

# GigaNelson

smart region

This GigaPlan expresses the voice of many, many people from across the entire Nelson region ready for the digital transformation of the city, and the country.

Rather than being from the traditional central agencies, its authors are from the region's business, education, investment, technology and volunteer community, bringing a combined vision for gig to these few pages.

The Nelson GigaPlan celebrates like-spirited individuals and their collaborative voices, galvanised through the year-long #GigatownNSN campaign.

As with the social media competition, Nelson has created this GigaPlan dynamically. It is this sort of disruptive journey that is needed to change the current mindset and environment so we can thrive in the digital present, and future.

GigaNelson is ready to lead New Zealand to digital transformation.

## GigaPlan Key

GigaNelson - Nelson Region  
GigaPlan - the Nelson Plan for Gig Success  
GigaResearch - Five months of region-wide community and sector workshops  
NMIT - Nelson Marlborough Institute of Technology  
EDA - Nelson Regional Economic Development Agency  
NCC - Nelson City Council  
TDC - Tasman District Council



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## Section 1: Gig Leadership

History celebrates Nelson’s innovative leaders: people not scared to be first. Nelsonians split the atom, disrupted politics with the suffragette movement, connected the country’s first telecommunications cable, established New Zealand’s first library, first bookshop and first café, played the nation’s first rugby game and initiated free public education in New Zealand. What is next?

In this century of connectedness, collaboration, scale and global reach, GigaNelson will reframe the traditional leadership and governance structures for a digital world, just as our original settlers had to reframe their home country mind-set to fit the realities of their new world. We will embrace gigabit services to claim the economic and social opportunity afforded by “digital residency.”

### The outcomes we seek for the Nelson region

The ultimate outcome would see our GigaPlan embraced as ‘life-as-usual’ within the region’s core community and economic strategies - and its initiatives adapted for implementation by other regions across New Zealand.

Constituent outcomes are:

**Digital Divide:** Our GigaPlan taps into the increased access to educational opportunities from gig, so Nelson is armed with the tools and culture needed to tackle the 'Digital Divide' and improve equity.

**Digital Journey:** We will guide people from all walks of life on the journey from ‘Digital Tourists’ visiting the digital world superficially to confident and competent ‘Digital Residents.’ The resulting personal empowerment through increasing confidence and connectedness will reduce social isolation for individuals, and increase competitiveness for businesses.

**New Leadership Model:** Nelson embraces the 21<sup>st</sup> century paradigm of open, real-time and many-to-many interaction over the internet and our leadership approach reflects this. Instead of a top-down, one-off exercise, we seek an ongoing collaborative engagement with a range of people to raise awareness of the potential and successes of a gig-powered environment. While a challenge for our leadership is to provide direction and facilitate progress it is important for citizens to take responsibility for their digital readiness and not devolve this to a central organisation. Leadership remains critical but must be rethought to reflect the highly participatory and information rich environment that is increasingly pervasive.

The following desired outcomes emerged from our GigaResearch. Our ‘agile’ approach will develop them iteratively over time:

Objective	Measurable Outcomes
A gig powered infrastructure	<ul style="list-style-type: none"> <li>• Full and fair access to internet through Gigabit across the region - Nelsonians as early gig adopters.</li> <li>• Ubiquitous Wi-Fi connectivity in all our region’s commercial centres</li> </ul>
Sustainable economic prosperity	<ul style="list-style-type: none"> <li>• Creation and delivery of smart products and services based on internet-enabled innovation.</li> <li>• Significantly increased number of regional, national and global collaborative talent ventures.</li> <li>• Improved competitiveness – as indicated through rising value of Nelson exports.</li> <li>• Improved sustainability through smart use of IT - reduced processing costs, improved health and safety and lower carbon emissions</li> </ul>
Nelson attracting and retaining talented people, businesses and capital.	<ul style="list-style-type: none"> <li>• An increasingly tech savvy workforce.</li> <li>• Entrepreneurial business people taking advantage of the opportunities of ubiquitous connectivity.</li> <li>• Vibrant community of designers and developers creating intellectual property in Nelson region.</li> <li>• Increasing levels of venture capital investment</li> </ul>
Research and development adding value.	<ul style="list-style-type: none"> <li>• Increased research activity broadening the scope of traditional and emerging economic activity.</li> </ul>
Enhanced social well-being and quality of life	<ul style="list-style-type: none"> <li>• Increasing democratic participation through the innovative deployment of smart technology to engage residents in community planning and development.</li> <li>• Social media fostering new models of social and community participation.</li> </ul>
A confident and connected digital community	<ul style="list-style-type: none"> <li>• Access for all to ubiquitous digital educational services and facilities irrespective of age, social standing, rank or location.</li> <li>• Percentage of confident “Digital Residents”- partial proxy is rising social media usage</li> </ul>
A digitally-friendly culture	<ul style="list-style-type: none"> <li>• The widespread promotion of successful digital innovation.</li> <li>• Collaborative network of individuals &amp; organisations promoting digital enablement and confidence within Nelson and beyond.</li> </ul>

