



The New Zealand Telecommunications Forum

Telecommunications 2023 Industry Report
Connecting and enabling Aotearoa





Introduction

Welcome to this year's Industry Report. With a new government we have taken the opportunity to focus on the shape of the industry, what the big challenges are and where to next for telecommunications.

The recent weather events brought the resilience of our telecommunications networks into sharp focus and underscored the importance of being able to communicate with emergency services, whānau and communities. The report focuses on our response to Cyclone Gabrielle but also looks at future planning, action and recovery.

We all have a role to play in reducing carbon emissions and for the telecommunications sector, the call to action is about enabling other sectors to reach their carbon emissions goals alongside our own programme of work under the Climate Change Working Group and Product Stewardship programmes.

Consumer protection is a key focus for the sector as we see more sophisticated scams and fraud impacting consumers. The telecommunications sector works closely with a number of government agencies and other sectors like banking to combine efforts, technology and ideas to protect New Zealanders.

Taking everyone on the journey means we will focus on digital equity as an issue. This requires partnerships with both community and government to reach our long-term sustainable goal: a programme that will make a real difference in affordable connectivity for all.

There are now a range of technologies and services available to New Zealanders and the telecommunications sector continues to invest in network upgrades and developing these technologies to meet the needs of all consumers. We are expanding network reach into the most remote areas and increasing capacity as New Zealanders' demand for high-quality, reliable telecommunications services continues to grow.

The New Zealand Telecommunications Forum plays a key role in bringing together the telecommunications industry to address these issues, working to achieve the outcomes together. As demand for telecommunication services increases, so too does the role the Telecommunications Forum plans in bringing together providers, customers, policy-makers and regulators in one place. Our job is to help the sector address these issues and many more that crop up. By working together, we can achieve outcomes the deliver tremendous results both for customers and providers alike.

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Telecommunications in 2023

It's been a busy year in the telecommunications space, with a lot of progress against key deliverables and our work programme. Firstly, resilience. The Auckland region was hit with intense flooding and Cyclone Gabrielle arrived bringing the storm of the century down on the North Island, knocking out power supplies, destroying roads and bridges and impacting telecommunications across the Northland, Auckland, Gisborne and the Hawke's Bay.

The industry has a good track record of coming together in times of crisis to support each other and minimise the impact of any outages by working hard to restore services quickly. I'm pleased to say that within 96 hours of regaining access into the regions, we had restored more than 90 percent of the impacted coverage.

Resilience is now one of those major areas of focus not only for the telecommunications sector but for the whole country. How we provide connectivity in a country prone to major events like earthquakes, volcanoes, tsunamis, rising sea levels and increasingly wild storms, is our top priority. Telecommunications is a critical infrastructure that provides an essential service to enable New Zealanders to be connected in ways it never has before.

But that's not all we've been working on this year. The TCF has also been engaged in the overhaul of the Resource Management Act and the introduction of new legislation that will impact how we build networks in the future. We submitted on the new-look regime and will continue to work with the new government on how to achieve the best telecommunications outcomes including how telecommunications infrastructure is deployed across all of New Zealand.

We are also involved in discussions about the wider climate change concerns to ensure we support the sustainability of our sector and do what we can to minimise our impact on the environment. Alongside this we continue to work on recycling with our partners and supporting the charity Sustainable Coastlines through our RE:MOBILE product stewardship scheme which has successfully stopped hundreds of thousands of old or unwanted phones ending up in landfills around the country.

We are engaging with government and a number of agencies on both rural connectivity and digital equity – to help ensure all New Zealanders have access to the digital services they need. This will become even more critical in the years ahead.

Finally, in July we completed a major project to launch the new-look Telecommunications Dispute Resolution service, which has a new governance structure, constitution and a new independent chair and board. This major undertaking means customers of TCF members can be assured that any disputes they may have with providers will be handled by independent resolution experts, should the need arise.



Paul Brislen, CEO

New Zealand Telecommunications
Forum (TCF)

Snapshot of New Zealand's telecommunications industry



87% of Kiwis can connect to fibre
1.8 million homes and businesses with access, an uptake rate of 70%.



616 MARAE now connected to fibre



14% increase in wireless broadband uptake
To 315,000 connections, the fourth-highest level of wireless broadband uptake per capita in the OECD.



450 RCG cell towers
As of June 2023, with an additional 25 tourism sites and 182km of state highway gaining mobile coverage.



Ranked 4th in the OECD
For average 5G download speeds of 256.7Mbps.



Ranked 6th in the OECD
In the mobile connectivity index for the 4th year running.



Ranked 9th in the world
For average broadband download speed - at 94Mbps. An 8Mbps increase in the last year - ahead of Australia, Ireland, the UK and Germany.

*Sources: Commerce Commission Annual Telecommunications Monitoring Report 2022 and CIP Quarterly Connectivity Report March 2023

Resilience

Building a more resilient telecommunications environment has been a key focus for the sector. Following the recent severe weather events around Aotearoa the TCF has been considering how resilience to natural hazards and disasters (such as severe weather events, earthquakes, volcanic eruptions, wildfires and pandemics) can be enhanced.

PLANNING

The recently introduced Emergency Management Bill requires critical infrastructure sectors to develop an emergency response plan. On behalf of the sector the TCF is developing the Telecommunications Emergency Management Plan which will set out our emergency response planning and preparedness for a variety of scenarios. Preparation for any event begins with the very basics of network design and how infrastructure is deployed. Short to long term planning and investment are required to build in redundancies, reduce single points of failure and enhance the resilience of the network.

ACTION

During an event the telecommunications sector works collaboratively through the Telecommunications Emergency Forum (TEF) to support restoration of telecommunications services for emergency services and affected communities. Cooperation with other critical infrastructure providers like electricity and transport is

essential to be able to move key telecommunications equipment quickly into an area. Generators, fuel, temporary satellite technology and mobile exchanges on wheels are needed to restore services quickly and keep the network operational.

RECOVERY

Timely service restoration is critically important to emergency services and affected communities. We work quickly to rebuild and restore capability and to minimise the impact on customers as much as possible.

OUR INVESTMENT

For year June 2021 - 2022 over \$260 million¹ was invested in the mobile access network and ongoing investment continues. The RCG (2degrees, One NZ and Spark) partnership with Crown Infrastructure Partners (CIP) has received a \$25 million contribution per operator (totalling \$75 million) plus \$150 million Government funding to take the total to \$225 million.

Post cyclone, the mobile network operators have completed vulnerability assessments and invested in additional power back up capability. This includes generator resources, automatic transfer switches at critical sites and more resilient battery technology. Building direct-to-cell technology (mobile connectivity enabled by satellite) will add another layer of resiliency when it becomes available

and its capability matures over time. This will reduce dependency on land-based cell sites if exposed to power and backhaul fibre outages. 5G deployment, capacity upgrade programmes and future LEO (low-earth orbit) satellite technology deployments beyond 2024 continue to build mobile network resilience.

