

Future: Digital

A discussion starter on priorities
for a future Government



New Zealand's digital future

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Introduction

Digital technologies, especially the Internet, are everywhere. At home, office and play. On our computers, tablets, mobile phones, TVs and gaming consoles. Commonplace. That's exactly when they stop being technologies and become drivers of fundamental shifts. A tipping point.

The challenge is for us to grasp the possibilities. Many countries have done exactly that, both developed and developing. Yet New Zealand currently has no such shared, common vision of where we want to be in 10 years or 20 years time.

The Internet marks a step change in New Zealand's access to markets, people and knowledge. It sounds trite but the Internet is disruptive, changing almost every aspect of our lives. The solutions and opportunities are global, as are the big forces and challenges we face.

The central opportunity for our digital future is *economic*. High growth, exports, jobs, productivity, wages, returns and prosperity. Nevertheless, the *social, cultural, environmental* and *government* impacts are profound. All five of these elements have to be woven together to form a fabric of fundamental change.

As we re-define our place in the global village, New Zealand is fortunate to have so many advantages. We are a nation of makers and start-ups, valuing the innovative and ingenious. Our size and location has created a global mindset. We have a stable legal and financial system. Often overlooked is our number one ranking in the world for trust and integrity of government. Also comparatively highly ranked is our schooling. Despite real environmental concerns, Kiwis continue to have a lifestyle that will increase in comparative attractiveness.

For all of that potential treasure at the end of the digital rainbow, we have to ensure no one is abandoned on the journey - whether it's people who can't afford it or those with disabilities; whether it is small businesses needing a helping hand to make the leap or a firm grappling for an overseas foothold.

Part of shifting the mindset is symbolic. Having a "Digital Adviser", equivalent to the Chief Science Adviser, is one such step. More powerful is for the Prime Minister to take on a "Digital Future" portfolio to coordinate and drive cross-government action. Countries that have adopted this approach have gained considerable advantage in the global digital economy.

Future: Digital isn't *the* blueprint. Rather, it's a starting point for having the debate by laying out potential priorities for a future central Government. Developing and progressing towards our digital future requires ideas and participation from all sections of New Zealand – central and local government, businesses, community organisations, *tāngata whenua*, technologists and individuals.

In the meantime, there is the challenge of re-building the Canterbury region which provides both the imperative and the opportunity to put ideas into early action. So let's get on with it.

Who needs to understand the issues and participate in the debate? Everyone. This throws up a key challenge. Just as most corporates have struggled with taking the Internet out of the IT Department and making it an essential part of everyone's job, so too will political parties need to find a way to involve everyone in their party. Neat boxes like ICT portfolio spokesperson are no longer sufficient.

Otherwise, rather than by thoughtful intent and design, our future will be what it will be. A fraction of what it could be.

The Internet drives economic growth

The Internet is by far the greatest conqueror of distance, giving Kiwi entrepreneurs unprecedented access to a global marketplace. As global economic power shifts and a global middle class emerges, digital technologies become a key enabler for our participation in this new world. The Internet provides unprecedented opportunities for people and businesses to collaborate and create new business models.

Technology will continue to drive value creation in new ways while challenging those who remain wedded to outdated business models. The same is true for New Zealand as a country – we can ride the wave and thrive, driven to new levels of prosperity by our ideas and the “weightless economy”, or be a quaint backwater.

Create and promote the economic vision

We need to create and promote a common, shared vision of economic growth and prosperity enabled by the Internet. This requires far-reaching change in our mindset and aspirations. Leadership is a critical ingredient in having the confidence and creating the excitement to aim for this future. Leadership will need to come from both government as well as the wider community. The vision also needs to develop and promote the role of rural areas in our digital future.

Focus on the important steps

A vision needs to be made real by focussing our limited resources on steps that will help progress New Zealand towards that future state. This will involve hard trade-offs, making a common, shared vision an even more important prerequisite. There are more subtle trade-offs too. For example, how we brand New Zealand as a source of high-tech innovation while still being a primary producer. A valuable under-utilised resource in reaching out to the world is the Kiwi diaspora. Threats, such as cybersecurity, need to be comprehensively addressed with adequate resources.

