank of New Zealand

The Reserve Bank of New Zealand categorises fintech as follows:

- Application Programming Interfaces (APIs)
- Distributed Ledger Technology (DLT) and Blockchain
- Cryptocurrency
- Big data and AI
- Digital platforms encompassing peer-to-peer (P2P) activities[47]

AMBIT

Ambit Uses AI Language Models to Handle Financial Services Queries with Digital Assistants

Auckland based Ambit uses artificial intelligence (AI) to create 'digital employees' that connect companies to their customers. This is conversational AI that enables humanlike conversations between humans and computers.

Ambit's platform contains a series of language models. This includes a solution for its financial services companies that contains out-of-the-box handling for common financial services queries. For example, applying for a personal loan, increasing credit limits, and setting up direct debits.

Ambit has scaled up fast, in New Zealand and is expanding into Australia and the U.S. Customers include Tower, KPMG, Flexicards, and Squirrel Mortgages.

www.ambit.ai

The Global Fintech Market

Despite the pandemic related challenges and skilled labour shortages, the global Fintech market is growing fast. The global Fintech market has been valued at US$7302 billion in 2020 and is forecast to grow at a compound annual growth rate of 27 percent to 2026.[48]

Global investments into the market reached a record-breaking US$98 billion in the first half of 2021.[49] The global number of fintech deals hit a new record of 2,456 deals in the first half of 2021, and the valuations for many fintech start-ups skyrocketed during the period.[50]

The expected impact of open finance and fintech is huge. The World Economic Forum (WEF) expects the introduction of open data to increase Gross Domestic Product (GDP) by four to five percent in developing digital economies such as India.[51] The impact on the GDP within more developed nations is also substantial, for example, the UK fintech sector adds £11 billion to the UK economy each year.[52]

The US and the UK lead the way when it comes to the quantity and quality of fintech companies in 80+ countries.[53] There are challengers in this space. Tech-hub Israel is in third place, up from 12th the year prior.[54] With a compound annual growth rate of 30 percent, there are predictions that the Middle East's fintech sector will be home to 800+ fintech companies by 2022, with all sub-segments raising over US$2 billion in venture capital funding.[55]

Global Adoption Rates

Global fintech consumer adoption rates have doubled every two years, shifting from 16 percent in 2015 to 64 percent by 2019.[56] The Global fintech Ranking Report notes three-quarters of consumers use a money transfer and payments fintech service, and around half use an insurance fintech service. 68 percent of customers in 2019 were open to considering the use of financial products sourced from non-traditional finance companies. A further study in July 2020 found that due to the pandemic, customer expectations regarding companies' digital capabilities have increased by 68 percent.[57]

Adoption of digital banking continues to expand, despite APIs and other open banking technologies remaining unclear in their customer optics. Business Insider predicted that 75 percent of US customers – approximately 196.8 million individuals – will be making use of digital banking services by the end of 2021.[58]

Despite the global disruption brought on by COVID-19 (or perhaps because of it), the number of global open banking users has doubled over the last two years from 18 million in 2019 to 40 million in 2021.[59]

This global growth in the number of open banking customers is expected to continue going forward, with Statista forecasting the user base to grow up to 132.2 million by 2024.[60] This constitutes an annual average growth rate of nearly 50 percent between 2020 and 2024, with the largest user base in the European market.[61]

Leading Global Fintechs

A wide range of fintech companies have seen fast worldwide growth, with the rapid emergence of many successful fintech start-ups over the last two years.[62]

The top three fintech companies by growth for 2021 were:

BlockFi: A crypto trading company founded in 2017 with the goal of providing credit services to markets with limited financial products. Over 2021 the company has secured over US$500M in funding and holds an estimated annual revenue of US$104.8M per year.[63]

Fast: A consumer focused online checkout company privately funded by the world-leading fintech, Stripe. The platform has secured US$22.5M in funding during 2021 with an annual estimated revenue of US$37.6M per year.[64]

Public.com: An investment services app founded in 2017, securing US$308.5M in funding with an estimated annual revenue of US$18.7M per year.[65]

There is continued investment into mature fintech companies. A CB insights report highlighted that out of these more established companies, the top five firms that stand with the highest amount of total disclosed funding are:[66]

Klarna (US$3,471.7M): Klarna Bank is an open payments and shopping service founded in Sweden in 2005. The Fintech currently has a user base of over 90 million customers with more than 250,000 merchants across 250 countries.[67]

Stripe (US$2,900.9M) — Stripe is a payment service provider that offers a secure cloud-based payments platform accepting a variety of payment methods.[68]

Chime (US$2,598.7M) — Chime bank is a San-Francisco start-up providing a fee-free mobile banking service. This non-traditional approach is monetised mostly from interchange fees from merchants.[69]

Nubank (US$2,546.6M) — Nubank is the leading digital bank of Latin America, aiming to use its mobile focused experience and simplified process to appeal to customers.[70]

Revolut (US$1,715.9M) — Revolut is a fintech banking service based out of London. Since its launch in 2015 the company offers a suite of services including accounts, currency exchange, and commission free trading of stocks, crypto, and commodities.[71]

Outside of start-ups, the fintech sector has seen increased interest from big-name tech vendors over the last few years. The likes of Google, Meta, Amazon, and Apple are looking to grow their market shares within the sector and gain a slice of the ever-growing fintech pie.

Google revamped its digital payments platform Google Pay in 2020. It partnered with financial institutions and banks to create Plex – a mobile-first bank that offers accounts integrated into

Google Pay.[72] However, Google backpedalled its plans for digital banking in October 2021, announcing the Google Pay banking services would be halted due to struggles meeting deadlines and the departure of the leading executive behind the project.[73] Google remains the most active of the tech giants within the fintech market for equitable investments, leading the market with 23 deals between 2020 to 2021.[74]

Amazon has taken a broad and aggressive approach entering the fintech market. The tech giant aims to establish Amazon Web Services (AWS) within the sector for payments, lending, insurance, and checking accounts. The company's interest in fintech and the financial services sector stems from a strategy where financial services will help grow Amazon merchants and help increase Amazon customers' spend.[75]

The global tech corporate Meta, previously known as Facebook, announced its online payments platform Facebook Pay in November 2019, partnering with PayPal and Stripe for payments processing.[76] Meta partnered with UK based fintech Diem where the tech giant has provided funding for a digital currency project, with plans to launch a pilot with a single stablecoin pegged to the US dollar by the end of 2021.[77] Meta has established an interest in breaking into the Indian Fintech market. Meta plans to roll out its new small business loan program to India first. The company will offer loans to partnering firms that advertise on its platform.[78]

Apple established partnerships with Goldman Sachs and Mastercard for the launch of the Apple Card in August 2019. Apple now has a suite of financial offerings with Apple Pay, Apple Wallet, and now Apple Card.[79]

Witnessing the boom of the Fintech sector, traditional financial services have increasingly turned their attention to the acquisition of emerging Fintechs around the world. Investment banking company JPMorgan Chase undertook a spree of acquisitions in 2021. These include buying American fintech start-up Open Invest in June 2021 and UK based digital management company Nutmeg in the same month.[80 81] JPMorgan Chase has since utilised Nutmeg for the launch of the company's first digital-only bank within the UK in October 2021.[82] Other key deals include Visa's acquisition of the European open banking platform Tink in June 2021; allowing Visa to leverage Tink's API technology for improving customer relationships. This deal is expected to further accelerate adoption of open banking within Europe as a more secure platform for innovation is cultivated.[83] Mastercard is acquiring Danish open banking technology company Aiia, expanding the multi-national finance giant's reach into open banking services and the use of API connectivity for European customers.[84]

Leading Fintech Countries

UK – ACCELERATING THE GROWTH OF OPEN BANKING

The UK is a global leader for the regulatory landscape of fintech and open banking. The Competition and Markets Authority (CMA) identified nine major banks that it required to create open-source open banking APIs by January 2018.[85]

The nine banks and building societies taking part in open banking, known as 'the CMA9' or 'CMA9', are:

- AIB Group UK (trading as First Trust Bank in Northern Ireland)
- Bank of Ireland (UK)
- Barclays Bank

- HSBC Group (including First Direct and M&S)
- Lloyds Banking Group (including Bank of Scotland and Halifax)
- Nationwide Building Society
- NatWest Group (including NatWest, Royal Bank of Scotland and Ulster Bank NI)
- Northern Bank Limited (trading as Danske Bank)
- Santander UK

Alongside this deadline, the UK launched its execution of the European Payment Services Directive Two (PSD2) regulation, in January 2018. This legislation enables open banking by requiring banks to share data with regulated third-parties.

Since then the Open Banking Implementation Entity (OBIE) has worked to support the local industry through regulatory initiatives that encourage user adoption and market growth. These include:

- The Open Up 2020 challenges run by Nesta, which offered a £1.5m prize to promote fintech innovation and the creation of Open Banking solutions.[86]
- The establishment of a £3 million tender for the development of a UK open-banking payment system.[87]

HONG KONG – THE DEVELOPMENT OF OPEN BANKING

Hong Kong acts as a geographic and financial gateway to China via supportive Government initiatives that promote innovation and enable high-value investment within the sector.[88]

Supportive initiatives include:

- The launch of the 'Commercial Data Interchange' (CDI) in November 2020, which enables more efficient financial intermediation in the banking system.[89]

- The announcement of the new public service app 'iAM Smart' in December 2020.[90] The app includes over 20 digital services from departments such as Inland Revenue, Transport Department, and the Student Finance office.
- The Hong Kong Monetary Authority (HKMA) launched its fintech 2025 strategy in June 2021. The strategy aims to encourage all banks to digitise, strengthen research on Central Bank Digital Currencies (CBDCs), lead next-generation banking infrastructure, increase the supply of fintech talent, and formulate supportive policies.[91]
- Development of the nation's open API framework continues. There are more than 20 participating banks and over 800 open APIs so far. The HKMA said "Customer receptiveness for open APIs has also risen sharply, with the number of API calls in Q3 2020 exceeding the recorded number of calls for Q4 2019 almost 70-fold."[92]

CANADA – THE REGULATORY SANDBOX OF THE FINTECH SECTOR

Canada supports the fintech ecosystem by providing institutes with a safe space to test new products and technologies. Its relaxed regulatory standards came about with the launch of the Canadian Securities Administrators's (CSA) 'Regulatory Sandbox' Initiative in early 2017, which allows fintech companies to operate in all Canadian jurisdictions with approval.[93]

The nation is developing and implementing its own hybrid open banking system. This system aims to support the local fintech sector while addressing security vulnerabilities impacting consumer data and financial institutions.[94] The Financial Data Exchange that shares API standards across the US and Canada has enabled the uptake of open banking within the North American region. Reports in April 2021 state that 16 million regional customers were leveraging its API for open banking and the sharing of financial data.[95]

Some of Canada's biggest strides in strengthening its fintech market have been made by establishing global partnerships. For example:

- A partnership between the Bank of Montreal (BMO) and the North American based online accounting company Intuit in October 2018. The BMO makes use of Intuit's QuickBooks accounting software to provide a secure data-sharing platform for the financial data of its customers.[96]
- An agreement between Intuit and the Toronto Dominion (TD) Bank Group in September 2020. Intuit provides a secure framework for the financial data of TD customers, along with the use of personal financial management apps supported by Intuit.[97]
- The Financial Transactions and Reports Analysis Centre of Canada (FINTRAC) granted a FINTRAC license to RevoluGROUP in December 2020.[98] The company has since worked to launch its first Canadian white label partner under the brand Sendity in September 2021. It has plans to launch its banking app RevoluPAY within Canada by the end of 2021.[99]

SINGAPORE – DIGITAL TRANSFORMATION AND INTEGRATION

Singapore is a digital banking services leader within Asia. Its fintech start-ups have had a surge in funding, registering over 350 percent year on year growth in the first quarter of 2021.[100] This growth stems from Singapore's accelerated pace of digital transformation, credited to its supportive regulation, and pre-existing protection of personal data regulation. This has underpinned the country's development of Open Banking.[101]

The Monetary Authority of Singapore (MAS), has initiatives to provide more funding for fintech start-ups while establishing frameworks to standardise service processes.[102] Initiatives include:

- Launching its digital ecosystem APIX in 2018 which acts to encourage the collaborative designs of open APIs for data regulation.[103]
- Developing the nation's open banking framework in February 2020.[104]
- The world's first public digital infrastructure through the launch of the Singapore Financial Data Exchange (SGFinDex) in December 2020. This index has further prompted the collaboration of financial institutions by gathering the financial data of banks and Government agencies in a single place.

In December 2020, Singapore granted the country's first digital banking licenses to four tech companies, with the institutes expecting to open for business in early 2022.[105] This acceptance of tech companies as the first digital banks has shaken up the global landscape of online banking. It is likely a sign for the future trajectory of the Singapore fintech market.

Cross Border Ecosystem Collaboration

Within this global marketplace for fintech, many nations are seeking the benefits of collaboration via partnerships and alliances. The marketplace for banking products and services is set to accelerate, creating a platform economy that allows for greater flexibility and diversification among financial institutions and their complementary services, while bringing together multiple stakeholders within a 'plug-and-play environment'.[106] Examples of cross border ecosystem collaboration include:

- The Australian Securities & Investments Commission (ASIC) and the UK regulator (Financial Conduct Authority) made history in 2016 with a world-first fintech cooperation agreement to ease barriers to pursuing opportunities in both countries.[107]
- The Global Financial Innovation Network facilitates fintech companies to interact with regulators across the world. This cross border regulatory collaboration is key for fintech global expansion. The organisation has members from many countries, but New Zealand is not yet one of them. There is a risk that if New Zealand does not participate at this level, it will be left behind.
- The Danish Financial Supervisory Authority (Danish FSA) and the Monetary Authority of Singapore (MAS) began cooperating in June 2017 as part of an agreement to help fintech companies from both countries expand into each other's markets.[108]
- The Hong Kong Monetary Authority (HKMA) has agreements with a number of overseas banks to explore using Central Bank Digital Currency (CBDC) for cross-border payments. Banks involved include the Bank of Thailand, Central Bank of the United Arab Emirates and the Digital Currency Institute of the People's Bank of China.[109]

Fintech in New Zealand

The fintech sector continues to grow fast in New Zealand. In 2020, the TIN200 report said that New Zealand fintechs are the fastest growing sector within the top 200 tech exporters for the fifth consecutive year. The sector has a five-year compound annual growth rate (CAGR) of 31 percent.

Relative to other countries, New Zealand's fintech sector is shifting up the rankings. The 2021 Global FinTech Index showed New Zealand fintech is now ranked 30th out of 83 countries – up 15 places since the last review. This index measures quantity, quality, and environmental metrics.[110] Across Asia-Pacific, in the same index, New Zealand ranks 7th in the region.

New Zealand's leading fintech companies – including Xero, Pushpay, Valocity, Vend, Invenco, and Laybuy – continue to be recognised internationally. The number of early-stage fintech companies is growing. The fintech ecosystem in New Zealand is growing fast, Figure 1.

There is a spread of fintech companies at different stages in New Zealand, from start-ups (25 percent) to scale-ups (31percent) and Enterprise (40 percent).[111] While 29 percent of fintechs are quite small with less than five employees, 19 percent have more than 500 employees, illustrating the potential for fintech to scale as an employer of note in the tech industry in the future.