2021/2022 fixed line networks investments totalled \$750 million². Current and future resilience plans include reducing single points of failure across the networks and working together to improve interconnects and increase diversity where possible. Chorus and the Local Fibre Companies have significant investment plans across their core networks to increase route diversity and backhaul fibre for secondary and alternative routing. Exploring alternative network pathways where fibre is installed across bridges and other critical infrastructure is key for fibre backhaul resilience.

Beyond the networks, a major investment project is underway to upgrade the public safety network by the Next Generation Critical Communications, Poutama Whai Tikanga Pāpāho and Hourua (Spark and One NZ partnership). This will deliver a new Land Mobile Radio (LMR) network for emergency services, cellular roaming and prioritisation across the mobile networks, with future work on infrastructure mapping and near real time reporting on cell site status and coverage.

1 & 2: Source - Commerce Commission 2022 Annual Telecommunications Monitoring data

Emergency Response

CYCLONE GABRIELLE

On February 12th, Cyclone Gabrielle arrived in New Zealand killing 11 people and causing more than \$13.5 billion worth of damage in the process. The costliest tropical cyclone on record in the Southern Hemisphere, Gabrielle saw 225,000 homes lose power and more than 10,000 people displaced over the three-day period.

The impact on infrastructure was severe; road corridors were cut by landslides, dozens of bridges were destroyed by forestry slash being washed downstream, and the electricity supply for much of the east coast of the North Island was knocked out when Transpower's Redcylffe substation was submerged in flood water.

A national state of emergency was declared for only the third time in our history and the clean-up and rebuild continues many months later.

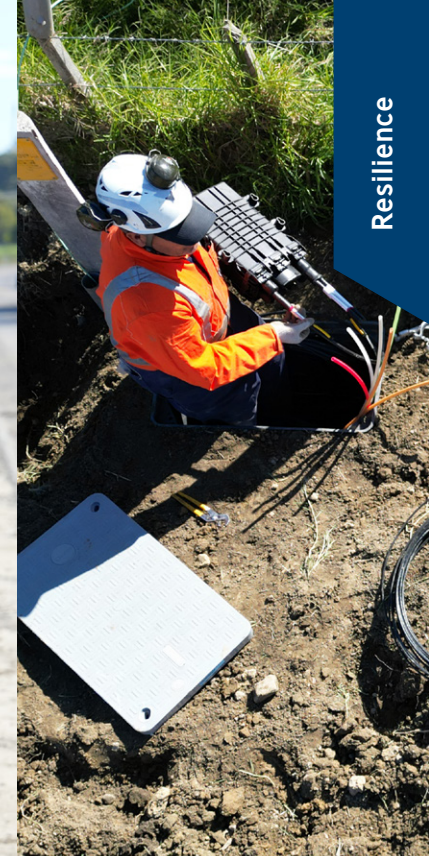
For the telecommunications sector dealing with weather issues is core to our business. In this case, loss of power supply and destruction of fibre lines that are carried on bridges or run alongside road corridors was extensive and for three days many communities across the four affected regions were isolated.

Several days before the cyclone the TCF activated the Telecommunications Emergency Forum (TEF). This Forum comes together to enable effective coordination of an emergency response across the sector when an event may impact national and regional telecommunications. The TEF works closely with NEMA and other key government agencies and sectors to coordinate a response during a state of emergency.

The impact to the mobile networks was largely due to loss of power and damage to fibre backhaul. Out of the

1,645 cell sites across Northland, Auckland, the Hawke's Bay and Gisborne only two towers were damaged by the cyclone. The total number of cell sites impacted across the four regions was relatively low. The worst day was February 14 when 20 percent of cell sites were offline. The worst hit region was Gisborne where for two days (14th and 15th February) around 90 percent of cell sites were offline as both fibre links and electricity supply were impacted.

Engineering teams worked around the clock to help restore service in the region. Generators were deployed, fuelled and refuelled. Helicopters were brought in to help lay fibre lines over the tree tops to reconnect the network. Technicians worked closely with counterparts in the electricity and transport sectors to ensure telecommunications was brought back online as quickly as possible and within the first 96 hours after the storm passed, more than 90 percent of the affected towers were restored.



Sustainability

WE ALL HAVE A ROLE TO PLAY IN A SUSTAINABLE AOTEAROA

Sustainability in the telecommunications sector is becoming increasingly important as Aotearoa strives to address environmental challenges. We need to embrace eco-friendly practices to minimise our carbon footprint and promote responsible resource management. Through innovative technologies and infrastructure upgrades the aim is to enhance and support energy efficiency, and for the telecommunications sector to be a sustainability enabler for customers and other sectors.

By investing in sustainable practices, increasing consumer awareness, encouraging the adoption of greener devices and promoting e-waste recycling programmes the telecommunications sector can play its part in reducing waste. The industry is moving forward and contributing to a cleaner

environment as well as setting a positive example for its customers and other industries to follow in the journey towards a sustainable future.

ENVIRONMENTAL SCAN

New Zealand set its first emissions budgets in 2022, committing us to limit warming to 1.5 degrees and net zero carbon by 2050. Over the decade to 2030 we need to reduce our national emissions by 20 percent, and by 35 percent by 2035.

As a country we are also increasingly focused on climate change adaptation, and mitigating the risks of extreme weather events, such as those that occurred in the North Island earlier this year.

Spark's report *Meeting the climate change challenge through digital technology* notes, "Digital technology has a smaller footprint in New Zealand than the 'vertical sectors' like transport, energy and agriculture. Telecommunications is

an enabler working 'horizontally' across sectors, supporting the current technologies included in the Emissions Reduction Plan with existing infrastructure that has been built over the last decade through both private and public sector investment.

Digital technology can enable emissions reductions through a wide range of mechanisms beyond connecting people virtually - including enabling secure access to remote services, connecting and monitoring physical assets and their environments, creating insights from data, optimising systems and processes, informing human decision making, influencing behaviour, and, creating low-carbon industries and jobs. Collectively these actions could reduce annual emissions 7.2Mt by 2030 - equivalent to 42 percent of Aotearoa's emissions budget targets.

If we all have a role to play then the telecommunications sector and the digital technology it

enables should be integrated into the climate change mitigation and adaptation planning. The telecommunications sector has a real opportunity to enable sustainable solutions across many other sectors in New Zealand.

[Read the full report here](#)

CLIMATE CHANGE WORKING GROUP

The TCF recently established a Climate Change Working Group. The purpose of the group is to gather and share information about the impacts of climate change on the resilience of the telecommunications industry.

One of the tasks of the group will be to develop a set of scenarios that consider climate-related risks to the sector. The intention is to consider scenarios where early ambitious mitigation has limited temperature change, and a future where insufficient early mitigation has led to significant risk requiring adaptation to rising temperatures, sea level rises and extreme weather events.

The new group will also engage in government policy on climate change and make submissions as needed.

You can read our first submission, to the Climate Change Commission on its advice to government on the second emission reduction plan, [here](#).