Develop and attract high-end talent

We don't have enough high-end talent to power this Internet-driven economic growth. A part of the response is growing these skills in schools and universities

as well as attracting our best talent to these future growth areas. Increasing the number of research and development internships provides significant economic returns. Nevertheless, we still have to attract the best talent in the world to come and live in New Zealand. Talent will come here for the opportunities, lifestyle and a vibrant entrepreneurial environment.

Step up spending on Research and Development

Our spending on research and development across government, businesses and universities as a proportion of Gross Domestic Product is amongst the lowest of developed countries. This is a fundamental weakness. Spending has to be stepped up across the board and is an example of where re-allocation of resources is going to be required. Our research and development incentives and frameworks have a patchy history of success yet getting it right remains critically important.

Recognise and reward success

There are many examples of New Zealand individuals and companies that have had the courage and foresight to succeed in the Internet-powered global economy. Why have they succeeded? What were the critical elements at a systemic level? Is there a natural exit point for start-ups? These are the questions we need to answer so that we can strengthen the success factors. Most individuals and organisations that have succeeded are poorly recognised or celebrated within New Zealand. Celebrating success and promoting new role models can help gradually shift our mindset.

A digitally inclusive society

Our goal should be a digitally inclusive society where everyone can create, access, use and share information and knowledge. Individuals and businesses will then be empowered to achieve their full potential. Everyone must have the skills, confidence and trust to fully participate online.

For individuals, this will reduce transaction costs and increase convenience through online services. Additional benefits arise from increased employability based on digital skills and confident participation in online networks. For Government, digital literacy and inclusion will yield a stronger digital economy and increase efficiency in delivering public services. Business benefits arise from a digitally-skilled workforce that is more productive and better suited to new opportunities.

Bridge the divides

No one should be abandoned in New Zealand's future digital society. People and businesses need the skills to gain the benefits from digital technologies including computers, mobile devices and the Internet. A number of divides need to be addressed - economic, age, abilities, geography, ethnicity and skills. Online services should be developed and operated in accordance with universal accessibility standards to provide equity of access and opportunity to all New Zealanders. Current efforts are insufficient to bridge the divides in any reasonable timeframe.

Affordable and ubiquitous access to the Internet

The Ultra-Fast Broadband initiative will provide fibre to 75% of New Zealanders. At the same time, this will sharpen the urban-rural divide. Widespread uptake of fast broadband is critical and requires continued attention to retail prices, market structures and regulatory oversight. Extending the fibre coverage and prioritising rural areas in auctioning the 700 MHz radio spectrum provides opportunities to minimise the urban-rural divide.

Maximising the potential from fibre rollout

Rolling out fibre does not in itself provide the necessary readiness to gain the benefits. Low data caps and relatively high costs remain major challenges. Retrofitting existing houses with new

internal wiring as also upgrading installed equipment and devices comes at a significant cost. Finally, there remains the challenge of building capability to use the fibre in innovative and world-leading ways. Contestable funding can spur solutions as can setting up a public-private "Centre for Broadband Innovation".

Strengthening trust and confidence online

Without trust and confidence in accessing and using information and services online, much of the potential of digital technologies will be unrealised. Developing digital skills and confidence in students, the disabled and the elderly requires more resources and effort. Staying safe online and combating new cyber threats, particularly for youngsters and small businesses, also requires more resources and effort. Privacy and protection of personal information remains critical. The recently-concluded Law Commission's privacy review report contains several important law updates that should be rapidly considered and implemented.

Protect free expression

A digitally inclusive society is also one where citizens can freely communicate. At a time when some States are seeking to inappropriately curtail democratic and human rights, especially by targeting online social networks, the Government should publicly affirm that it will not interfere with citizens' right to seek, receive and impart information and opinions using the Internet. The Government should also introduce a legislative framework to prevent expansion of the current scope of the Digital Child Exploitation Filtering System.

A vibrant, multi-cultural identity

New Zealand is evolving from a bi-cultural treaty-based nation into a multi-cultural country. Attracting migrants from diverse ethnic and cultural backgrounds, we have absorbed new culinary tastes, fashions and lifestyles to forge a unique New Zealand identity. Strengthening Māori culture, identity and taonga in a digital world remains important.