New Zealand's financial environment is stable with four large Australian owned banks – ANZ, ASB, BNZ and Westpac. However, there are few new players like digital banks in existence. Despite the growth stats, the fintech market can be a difficult one to get started in. With 85

percent of the market, the big four banks control a lot of the infrastructure; in theory, freeing this up would help fintechs build services.

Looking at the success of New Zealand's leading fintech companies, some, such as Xero, have quickly moved to the export market to build on early successes. FinTechNZ's survey on its member organisations found that 27 percent of our fintech companies export their services overseas, with the most common export countries being Australia, the United States (US), and the United Kingdom (UK).[112]

VALOCITY

Valocity Makes Mortgage Decisions Easy

This property data analytics and technology platform company automates the property valuation process for lenders and their customers. This enables faster, streamlined turnaround times for mortgage decisions. The platform uses analytics and machine learning to develop valuation models to fit lenders' requirements.

The company has an expansive property database covering various data points like sales price history, title history, etc, which empowers the lenders to make quick informed lending decisions.

Valocity is more than a New Zealand success story, it has now expanded into Australia, India and Singapore.

The company has won multiple awards including Global Fintech Start-up of the Year at the India Fintech Awards 2019 and a Global Finalist in the Singapore Fintech festival 2018.

www.valocity.co.nz

FIGURE 1: New Zealand FinTech Ecosystem

FinTech in New Zealand in 2022

The FinTech sector in New Zealand continues to grow faster than its global counterparts. Partnerships and collaboration are critical to building on our success. Please get involved if you want to shape the future for New Zealand companies both here and overseas.

Email: info@fintechnz.org.nz
Web: www.fintechnz.org.nz

Payments FX Crypto

BlinkPay
centrality
dacxi
VISA

Public Sector

FMA Financial Markets Authority
Ministry of Business, Innovation & Employment – Hīkina Whakatutuki
New Zealand Foreign Affairs & Trade
ASX
New Zealand Trade & Enterprise
Callaghan Innovation – New Zealand's Innovation Agency
Reserve Bank of New Zealand – Te Pūtea Matua

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PART ONE: FINTECH AND OPEN FINANCE

Open Finance in New Zealand

In New Zealand, the Government has allowed an industry-led approach to open finance, particularly around developing open banking standards.

However, the Government has concerns that progress could be happening at a faster pace than anticipated.[113] In a comparative look at Asia-Pacific countries' readiness for open banking, New Zealand sits in the middle of the pack.

While the lack of a regulatory framework is a hindrance, the country does have a supportive fintech ecosystem.[114] As time passes, New Zealand risks being left behind if it cannot pick up the pace.

Development of API Standards

PaymentsNZ governs New Zealand's core payments systems and leads development of open banking API standards. It was founded in 2010 to ensure payments are simple and secure for New Zealanders. Its API Standards and supporting services and tools are governed by the API Centre® Council with a mix of bank, third-party, and independent representatives. The core payment systems Payments NZ governs transact over NZ$6 trillion each year.[115] The systems govern three payment types:

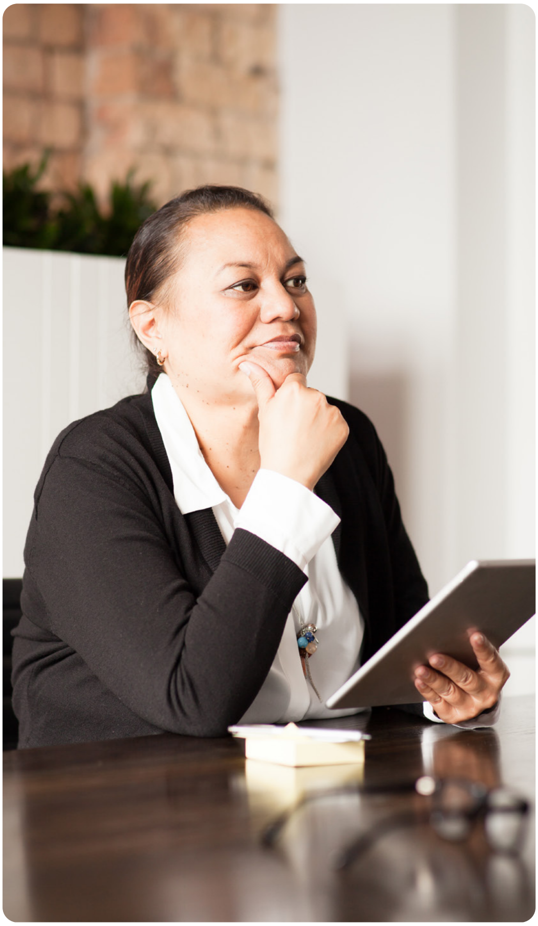
- Large irreversible payments such as property settlements
- Bulk payments such as direct debits and automatic payments
- Consumer payments such as EFTPOS payments and mobile payments

PaymentsNZ piloted an industry application programming interface (API) for open banking and digital payments in 2018.[116] APIs are a key tool for enabling open banking; they allow third-party apps to integrate banking data with the customer's consent. This lets fintechs create new financial value for consumers.[117] Banks can leverage the capabilities of these potential partners to innovate and offer better products and services to their customers. Globally, the use and development of APIs has seen significant growth over the last three years. API volumes increased 240 percent between 2019 and 2020, and the number of participants and range of propositions has also increased.[118]

In 2019, PaymentsNZ developed a shared API framework by launching the API Centre[119] in May 2019. The API Centre's framework makes it easier for companies to partner using agreed standards. The API Centre publishes open banking API standards, drives standards adoption, provides ways for stakeholders and members to engage and collaborate, and helps standards users reach agreements. Its standards cover consented account information data sharing, and payments initiation. The API Centre also hosts its standards on Confluence and GitHub, and provides support tools including a sandbox, PKI certificate register and customer experience guidelines.

There are already some third-parties using the API Centre's APIs. For example, Paymark's Online EFTPOS service uses the APIs to let people make secure online payments from their smartphones.

In late 2018 the Minister of Commerce and Consumer Affairs, Kris Faafoi, wrote an open letter to the New Zealand banking industry. He acknowledged the considerable work done in progressing open finance but said the pace and scope of progress risks not delivering full benefits for consumers.[120] The Minister set out his expectations for API providers around prioritising open banking, implementing the standards, reporting correctly, and aiming to collaborate more to find shared industry solutions.



GLUEWARE

Accelerating Open Banking

Glueware aims to drive innovation with its Open Banking Suite of products. Glueware, and sister company Middleware New Zealand Limited, wrote the API Guidelines for the New Zealand Government, developed a Consumer Data Right (CDR) accelerator for Australia in partnership with ForgeRock, and helped develop the Payments NZ API Centre Standards. The companies built and operate Payments NZ's API Centre sandbox. They are also helping several banks in Australasia accelerate their open banking journeys.

Glueware designed its Open Banking Accelerator Suite to help financial institutions quickly deliver the Open Banking security profile, payment initiation, and account information APIs defined in the Payments NZ API Centre Standards. Beyond compliance, Glueware's Open Banking Accelerator enables banks to build new propositions to deliver their own innovative products and services. Astrud Burgess, General Manager – Data and Marketing, ANZ Bank – credits the companies as a 'fantastic partner whose contribution has significantly accelerated our Open Banking program of work. The partnership model worked beautifully."

www.glueware.co.nz

PRACTICAL EXAMPLE

How the Consumer Data Right Means Better Digital Financial Services for Consumers

Rob Hassan has banked with his traditional Bank since he was a child. A few years ago, the Bank launched a budgeting tool on its website. Rob uses the tool to regularly log his expenses and income. The tool tracks his progress towards his savings goal; Rob is saving to buy a brand new EV.

Rob's friend Ben recommends that Rob try using a new app called MyBudgetNZ. The app, developed by FinTech Startup Limited, provides Ben with better outcomes than the tool Rob is using. MyBudgetNZ has the same features plus it uses Artificial Intelligence to generate insights about Ben's spending patterns and make predictions about when to make a big purchase. MyBudgetNZ integrates with the other personal finance tools that Ben uses.

Rob is keen to start using MyBudgetNZ. He can exercise a consumer data right to require his traditional bank to securely share Rob's data with Fintech Startup Limited. Rob can immediately benefit from using the MyBudgetNZ app, he does not need to input his budgeting history himself or start from scratch.

The Consumer Data Right

A key factor to drive more open finance and fintech success in New Zealand is the Government's 2021 decision to establish a Consumer Data Right (CDR). A consumer data right lets consumers securely share data that is held on them, by organisations such as banks, insurance companies, electricity retailers, and with third-parties.[121] The consumer chooses when to share data and with which second-party. The organisations that hold data must then share the data in a way that computers can read so it can be used by a third-party.

The ability to tap into New Zealand consumers' data will drive new innovative fintech solutions from New Zealand fintech companies. It may also drive international fintechs to make their solutions available to the New Zealand market.

The Government will introduce a bill to Parliament in 2022.[122] It plans to roll out the consumer data right on a sector by sector basis. Banking, insurance, telecommunications, and the energy sector will be high on the list. These industries are known to have had customer issues around transparency, ability to compare products easily, inertia to switch, or difficulty switching. For example, almost half of New Zealanders have never changed their bank provider.[123] Australia has commenced its CDR within the banking and energy sectors allowing New Zealand the opportunity to learn lessons from the Australian CDR experience.

Retail Investment Platforms

Retail investment platforms such as Sharesies, Hatch, and InvestNow, let people invest into shares, managed funds, cryptocurrencies, bonds, or derivatives. These platforms tend to be easy

SHARESIES

Making Investment Affordable

Sharesies is a fintech scale-up based in Wellington, New Zealand. It lets consumers invest in over 5,000 companies and funds across the New Zealand, Australian and the US markets.

In 2021 they raised $50 million and have over 500,000 customers.

Consumers can invest in small quantities, which increases Sharesies' addressable market to anyone with even a small amount of money to invest. Customers can view and manage their investments in the one app. The Shareies blog provides information and investment education to consumers. Topics include how to choose an investment, investment diversification, setting investment goals, and understanding risk.

This fintech makes investing more accessible and understandable for the average New Zealander. It is a great example of using digital technology to disrupt traditional wealth creation models and enable more equitable access to investment options.

www.sharesies.nz

to use and affordable. However, investors need to be comfortable making their own decisions. They won't receive financial advice and often won't receive research reports.[124] With rapid change occurring in these markets, the Financial Markets Authority (FMA) commissioned research in 2021 to help it understand how to support investors using retail investment platforms.[125]

The research found that the low-interest rate environment in New Zealand attracts people to online investment platforms. People also said that using a retail investment platform is affordable, easy, social, and fun. Underneath these factors, people have a desire to build their wealth. The majority of investors are looking for long term gains. There is a subset of investors that buy and sell multiple times per week, focusing on short term opportunities. While most conduct research online, only six percent are currently seeking advice from a professional financial adviser. Online research is more likely to involve using media, social media, and companies' annual reports for research instead of using the Financial Markets Authority (FMA), a financial adviser, or another expert. The report said some investors are "jumping into investments because they have a fear of missing out and some are jumping in without fully understanding what it is they are committing to." The research has provided the FMA with valuable information on how to support this set of investors using retail investment platforms.

What is Driving Development of Open Finance in New Zealand

HATCH

Letting Kiwis Own Their Own Shares

Hatch is a New Zealand based digital investment platform that was purchased in 2021 by global wealth management platform FNZ.

The company provides New Zealanders with access to invest into the U.S. share markets. It's the only New Zealand based digital platform where investors own their own shares, which gives investors shareholder voting rights.

The platform includes material to educate customers on investing into shares. This includes several webinars about investment, and video sessions with an investment coach.

The company's monetisation model includes taking a percentage on money exchanges and a share volume based fee for each buy or sell transaction. Hatch does not monetise with monthly subscriptions or via a percentage of its customers' profits.

www.hatchinvest.nz

The timing is right for fintech sector growth and adoption, and open finance as the enabler, globally and in New Zealand. Key drivers include:

- a confluence and convergence of global megatrends;
- increasing consumer digital literacy;
- technology advances;
- start-ups gaining traction; and
- incumbent investment.

Global Events and Megatrends

The pandemic has accelerated New Zealand's transition towards a cashless society. New Zealanders were forced to accelerate their use of digital services. Financial services and payments were no exception. Consumers shopped online during lockdowns, banks increased limits on contactless Paywave, and we reached the end of the paper cheque era.[126]

Globally, and in New Zealand, businesses have shifted their financial strategy and operations post-pandemic.[127] The emphasis has moved toward speed and business resiliency. Financial processes have had to become faster and more efficient as market dynamics forced shifts in week to week goals. Chief Financial Officers (CFOs) are working more closely with Chief Information Officers (CIOs) to become more agile in the wake of COVID-19. Companies, from SMEs to enterprises, want more forward-looking insights and better dissemination of business-critical information. This is a key driver for developing open finance and driving adoption of financial applications and fintech services.

The financial services industry has learnt from crises such as the pandemic and the Global Financial Crisis. However, international surveys show that consumers still have a

“Banks really don't care about you. Having been a priority customer with my bank for 30 years and then just being ignored, you realise that they only build up a relationship with you when it's in their interests. So I wouldn't have any difficulty changing to banking alternatives, because banks have lost their humanity I think. And if you're still in control of your data and you still only give the information that you authorise, it sounds a little different to what your bank requires from you anyway.”

Quote from community engagement panelist

lowered sense of trust in traditional banks.[128][129] In New Zealand, a recent community engagement pilot found that many discussion participants expressed disillusionment with their current and past experiences of traditional banking, and were therefore receptive to alternatives that could potentially offer them better value, more competitive choices, and ease of switching their bank.[130]

Trends are converging around sustainability in financial services. For many financial services institutions (FSIs), sustainability, along with their respective environmental, social, and governance (ESG) programs, has been fast-tracked.[131] Programs and initiatives are happening across the industry, across markets, and jurisdictions. For example, the Monetary Authority of Singapore launched its Green Finance Action Plan in 2019. A key strategy in the plan is to harness Singapore's fintech strengths to address challenges in the green finance space.[132]

The growing international fintech success will help drive investment into local fintech initiatives and start-ups in New Zealand. There are many innovative Fintech companies, and countries leading the way – delivering robust standard frameworks, API ecosystems, regulatory/

consumer protections, and Government support. New Zealand can join this wave.

Finally, the wave of global interest in improving financial inclusion is driving progress in open finance and fintech innovation. Financial inclusions means that financial products and services meet the needs of all people equally. Its purpose is to improve people's financial wellbeing by providing all people equal access to the types of financial products and services that can enhance their financial wherewithal.

In New Zealand, the National Strategy for Financial Capability He Rautaki-ā-motu mō te Āheitanga Ahumoni recognises that people's financial behaviours are influenced by the design and accessibility of financial products, services and support.[133]

FINAPPSTER

New Zealand-headquartered finappster™ provides asset managers with a platform they can share with their investors to easily understand the aggregated sustainable contributions of investee companies in their fund(s).

finappster™ solves the current challenges regarding transparency in both utilising investments to combat climate change and corporates Environmental, Social and Governance (ESG) risk mitigation and sustainability practices.