"We must continue to improve the efficiency of our networks and infrastructure, replacing legacy technologies with modern alternatives that have lower emissions profiles. Digital technology enables a variety of actions that could collectively reduce annual emissions 7.2Mt by 2030 - equivalent of Aotearoa's emissions budget targets."²

ECO RATING - ENABLING CONSUMER CHOICE

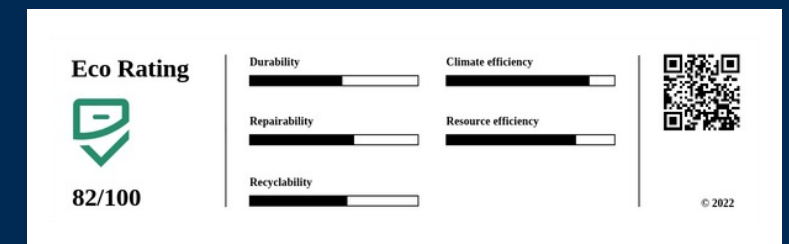
Eco Rating is a newly introduced global rating system that evaluates the impact mobile phones and feature devices make on our environment throughout the entire lifecycle of the device. It assesses the environmental impact of the process from production, transportation, use and to the disposal of the device and produces an overall score that shows the impact the device has on the environment.

- Mobile phone consumers are increasingly aware of how their device choices can contribute to minimising climate impact and lead to a more environmentally sustainable sector. Eco Rating aims to improve transparency and help raise awareness of

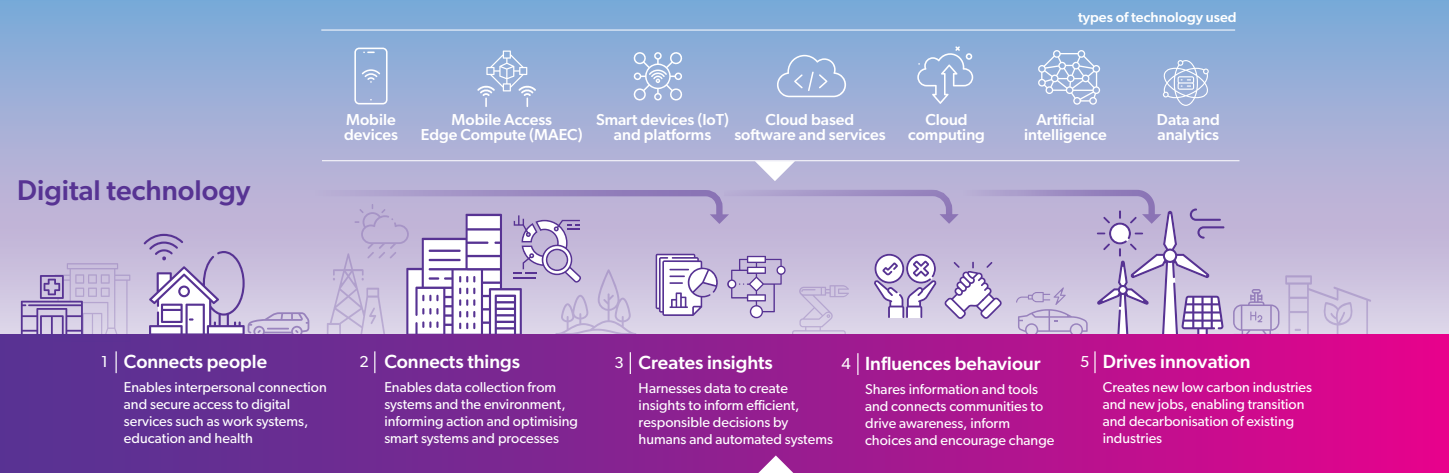
the environmental impact of the phones we supply, and our customers choose.

- Helps consumers to make informed and more sustainable choices when shopping.
- Encourages suppliers to reduce the environmental impact of their devices.
- Aligns the industry in improving transparency and reducing its environmental footprint.
- One NZ has introduced this initiative into the New Zealand market with the support of the TCF and wider industry, to help customers evaluate their device choices through a sustainability lens.

[Find out more about One NZ's Eco Rating scheme](#)



How digital technology enables a low carbon NZ¹



The foundations we need to realise the benefits of digital technology:

- Digital infrastructure**
 - mobile and Internet of Things networks
 - fibre and fixed networks
 - data centres and network sites
 - satellite
 - international submarine cables
- Digital capability**
 - talent
 - intellectual property
 - culture of innovation
- Digital equity**
 - access to technology
 - digital skills and pathways
 - digital trust
- Supportive regulatory environment**
- Funding and capital investment**

¹ & ²: Source - *Meeting the climate challenge through digital technology*. Research from Spark and thinkstep-anz

PRODUCT STEWARDSHIP

RE:MOBILE is the telecommunications sector's product stewardship scheme aimed at reducing the environmental impact of unwanted mobile phones and their accessories via a circular economy solution.

This not-for-profit scheme is managed by the TCF and encourages New Zealanders to donate their unwanted mobile phones and accessories for re-use, refurbishment, or recycling.

As well as reducing the environmental impact of unwanted devices, all the funding received from the scheme is donated to the appointed beneficiary, Sustainable Coastlines.

The scheme aims to:

- Reduce the environmental impact of unwanted mobile phones and their accessories in New Zealand.
- Create a sustainable circular economy by re-using, refurbishing, and recycling devices and the valuable materials that each device contains.
- Increase consumer awareness and change behaviour about mobile phone product stewardship.
- Increase consumer confidence by establishing [appropriate standards of practice](#) and accreditation for product stewardship.
- Enable a collective and collaborative solution to the responsible management of end-of-life mobile phones and accessories.

Recycling:

Non-working mobile phones that are broken or old are recycled in line with ISO accreditation and New Zealand standards. Mobile phones and associated products have many recyclable elements, plastics, and metals, that can be deconstructed and broken or melted down to create new products. Over 95 percent of the materials in a mobile phone can be reused when they are recycled.

Refurbish and reuse:

Mobile phones that still work are assessed, graded, and have their data wiped using the Blancco erasing system. These phones are then shipped to Hong Kong where they are refurbished and on-sold into emerging markets.

EXTENDING THE LIFECYCLE OF DEVICES BY PROMOTING REUSE FOR DIGITAL INCLUSION

Recycle A Device (RAD) is an initiative that takes good second-hand laptops donated by businesses and households and gives them another life by teaching local high school students to refurbish them. These devices are then distributed via community groups into the hands of those who need them the most.

The result is an end-to-end process of device collection, refurbishment, distribution, and disposal that enhances digital equity at every level – providing highly sought-after tools, access,

and skills to high school students, while also offering the added environmental benefit of diverting e-waste from landfill by giving these laptops a second life.

Once devices have been refurbished they are transferred to students within the school community itself, or to other community organisations for distribution to people in need. 2023 has already seen a lot happen for RAD - most recently celebrating wins at the NZ Hi-Tech awards (Best Hi-Tech Solution for the Public Good for

RAD, and Best Contribution to the New Zealand Tech Sector for DFA, RAD's parent charity) along with welcoming aboard new schools and community groups (in Tairāwhiti, Whanganui, Otago and more) and running 'fix one, keep one' workshops.