*“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.” Niccolo Machiavelli*

## “Who” is Critical

He tangata! He tangata! He tangata! People are central to our GigaPlan, which builds on networks of existing organisations and people committed to tackling the digital-divide and driving regional development.

Following the Chattanooga model of success, the Nelson private sector will harness the community’s vision, in close partnership with agencies already engaged, such as the local councils (NCC and TDC), the EDA and Chamber of Commerce. Critical contributors come from within the community itself and include people from education, health and social services, as well as #GigatownNSN enthusiasts, Gig-Club members and global gigabit innovators. Our Digital Ambassador will work alongside these people to create a smart town, where urban planning is combined with new thinking and technology to promote digital innovation.

**Research/Education:** establishments such as Cawthron Institute, NIWA, Plant & Food, Massey and Canterbury universities (which have Nelson outreach initiatives), and our local NMIT, all have roles to play in research that adds value to existing human talent and economic activity. It will be essential to mobilise all Nelson’s formal and informal educational channels. Key to this is anointing an inspiring sector leader such as Charles Newton, Chair of the Nelson Loop, willing to tackle the challenges of driving this region-wide digital community education initiative.

**Health:** There are also outstanding examples of local practitioners and service providers in the health sector, such as Annette Milligan. We need to engage with them regarding strategies and tactics to reduce inequity in access and provision.

**Iwi:** Local iwi are economically and socially active across our region. Discussions to-date confirm iwi share a vision for digitally connected and enabled communities. Building a partnership and embracing relevant Māori cultural elements will be essential in broadening our ideas, leadership and reach.

**Seniors:** Nelson’s ageing population and desirability as a retirement destination provide a particular challenge but also a rich resource with keen and capable digital residents in this cohort already helping others to advance.

**Youth:** Equally, the region’s young people are a powerful resource. Born into a world of constant technological development, these natural digital residents are often highly innovative users and creators of technology. We must tap into their fresh thinking and openness to possibility.