As a data-driven SaaS product, finappster™ collates companies' ESG and sustainability metrics and presents these in dashboards visualisations.

In reimagining how conscious investors can manage their investments, Founder, Leeanna Kohn-Hardy, has spent a significant amount of time working through challenges around collecting data sets and standardising them for comparability. "Investors are calling for more transparency, and Open Finance would make providing this kind of service easier", Kohn-Hardy says.

finappster™ has participated in Creative HQ's incubator, Atto's Accelerator and received funding from Callaghan Innovation and NZTE to iterate its platform while working with asset managers locally and abroad.

www.finappster.co.nz

Customer Expectations are Changing Fast

Financial services customers are becoming more complex, with higher expectations.[134] As consumers become more digitally and financially astute, so does their desire for seamless, frictionless financial services.[135]

The 'PYMNTS' report confirmed a growing interest in open banking, finding 65 percent of consumers between the ages of 31 and 42 said they would likely sign up for open banking accounts with companies such as Apple or Google.[136] This includes financial services and payment services. The latter has driven the rise of Buy-Now-Pay-Later (BNPL) services such as Zip, Afterpay, Affirm, and Sezzle. While these services can potentially have negative consequences for the financially vulnerable, they have had the effect of demonstrating to the public what fintech solutions are. Moreover, they have highlighted the need for embedded, seamless solutions that consumers can trust.[137]

The changing expectations of younger generations, millennials and older Gen Z are driving demand for financial data-sharing and innovation. In New Zealand, recent research affirms that younger New Zealanders (who tend to have higher incomes and skew male) are more tech-savvy, and more likely to already be engaging in fintech services to maximise their financial management. They are also more aware and interested in open finance and willing to provide data permission.[138]

As with other services, customers have grown tired of difficult engagements, a lack of transparency, and complicated product comparison. They are seeking more tailored offerings, personalised offers and more

control over how their data is used. Some of this behaviour is driven by consumers' familiarity and experience with social media, where hyperpersonlisation is the norm.

A recent report on open banking by Mambu, a notable cloud banking platform, found that consumers are looking for:

1. Control over finances
2. Clarity of options (without having to do in-depth research)
3. Different perspectives on privacy and less worry about sharing data
4. Real-time visibility
5. Good (independent) advice
6. User-friendly and intuitive interfaces
7. Automated management to get the best value without having to manually input
8. Ways to make their lives easier/better[139]

These changes drive consumer adoption of alternative financial services such as neo banks, new insurance models, BNPL, and embedded finance. While the consumer may not be aware of these terms, it's clear they desire seamless, frictionless ways to manage their finances and pay for purchases.

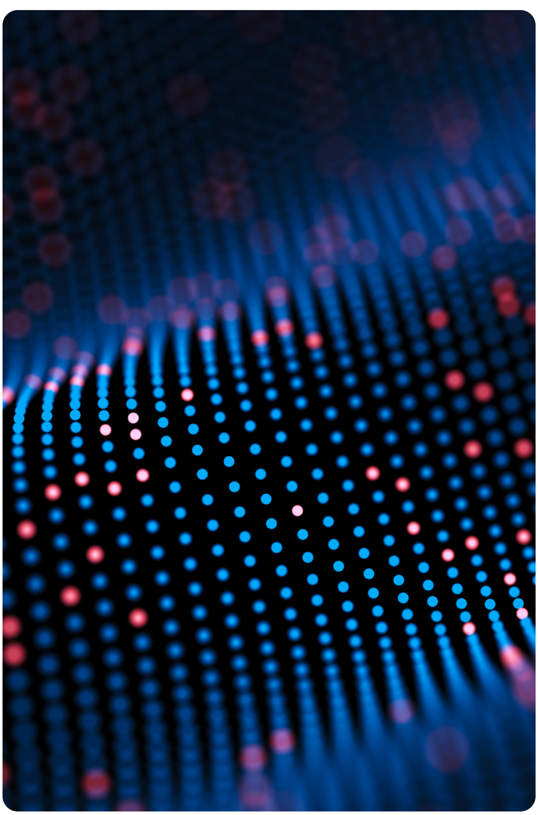
The Financial Services Sector is Transforming

Traditional financial services players are finding it harder to run encompassing propositions that meet every need in the market. They seek to differentiate as well as become more efficient in providing services.

There have been shifts in risk appetite from financial services companies driven by regulation changes; this is driving transformation. Structural changes in the sector have shifted the goalposts for incumbents. For example, business customers can now access capital from many different sources and don't necessarily need to go through a bank.

The financial services industry is in the throes of digital transformation. This is providing the global financial services industry with more agile and efficient capabilities, which translates into business growth and resiliency against market disruption.[140]

Research company IDC expects increasing bank-fintech collaboration over the next two years, as banks recognise the need to maintain market share against the rising threat of fintech competitors. The banks themselves have a wealth of data and the trend to monetise data means banks will look to use this to create new revenue sources.[141]



Digital Evolution Drives Fintech Innovation

The fintech sector itself is ramping up through evolving digital technology, enhanced innovation models, and trusted data frameworks that enable new revenue streams.

Digital technologies such as cloud, mobility, analytics, AI, blockchain, biometrics, RegTech, and Open Banking APIs, are the key enablers driving fintech innovation in New Zealand and overseas.

The New Zealand tech sector continues its growth trajectory. Recent research by NZTech found that Kiwi innovators perceive that they create innovative solutions that solve real-world problems. New Zealand's closed ecosystem, multicultural environment, and remoteness lets us test quickly and scale globally[142]. Our fintech industry community in New Zealand say open finance has high potential, in terms of its opportunities for them. They said it will increase competition, provide the opportunity to scale offerings, better customer experiences, make intermediary payments cheaper, and let fintechs develop better and more valuable relationships with banks and other fintechs.[143]

Across the tech sector, various innovation methodologies are maturing. Agile methodology, innovation sharing, and co-creation models are increasing innovation efficiency. This lets fintech companies iterate more efficiently and effectively to get from concept to a commercial product – maturation that's driving increasing cadence in fintech innovation.

NEW FINANCIAL SERVICES MODELS

NEO BANKS, NEW INSURANCE MODELS, BNPL, EMBEDDED FINANCE

Neo Banks: The slow response from traditional banks to address customers' changing needs has given rise to neo banks. These are online-only digital banks. Rather than holding a bank license neo banks prefer to partner with registered banks for licensed services as they pursue niche markets overlooked by traditional banks. Recognised international neobanks include Monzo and Revolut in the UK, Chime in the US, Airstar Bank in APAC, and Nubank in Latam. New Zealand had a very early iteration of a neo bank with ASB's Bank Direct launched in 1997. However, as a subsidiary of an incumbent bank, this was more an early digital transformation than a true neobank. With falling customer numbers, ASB announced the end of the brand in 2017. There are no current neo banks in New Zealand, though Revolut has signalled intentions of launching here in the future.

By Now Pay Later (BNPL): BNPL services let consumers pay for their purchases in instalments, usually over a period of four or six weeks. Examples include Afterpay, Klarna, Affirm, and Paidy. BNPL programs have grown considerably in the past several years, with explosive growth in the past 18 months. These companies have been generating significant attention, funding, and income. Afterpay, for example, earned US$693 million in revenue in the 2021 financial year, doubling its results from the year before.[144]

New Insurance Models: Insuretechs, such as New Zealand's Cove Insurance, provide consumers and businesses with contextual, personalised insurance. This is about creating simple, transparent, and unique experiences rooted on the principles of proactive risk management.[145] Globally, InsureTechs making waves include Next Insurance, Haven Life, MetroMile, and Corvus Insurance.

Embedded Finance: This is where non-financial service providers (anything from pizza delivery, to retail fashion, to vehicle sales) provide financial services. That financial service could be payments, lending, or insurance, for example. The goal is to streamline how customers pay, borrow, and insure products they buy digitally. Embedded finance companies close the gap between themselves and the consumer.[146] For example, Uber uses embedded payments for its ride-sharing service, and BNPL services offer embedded lending to retailers.

PART TWO:

The Benefits of Open Finance

The Benefits of Open Finance

People's acceptance of, and success using open finance depends on their understanding of the potential benefits and how these benefits are realised.

People's acceptance of, and success using open finance depends on their understanding of the potential benefits and how these benefits are realised. In countries where open finance is maturing, stakeholders are realising many of the predicted benefits. There have also been unanticipated benefits.

These benefits span four broad areas:

- the consumers and customers of financial services (particularly those underserved by traditional financial services);
- financial service providers (incumbent and new);
- Fintech ecosystems (independent tech developers); and
- the digital economy.

"In principle open banking is a great thing. We already have services like Sorted and they're great. If this motivates more things like that then I'm all in. Especially if it helps with innovation so it really pushes the big banks. I also like going into one portal and there's lots of choices there."

Quote from community engagement panelist

Customers' benefits can include enjoying greater financial inclusion and access to enriched and tailored products and pricing models. Meanwhile, industry benefits from an expanding financial ecosystem, promoting innovation and new business models, customer centred innovation, better decision-making, and reduced business risk through more open and clear frameworks and strengthening of the digital economy.

While regulators and policy-makers play a role in creating an environment for consumers and SMEs to benefit from open finance, there are also benefits for policy-makers themselves, these include:

- Transparency and insight for fraud detection and increasing efficiency of managing Anti Money Laundering and Counter Financing of Terrorism (AML/CFT) compliance.
- Faster and simpler ability to address undesirable activities of participants by simply updating APIs rather than complex processes.[147]

- Regulatory sandboxes for open finance provide an opportunity for regulators to safely test impacts of fintech in the New Zealand market and adapt policy accordingly.[148]
- Enabling the compliance process through ready access to a customers financial data

Lessons from early adopters like the UK and European markets, is that for open finance to generate benefits, regulators and industry must employ a hybrid approach.[149] If regulatory mandates and frameworks are too prescriptive, innovation (one of the big benefits) can become stifled, and compliance costs will shut down the competitive ecosystem. However, if the industry leads without any regulatory oversight several risks arise. For example, markets with low consumer trust and a high digital inclusion gap are unlikely to develop truly competitive ecosystems. Rather, industry may choose to only target profitable segments, leading to greater mistrust and a widening of digital inequality in society.

Whatever the approach, the biggest benefits will arise within an environment where regulatory bodies create frameworks and standards using principles identified by early adopters. It is, however, a balancing act and experience of other countries has emphasised the need for regulators, industry and innovators to collaborate on the creation of frameworks that are flexible enough to ensure innovation is unabated.[150]

Such frameworks prioritise accessibility, inclusiveness (for all participants), common understanding, the protection of data in transit, interoperability, and a capacity for evolving alongside the technologies shaping the future of finance.[151]

Consumer and Customer Benefits

Open finance is grounded in data about the customer. It is important to understand the benefits the new model will generate for customers. Open finance enables decoupling and/or rebundling of a diverse range of financial services. This lets customers access relevant products with a bundle of functionalities and services.[152]

Customers are increasingly seeking out relevant digital finance experiences, a survey by EY in 2019, for example, found “68 percent of consumers are willing to consider a financial services product offered by a non-financial services company.” [153] Interestingly, a 2021 study by Mambu into open banking uptake, found that many participants did not directly identify a desire to use open banking, though 81 percent said they were using at least one finance app and nearly 20 percent were using in addition of five apps.[154] In other words, consumers are seeking the benefits of open banking without full comprehension and acceptance of the financial service as a whole.

That said, evidence suggests that consumers are becoming more aware and accepting of open banking as a means of improving their personal lot. For example, 40 percent of those surveyed by Mambu said that their attitude towards open banking had changed due to financial issues and barriers raised by the pandemic. Ultimately financial wellbeing is personal, and the impersonality of traditional services is pushing consumers to seek out the benefits that open finance can provide.

Open Finance Can Provide the Bridge to Financial Inclusion

A central tenet of open finance is that it enables a level playing field where everyone can access services that are relevant to them and are currently excluded from.[155] Traditional finance providers struggle to support financial inclusion. Their barriers can be due to institutional structures or demographic inequities:

- **Institutional structures** – barriers include complex documentation, complicated fine print, a lack of fee transparency, and a focus on large customer segments that offer high-profit potential relative to the size of their overall business and cost base.
- **Demographic inequities** – barriers that exclude segments of the population include sparse or unqualified credit history, perceived barriers or a lack of trust of intuitional financial services, identity validation conditions, and inadequate financial literacy.

Open finance can help bridge the gap by providing access to services for underbanked or less financially served populations. It can also provide greater choice for consumers that lack financial literacy. Moreover, open finance contains the building blocks required to integrate data from areas such as payments history and non-financial sources – giving consumers additional financial oversight. Now all customers can benefit from a comprehensive, moreover, personalised view of their financial journey.

Specific benefits associated with open finance and enabled financial inclusion cover:

- Alternative credit scoring methods for more accurate credit worthiness and streamlining eligibility checks.[156]

- Digital identity verification rather than traditional physical identity sources. [157]
- Holistic Personal Financial Management (PFM) platforms that enable customers to demystify investment, better understand their portfolio, and make informed switching decisions[158].
- Financial literacy through building simplified financial services and increasing accessibility.
- The financial independence of users excluded through disabilities or dependence on carers and integration of assistive technology.[159]
- Community approaches to financial services, whereby data is pooled for collective bargaining power for cheaper services or increased benefits.[160]
- The creation of financial products and services in collaboration with Māori to improve inclusion in New Zealand.[161]

"Remember last year with COVID, banks were supposed to give you a business loan easier? I just wanted like fifty grand to tide me through. I applied and they didn't give it to me and, you know, all my data was pretty solid. I was like, we've been banking with you for thirty years, you see all our data and we have two houses and a business with you. They weren't using any of that discretionary human stuff at all. I dislike my bank immensely for things like that."

Quote from community engagement panelist

HARMONEY

Using AI for Credit Checks

Harmoney was the first licensed peer-to-peer personal loan provider in New Zealand. Founded in 2014, the company has loaned over NZ$1.7 billion to borrowers in New Zealand and in Australia and was listed on the NZX in 2020.

Harmoney offers unsecured loans ranging between $2,000 - $70,000 over a three-to-five-year tenure to credit seekers. The company originally funded loans via the peer-to-peer market from retail investors, but in 2020 it shifted to wholesale market funding from banks and financial institutions.

The lender's philosophy is to make the borrowing experience fairer and more accessible than traditional lending. Harmoney uses AI and machine learning to determine the creditworthiness of individuals and then to calculate personalised interest rates. According to the lender this simplifies the loan application and disbursement process.

www.harmoney.co.nz

Innovative Digital Products and Services

Open finance enables innovative financial services. Companies can create something of value not offered by traditional financial structures and methods. Innovative financial services can deliver diversity in a competitive landscape, provide options for customers (particularly the financially excluded), and create opportunities for international commercialisation and export.

"It's like airlines, they have to be competitive because there are lots of ways to shop around for flights. You don't become enmeshed or entangled with an airline, apart from Airpoints. It puts the power back into the consumer a little bit more. It forces services to look outward rather than completely navel-gazing like banks seem to be doing, spending money on billboard fantasies."