The Spark Foundation is one of the funding partners of RAD and Entelar – Spark's ICT and logistics business – has partnered with RAD to provide all logistics support.

[Find out more about the RAD programme](#)



3,062 unwanted laptops donated



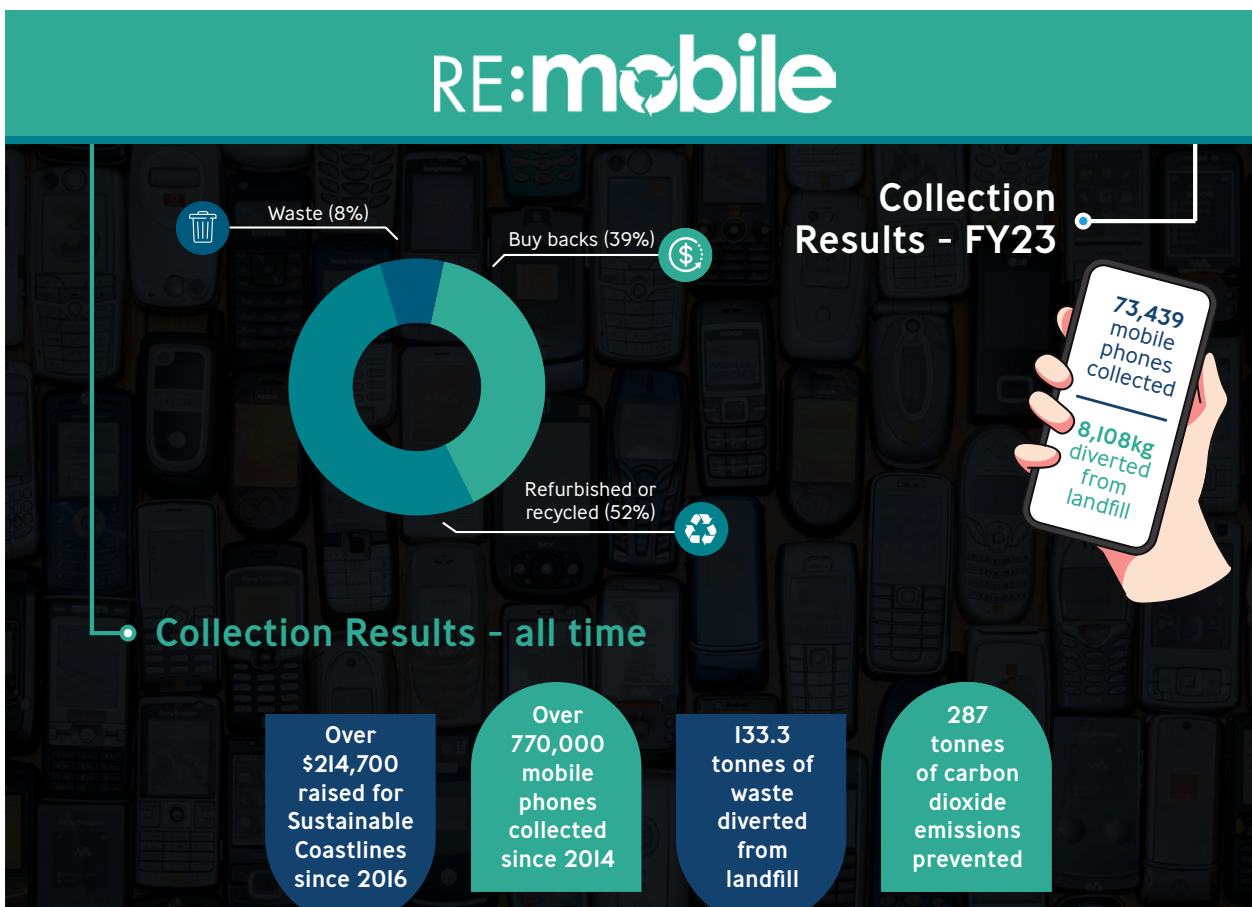
1,277 refurbished laptops gifted by RAD to the community



405 rangatahi with new tech engineering skills learnt through the programme



4.7 tonnes of e-waste given a new life



Consumer Protection

SCAMS & FRAUD

We've all received those emails offering to make us rich beyond our wildest dreams or text messages telling us there's a package waiting for us or a refund due and we just have to "click here".

In a world of smart phones, apps and online commerce, the risk to consumers of scams and fraud has never been higher. However, the benefits of digital services are obvious – you can update your details, buy products, pay for services and do more online – but that ease of use has proved irresistible to a new generation of fraudsters and criminals. Today's scams are more sophisticated and are more likely to sneak through your defences. The TCF works closely with service

"A scam becomes fraud when a scammer gets someone's personal or financial details and uses them for their own gain, or receives money from their target under false pretenses."

Source: CERT NZ

providers and law enforcement agencies to both educate and protect consumers where possible.

LATEST TRENDS

A sharp rise in text scams has dominated the scam and fraud landscapes across New Zealand in 2023. Waka Kotahi NZ Transport Agency, Inland Revenue, the New Zealand Police and many of our banks are being impersonated

by criminal groups both in New Zealand and from overseas.

Scammers are becoming more tech savvy, using impersonation and remote access. Criminal groups are running seemingly legitimate search and social ads for jobs and investment options as well as building detailed look-alike web pages and portals mimicking those of the genuine providers.

Three common themes are seen across almost all the different scam methods – they play on individual's sense of complacency, their fear of missing out, and urgency is used to rush people into making quick snap decisions that aren't always clearly thought out.

Finally, the rise of AI and potential of deep voice fakes continues to add risk and provide new ways to fool ordinary users.

WORKING TOGETHER

The TCF works closely with its members and partners such as CERT NZ, Netsafe, MBIE's Consumer Protection team as a member of its Interagency Fraud Working Group, DIA and the banking sector to educate consumers on the different fraud and scam trends and how consumers can protect themselves.

We have a dedicated Scam Working Group that actively monitors scam calling and text notifications and works with key stakeholders in the banking and government sector to identify and block scam activity across the telecommunications networks.

This year the TCF and the banking industry collaborated to combat scams involving spoofing of legitimate bank numbers. In these scams fraudsters use a bank's actual number as Caller ID to appear legitimate when pretending alert a consumer to an issue and convince them to share personal and financial details. Calls using these numbers always originate overseas. Telecommunication

providers can identify those calls coming in at the international gateway and block them before they reach customers. This action enables the banks to continue using their numbers for their New Zealand customer base safely, while reducing incoming international fraudulent activity.

The TCF quarterly fraud seminars bring together fraud teams from across different sectors and government agencies to review trends and collaborate on solutions. These teams work to protect consumers and even prosecute offenders where necessary.