The Internet provides new ways to express and evolve this plurality. People's expectations of the availability and timeliness of content is rapidly expanding. The ability and willingness to create digital content and share that with others widely is also expanding. Laws and business models that don't recognise this reality are obstacles that the Internet routes around.

Increase funding of local content

Given the comparatively low levels of sponsorship and philanthropy in New Zealand, public funding will continue to play a large part in sustaining production and distribution of local content. The issue of low levels of funding is even more acute when experimenting with innovative ways to develop and express our multi-cultural identity online. Specific support is required to promote diversity (ethnicities, religious cultural and personal preferences) as well as new ways to take advantage of digital technologies.

Accelerate digitisation of local content

Digital content is easier to disseminate, contextualise, re-use and provides for richer interactions. Boosting the resources and priority for digitising local content will enable official bodies and communities to connect with, access and preserve repositories that reflect our history, stories, cultures and environment. This includes considering issues of accessibility and open licensing. At the same time, necessary steps to capture and curate the new and emerging forms of born-digital culture are essential.

Empower individuals to be content producers

The Internet is changing people from being passive receivers of culture to active participants and creators. The ease and near-zero cost to express thoughts, art and other forms of creativity is leading to an explosion of culture online. New forms of expression, such as mixing

poetry with interactive graphics or social co-browsing of art online, are re-drawing the boundaries of culture. Numerous challenges remain - digital inclusion, outdated laws, restrictive licensing, orphan works, slow broadband speed, expensive Internet data charges, and lack of legitimacy.

Reform copyright law

A framework created for a physical world threatens the birth of new digital constructs before they have a chance to develop. All stakeholders stand to benefit from a 21st century copyright framework that supports the creative industries without handicapping the continued evolution of societal benefit. It is vital that copyright evolves to embrace the digital marketplace in which the Internet is fundamentally transforming the business models of the content industries, as well as creating new opportunities for creative industries. The Government should initiate an evidence-based review of copyright law, starting from first principles, which resets the balance of rights for an Internet-enabled world.

Preserve New Zealand's existing copyright law in the face of international pressure

Rethinking copyright is important, but preventing the current system becoming even more onerous and outmoded under the pressure of international trade negotiations is even more so. The Trans Pacific Partnership Agreement could lock New Zealand into intellectual property laws that do not suit our country and were not developed with Kiwi creators, innovators and the public good in mind. Given the importance of our digital future, New Zealand should not trade off intellectual property restrictions to buy agricultural market access. Any concessions need to be transparent and backed by credible analysis that takes into account both costs and benefits from a public interest perspective.

Protecting the environment for future generations

New Zealanders are increasingly concerned about sustainable progress and protecting the environment for future generations. Reducing pressure on the environment will allow indigenous ecosystems to be restored and replenished. Internet-driven economic growth can reduce pressure on our natural heritage even as its value is enhanced by the need to keep/attract the best talent in the world.

Digital technologies, in particular data centres, are placing increasing demands on the environment. E-waste remains an issue. However, smart technologies have great potential to provide “win-win” solutions: reducing environmental impact while being more economical in the long run.

Green data centres

A green data centre optimises the mechanical, lighting, electrical and computer systems for maximum energy efficiency and minimum environmental impact. Building and certifying a green data centre is more expensive but offers long-term cost savings. Some modern data centres operate at half the energy consumption of a typical data centre. New Zealand provides many opportunities to locate green data centres near renewable energy sources as well as take advantage of natural cooling. Government’s encouragement and support for building one world-class green data centre will act to highlight the possibilities.

Introduction of compulsory product stewardship

E-waste is the fastest growing type of waste in the world and is more toxic than normal household rubbish. Landfills don’t allow for recovery and reuse of valuable materials. There is also a risk that hazardous substances will leach from landfills into surrounding land and waterways. Moving on from eDays and e-waste drop offs, the long-term solution is to introduce compulsory product stewardship in conjunction with the industry, whereby manufacturers and importers are responsible for e-waste disposal by including the cost of recycling into the final price of new products.