Quote from community engagement panelist

POCKETFUL

Enabling Consumers to Easily Share Costs and Group Savings

Pocketful is a bill payment platform that uses secure Open Finance APIs to help people and groups share costs or save for a goal. Users connect their bank accounts then create groups or 'pockets' to which group members can add bills or receipts. Members can pay their share through their connected accounts. Pocketful has a wide range of applications, for example:

- couples wanting a common account but don't want a joint bank account,
- flatmates with shared bills,
- saving a deposit for a house,
- friends sharing the costs of a dinner out, and
- groups managing the koha account for events such as weddings or tangi.

Pocketful interacts with consumers in a conversational way, and in six different languages including English, Te Reo Māori, Samoan, Tongan, Hindi, Arabic, and Mandarin. Its chatbots also help consumers with daily budgeting, savings plans, and paying bills. Pocketful plans to earn revenue from partners like utility companies and lenders and even government agencies. As of October 2021 Pocketful's founder, New Zealand based Decent Developments is poised to launch its first release.

www.pocketful.co.nz

The key concept is that of the data-empowered consumer. Where innovation creates true value for consumers, enhanced functionality that enables seamless switching, and the power and means to make data work for them as they choose. Consumer-led innovation is shaped by the ability to choose new and innovative products and services that match risk tolerance and privacy preferences, and deliver the biggest benefits.[162]

> *"A big one for me is that it's not a bank in and of itself. So rather than being locked in and you only get what they give you – it's sort of a separate entity with the interest of getting you the best match in mind from a range of providers."*

Quote from community engagement panelist

Consumers exercise this by leveraging the user experience and insights of agile, legacy-free fintechs. Legacy systems are often manual, error-prone, inefficient, and feature inertia that can hinder or tie up innovation in a web of technical debt.[163] By collaborating with open finance fintech, traditional finance service providers like banks are able to increase efficiency and speed up innovation.

This expectation of creating innovative products and services is driving traditional financial providers to partner and collaborate with fintechs. Together they are experimenting and co-creating open finance services. This is driven by a customer experience design focus particularly on tailored offers, and hyper-personalised services.[164] Other customer benefits include cheaper payment methods, reduced fees, increased convenience,

SUPERGENEROUS

Automating the Tax Rebate Process

Supergenerous helps consumers claim donation rebates and encourages rebate re-donation. The company says that there is around $1 billion in donation rebates waiting for New Zealanders to claim. That money could be doing a lot of good in our communities. While most New Zealanders know their donations are often tax deductible (including school donations and church tithing) the process is too admin heavy for most consumers to action.

With Supergenerous, donators list the organisations to whom they've donated. Supergenerous obtains the donation receipts from the organisation. It then lodges the claim to IRD and manages the rebate process. Donators can elect to keep the rebate or re-gift it to charity. Supergenerous covers its costs by taking a small fee where it has successfully secured a rebate.

This is a similar model to online income tax rebate companies with an important difference. Auckland based Supergenerous is a social enterprise. It aims to facilitate rebate re-donations to improve the impact that human generosity has.

www.supergenerous.co.nz

better financial transparency (enhancing financial wellbeing), more control, and improved security.[165]

Open Finance Allows for Greater Customer Empowerment via Transparency and Control

Open finance enables greater customer empowerment through the key principles of transparency, protection, shareability, control, and access. The CDR work in Australia revealed that open finance was creating transparency that would enable consumers to have better control of their finances and make better financial decisions.[166]

This can be seen through the uptake of new and alternative sources of non-bank financial information (including data linked to social networks) that can help financial intuitions get a wider, more well-rounded view of a customers' real-time financial activity and requirements beyond traditional banking patterns.[167]

Transparency with secure oversight – Transparency and clarity of information are big drivers behind promoting switching behaviour and the uptake of novel new financial products. For example, new innovative tools, such as personal finance management (PFM) tools, enable customers of all levels of financial literacy to have enhanced oversight and control of their personal finances.

Transparency also extends to consent models. If these models are utilised correctly they can provide simple and transparent ways for the consumer to give, track, and withdraw consent around data-sharing.[168] Customers need to feel confident to share and/or provide access to their data in areas where trust is paramount, enabling new services personalised to their behaviour and preferences.

Open insurance, for example, offers the ability to create simple, transparent, and unique experiences that are rooted in the principles of proactive risk management. This translates to secure, seamless, and contextual engagements across the customer journey.[169]

Recent community engagement discussions suggested consumers are suspicious of free digital services due to a perception that companies are profiteering from personal customer data. Activities including targeted and/or unsolicited marketing, or sharing, and benchmarking were of key concern. Some panellists were suspicious of biased service recommendations; they perceived that some businesses may be gaining preferential product promotion on open banking platforms. In other words, consumers were wary of sub-optimal services and market access for smaller, more deserving market actors[170].

"Where are you making your money from? And is it you having access to my information that you are making money, or is the bank paying you, or are both of us paying you to provide this service?"

"I would have to know fundamental decisions about the business model. Is data how they make money? I would hope that those benefits are the scope of my data, and my data is not being sold or used in benchmarking. And I'd want to know about anonymity, privacy and data protection."

Quote from community engagement panelist

Consumer empowerment and control – The utility of open finance rests on the ideal of consumer control and empowerment. That is, the control of personal data, how it is used, managed, shared and discarded.[171] This is an overarching theme across published literature and open finance reviews.

Open Finance Improves the Customer Experience

By placing the customer at the centre of the relationship, open finance is essentially the antithesis of the 'traditional' banking experience. Newcomers are recognised for providing outstanding customer and user experiences.[172] Of those financial institutions who've already integrated open finance into their operations, 97% recognise the benefits to their business and customers. The ability to improve customer service/experience, attract customers (both new and existing) and deliver new services have been identified as core benefits.[173] The impetus is now on integrating open finance solutions to avoid losing customers to more savvy providers.[174]

The importance of customer experience was underlined in a 2020 review by the open banking Implementation Entity (OBIE).[175] This review recommended the development of Customer Experience Guidelines noting:

"Customers will only use open banking services if they feel informed, secure and in control. Customers will only use open banking products and services if their experience matches or betters their expectations, and information is presented in an intuitive manner that allows them to make informed decisions." [176]

Likewise in New Zealand, work by Payments NZ found that customers will only use products and services if their experience matches or betters their expectations, and information is presented in an intuitive manner that allows them to make informed decisions. Payments NZ identified that it is important that the interplay between the Third Party and the API Provider is as seamless as possible while providing customer control in a secure environment. It is essential that customers are clearly informed about the consent they are providing and the service they are receiving. This led to the creation of New Zealand Customer Experience Guidelines.[177]

Open finance will put financial institutions in a better position to address and serve individual customer needs by:

- **Providing a greater channel experience,** more intuitive digital tools (including apps and dashboards) and a range of highly reliable and secure products and services that are better suited to demographics that have been traditionally left behind.
- **Turning the process and technology-centred business environment into a customer-centric environment.**[178] Open finance consumers are provided with control to choose the products and services they want and the channels they want to use to get it from.

Applied intelligence is becoming a new focus area for delivering strong customer experiences as established players look to build empathy at scale. Applied intelligence focuses on building a portfolio of intelligence about the customer that can then be used to hyper-personalise their user experience. Open finance, by its very nature, allows this to be built quickly and efficiently through streamlined data access.[179]

Finance Sector Benefits

A 2021 survey by Finastra found that 97 percent of financial institutions who have integrated open banking into their operations have realised benefits including improved customer experience, new customer acquisition, attracting existing customers to new products and services and the ability to create new banking services.[180]

While improved competition is already being highlighted as a benefit for end-users, it also plays a role in stimulating financial services innovation and opportunities.

Open Finance Could Accelerate Innovation and Investment

Legacy systems are often manual, error-prone, inefficient or static. This ties up innovation in a web of technical debt.[181] The recent CDR review in Australia noted the importance of frameworks that are agile and fit for future innovation. The report also noted that flexibility needs to be embedded via a technology-agnostic approach. In the Canada review, it was recommended that flexibility should be built into frameworks and credentials for all open finance innovators.[182]

It is important to note that open finance is part of a global trend towards open data and data portability that enables cross-industry integration.[183] Similarly, open data also broadens the range of third-parties and industries that compete for, or mediate, financial relationships. This by its very nature breeds innovation.[184]

Embedded finance is also diversifying the payments space, from embedded offerings, retail apps and ecosystem platforms. One key emerging branch of embedded finance involves open insurance which is allowing new insurance models to emerge for claim disbursements between Governments and insurers, including those that arise during national or regional disaster recovery. [185]

Acquisition and partnership opportunities are flourishing in the open finance ecosystem and traditional financial providers will seek talent and a ready pipeline to innovation. For example:

- In June 2021 Visa announced it was acquiring Tink, a European open banking platform, for US$2.15B. By combining its financial infrastructure and cybersecurity strength with Tink's powerful innovation and customer relationships, Visa is positioning itself as a leader and accelerator of open banking in Europe.[186]
- In September of 2021, Mastercard announced it would acquire Danish open banking technology company Aiia to help meet the changing needs of customers around open banking.[187] Mastercard brings its distribution channels, technology and data practices while Aiia is an API connectivity powered open banking platform. As with Visa, Mastercard is the stable infrastructure, while Aiia brings its customer experience capabilities.

"When we transferred the business to Xero years back we went from taking shoeboxes full of receipts to our accountant who was always really slow and really unreliable, to having the control ourselves and having that sense of management, transparency and ease. I hope that's what open banking could be offering."

Quote from community engagement panelist

Open Finance Enables Credit Risk Reduction

Technology research firm IDC predicts that to counter the uncertainty of the pandemic, 70 percent of corporate banks will revisit credit scoring models and prioritise an open data strategy to improve loan portfolio health by 2023.[188]

Likewise, traditional credit assessment models may no longer be enough from a risk management and customer expectation view. While current models are adequate for managing risk, their rigid approach to compliance and institutional methodology can lead to financial exclusion for some customers.[189]

This means that conventional sources of data used in credit-risk assessments may quickly become out of date and inaccurate due to the volatility of financial cycles.[190] Open finance models help lenders more accurately assess credit risk and much faster than traditional models by enabling ready access to real-time data. Whilst this appears to favour providers, it also ensures that consumers benefit from faster and more accurate decision-making within the lending process.[191]

Additionally, providing a central point for consumers to manage permissions and access their data, including understanding which third-party customers have given permission for data to be shared and for how long, is of critical importance. This will help service providers/ data holders provide a way of reducing the number of parties required for support.

Open Finance Creates New Paths to Efficiency

By removing the impact of legacy silos and streamlining processes open finance has the potential to generate enormous efficiencies for financial providers. This can be achieved through digital verification of data and the use of automation technologies like AI and machine learning. As with risk reduction, the consumer stands to benefit from increased speed and transparency across transactions. Importantly, automation can reduce the risk of errors and inefficiencies by providing a single source of truth.

The trend towards partnerships and acquisitions can also play a role in increasing efficiency. Market actors can – through partnerships and acquisitions – avoid the time and energy costs associated with developing their own tools and services. By extension, this fast-tracking of knowledge helps accelerate the adoption and creation of successful open finance models. Collaboration is rapidly becoming the most efficient and effective path to rapid open finance.[192]

CENTRIX

Helping Kiwi Businesses with Risk Assessments

Credit bureau Centrix, established in 2009, helps New Zealand businesses undertake risk assessments. The company claims it houses account payment and credit data on 95 percent of New Zealand consumers. Businesses can buy Centrix reports to assist them to make credit decisions.

Centrix's cloud software solution, Smartlink, automates the credit decision process for the company's business users. Moreover, businesses can connect to, and retrieve data from multiple credit bureaus when actioning a credit decision process. Centrix also offers an online identity verification service that checks multiple databases such as credit accounts, property ownership records, and driver license records so clients can verify customer identity.

www.centrix.co.nz

Open Finance Can Help Meet Social Commitments

Shifting investor sentiment towards environmental, climate, ethics and governance practices is becoming a driver of green finance, an adjacency to open finance. Investors want control over their Environmental Social and Governance (ESG) profile within their portfolio and are already starting to embed these metrics within reporting and risk management frameworks.[193]

This is creating a new breed of fintech data aggregators and a flurry of acquisition activities. For example, Blackrock purchased Baringa's Climate Change Scenario Model and integrated it into its Aladdin risk management framework.[194] Open banking for Good (OB4G) is a UK initiative designed to support businesses under financial duress.[195] The OB4G programme is also designed to help the 'financially squeezed' manage their money and access income smoothing.[196]

Good corporate citizenship is another benefit that could be realised from open finance. For example, like-minded communities of people can pool their data and exercise collective power.[197] In terms of transparency, fintechs are employing open data to successfully expose and address profiteering, bundling, discretionary discounting and confusopoly used by telcos, energy companies and utility operators. Automatic switching services, for example, help consumers identify potential savings and offer seamless switching between service providers. In the personal finance space, various apps are using open data to help consumers better comprehend their finances. Ultimately, open finance could well be the harbinger of a new level of transparency that empowers consumers to make decisions in their own best interest.

Digital Economy Benefits

Open Finance Promotes Innovation and Strengthens the Digital Economy

Open finance thrives in an ecosystem that values trust, transparency, and stability; this is where New Zealand is at an advantage. International interviews conducted as part of the 2021 NZTech Tech and Innovation Story revealed that venture capital investors considered New Zealand to be one of the most transparent countries in the world. Moreover, New Zealand was recognised for its privacy standards, data integrity, stable regulatory environment, sovereignty, transparency, access to credit, and ease of business. These are all factors that create economic conditions for a thriving fintech hub.[198]

Meanwhile, the Farrell Review in Australia identified that cross border interoperability, consistent standards, data portability and collaborating in the international open finance community is critical to the development of new innovative products and services. An integrated, competitive, creative and accessible data ecosystem with connections to the wider digital economy, and the availability of data scientists (beyond banking etc) and growing other areas of tech such as AI were also discussed.[199]

Economic growth and employment are substantial economic benefits of open finance. Farrell's review talked of how CDR supports the growth of start-ups and new business models for the digital economy. In another study, it was estimated that GDP will be lifted by up to 1.5 percentage points through open data and open finance ecosystems by 2030.[200]

New Zealand's digital economy will benefit from the attraction of investment in high-growth fintech and open finance, and participation in fintech bridges.[201] In the UK, early entry into open banking contributed to turning London into a leading tech ecosystem hub – producing and attracting investment in 'fintech unicorns'.[202]

Fintech bridges facilitate the setting up of fintechs in-country and breaking through the barriers to international investment. Bridging between the UK and Singapore expanded to include Australia, Canada, Japan, China, Hong Kong, South Korea and the US. While New Zealand has low trade barriers with the UK, it is not yet part of this fintech group. However, these pseudo trade agreements have had mixed results – such as a lower than projected rate of innovation and investment.[203] To address some of these shortcomings, in 2020, the UK revamped the concept, launching its Leading Edge Global Partnerships Programme in December 2020.[204]

Open Finance Supports a Stronger Financial Ecosystem

Open finance supports increased collaboration between financial actors and industries which benefits the financial ecosystem as a whole. Banks, fintechs and non-financial organisations will be able to use the open data to accelerate the development of new products and services, while driving innovation and a maturing of their core industry.[205] Research notes that industries that partner together (within their industry or across others) can deliver increased value, foster innovation and anticipate overarching threats and opportunities.[206]

The future of financial ecosystems goes beyond partnering, to leveraging shared data, applications, operations, and expertise. This is best achieved through expansion of existing and emerging platforms.