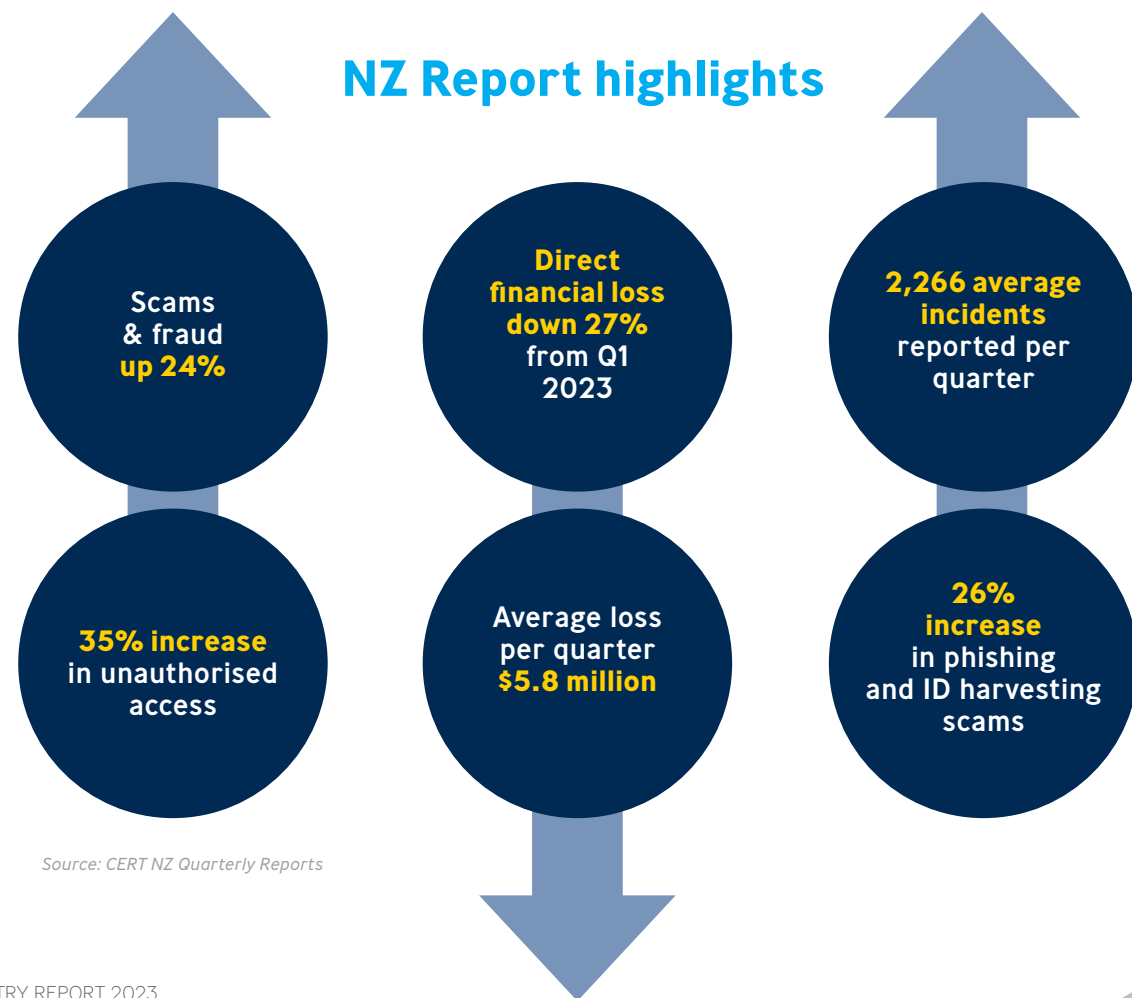
Last year mobile operators introduced a two-factor authentication step in our number portability process to ensure that customers can securely port their number to a new provider. This initiative has essentially stopped this type of porting fraud in New Zealand and made it harder for scammers to gain control over your phone number and to use it fraudulently.

The TCF also offers a free mobile phone IMEI look-up service so customers buying second hand mobile phones can tell if they've been stolen and block listed. The IMEI is a serial number specific to each handset. Block listed phones won't work on any New Zealand network.

The DIA works with law enforcement agencies to investigate harmful text messages where a domestic sender can be identified and, where appropriate, undertaking enforcement action. Customers are urged to send any scam messages to 7726 – the DIA's public reporting mechanism. Alerts about scams are reported to both New Zealand and Australian mobile network operators daily to help them take effective action.

The TCF continues to work with banks, government and law enforcement on solutions to protect Kiwis from being harmed by these types of scams. This includes the detection and blocking of known scams at a network level.

NZ Report highlights



Source: CERT NZ Quarterly Reports



THE HUMAN FIREWALL

A key message to New Zealanders is to be careful when receiving phone calls or texts from unknown numbers and not to engage with or click any links before you know a message is genuine.

Changing consumer behaviour requires extra due diligence before engaging, such as checking first that the email or message is coming from a genuine source.

In New Zealand short codes are the only way a business can legitimately send a customer communications via text and are registered with the mobile operators.

Other flags that a message is a scam are errors and inaccuracies such as non-official email domains, spelling mistakes, and messages sent from an overseas phone number.

[Click here to find out more about latest scam types and tips for staying safe online](#)



PROTECTING CONSUMERS

The TCF is a member of the Independent Reference Group that is tasked with maintaining oversight of the operation of the Digital Child Exploitation Filtering System (DCEFS) to ensure that it operates with integrity and adheres to the principles set out in the Code of Practice.

The DCEFS is designed to prevent access to sites known to host child sexual abuse material. It is managed by Te Tari Taiwhenua (DIA).

TDR Telecommunications Dispute Resolution

TCF members are also members of the Telecommunications Disputes Resolution scheme which is a free and independent service that helps to resolve complaints between consumers and telecommunications providers. Completed in 2023, the TCF led a project to improve the disputes resolution service and governance and established an independently-chaired TDR Board.

[Find out more about the TDR \[www.tdr.org.nz\]\(http://www.tdr.org.nz\)](#)

ONE NZ FIREWALL

In June, One NZ became the first telecommunications provider in New Zealand to sign up to DIA's 11 Voluntary Principles to Counter Online Child Sexual Exploitation and Abuse. One NZ also begun blocking Child Sexual Exploitation and Abuse material (CSAM) at a network level to prevent active or inadvertent access to known

child sexual abuse material on its platform and to actively combat dissemination of any new exploitative or abusive content.

In July One NZ switched on Malware Free Networks (MFN) in partnership with partners DEFEND and the GCSB's National Cyber Security Centre. The tech works by blocking malicious URLs from

being accessed at a network level, meaning where we know of campaigns targeting New Zealanders, like those dodgy missed parcel or incomplete tax return texts we all receive, the links don't work, saving customers from potential fraud or money loss. Over 300,000 scams were blocked within the first six weeks of operation.



Achieving Digital Equity

Digital equity continues to be a focus

With the use of technology rapidly increasing in our everyday lives, it is crucial that all New Zealanders have access to the digital equity essentials: affordable internet and appropriate devices, digital skills, and wrap-around support to stay safe online. But current levels of income poverty, exacerbated by the cost-of-living crisis, mean that large numbers of families cannot afford the basics, including internet access. Not everyone has what they need to function and thrive in an increasingly digital world.