Help make remote working work

Despite the acknowledged benefits, teleworking from home hasn’t become as popular or widespread as expected. Fibre-based broadband and cloud-based services will help but employer mindset and business practices also play a major role. Part of the solution may be developing remote hubs, which have the added benefit of developing village centres within urban areas, thereby reducing commuting pressures. Government should commission a study to identify the steps necessary to make telework a success. Continued support for video conferencing to reduce travel is also a good step.

Promoting “smart” solutions

Whether it is smart electricity meters or more sophisticated smart cities, digital technologies can increase efficiency and reduce costs. Typically, sensors or real-time data is used to make intelligent decisions. Whether it is traffic flow, water usage or electricity usage, smart solutions can both reduce costs and the impact on the environment. Government leadership and coordination across territorial authorities is essential to kick start and accelerate “smart” solutions.

Help people and businesses help themselves

There continues to be a demand for good quality information to reduce the carbon footprint of individuals, communities and businesses. Much of the information can be crowdsourced with government acting as a catalyst and facilitator. There is an increased willingness for individual action that collectively adds up to a significant reduction on environmental pressure if the right information and incentives (not necessarily financial) are put in place.

A Government that ‘gets’ the Internet

Government wears many hats in our digital future - as a maker of laws and regulations; provider of information and services; defender of the country; and the peoples’ representatives. Crucially, the Government needs to demonstrate leadership in creating and promoting a common, shared vision of our digital future.

Across all these roles, the Internet provides opportunities to make a step change. The starting point has to be a Government that “gets” the Internet.

“Smart” and converged laws

New laws and changes to existing laws need to be underpinned by consistent principles which reflect the realities of digital technologies and constant change. Enduring laws are principles-based and should not be technology-specific. The need to regulate telecommunications monopolies and value open access, as well as our experience of competition driving investment and innovation, continues to remain important. Many countries have unified regulation of broadcasting and telecommunications. As a first step, their lessons for New Zealand should be reviewed followed by rapid progress towards a common regulatory and institutional framework.

Act as an exemplar

The size and importance of Government activity means its actions have a large impact on the market and society, whether that’s a specific intent or not. This places the onus on Government to act as an exemplar in areas critical to our digital future. These areas include strategic procurement that supports innovation and capable domestic firms, open standards, IPv6 (Internet Protocol version 6) implementation, green ICT, universal accessibility and cybersecurity.

Re-design service delivery

Government services need to be provided across multiple channels and devices. Services need to be user-centric, cutting across organisational structures and seamlessly delivered with non-Government services. More effort needs to go into actively promoting the use

of digital services, not just designing and building them. Particular emphasis needs to be placed on high-spend areas like health and education with big opportunities for a step change such as telemedicine, home-based elderly care, distance education, and lifelong learning.

Provide leadership in openness and public engagement

Government should be “open by default”. Acceleration of making data available, accessible, and easy to re-use is important but the bigger picture is open government. All Official Information Act requests, responses and material released should be published online as should all Cabinet papers (subject to lawful restrictions). The Internet also provides unprecedented opportunities to deepen engagement with the public to develop a genuine, two-way dialogue. This will result in increased trust and continued evolution of the relationship between people and the State.

Support an open Internet and a multi-stakeholder governance model

An open Internet is the foundation of our digital future - a platform for innovation, change and connectedness - and requires the explicit support of Government. The open Internet represents a promise, and a potential worth protecting. Internet governance needs to be an open and inclusive process, recognising that the best outcomes are achieved when the views and interests of all stakeholders are equally valued. These principles need to guide the Government’s views and efforts at a time of increasing global strain to the current multi-stakeholder Internet governance model.



InternetNZ is a non-profit, open membership organisation dedicated to protecting and promoting the Internet in New Zealand. We aim to foster a coordinated, cooperative approach to the Internet's ongoing development. InternetNZ is the recognised delegated manager for the .nz country code top level domain.

We advocate for an “open and uncaptureable” Internet so that it continues to operate in an open environment and as a platform for innovation.

For more information, please see our **website www.internetnz.net.nz**

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