The advent of a richer financial ecosystem is a natural reflection of emerging consumer patterns and values. Today's consumers place a premium on choice, return on investment, and personalisation. Open finance forces the financial ecosystem to respond to these demands and to meet current digital standards. This is resulting in a shake-up of traditional consumer relationships and the products used to secure custom.

This sharing economy approach to finance is a relatively new phenomenon. However, open finance and its key focus on data allows for natural commonalities, leading to organic growth and sector-wide innovation.

PART THREE:
Barriers and Challenges

Structural Barriers and Challenges

The current structure of the financial system creates a range of barriers and challenges that will need to be overcome to achieve a thriving Open Finance ecosystem and the numerous benefits this entails.

In this section we discuss structural barriers and challenges. These include:

- the impacts of a consolidated banking sector on innovation;
- the impacts of a consolidated banking sector on new market entrants; and
- the impacts of an outdated regulatory environment.

New Zealand's Consolidated Banking Sector is an Innovation Barrier

New Zealand's banking market is highly concentrated; dominated by the big four banks. Barriers to entry by new competitors are high. The scale, complexity, and heritage of incumbents creates an environment that is not suited to the rapid pace of innovation delivered by open finance. At present, innovation is based on conventional banking practices and occurs incrementally. Naturally, it's the smaller innovators that have the mindset and capability for rapid innovation.[207]

New Zealand's banks have become highly profitable. In 2021 the big four banks, ANZ, ASB, BNZ, and Westpac, reported a record-breaking NZ$5.49 billion in after-tax profit. Naturally, the big four are risk-averse; they generate business value by utilising rich sources of contained data curated from customers and transactions. As a means of competitive advantage, this data is guarded. But such an approach creates barriers to financial innovation. It's not necessarily in the interest of the big banks to enable customer switching behaviour or potential disintermediation of the customer relationship. Hence data that could be used to improve the personal financial wellbeing of customers remains out of reach.[208]

> ***"I have very low trust with my current banking, but for me to change banks would be a nightmare. Properties, a family trust, maybe eight bank accounts that all have mortgages finishing at different times. I would love to change my bank. I hate them. They closed our branch, they make everything difficult and they've made leaving incredibly hard. I've wanted to change banks for years. If the implication here is that open banking could make that easier then I'm there."***
>
> Quote from community engagement panelist

For incumbents that are unprepared or unwilling to adapt to the changes open finance brings, the threat of competition looms. Newcomers are delivering innovative offerings, including unbundling of services, comparison tools, and automatic switching services. These newcomers may become the new primary relationship or interface for customers who embrace open finance.[209] With open finance, the consumer has primary control in the financial relationship.

This is a threat to incumbent banks. For example, in Australia, there was – at least initially – a push back by large banks around how much data-sharing should be permitted under open

banking. The banks say some of the data is their competitive asset, and have concerns about high implementation costs and security issues.[210]

In New Zealand, the structural barriers are hampering non-incumbent participants' success in attracting customers, making New Zealand a less attractive target market for these innovators.[211]

The Regulatory Environment is not Optimised for Open Finance

New Zealand's financial services sector has a robust and mature regulatory framework. However, there is a lack of fit-for-purpose open finance regulation. New Zealand also lacks frameworks that cater for open data and data-sharing, new technology, and market entry. A 2019 report for New Zealand Treasury identified the current AML/CFT legislation as a regulatory challenge for fintech that should be addressed. A key challenge included whether or not the legislation even applies to certain fintech businesses, given what constitutes a reporting entity was developed 20 years ago.[212]

Regulation is a balancing act that policymakers need to get right. Too much regulation can stifle innovation and competition. Too little regulation can expose consumers to unnecessary risk, leading to trust and confidence deficits.[213]

The New Zealand community engagement participants were frank about not knowing or understanding the intricacies of what regulation would need to cover. People tended to default to their long-held expectations of banks being safe places to entrust money and financial information – and Government being the arbiter of a regulatory system that keeps banking safe. Most people wanted assurances from the Government and the banking sector that they themselves endorsed open banking. Participants also sought a rigorous regulatory regime – one that reflected the higher levels of risk associated with open banking.[214]

The UK FCA has highlighted the importance of establishing a fit for purpose regulatory framework for open finance.[215] Ahead of UK open banking reform in 2019, the FCA identified nine areas needing to be addressed to remove barriers to progress:

- technology architecture
- operating principles
- processes and practice
- security protocols
- user experience design
- service levels
- dispute resolution
- consent management and data rights
- authentication and identity management

"I mean, honestly, I have no clue as an everyday person, how all this works. I feel reassured that it is backed by New Zealand Government legislation and the fact that you can withdraw your permission and your information when you want. It feels like it is more legit and you have more control."

"I'm always a little sceptical of something like this that is new. To make me trust it, I'd want my bank to endorse it or possibly the Government. I'd like some kind of reassurance or evidence from an established organisation that everything is above board."

Quote from community engagement panelist

Regulation must provide both the flexibility needed to facilitate innovation and confidence to encourage participation.[216] Some countries have used regulatory sandboxes to ring-fence testing and use-case development before rules and guidelines were made for the 'real-world'. [217]

The Open Bank Project describes how sandboxes, such as the Payments NZ API Centre sandbox in New Zealand, can bridge barriers created in regulatory frameworks.[218] It said:

"Regulatory sandboxes provide a safe environment to test innovative products, services, and business models under a more relaxed regulatory environment. This prevents innovations from being stifled by high regulatory requirements and allows regulators to test the standards before implementing them."[219]

The global nature of open finance will also present challenges. For example, The FCA warned that:

"challenges are exacerbated when firms conduct financial activity both online and cross-border. This makes it easier for firms to choose between different regulatory regimes to avoid regulation and operate under the least stringent rules (known as 'regulatory arbitrage')."[220]

Hurdles Slowing the Progress of Developing a Thriving Open Finance Ecosystem

LEGACY BANKING PRACTICES AND RINGFENCING OF CUSTOMER DATA

According to Accenture and the HK Monetary Authority, obsolete 'security structures' – like those used by legacy banking practices – are preventing customer data from being harnessed to its full potential. Their report on the HK banking ecosystem determined that existing banking architectures and practices were not designed for an open finance environment where sensitive data is shared externally with non-banking providers. Moreover, legacy banks could push back on comprehensive data-sharing if they consider sensitive data integral to their competitive advantage. In other words, legislation notwithstanding, barriers to collaboration on open finance are likely to persist.

BARRIERS TO COLLABORATION BETWEEN ESTABLISHED PROVIDERS AND INNOVATORS

Legacy financial service institutions often don't have a history of collaborating with fintech innovators with an agile culture mindset and less structured approach.[221] This could create a clash of cultures that will impact success.[222] At the same time the newcomers often underestimate the complexity of plugging their tech into complex banking systems and the regulatory minefields associated with 'big finance'.[223]

Participants in the open finance ecosystem have identified several barriers to collaborating. Key obstacles include:

- The incumbents' complex and compliance-driven procurement processes, and long procurement cycles.[224]
- Their risk-averseness with respect to liability if something goes wrong; and
- the lack of an environment or 'regulatory sandbox' environment to ease those concerns.[225]

COSTS THAT COULD CHALLENGE OPEN FINANCE SUCCESS

The costs connected with implementing open banking architectures can, in some cases, act as a stop-break on progress. For example, the aforementioned Hong Kong open banking review noted the complexity and cost of new technical requirements, compliance costs, and the need to integrate legacy technology with new technology, as being unattainable to all but the most well-resourced players in the market.[226]

The high technological and compliance related costs, required to build an open finance compatible system, will draw investment away from other parts of a business. On this, the UK's FCA warned:

"There could be concerns from an operational resilience perspective if firms were required to make significant changes to their IT systems to support open finance. This could result in firms being more susceptible to system outages."[227]

Increased competition is one of the sought benefits of open finance. However, the associated costs, such as creating new business models to enable interoperability, compliance and accreditation, could have the opposite effect should resource-poor innovators exit the market.[228]

NEW ZEALAND'S INEXPERIENCE WITH A CDR FRAMEWORK

In July 2021, the New Zealand Government announced its decision to implement a new legislative framework for a Consumer Data Right (CDR).[229] The development of a CDR will need to incorporate a comprehensive consultation process with inputs from multiple stakeholders and this will take time, even if the Australia model is used as a template.

THE ROAD TO DATA STANDARDISATION

The 'Establishing a Consumer Data Right' report released in July 2021 noted:

"standardisation of data is a condition for interoperability, which cannot be guaranteed through commonly-used machine readable formats alone. New Zealand lacks consistently applied data standards and processes for sharing, storing and using information in a digital environment. In the financial sector, a lack of standardisation is causing inefficiencies and fragmentation."[230]

While the establishment of Consumer Data Right legislation will accelerate progression to the data sharing that will enable open finance, significant work in data standardisation has already started with the development of the API Centre's open banking API standards. These standards define and establish flows for customers consenting to share data with third parties such as fintechs.

This progression to data standards is critical as standardisation removes barriers to open finance, by:

- reducing costs for participants;
- creating transparency to avoid the erosion of trust;
- enabling 'plug and play' solutions (interoperability); and
- enabling efficient and convenient product switching for customers (pre-fill applications, etc).[231]

The 2020 Australia CDR inquiry warned that a lack of interoperability in standards will mean inconvenience and inefficiencies for businesses and for customers. The inquiry suggested that the longer this is left unaddressed, the harder it will be to create new standards later. It also warned that fragmented approaches will lead to missed opportunities to align standards with economy-wide and international standards for digital products and services.[232]

Open finance needs common standards to overcome the barriers to interoperability, not just within the financial services sector, but across other industries such as energy and utilities integrated as part of the open finance ecosystem.[233]

A LACK OF TRANSPARENCY HINDERS REALISATION OF BENEFITS

Shopping for, and comparing financial services can be complex and unnerving for the unsuspecting consumer. The 2020 Australia Consumer Data Rights (CDR) inquiry found the consumers ability to compare products and services is hampered by misleading practices, including:

- opaque pricing practices;
- discounting that could constrain competitive behaviours;
- unclear approval criteria; and
- complexity of plans and product bundling.[234]

The report warned that while bundling can benefit consumers the convenience creates a disincentive to switch. This is partly due to the complexity of comparing individual components of a bundle and the perceived effort involved in shifting to new services.[235] In New Zealand, the Ministry of Business Innovation and Employment (MBIE) has identified a lack of transparency in existing financial services, alongside commercial disincentives, constraints to competition, and fragmented regulatory systems, as barriers to the data flows that enable open finance.[236] Similarly, the Establishing a Consumer Data Right report for New Zealand observes:

"Information asymmetries, market structure, and a lack of transparency combine to give incumbent providers a significant competitive advantage in many markets. In turn, these factors coalesce to create strong commercial disincentives on incumbent providers to share data, creating barriers to entry for new participants in many markets."[237]

COMPLEXITY IN GAINING INFORMED CONSENT

If the process for consumers to provide explicit informed consent is too onerous consumers will be deterred from engaging with new services. User experience standards, including simple and transparent ways for consumers to give, track, and withdraw consent, are an essential part of the equation.[238]

The full implications of giving consent must be transparent to the consumer. A recent report by UK's Financial Innovation Lab about the impacts of open finance on vulnerable customers noted:

"Contracts often involve complex data chains, which cede control of data to many more firms than is at first apparent. This can result in data sharing impacting access to multiple services. There is therefore a real danger that people will fail to understand the full implications of allowing access to open finance data. This undermines the notion of informed consent."[239]

Open finance participants must take care to ensure users understand how their data is used.

Clarity Insight surveyed New Zealand consumers in November 2021 regarding their awareness and attitudes towards open finance. Their research revealed there is a need to outline 'boundaries' around uses of data – especially around the role of third-parties.[240]

THE WAY WE TALK ABOUT OPEN FINANCE MAY BE HINDERING CUSTOMER ADOPTION

When consumers are asked about open finance, a recurring theme is the exclusionary nature of the language used and the need for clear, non-technical communication. How a solution is framed will impact uptake and demand. A 2021 poll by cloud platform provider Mambu found that while around 80 percent of consumers liked the benefits of open banking, 60 percent were unaware of what it was, and 48 percent did not like the concept as they understood it. The report authors said, "To truly be customer-centric it's time to stop talking 'open banking' and show them it's simply 'smart banking'."[241]

In New Zealand, a 2020 survey showed that just six percent of people had both heard of open finance and are confident that they know what it means.[242] In 2021, 82 percent of New Zealanders said they had not heard of open finance, when it was described to them as: "a new way to manage your money, where financial institutions, with your permission, can provide other financial service providers access to your personal and financial data to create more customised services tailored to your needs."[243]

"I think I'd start to lose track of who was doing what and who I had given permission to. There is a lot going on and I like to be in control. Perhaps if it was really clear in the settings – and easy to see or adjust things, then I'd be happier."

"Yeah, I'd be comfortable consenting to it all as long as it made it real clear that you can go in and revoke your consent for certain parts of it. So the design of the platform, like the part where the settings are – would have to be very clear and prominent, and easy to access. Especially for people who aren't very tech-savvy. Not like on Facebook."

"There needs to be an appropriate level of digital and financial education to get involved and engage. What is the ease of access to these tools? I think it's quite a slippery slope when you talk about aggregation and abstraction and you feel like you're in control, but you might not be."

Quotes from community engagement panelist

"This needed to be presented in simple, plain language. How will we ensure that people from different backgrounds, who are time-poor and language-poor will understand?"

"How do we make no cost barrier, no access barrier for people that would otherwise, never know that this kind of service was available. Generally the marketing of this stuff is never targeted at Māori or Pasifika. Like advertising on radio. Pasifika in particular are very young so are we using platforms like Tik-Tok, Instagram or Facebook to engage the older cohort?"

Quotes from community engagement panelist

Supply-Side Barriers and Challenges

There are several supply-side barriers that will need to be overcome for New Zealand to have a thriving open finance ecosystem and improve financial inclusion.

People Challenges

THE SCRAMBLE FOR OPEN FINANCE TALENT HAS JUST BEGUN

The emergence of open finance will exacerbate New Zealand tech skill shortage problem. As with other countries, the race is on to attract global talent with specialised skills to New Zealand. Fintech innovators need this talent to take advantage of the market opportunity. They must also then retain the talent they have developed.[244]

The scale of this problem was highlighted in a 2021 survey of Australia's fintech sector. It found that two-thirds of fintech organisations were struggling to find talent in Australia and almost three-quarters stressed the importance of skilled migration visas in overcoming this burgeoning problem.[245] An October 2021 review of Australia's CDR progress, found that a quarter of organisations said the challenges associated with skills shortages were hindering the development of products and services. This challenge has been compounded by immigration and employee mobility barriers during the COVID-19 pandemic.[246]

Process Challenges

INNOVATORS MAY STRUGGLE TO SCALE ACCREDITATION HURDLES

Prohibitive accreditation criteria and costs is a barrier to the competitiveness of an open finance model.[247] This barrier needs to be addressed early in the journey to ensure New Zealand can realise a key open finance benefit – that of creating a vigorous competitive ecosystem that supports innovation. The CDR review in Australia recommends a tiered, risk-based accreditation model to be developed to ensure that barriers to new market entrants are removed.