The benefits have been quantified

Digital equity isn't just a welfare issue - digital equity is also an enabler. It allows people to search and apply for jobs, work or study from home, and access essential services like healthcare, education, and banking. It's a springboard for the digital skills needed to grow the tech sector and other sectors of the economy that rely on digitally skilled people. It can also help address climate change, by enabling more people to work

from home (reducing emissions) and providing the digitally skilled people needed for just transitions into more climate friendly industries.

"Right now one in five New Zealanders may be digitally excluded in some way."

Source: Department of Internal Affairs

New research commissioned by Spark from economic consultancy NERA shows that providing internet access to the approximately 130,320 homes without it could benefit New Zealand's economy by up to \$700 million annually. The NERA report confirmed that those most impacted by a lack of digital access are people living in social housing, those with disabilities, job seekers, people recently released from prison, senior citizens, refugees, new migrants with English as a second language, families with children in lower socio-economic households, and Māori and Pasifika youth. Work commissioned by the Ministry of Education suggests that the return on investment (ROI) for

every government dollar invested in digital equity is, conservatively, between \$3.10- \$3.60. Economic analysis undertaken by NZIER for the Digital Council found a similar ROI, with a range of 1:2 to 1:3.

Government leadership and investment is needed

Government's Digital Strategy for Aotearoa 2022 had digital inclusion (mahi tahi) as a key pillar. Government policy on how to achieve digital equity is yet to be developed.

The TCF view is that while government, industry, philanthropy and community all have a role to play, government leadership and investment is needed to support New Zealanders experiencing income poverty who cannot afford digital access. It is time to move from stop gap measures to sustainable solutions.

While the government continues to contemplate policy direction and funding our members are getting on with supporting those consumers with their own sustainable solutions to affordable connectivity.



CHORUS AND THE 20/20 TRUST LAUNCH THE HĀPORI CONNECT PROGRAMME

In an initiative earlier this year, Chorus partnered with the 20/20 Trust to launch the Hāpori (community) connect pilot programme. The inaugural training occurred in Northland, a region with a higher-than-average number of individuals facing digital exclusion.

20/20 Trust is renowned for its ability to establish partnerships with local communities to deliver

digital inclusion programmes. Learners graduate with enhanced digital skills, enabling them to access employment opportunities and take charge of their health, social and community participation.

Māori and Pasifika adults applied to attend the programme to strengthen their digital skills and develop personal learning plans. The aim was to boost their trust, confidence, and capabilities in the digital realm while supporting their communities to thrive in a digital world.



ENABLE KEEPS CHRISTCHURCH CITY CONNECTED

Enable Networks has partnered with the Christchurch City Council to launch a free Wi-Fi service as part of a shared smart city vision for making Christchurch central city a great place to visit. Powered by the team at Enable and built on their gigabit fibre broadband, the Wi-Fi service helps residents and visitors to the central business district (CBD) stay connected.

Enable Networks has also provided Hyperfibre for three of Christchurch's largest high schools, ensuring they have the speed and capacity to meet their needs.



20% of New Zealand adults lack the essential digital skills needed to use the internet safely.

(Source: BNZ digital skills report)



\$464m to \$737m - the annual economic benefit of connecting the 130,000 households that don't have internet access.

(Source: Spark report)

SKINNY JUMP PROVIDING LOW-COST PRE-PAID BROADBAND



Committed to accelerating digital equity, Spark Foundation led the establishment of Spark's subsidised wireless broadband service Skinny Jump. Skinny Jump has promoted a 150 percent increase in connections since the first COVID 19 lockdown in 2020, with nearly 27,000 households now using the service. More than \$6 million worth of free data was provided in the last year to these homes in need.

Skinny Jump initiatives include the 'Awhi Matihiko Red Cross New Zealand' programme, which provides a free Jump connection for one year to new refugees who have recently arrived in Aotearoa, and the 'Ciena Jump for Students Fund', which provides Jump free to eligible school students.



TE WHAREKURA O AROWHENUA

TOITŪ TE TOKI DEVICE EQUITY PROGRAMME

One New Zealand and its charitable arm Te Rourou, One Aotearoa Foundation are partnering to get laptops into the hands of students who need them. Toitū te Toki asks customers of One NZ to donate laptops that are no longer needed to the Foundation. These devices are then loaned to schools for student use during the year. Te Rourou takes on the responsibility for providing a continuing pipeline of devices for students. This ensures ongoing access to good quality devices for education and reduces the burden on schools and whānau. The programme provides a simple and effective way for businesses to support better social and environmental outcomes.



TE PAE HONONGA

Te Pae Hononga is a digital equity kaupapa centred in connection. Connection to iwi, connection to whaanau, connection to whenua, connection to that which makes whaanau feel connected to purpose. Driven by whaanau voice, the vision for Te Pae Hononga arose from a pressing need to address digital inequities exacerbated by the pandemic.

A partnership between Te Kei o Te Waka Tainui, Te Rourou: One Aotearoa Foundation, and One New Zealand, Te Pae Hononga provides Waikato-Tainui whaanau meaningful connection through access to digital connectivity and learning. Whaanau who participate in Te Pae Hononga are provided free access to a One New Zealand broadband plan, devices suited

to whaanau needs, digital skills and online safety training, and cultural learning opportunities.

Grounded in tikanga and te ao Maaori values, Te Pae Hononga offers the opportunity for generations to learn together, where rangatahi support

“Whaanau connection enabled by technology.”

kaumaatua with digital learning while kaumaatua are able to share traditional knowledge and history in return. Through building connection to each other, connection to place and to Waikato-Tainui history, whaanau are provided a space of safety and trust allowing everyone to learn, regardless of where they are in their journey.

To understand the impact of Te Pae Hononga rangahau, or impact research, was developed by Toi Āria: Design for Public Good in partnership with participating whaanau. This rangahau demonstrated the profound journey all those involved in Te Pae Hononga have experienced – from whaanau to the partners walking with them, the rangahau has demonstrated the resounding power of connection. From greater engagement in education, to being empowered to find work for the first time, reconnecting with whakapapa, and utilising technology to protect taonga for future generations, the impact is multi-layered. Te Pae Hononga leverages the power of connection to technology, to people and to place to open opportunities for whaanau.

Note – this story uses Waikato-Tainui dialect; double vowels are used rather than macrons



TUATAHI ENABLING RIDING FOR THE DISABLED

Tuatahi First Fibre went above and beyond to bring better internet to an organisation that is changing lives in Cambridge. Despite being just outside the reach of the fibre broadband network, Riding for the Disabled (RDA) Cambridge had been trying to secure a reliable internet connection for years and relying on hotspotting off phones which were often slow and unreliable due to the dead zone for signal in the area. Tuatahi’s land access team worked with Waipa District Council to secure consent to carry out the necessary works and connect RDA to the fibre network. RDA’s fibre broadband connection is now up and running and the organisation is empowered to continue with their important work without being hindered by connectivity issues.



Connecting Aotearoa

Variety is the spice of life and in telecommunications we have a range of products and services to fit almost every need. Mobile, fixed wireless, fibre and satellite offer a range of speeds and capabilities across the country.