BILATERAL CONTRACTS

Research suggests that standard rules for fintechs entering into arrangements with data providers are inefficient. International jurisdictions are still grappling with the regulatory impediments of bilateral contracts, such as between banks and third-parties. A Canadian review of open banking recommended that such impediments to secure data-sharing need to be addressed, "with a view to resolving hurdles that necessitate bilateral contracts.[248]" The review warned that using bilateral contracts instead of a framework of standard and common rules is, "inefficient and do[es] not provide a consumer-centric and transparent foundation for open banking to thrive."

LIABILITY

As with other technologies that include an element of automation, or the merge of tech and industry applications, the concept of liability has several grey areas for open finance. For example, who is liable if there is an outage or security breach associated with the technology? This is an issue that could potentially plague bilateral contracts.

In the community engagement panels undertaken by Toi Aria to support this research, New Zealanders wanted to know who is accountable for putting things right, for example, in a data leak situation, or dishonest use of data. [249]

"There's an expectation that stuff like leaks happen. It's knowing beforehand how it will be put right that will raise my comfort. I want to know how it will be put right and by whom so I am not out of pocket."

"Once a data breach has happened what do you do? Is there some kind of regulator in place that can force people to do things because basically for the average Joe, how are they going to get reparation? You're going to be stuck between everybody blaming everybody else."

Quotes from community engagement panelist

Different countries have taken different approaches to liability. Payments NZ's literature scan on national level liability models used in open banking provides these examples:

- Hong Kong's regulated open API framework which enabled the industry to create a "common baseline" for how API providers and third-parties partner.
- The Institute of International Finance's work on pillars and principles for how open banking and digital networks can establish trust and manage liability.
- Europe's Payment Services Directive Two's (PSD2) – selected content that summarises how liability is managed, and their methodology and formula for how the level of insurance is required by third-parties.
- How Australia's CDR allocates and manages liability using a good faith approach.

Panel participants wanted to see an independent body with oversight of regulations – and the teeth to be able to act against wrongdoers, and to advocate or act for parties who had grievances.

AUTHENTICATION FRAMEWORKS CAN BECOME A BARRIER

In Europe, heavy customer authentication processes mandating two-factor authentication have introduced more friction into the payments process. This is slowing the progress of open finance in the region.

The UK's Smart Data Working Group said, "The authentication process should be smooth and user-friendly.[250] It goes on to suggest some friction is needed to generate trust that processes are robust and consumers' data is protected. This is a balancing act; if friction is too high user experience will deteriorate and usage will wane. The report warned that the use of digital authentication processes could exclude users with inequitable access to digital services needed for verification, such as mobile devices.

"What protections are in place for misuse of data? Is there some kind of regulatory body like an ombudsman? Would companies get fined or struck off if they misused my data? I'd need reassurance that this would be the case."

"This needs to be policed or enforced by some kind of organisation – like the FMA or an ombudsman overseeing the whole thing."

Quotes from community engagement panelist

> ***"Customers should be able to grant persistent authorisation and manage this authorisation transparently."[251]***
>
> Farrell report into open banking in Australia

Technology Challenges

DATA MANAGEMENT CHALLENGES

Growing volumes of disparate data sources will create new headaches for industry. Solving this will require further investment, particularly where it involves the legacy systems within the banking sector.[252] Incomplete or out-of-date information can create gaps that will challenge the effectiveness of using open finance tools for decision-making. For example, checking credit history for lending to businesses and SMEs particularly in times of economic turbulence.[253]

The key will be to avoid a 'one-and-done' approach. According to Australia's CDR review "A key challenge with the CDR is to ensure that privacy and information security arrangements are tailored and proportionate to the different data types and risks, while also avoiding complexity which harms consumer comprehension and exercise of their rights and imposes undue costs on participants."[254]

CYBERSECURITY AND NEW RISK SURFACES

Data misuse, fraud, scams, or other financial crimes will likely escalate as the value, volume, and qualities of data increase. With new technology comes potential new security threats.

UK Finance reported a 32 percent increase in the number of investment scams advertised in 2020. Open finance could increase the risk of fraud, with this risk increasing as consumers are prompted to share data more frequently.[255] In other countries, the challenges relating to fraud detection, money laundering and other cybercrime have grown. However, detection systems may struggle to keep pace with this escalation.[256]

> ***"Who isn't getting hacked these days? It's becoming commonplace. Not long ago I couldn't access my Kiwibank account for two weeks, but it was good to see when I did get access to my bank account at least the money was still there."***
>
> ***"Data leaks happen. And I do feel like this platform would be a target for hacking at some point."***
>
> Quotes from community engagement panelists

In a recent survey of New Zealand fintech companies by FinTechNZ, security, privacy, trust and transparency ranked highest in terms of customer concerns vis-a-vis open banking and data-sharing. It is vital for the industry to address these concerns immediately.[257]

Participants in the research's community engagement panel considered it inevitable, or at least highly likely, that data breaches caused by hackers could be expected in any online platform.

Those surveyed were especially concerned about data breaches featuring dishonest use of data by an entity operating within an open banking platform. Respondents identified regulation, oversight and clear resources as prerequisites for engaging with open banking based technologies.[258]

BLINKPAY

Security of Customers Data

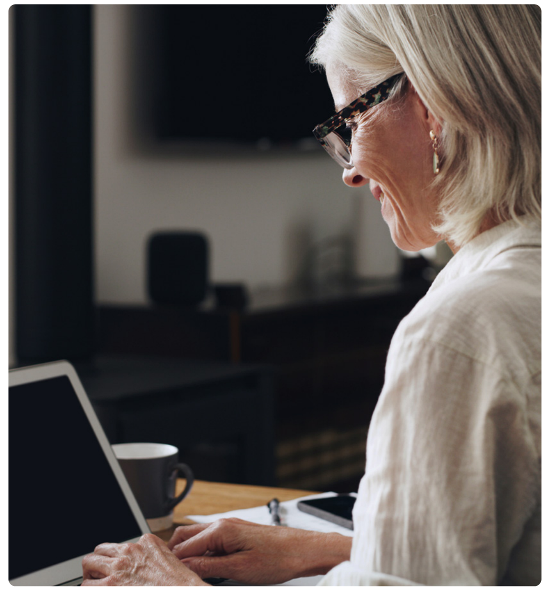
Is The Number One Priority

The bills we receive come to us in multiple ways: via email, an online account, or via physical post. Blinkpay solves the problem of keeping track of all of our bills – and paying them. The Blinkpay app allows users to view, store, and pay their bills all in one place . Businesses can send invoices directly to their customers' internet banking platforms for review and payment. Blinkpay users have a consolidated view of their outgoings and reduce the risks of extra costs for failed payments.

A core strength of Blinkpay is the company's strong stance on the security of customers' data. Founder Daniel Karehana says the security of Blinkpay's data is, and always will be, its first priority. To illustrate this, Blinkpay became the first Māori FinTech to be accredited with ISO 27001 security certification. In October 2021, the company announced it had signed a bilateral API agreement with BNZ. Customer data will be securely shared between Blinkpay and BNZ with the user's consent, meaning the customer will not need to share their internet banking logins, like some other apps.

BlinkPay is a good example of a home grown FinTech that is role modelling significant steps towards trusted and secure Open Banking in Aotearoa.

www.blinkpay.co.nz



As the number of participants within the open finance ecosystem grows, so too do the points at which data can be compromised. Those without the experience, knowledge or financial wherewithal to competently navigate the risks will be most impacted.[259]

These risks will likely require additional substantial investments, particularly legacy systems not designed for open finance.[260] High regulatory compliance burdens, asymmetrical information access and commoditisation could strengthen large incumbents' positions, reduce consumers' choice, and potentially decrease overall product quality.[261]

AUTOMATION AND AI

Some open finance systems will use embedded AI. For example, automated advisory or decision-making tools. To create trust with consumers, it is crucial that these systems can explain their choices.[262] Ethical use of AI includes ensuring it is free from bias, is transparent, is accountable, and upholds consumer protections.[263]

Several community engagement workshop participants raised concerns about bias and discrimination that could be embedded in algorithms. Moreover, there was concern that algorithms used in open finance would reinforce existing biases within traditional banking systems.

Participants suggested they would be more comfortable if there was human oversight and greater transparency about how algorithms worked, including the data used and the criteria applied.[264]

Recently, Rob Hale, Chief Digital Officer at Regional Australia Bank, said consumers "want help with automating the tedious things like analysing income and expenditure, but when it comes to big decisions, they want to have a proper conversation with a human before they commit. Perhaps the biggest challenge is to not get too carried away with automating the life out of everything."[265]

PORTABLE DIGITAL IDENTITY

New Zealand's Digital Identity Services Trust Framework bill will set out the rules for a digital identity service. According to the Australian CDR review, a secure digital identity verification tool is critical to create trust in open finance and data-sharing.[266] Australia's CDR review noted, "Wide adoption of digital identity solutions would assist quick, efficient and convenient switching". Delays with developing digital identity frameworks in New Zealand could create a challenge for open finance rollouts. Likewise, the UK FCA have noted that the creation of a viable, portable and unique digital identity could reduce the authentication barriers that arise when dealing with multiple providers. Such an identity would also help the financial services sector meet their due diligence obligations.[267]

"That they use automated decision-making tools made my trust plummet, largely because of personal experience with automated decision tools in banking and insurance. I'm an outlier in both my housing and my work situation, so getting insurance and getting a mortgage was extremely hard even though I had the income. I'm not convinced an automated decision-making tool is going to get me anything because it's not got me anything in the past – it's just told me that I don't meet the criteria to get a mortgage or to get insurance. It's been a real fight to get that."

"I'd want information around the data that they're using to build the algorithm and how they're using it. It would be good if this was communicated in a way that I could make sense of and understand. I'd want to know that there isn't a data gap when it comes to women. And it's not just women – it's also people from different ethnicities and general backgrounds."

Quotes from community engagement panelists

Consumer Awareness and Capabilities

Consumer awareness and capabilities present additional challenges that will need to be overcome to develop a thriving open finance ecosystem and improve financial inclusion.

Lack of Knowledge and Awareness Limits Participation

For open finance to work, consumers must embrace it. However, there are challenges to creating the trust required. In other open banking rollouts, consumer trust was highlighted as a challenge, particularly with respect to data access for non-banking third-parties. Other concerns cover the resolution of complaints and liability when something goes wrong.[268] New Zealanders cite concerns around the integrity of third-parties to manage their data appropriately.[269] Consumers will need to become comfortable with the nature of third-parties in order to fully engage.

Consumer awareness is a barrier to uptake. This is partly because open finance branding and messaging is designed for digitally literate consumers and the industry itself.[270] Consumers need to be made aware of the meaningful and relevant applications available to them and their family should they decide to share their valuable information.[271]

According to recent research in New Zealand, more than eight in ten people are not aware of open finance – even when it was put to them in a practical way. Once it was explained, one in six New Zealanders indicated they would be comfortable with a full open finance environment, but six in ten are reluctant to engage at all. This research found that the major hurdle relates to who consumers feel they can trust with their data, and wariness around how their data could be used. Unsurprisingly, New Zealanders with financial freedom were the most comfortable with the open finance scenario, while those financially vulnerable were the least comfortable.[272]

In the FCA's open finance feedback statement, consumer sentiment and awareness was identified as the biggest barrier for open banking services uptake.[273] Compounding this obstacle, those aware of open banking said benefits were unclear and data security was a concern.

The submissions to the FCA's report suggested that regulatory and technology-led transformation would not shift consumer behaviour. Rather, New Zealand will need a combination of compelling use cases and Government-led consumer education campaigns around data-sharing rights.

Low Financial Capabilities Limit Participation

A 2019 study by Deloitte found that lack of financial and data literacy was a major barrier to consumer awareness and the impetus to use switching services.[274] People with low financial literacy pay a loyalty premium. That is, they are unaware of other options and simply trust their provider. The report noted the requirements to maximise the benefits of new financial models are, "greater levels of both data literacy and financial literacy, financial capability and financial consciousness, if consumers are going to be able to effectively assess the benefits associated with alternate pricing options for lending, alternate savings options, and better budgeting and personal financial management generally.[275]

The report distinguishes financial literacy, financial capability, and financial consciousness:

- Financial literacy changes people's ability to understand
- Financial capability changes people's capacity to act
- Financial consciousness changes how people make decisions, take actions, and understand the consequences of their decisions

Improving the financial literacy of New Zealanders needs to go hand in hand with changing behaviours and mindsets relating to finance, including attitudes towards money. Consumers with a more positive attitude towards their finances will be more motivated to improve their financial literacy and capabilities.

"When you have mortgages and Investments and credit cards and insurance, and all these sorts of things – nobody ever really teaches you how to do this sort of stuff. You can manage this stuff really well or you can manage it really badly. So if this is a one-stop shop with some emphasis on the education side as well, then I think that's really good."

Quote from community engagement panelists

Behaviours and Beliefs Limit Participation

The 2020 Australia CDR enquiry warned that consumer's behavioural biases created several potential barriers that may affect their inclination to participate in open finance services.[276] These include:

- analysis paralysis (too many choices);
- uncertainty of the future (lack of urgency);
- emotive reasoning (fear of failure);
- loss aversion when changing providers;
- endowment effect; and
- status quo bias.

A similar UK study found the biggest barrier to investment is the customer-held belief that they cannot afford to invest due to a lack of information, and the perceived risks of sharing data with non-bank third-parties.[277]

Financial Inclusion Barriers

Financial inclusion means that financial products and services meet the needs of all people equally and with the purpose of improving peoples financial wellbeing, and all people have an equal opportunity to access financial products and services that are appropriate to their needs and to participate meaningfully.

Potential for Exploitation and Unintended Consequences

The technologies and processes underpinning open finance can be used to exploit vulnerable consumers – both intentionally and unintentionally. According to a recent report by McKinsey:

"Financial services can be a vector for unequal treatment or discrimination. Open financial data may make those abuses easier or more prevalent. For example, institutions might be able to use open financial data to more accurately prevent customers deemed unprofitable from opening bank accounts, which could systematically increase the unbanked population in certain segments."[278]

The drive for hyper-personalised services, combined with automation and incomplete data, has the potential to leave consumers exposed to new risks. These potential unintended consequences include pricing premiums for consumers deemed 'risky' or switching advice that is discriminatory or leads to suboptimal outcomes.[279]

Problematic Data and Overreliance on Automation

Financial institutions already use tools to support customer risk assessment. However, without appropriate guidelines and rules open finance has the potential to exacerbate current risk assessment bias. A McKinsey paper warned that additional care must be taken with data that may be incomplete, compromised (such as identity theft), inaccurate or out of date. Consumers' lives and circumstances change and, as noted by McKinsey "Without an automatic or easy mechanism for correction, problematic data might block an individual or enterprise from accessing a needed financial product at a fair price."[280]

As more demand for personalisation of services grows the quality and completeness of data will become critical. Databases absent of clean, quality and complete data risk creating embedded biases, suboptimal switching, flawed assessments of customer needs, misuse of data, and inappropriate recommendations.[281]

A recent UK study focusing on open finance and its impact on the vulnerable warned of the potential for "careless automation" and exclusion, stating:

"Customers can feel more comfortable disclosing information related to vulnerability in conversations with staff, and automation will remove opportunities for that to happen. Automated systems can impact customer decisions too. Reduced 'friction' can make it easier for people to act against their best interests. Navigating new online systems can be overwhelming and limit engagement, or inhibit informed decision-making."[282]

PART FOUR: Opportunities and Recommendations

The Opportunities for Open Finance

Open Finance presents an opportunity to enable improved financial wellbeing and outcomes for New Zealanders, our businesses and organisations, and the country itself.

Open finance will deliver new products, transparency, and ease of managing finances. Kiwi's stand to have more control over their financial decisions, improved attitudes towards money, and enhanced financial capabilities. For businesses, open finance can help level the playing field for SMEs. It will enable the financial services industry to embed products, and will help develop, grow, and export our burgeoning fintech industry to the world. For New Zealand and its people, improved financial outcomes will support GDP and export growth. Open finance also has the potential to radically change how the Government delivers essential services like social welfare, the healthcare system, or Inland Revenue.

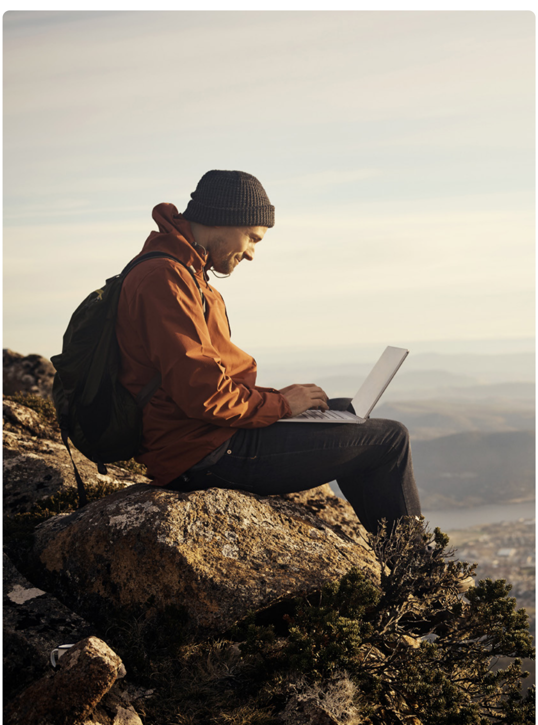
Improving Financial Wellbeing and Outcomes For Kiwi's

FINANCIAL INCLUSION AND CONSUMER EMPOWERMENT

Open finance provides the opportunity to address financial inclusion gaps and mechanisms that are negatively impacting consumers' and SMEs' financial wellbeing. The key to success is to shift the emphasis to purpose-driven open finance innovation, and to ensure financially vulnerable people and their representatives have a meaningful voice and input.[283] Examples of how marginalised New Zealanders stand to benefit include:

- **Partnering and engaging with those at risk of exclusion.** For example, the RBNZ, Reserve Bank of Australia (RBA) , and Bank of Canada have formed a voluntary network with indigenous partners to foster discussions and raise awareness of indigenous economic and financial issues.
- **Focus on the big gaps.** Building a credit history is highlighted as one of the biggest exclusionary factors. Open finance provides the opportunity to address this through a targeted information approach. For example, Moneyhub's Rent Recognition provides alternative credit data to help previously 'invisible' people build a credit history.[284]
- **A locally grown open finance option.** Inclusion is also influenced by the culture and values of the community it operates within. To get the biggest benefits of inclusion in New Zealand, it is critical to innovate for a solution and community that meets those needs. For example, it must consider the principles of Te Tiriti o Waitangi, Māori data governance (MDG) model and the principles of the Māori Data Sovereignty Network. A co-design approach is recommended.
- **Opportunity to address inequities for disabled users.** Open finance innovators are building solutions for people with disabilities or those who need assistance to engage with financial services. For example, Touco has developed an app designed to help people who have long term mental health difficulties to achieve financial independence. It also has an app for their guardians to monitor transactions.[285]

Recent research in New Zealand shows that younger Kiwis (who tend to have higher incomes) present the best opportunity for early adoption of open finance-based services. They are more tech-savvy, and more likely to already be engaging in fintech services to maximise their financial management. Research suggests younger New Zealanders are also more aware and interested in open finance, and willing to provide data permissions.[286] A focus on developing and marketing digital financial solutions for this group, with a genuine consideration of their circumstances and needs in supporting the building of greater financial capability, will help kickstart adoption, and improve word of mouth recommendations and awareness within peer groups.



ENABLING CONSUMER CREDIT TO ADDRESS THE FINANCIAL INCLUSION GAP

Inadequate credit assessment tools, inability to access or afford credit, systemic decision-making bias, and complexity puts consumer credit out of reach for many people.[287] In New Zealand, new credit laws, under the Responsible Lending Code, came into force in December 2021 and may make it harder for people to access credit.[288] The rules require lenders to ask for additional details when it comes to assessing affordability. While this is designed to ensure people can afford credit, it may make it harder for people to access credit they have easily accessed in the past.[289] Open finance can address this perpetual cycle of inequity and debt. For example, open finance can enable personal debt advice. The insights on consumer debt behaviour that open finance will enable should increase responsible lending. These insights could provide a dynamic view of a consumers' financial situation and activities allowing for faster risk assessments.[290]

Data and data automation will be at the heart of open finance. Data, the sharing and coupling together of apparently disparate data sets, and performing advanced analytics, will help make for better and more efficient credit pathways for both consumers and SMEs.[291]

ADDRESSING FINANCIAL WELLBEING AND SECURITY IN RETIREMENT

There is growing uncertainty amongst Kiwis about their financial wellbeing in retirement. About 40 percent said in a recent survey that they will only just make ends meet or will struggle financially in retirement.[292] Recently Te Ara Ahunga Ora Retirement Commission said, "Informed financial decision-making has a positive effect on preparedness for retirement and is the secondhighest (after spending restraint) positive effect on active saving."[293] The Commission said the ability to compare financial products and make informed decisions enhances preparedness for retirement.

Open pensions is a facet of open finance that provides an opportunity for New Zealanders to improve their retirement financial planning. This will make it simpler to manage retirement planning through aggregated information. It will make it easier to switch products as needs change without jumping through multiple hoops.[294] In The UK, the Department for Work and Pensions (DWP) is looking to develop pensions dashboards to centralise retirees' financial information.

IN THE FLOW STATE

Changing People's Relationships with Money

In The Flow State is an early-stage New Zealand start-up which aims to drive financial security for families challenged by debt. Through their community work, co-founders Tyrone Tangata-Makiri and Kamiliia Witehira found families that are constantly in a vulnerable financial state. Often, one unexpected expense might tip the family over the edge from 'just surviving' into a debt spiral. The company wants to change the narrative around money and build more trust within communities. Its ethos is that before you can improve financial capabilities, people must improve their relationship with money.

In The Flow State is looking at how Open Banking and FinTech products can help people develop better relationships with money. It's developers are working on an app to support rangatahi and whanau to manage their financial situations and plan for the future. The company was a participant in the 2021 cohort of the Kōkiri business accelerator.

Empowering the Traditionally Underserved SME Sector

GREATER SME INCLUSION, WELFARE, AND PARTICIPATION

SMEs are the generator of the New Zealand economy; open finance presents an opportunity for greater SME inclusion, welfare, and participation. Open finance can help level the playing field by providing access to products, services, partnerships and markets that enable productivity and growth. There is the opportunity to address some of the financial challenges that SMEs face, including:

- **Sluggish cash flow caused by chasing late payments from customers.**[295] Cash flow management solutions such as Request to Pay (RTP or R2P) enable real-time confirmation and certainty of payment.[296]
- **A lack of transparency and centralised financial information,** which can be solved by providing account aggregation across all business and personal financial accounts (such as sole traders where personal and business lines can be opaque).
- **Little financial services innovation for SMEs,** who are often treated with cookie-cutter products not dissimilar to the consumer segment. Solved by providing help to SME employees in innovative ways (such as improving their credit worthiness and financial wellbeing).[297]

"SMEs are underserved, they need financial services, and they want these products at a low price. Perhaps the additional data can be the currency to make sure as a bank, you are capable of providing these products at a lower cost."[298]

Jonathan McPhail, Global Solution Lead, Corporate Banking, Finastra.

While SMEs tend to be an underserved segment, they have a higher level of comfort with open finance scenarios than consumers. Clarity Insight says its research shows almost four in ten SMEs were interested in a genuine open finance scenario, compared to around one-in-six Consumers.[299]

OPPORTUNITY TO ADDRESS UNDERINSURANCE IN SMES

In response to the economic pressures of COVID-19, many SMEs around the world have started to reduce their insurance cover. In the UK over half of SMEs surveyed said they had cut back on their business insurance.[300] Similarly, around 46 percent of Australian SMEs cut back, while a much lower 23 percent reduced their insurance cover in New Zealand.[301] Underinsurance of SMEs was considered an issue before COVID-19, but now it is becoming an acute problem. Open finance presents an opportunity to create insurance products better suited to the needs of SMEs. For example, embedded insurance products, flexible policies, usage-based insurance, and comparison tools.[302]

MONTOUX

AI based Decision Science For Insurers

Wellington based Montoux describes itself as the only AI based decision science platform for insurers. Its cloud based pricing tools are transforming the life and health insurance industry.

Traditionally, insurance companies work with large spreadsheet based pricing models. Montoux's platform brings together data science, actuarial science and optimisation algorithms. It uses data to identify optimal trade offs when making complex insurance decisions. The platform helps insurers price risk, drive new business growth, optimise operating costs, and improve customer retention.

In 2019 Montoux raised NZ$10.5 million in funds including contributions from Sir Stephen Tindall's K1W1 and the New Zealand Venture Investment Fund. The 2019 TIN report recognised Montoux as a promising Early Stage Company. The company has global customers and partners include Accuro Health, PwC UK, AWS, and Scottish Widows.

www.montoux.com

"An insurance comparison thing would be a hallelujah for me. Every event that I hold I have to get public liability insurance for, and there is just no way to shop around all the providers, and they all ask different questions and compare it in different ways. It's really hard to compare public liability products, it's the most baffling thing to shop for."

Quote from community engagement panelists

Enabling the Financial Services Industry to Shift the Locus of Control Back to Consumers

This is an opportunity for New Zealand to build on the strength of its existing financial sector to create a uniquely Kiwi sector, shaped to fit the culture and values of all New Zealanders. We can set the direction based on our objectives. Consumers and businesses are faster to adopt systems that are culturally relevant. This includes change and innovation within the existing financial services sector and the growth of New Zealand's fintech sector.

If no action is taken, many open finance solutions may end up being provided by international firms who will have much lower connection and commitment to the New Zealand way of life. Some will fit, but some will not. And while we may have the opportunity to take up the benefits of open finance, the wider opportunity for the ecosystem may be missed.

Open finance provides opportunities to bring the locus of financial control back to the consumer and SMEs, in ways that would not be possible with traditional models of financial management. These opportunities will be generated through the development of secure fintech, adaptive regulatory frameworks (as technology and participant behaviours evolve), a robust CDR and an ecosystem that supports innovative collaboration. The opportunity is to:

- Improve pricing for consumers as they get the full and transparent view of their financial picture.[303]
- Implement data portability and sharing of consumer information that fosters the development of innovative products and services, as well as stronger consumer control over their personal information as an asset.[304]
- Create holistic Personal Financial Management (PFM) platforms which demystify investments, create financial consciousness, and the ability to conduct informed comparisons to activate switching activity.[305]
- Reduce friction for consumers and SMEs. Make change and adoption easier, switching easier and customer experience enhanced, particularly when combined with a digital identity.[306]
- Enhance the customers experience for financial services in New Zealand to reduce customer churn to offshore providers. Shifts to offshore providers impacts not only the financial services sector but the wider economy as money moves offshore.

Opportunities for New Zealand

While the open finance opportunity is emergent – the broad sweep of use cases, industries and scale could see it become a generator of economic benefit within New Zealand's digital economy. Already there are predictions that wide-scale adoption of open finance could result in a 1.5 percent increase in GDP in the UK, Europe, and the US. This will be even higher in countries with higher numbers of unbanked populations, such as India.[307]

DESIGNING OPEN FINANCE FOR OUR UNIQUE NEW ZEALAND ENVIRONMENT

Recent community engagement workshops held in New Zealand to support this research show that for some workshop participants the scenarios offered around Open Finance were not innovative or expansive enough in rethinking the financial and banking sector. These people wanted a bigger shake-up and redesign for a uniquely Aotearoa environment — from values, ethics and accessibility through to co-design of algorithms, user interfaces, marketing and education about what open banking could offer.[308]

"I'm part of this iwi trust and we want some money to develop a papakainga, but NZ banks won't give those loans out because of the fact there's multiple owners. It's this huge opportunity, let's rethink how we want to offer banking in a much more Aotearoa centric way."

"I'm Ngāi Tahu and we have our own KiwiSaver fund that benefits all our people. Where do those kind of financial initiatives sit in all of this? There may be a way that this could benefit people who don't have access to this. A reframing of what it might look like as opposed to just a repeat of what's out there just done a different way"

"Most of the solutions are about what we get NOW. Whereas indigenous cultures and te ao Māori is about how we do things for our mokopuna, for our grandchildren. So it's changing the mindset about the immediacy of benefit. If you think about the collective and how you benefit others, this shifts the parameters of all these things because now you're thinking actually, I might grow but I'm also helping these other things grow"

Quotes from community engagement panelists

Participants spoke of an environment that was radically customer-centric, highly flexible, responsive to emerging needs, provided innovative and new offerings and connected with KiwiSaver. A space that could enable generational thinking, was caring, accessible, ethical and values-based. An online space that would provide financial products that would benefit the environment and the housing crisis, a financial space where disadvantaged or minority groups had autonomy and could access benefits with ease and confidence.