New Zealand's Ultra Fast Broadband (UFB) project has delivered fibre to 87 percent of New Zealand households and for many, this has changed the way they connect at home.

Whether consumers value mobility or speed, whether they have one user or half a dozen, there's a technology and a service that will fit the bill. Forget queuing up to use the family computer, today's digital family have multiple devices connected constantly.

New Zealanders watch TV on the big screen, play games on tablets or laptops, have phones, watches and other devices all utilising the home Wi-Fi to enable our modern life.

During COVID we saw usage levels soar as families switched to working and studying from home. Video calling is now commonplace, many companies have embraced the hybrid working style and today's families are more connected, more in contact with each other than ever before.

The ability for consumers to find the technology that is best for them and

their family's needs is easier than ever. The TCF Broadband Marketing Code ensures that broadband providers present information about their broadband services in a clear, accurate and up-to-date way, enabling consumers to compare plans and information.

"High-quality connectivity will support Aotearoa New Zealand to be a more equitable, innovative place with a strong economy that is resilient, sustainable, and ready for the future."

Source: Lifting Connectivity in Aotearoa New Zealand

Rural customers have been a major focus for the telecommunications industry over the past decade with the Rural Broadband Initiative, the mobile blackspot fund and the arrival of Wireless ISPs (WISPs) all helping deliver services to the rural and remote parts of New Zealand.

Today we can add Low Earth Orbit (LEO) satellite services to the mix, which offer faster connection speeds and more stable connections than ever before.

The value this connectivity brings is evident both in the economics of rural life, but also

in the social aspects. Education and training can continue while you're on the farm and we see customers keep their city jobs but move to the countryside for lifestyle and family reasons, getting the best of both worlds.

EXPANSION OF 5G SERVICES

The mobile world continues to evolve with improved capability and capacity among all three network providers. New Zealand's 5G download speed is now the 4th fastest in the OECD and with three operators all vying to outdo each other, the competition is fierce.

Access to new spectrum bands is essential to increased speeds and offerings and this year the government moved away from its traditional auction model by working with operators to deliver faster 5G speeds. Each network was granted 80MHz of 3.5GHz spectrum in exchange for agreeing to expand coverage across rural New Zealand.

On top of that, the Interim Māori Spectrum Commission received 100MHz to help foster involvement and innovation in the telecommunications sector.

LOOK TO THE STARS – 2023, THE YEAR OF LEO

At the start of 2023, the telecommunications industry was pretty sure 2023 would be a massive year for Low Earth Orbiting (LEO) satellites. What we didn't predict was the speed that this would become a reality. With the impact of Cyclone Gabrielle, the year compressed into a few weeks.

2degrees, One NZ and Spark deployed satellite units into the field to provide temporary replacement backhaul, enabling data from remote cell sites onto their network and by-passing broken fibre strands. Restoring communications to affected communities and supporting emergency services. Access to sites to install satellite units was challenging and often only possible via helicopters because road access was either limited or completely destroyed, particularly across the Gisborne and Hawke's Bay regions. Collaboration and resourcefulness between the

three mobile network operators resulted in 90 percent of affected mobile cell sites being restored within 96 hours.

In response to the Cyclone, almost overnight, satellite technology moved from a handy way to connect the bach to the internet into a major lifeline for local businesses, a key tool for redundancy and resiliency in geographically diverse and challenging regions. Similar satellite technology has been deployed to other remote areas such as the Chatham Islands where the medical centre on the island now employs a Starlink unit to ensure its telemedicine links are always available to its community.

Connection to faster, more reliable internet through satellite technology is also transforming digital learning at Aotearoa New Zealand's most remote schools (kura). Network for Learning (N4L) has recently partnered

with 2degrees to deliver the Satellite for Schools programme, which was commissioned by the Ministry of Education, connecting kura via Starlink.

Finally, satellite companies, such as Lynk and Starlink, in partnership with New Zealand telecommunications companies, are providing a more diverse way to connect standard mobile phones via a 'cell tower in space'. The space race is on, with 2degrees, One NZ, Spark and WISPs all working hard to extend their coverage through satellite to consumers across New Zealand in the coming years. For a country such as New Zealand offering satellite technology promises near ubiquitous coverage for even the remotest locations and is perhaps the ultimate redundancy backstop for disaster recovery, emergencies and business continuity.



RURAL CONNECTIVITY

Rural connectivity remains an important issue, as it impacts the ability of people living in rural areas to access essential services such as education, healthcare and business opportunities. As New Zealand continues to digitalise, it is important to ensure that all New Zealanders have access to high-speed broadband internet.

The telecommunications sector and government continue to invest in improving rural broadband performance with 6,700 rural premises benefiting from broadband capacity upgrades and 7,700 rural premises benefiting from Rural Broadband Initiative Phase 2 (RBI2) over the past year.

Mobile Black Spots Fund

The MBSF is providing funding to build new cell towers in areas with poor mobile coverage. The MBSF has funded over 200 new cell towers to date, and the government has committed to funding an additional 100 cell towers.

1: Source - CIP Annual Report 2022

“By the end of 2024 around 47,000 rural households and businesses should experience faster internet speeds and better reception than they do right now,”

Minister David Clark

Rural Capacity Upgrade

In February 2022 the government announced a Rural Capacity Upgrade (RCU) initiative which is a public private sector partnership to upgrade existing cell towers and add new towers in areas of the rural sector that were experiencing poor performance. This was coupled with increased fibre to the home, additional VDSL copper broadband, 4G mobile broadband and other wireless technologies in the congested areas.

The programme will be funded with \$47 million from the Government’s COVID Response and Recovery Fund. As at June 2022 further funding was secured totalling around \$90 million.¹ At the completion of all current

connectivity initiatives in 2024, 99.8 percent of New Zealanders will have seen improved access to broadband services.

The Rural Connectivity Group

The Rural Connectivity Group (RCG) is a joint venture between 2degrees, One NZ and Spark and has built over 450 new cell towers across the country between May 2019 and June 2023. This network is expected to be completed by December 2023 and will provide 4G wireless broadband and 4G voice calling to at least 30,000 rural homes and businesses. The RCG uses shared equipment to enable all three mobile network operators to offer services competitively from a single site. The towers can also house equipment from other providers, like the the WISPs.

Funding for RCG was \$25 million contribution per operator (totalling \$75 million) plus \$150 million government funding to take the total to \$225 million, managed by CIP.

TIRELESS WIRELESS – CONNECTING HARD TO REACH COMMUNITIES

In the great Kiwi tradition of Number 8. fencing wire and doing it yourselves, one group of ISPs operates round the clock supporting the very communities they live and work in.

Wireless ISPs (WISPs) offer a fixed wireless service to local communities, often in parts of the country where larger operators don’t have service, says WISP Association chair, Mike Smith.

“The vast number of us start out as providing a service to a neighbour. You might have a farm or a farmer who wants connectivity and you find a hill, sort out service then

you can see the neighbours’ houses and they want some too and you go from there.”