OPPORTUNITY FOR JOB CREATION AND ATTRACTING TALENT

The race is on to attract talent and New Zealand's fintech sector has an opportunity to create an ecosystem, innovation hubs, and leverage its hackathon pedigree for global challenges. For example, the Global Open Finance Challenge where CIBC, Itaú Unibanco, National Australia Bank and NatWest Group partnered for the virtual October 2021 competition. These hackathons provide the partners with the opportunity to spot talent as well as find open finance solutions. [309]

As part of New Zealand's digital economy, there is also the opportunity to create a high-quality open finance fintech ecosystem that will attract investment, promote entrepreneurship, and create opportunities for partnerships that nurture the development of high demand skills. This is already recognised as an opportunity in other countries. For example, China's AliPay has partnered with the International Finance Corporation (IFC) to create a global community of fintech talent aimed at generating economic growth. [310]

OPPORTUNITY TO BECOME A WORLD LEADER IN OPEN FINANCE ENABLED ESG

Open finance provides the opportunity for New Zealand to create ESG outcomes. This is already happening in other markets, such as the OB4G Challenge in the United Kingdom – a collaborative effort between industry, fintechs, Government and community groups to create solutions aimed at, "Improving financial capability for the financially squeezed."[311] Some of the solutions include simplified mortgage application services, credit management apps, new forms of risk assessment, and innovative

money management services.[312] Another benefit of the OB4G Challenge was the opportunity to gain new insights into financially challenged consumers. Testing new products exposed other areas hampering financial inclusion, such as digital connectivity and gig worker needs.[313]

Accessing data across multiple financial and non-financial sources, also creates opportunity for solutions for companies' ESG metrics. For example, a company could use open finance to bring together transactional flows in the supply chain with investment activities. When analysed together, this will provide insight into the environmental profile of investment portfolios.[314]

IMPROVING OUR FINANCIAL WELLBEING IS AN OPPORTUNITY TO IMPROVE NEW ZEALAND'S FINANCIAL WELLBEING

We have an opportunity to improve the effectiveness of open finance-based innovation by redefining and elevating financial literacy, inclusion, and wellbeing. A recent study by Te Ara Ahunga Ora Retirement Commission found that "financial knowledge, behaviour and psychology can have a greater influence on [people's] overall financial wellbeing rather than how much they earn, how old they are or what ethnicity or gender they identify with."[315] This is also amongst the metrics that are used to assess a country's economic strength in the digital economy.[316] In other words, this is not only an opportunity to benefit consumers and SMEs but also the wider New Zealand economy.

Change is Good: It Needs to Happen Now

While the opportunities presented by open finance are still evolving and being tested globally, one thing is clear – those who do not move quickly to create the environment, frameworks and local ecosystem of open finance fintech innovators will lose out on early opportunities. For New Zealand the window of opportunity is now. We must develop an open finance ecosystem fit for Kiwi consumers and businesses.

Key Recommendations

With open finance in its infancy, Aotearoa is in a prime position to seize the opportunity to overcome the financial inclusion gap and lay down the foundations for a strong digital economy. Open finance, if done right, provides an enormous opportunity to address inequities right now.

At the same time, open finance presents an economic opportunity for New Zealand to become a global hub for open finance innovators and investors, while opening up opportunities for employment growth in a sphere where skills will be highly sought after as open finance becomes the standard for consumers' financial welfare and empowerment.

In determining the recommendations there are three key questions to answer

1

What needs to happen to ensure an environment that incentivises the development of open finance and fintech solutions in New Zealand, and that reduces the barriers to entry?

2

What needs to happen to improve consumer awareness and understanding of open finance to improve demand for and adoption of fintech solutions by New Zealanders?

3

How do we ensure equitable, inclusive access to and use of digital financial services?

Within these areas New Zealand must focus on pathways and priorities that will help drive adoption, while supporting equitable adoption.

1 Creating a Competitive and Thriving Open Finance Ecosystem and Fintech Innovation

THE CHALLENGE: Overcoming structural and sector barriers to grow a competitive and thriving ecosystem.

THE GOAL: Create an environment that incentivises collaboration, innovation and competition for a thriving open finance ecosystem.

KEY RECOMMENDATIONS:

1.1 Encourage Action Now - pre-Consumer Data Rights
It is likely to take several years before a regulated Consumer Data Rights (CDR) environment, a key enabler for open finance, is in effect. However, there are effective actions that can be taken to accelerate the development of an open finance environment to deliver a functional open finance regime now. These first few recommendations are focused on accelerating market behaviour toward that which a regulated CDR environment will create.

- ***Clearly communicate data use/access expectations under an open finance regime***

  As soon as possible, the Government should clearly set and communicate its expectations regarding the cost to use/access data under an Open Finance/CDR regime. This has the purpose of setting a baseline pre-CDR on the basis that access is to be provided. To the extent that the Government determines data access should be provided without direct cost to service providers or customers, this will go a long way to negating attempts to price data access in the intervening period. The Government may also consider demonstrating its stance on cost for data access by applying it to datasets it manages (e.g. Passports and Drivers License) which play important roles in identification uses cases central to the provision of financial services (and more broadly pan-sector).

- ***Confirm current open finance standards used by Industry will be adopted in a CDR regime***

  To assist with market certainty, we recommend that the Government confirms as soon as possible whether any open finance standards already developed by industry, such as the API Centre's Open Banking Standards, will be adopted and used in the future CDR regime, and determine what is the appropriate governance for standards development going forward, recognising a core underlying driver of CDR is to foster open competition, which naturally raises competitive considerations from existing data-holders.

- ***Look for currently available solutions to accelerate moves to open finance***

  To realise many of the benefits of open finance ahead of the CDR regime being widely supported and available for use, the Government should consider the role and potential accreditation of digital data capture services as a bridging solution for enabling immediate access to open finance data. The practice is increasingly widespread with some banks, Government agencies and leading New Zealand corporations already using services that leverage digital data capture. This can run alongside standards based API's which, as they become widely available and provide an improved solution, will be increasingly adopted. Concerns over privacy can be addressed by the protections already in place in the Privacy Act 2020 however it may be worth considering some form of Government accreditation to further ensure safe guards are in place.

1.2 Develop a Regulatory Framework for Open Finance

Ultimately, the proposed Consumer Data Rights regime that the Government is developing will create the regulatory framework for open finance. The development of a Bill, the consultation process through to an Act and then the enactment of any new regulation will take time. Even once the regulation is in place perceived risk may delay broad engagement with open finance. There will be opportunities outside of the regulation to further stimulate open finance innovation and uptake, for example:

- ***Encourage broad engagement in open finance innovation***

  FinTechNZ should leverage the insights developed from this research, to further raise awareness of the benefits of open finance for helping address issues such as digital financial exclusion and to encourage open finance innovation and uptake even while the regulatory framework is being developed.

- ***Look into sector wide approaches to liability***

  Liability left unresolved creates barriers for data holders to share, therefore the Government should consider a sector-wide approach to liability models. Lessons can be learned from the credit card sector where liability was used to drive adoption. For example, data holders receive safe harbour for liability if they provide data per standards set, within the set time frame, or else they carry liability risk.

2 Consumer Awareness and Understanding

THE CHALLENGE: There is a low level of awareness and understanding in New Zealand about open finance and the benefits it offers. The research shows this needs to be improved.

THE GOAL: To improve New Zealanders' financial wellbeing by building awareness of, understanding of, and adoption of digital finance solutions.

KEY RECOMMENDATIONS:

2.1 Build Awareness and Trust

The CDR regime currently under development will be the foundation for generating trust with open finance. It should ensure a simple and accessible consent model, and it should incorporate consumer protections and 'do no harm' mechanisms.

- ***Ensure the whole financial sector participates in open finance***

  The Government has signalled that the CDR regime will be implemented sector by sector with banking likely to be the first sector. This research identified the value of broader participation in open finance across multiple holders of a customer's data. Therefore it is recommended that the whole financial services sector is designated under the initial CDR regime in order to help build awareness and enable trust by consumers. Within the financial services sector, applying the 80/20 rule, would see most of the benefits of open finance achieved by prioritising designation of large data-holders (e.g. major banks and financial services firms), with later rollout to other financial services participants as appropriate to ensure consistent and equal application of CDR across the sector.

- ***Collaborate on consumer awareness raising campaigns***

  Industry and Government should collaborate on consumer awareness campaigns around data-sharing rights. The UK FCA report shows that work is required to raise consumer awareness and trust because taking just a regulatory and tech led approach alone doesn't shift consumer behaviours. Competitive pressures may inhibit commercial data-holders from encouraging consumer awareness on issues such as the ability to switch providers, therefore the Government may need to take the lead in driving consumer awareness.

2.2 Build Understanding and Access

Research shows that people with higher financial literacy are more likely to engage with open finance and gain the benefits from the additional competitive options available. While New Zealand has a good track record with initiatives to help improve financial literacy, a move to open finance increases the importance of this critical foundation for digital equity. Therefore we must continue to ensure we are providing multiple opportunities for individuals to understand and access information about financial products and services.

- ***Continue to invest in building New Zealander's digital financial literacy***

  The opportunity of open finance is to make financial services more inclusive, but this will require ongoing focused investment to ensure financial literacy and financial capability outcomes for vulnerable communities are specifically targeted. As a country we must also continue to build digital financial literacy through education programmes at schools as well as incentivise courses in adult education.

- ***Consider a trustmark for open finance and data sharing services***

  Industry and Government should collaborate in the development of a trustmark that consumers would recognise and have confidence that they are using an accredited service when sharing their data.

3 *Equity and inclusion*

THE CHALLENGE: People who are financially vulnerable may be in a perpetual cycle of financial exclusion and suboptimal financial wellbeing outcomes.

THE GOAL: Create equitable and inclusive access to digital financial services.

KEY RECOMMENDATIONS:

3.1 Design For Equity and Inclusion

- ***Co-design our future open finance system now with input from the digitally excluded***

  Industry should collaborate to bring together the sector and experience from this initial research to lead the design process for Aotearoa's open finance system. This must include embedding targeted user groups in the design process. Vulnerable users should be a cohort within design right from the start. This ground-up co-design must involve inclusive language design and take a use-case approach.

- ***Ensure Te Tiriti and values such as data as a taonga are understood by the fintech sector***

  The fintech sector must consider its responsibilities to Te Tiriti and how it will uphold the values of data as a taonga and its guardianship. This applies to all players in the open finance ecosystem.

3.2 Ensure it is Part of Broader Inclusion and Wellbeing Activities

- ***Maintain a nationwide focus on addressing digital exclusion***

  The Government must continue with initiatives that address digital exclusion, for there to be improvement in financial inclusion. This includes access to digital devices and consideration of a universal basic internet right for every New Zealander.

- ***Promote how open finance is about improving New Zealander's financial wellbeing***

  The Government should more widely promote how New Zealand's focus for open finance is about improving New Zealander's financial wellbeing. This is a powerful and unique driver.

- ***Build open finance into existing dispute resolution frameworks***

  The Government should ensure that open finance is specifically built into existing dispute resolution frameworks and also consider creating some dedicated processes specifically for open finance such as a multi-stakeholder advisory group for consumers.

The Research Team

The New Zealand Financial Innovation and Technology Association (FinTechNZ) is a purpose driven industry working group and inclusive community that is funded by members and who bring together the community of financial services providers, technology innovators, investor groups, Government regulators, financial educators and people who care about financial technology innovation and adoption.

Our purpose is to contribute to the prosperity of New Zealand through financial technology innovation.

FinTechNZ project managed, analysed and edited the research.

NZTech is the voice of the New Zealand technology sector. NZTech represents over 1,000 organisations across the technology landscape in New Zealand, from start-ups and local tech firms to multinationals, and from ICT to high tech manufacturing. NZTech's goal is to stimulate an environment where technology provides important productivity and economic benefits for New Zealand.

NZTech provided analysis, peer review and design for this study and report.

IDC is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide.

IDC conducted primary research and wrote the core of the report.

Clarity Insight was established in 2014 as a strategic, insight-based agency, committed to helping clients achieve better outcomes, through delivering actionable insight. This is achieved by applying our research expertise and rigour as well as strategy experience. Clarity Insight is a member of the Research Association of New Zealand (RANZ) and adheres to its code of conduct, while its Managing Director is also a RANZ Board Member.

Clarity Insight conducted the primary research component of this project.

Toi Āria: Design for Public Good is a research unit harnessing design for public good. Embedded in Massey University's College of Creative Arts, Toi Āria believes that design has a role to play in delivering public good and is interested in how conversations and community engagement can drive social change. Toi Āria works to connect organisations, government and communities with the views and needs of the 'people most affected'.

Toi Āria facilitated the public engagement workshops that provide the voice of the people in this project.

Methodology

IDC New Zealand Research Methodology

IDC employs a combination of primary and secondary research in analysing the open finance landscape in New Zealand and globally.

IDC reviewed and utilised the findings from local primary research which included surveys and workshops undertaken by Clarity Insight and Toi Aria.

Sources leveraged in secondary research include financial statements, Government statistics, published news articles and press releases, international IDC studies, and consultations with other IDC offices. This included a literature scan of 251 local and global reports and articles available in the public domain and the report of 17 IDC research papers across the topics of open finance, fintech, open banking, open insurance, financial services, payments strategies, and corporate banking.

IDC Research utilised for this report includes:

IDC PERSPECTIVES AND MARKET REPORTS

- Privacy-Preserving Computation Assures Much Needed Balance in open finance (IDC Perspective, #AP47796421, 2021)
- Buy Now, Pay Later — New Products, New Challenges (IDC Perspective, #US48249421, 2021)
- Sustainability in Asia/Pacific Banking: Sustainability Matters, But This Is What Matters Here and Now (IDC Perspective, #AP46522521, 2021)
- What Is the Future of Industry Ecosystems? (IDC Perspective, #US46828520, 2020)
- Fintech and Digital Banking 2025, Asia Pacific (Infobrief, IDC & Backbase, 2020)
- Account Aggregators – Placing Data Ownership and Consent Management at the Center of Open Banking (IDC Perspective, #AP45951220, 2020)
- Open Banking for Homebound Customers in Light of COVID-19 (IDC Perspective, #AP46223320, 2020)
- The Need for an Open, Data-Driven SME Banking (IDC Perspective, #EUR146262620, 2020)
- How can Banks Achieve Digital Experience (IDC Financial Insights Presentation, EUR246173820, 2020)
- Open Insurance is Here: Exploring the Whys and Wherefores of the Future Insurance Business (IDC Perspective, #EUR145789720, 2019)
- Readiness of Asia/Pacific Markets for Open Banking (IDC Perspective, #AP43574418, 2018)
- Regulatory Guidelines for Open Banking: Asia/Pacific Markets and their Varying Paths to Open Banking (IDC Perspective, #AP44362818, 2018)

IDC FUTURESCAPES AND MARKET FORECASTS

- Worldwide Financial Applications Forecast, 2021–2025: Pandemic as an Accelerator for Digital Transformation (Market Forecast, #US46438121, 2021)
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Clarity Insight Research Methodology

Clarity Insight designed and delivered the primary research component of this project exploring the potential for open finance. This involved an online survey of 2000 New Zealand residents aged 18+, weighted to reflect population distribution covering gender, age, region, and ethnicity. Within this total sample, 300 small business decision-makers were also identified to provide an alternate perspective.

Toi Āria Research Methodology

This project used 'The Comfort Board', a research method developed by Toi Āria. The method provides a structure for meaningful conversations about subject matters that can be technically complex and/or emotionally challenging. Participants are able to deliberate, collaborate, and design solutions responding to their own communities needs and aspirations using scenarios that model real-life situations.

They then identify and prioritise the themes and concerns that they consider most important to increasing their comfort on a particular issue.

Toi Āria crafted a series of fictional scenarios — one for a general consumer group on one for small medium (SME) enterprise owners — that builds a narrative where Open Banking is introduced into Aotearoa New Zealand across a time period of two years. Each scenario explored different social and technical variables contributing to the implementation of an Open Banking system including: broking; ease of use; matching providers; use of algorithms; issues of consent; data use; privacy; legislation and standards; types of services, types of data sharing; data leaks, notifications, third party payments; thresholds and notifications; permission settings and information used without permission.

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