This grass-roots approach started around a decade ago and today there are more than 55 WISPs around the country serving around 300,000 customers on a very personal level.

“We work in our local communities. Customers know who we are and if there’s a problem with the service we are straight out there to fix it.”

This came to the fore during Cyclone Gabrielle, where Mike’s colleagues in the WISP community provided a ready-

made technical army ready to go in the hardest hit areas.

“One of the things we’ve realised is we’re already in place and have the capability to restore service in a region regardless of whose network it is.” Mike says the next five years will see a lot of change in terms of rural broadband offerings, and the WISPs will grow to meet that demand.

“In the next five years we’re going to see a lot more fibre both to provide backhaul for the wireless connections but also fibre to the premises in rural New Zealand.”

For many in rural New Zealand that can’t happen soon enough.



EXPANSION OF CONNECTIVITY



78,708 RURAL HOMES AND BUSINESSES can access improved broadband — 93% complete



1,228 KM OF STATE HIGHWAY have mobile coverage — 87% complete



24,793 HOMES AND BUSINESSES with broadband capacity upgrades — 35% complete



98% OF THE POPULATION has mobile network coverage across 3G, 4G and 5G



Total \$2.1 billion invested (project to date)

FIBRE TO THE FARM: THE CONNECTED COUNTRY

The Ultra-Fast Broadband (UFB) programme was completed in the picturesque town of Opononi in the Far North.

This decade-long programme saw network providers Chorus, Enable Networks, Northpower and Tuatahi First Fibre work with Crown Infrastructure Partners to deliver fibre to 87 percent of New Zealanders.

Chorus recently commissioned research with NZ Institute of Economic Research (NZIER) which asks why those in rural areas should settle for anything less when an urban majority can access affordable gigabit broadband? The research highlights that rural customers often have a more significant demand for connectivity than their urban counterparts. Raising rural connectivity to mirror that of our larger towns and cities could potentially add a substantial \$16.5 billion to the New Zealand economy over a decade. And while the aspirations for Aotearoa are aimed high at 95 percent or more for fibre coverage (mobile coverage has already reached 98 percent of the population), such ambitions demand a collective industry and government

effort. Rural households are the primary beneficiaries of this \$16.5 billion largesse, with potential annual savings of \$6,500 per household. These gains follow better employment opportunities, enhanced telehealth services, and seamless online transactions with governmental and financial entities. Christina Leung, the Principal Economist at NZIER, says the pandemic showed how dependable technology and high-capacity networks can profoundly impact lives.

“We estimate that for rural businesses, the improvement in productivity from having access to connectivity with unconstrained capacity increases output each year by at least \$189.5 million”

Source: NZIER Rural Connectivity Report

Copper services in rural areas

As New Zealanders increasingly embrace modern digital solutions, the demand for copper services is dwindling. Today, copper-

based services cater to a market a fragment of its original size, making up less than half of all rural broadband connections. Chorus foresees a gradual phase-out of copper within the next decade as consumers opt for more resilient and advanced technologies offered by fibre, wireless and LEO satellite providers. In May this year, the Commerce Commission launched its Rural Connectivity Study which aims to examine the telecommunications market in rural New Zealand, focusing on connectivity options beyond the UFB fibre footprint. It aims to arm policymakers, advocacy groups and rural consumers with essential insights into the technologies available, the pricing, the performance and the consumer experience.

As New Zealand continues its march towards a comprehensive digital future, the spotlight on bridging the urban-rural digital divide intensifies. Taking high-capacity networks and other technologies deeper into rural areas should not just be an aspiration but an economic and social necessity.



About the TCF

The TCF plays a vital role in bringing together the telecommunications industry to resolve regulatory, technical and policy issues through actively fostering co-operation and collaboration among the telecommunications industry, other sectors, stakeholder agencies and the government.

The TCF produces industry codes and guidelines across a range of telecommunications topics and delivers a number of consumer-focused services. This enables the industry to work together more efficiently and provide the best possible outcomes for New Zealand consumers.

The work of the TCF is instrumental in enhancing consumers telecommunications experience within New Zealand.

What we have achieved in the last 12 months:

- The Broadband Marketing Code sets out requirements for

providers to ensure consumers understand the different types of broadband services, and independently verified performance measures of those services, are presented in a clear, comparable and up-to-date way to help consumers make informed choices.

- The Copper and PSTN Transition Code aids consumers in making informed decisions about the different telecommunications services available to them when they need to transition off their legacy copper-based services, as well as educating consumers on the benefits and independently verified performance measures of each of those services.

- Consumer care policies are the focus of the Customer Care Code ensuring that providers deliver a certain customer care standard and have access to a fair and equitable process for customers.

- Reviewed our IMEI Blocklisting and Fibre Installation Codes.

- Provided submissions on the Emergency Management Bill, DPMC consultation on regulation for critical infrastructure, MBIE's proposed Consumer Data Right, DIA's Safer Online Services and Media Platforms.

- Worked constructively with government on the changes to the Resource Management Act and provided detailed submissions on behalf of the sector.

- Engaged with the Commerce Commission on its retail service quality programme, its rural connectivity study and its review of the Commission's Ill Contact Code.

- In July the TCF completed a two-year project to implement operational improvements to the Telecommunications Disputes Resolutions (TDR) Scheme to better support consumers and establish a new constitutional framework for TDR with an independent chair and new board.

CONSUMER FOCUS

The TCF also provides a range of services for consumers including:



Number Portability: enables consumers to seamlessly switch their mobile or fixed line service provider and keep their phone number.



RE:MOBILE: a mobile phone recycling service which collects unwanted mobile phones across the country.



An IMEI mobile device look-up service for consumers to check whether a handset has been block listed before purchasing.



Education on new and emerging technologies: and helping consumers understand their options when transitioning off legacy copper-based services.



Education and information on scams: to ensure consumers have the right tools to protect themselves against online, phone calling and texting fraud.



Support consumers: to port their numbers securely through a two-factor authentication step.



Our members

MEMBERSHIP

The TCF's diverse membership spans the telecommunications sector. It represents more than 55 brands across the New Zealand telecommunication landscape, and more than 95 percent of New Zealand telecommunications customers.

An inclusive membership is one of our key strengths. By encompassing wholesale, retail, mobile, and infrastructure providers, the TCF creates a comprehensive and collaborative platform for stakeholders to address industry-wide issues and opportunities.

Wholesale and infrastructure providers provide the backbone of the telecommunications ecosystem, ensuring that services can be efficiently delivered to the end-users.

Their participation, along with our other members in the TCF helps address infrastructure-related challenges and plan for future network developments, which, in turn, benefits consumers by ensuring network reliability and expansion.

Retail and mobile providers serve consumers directly. Their

membership in the TCF allows for the development of industry codes of practice and guidelines that enhance service quality, technology innovation and dispute resolution. This directly impacts the end-user experience, making it more reliable and consumer friendly.

The diverse membership of the TCF reflects its commitment to fostering collaboration and addressing the multifaceted aspects of the telecommunications industry in New Zealand. This approach ultimately results in a more competitive, innovative, and consumer focused telecommunications landscape.





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