## Governance

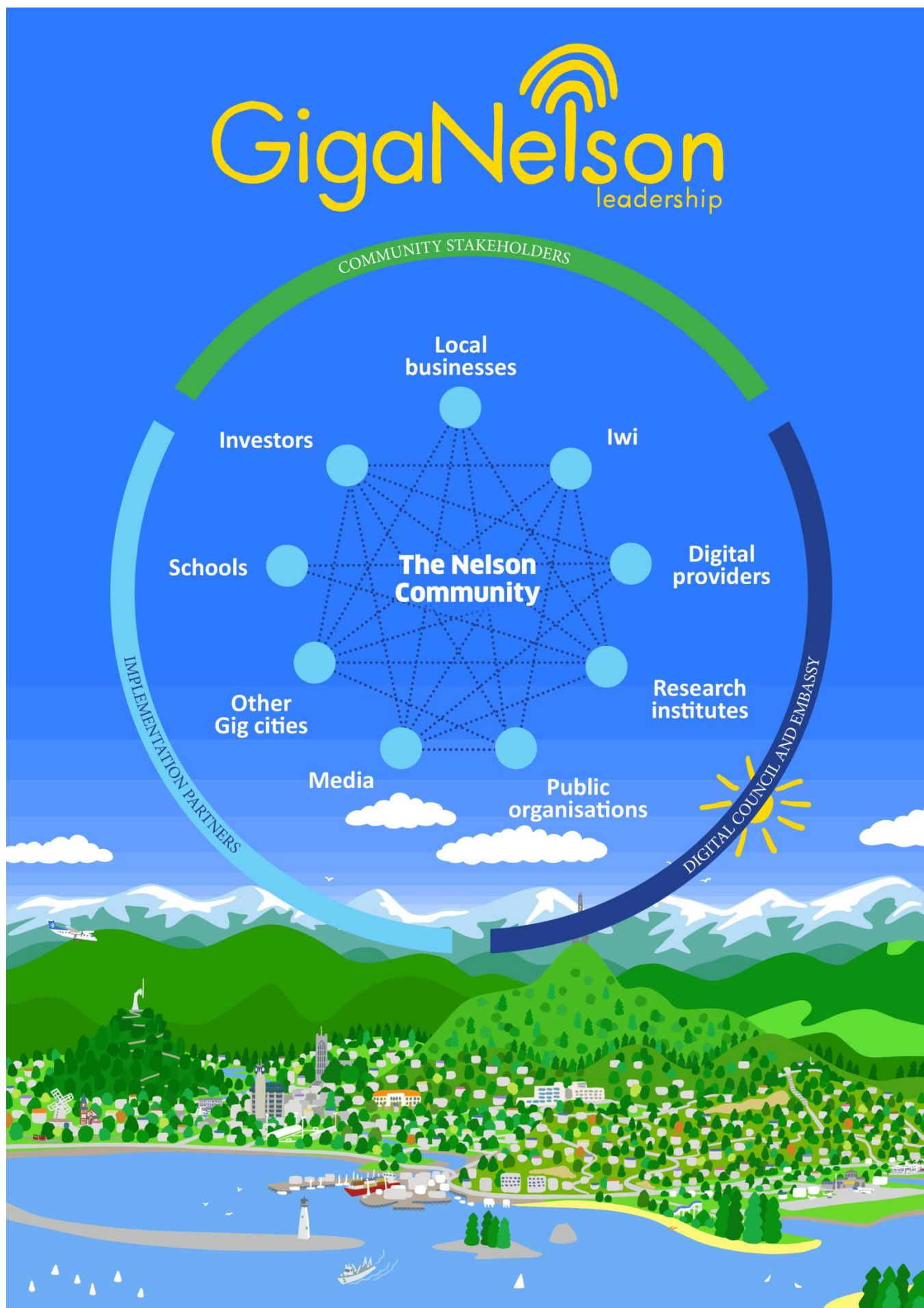
A key element of both the governance and execution of the GigaPlan is diversity and openness. Our GigaResearch identified growing dissatisfaction with current corporate and democratic processes; traditional ‘command-and-control’, one-to-many structures are less relevant in the new many-to-many internet paradigm.

In order to leverage the dynamic and disruptive nature of digital innovation, along with the broad and varied needs of Nelson people and businesses, there needs to be an eclectic mix of age, experience, passion and perspective. This will be achieved through both open and curated online interaction using multiple global social-media platforms. Input will be shaped and driven by the community and informed through exposure to the best national and international thinking. In effect, consultation, advisory services and intellectual innovation will be crowd-sourced as an online digital think-tank, alongside ‘round the table’ interaction. We aim to revolutionise local consultation and decision-making by adopting new thinking and new social-media savvy tools, such as those from ThinkActual™, to demonstrate how to become an agile and participative democratic community.

**Digital Council:** In fulfilling its role, which includes final responsibility for the funding and execution of the GigaPlan, the Digital Council’s most important task will be discerning, balancing and representing the varied needs of the community. The Council will be made up of eight diverse individuals with strong networks, governance skills and understanding of the innovative use of digital technology. Three will represent the online community; four will represent education, business, not-for-profit and the EDA, while the final person will be chosen to provide a perspective from outside Nelson. To facilitate the balancing of community needs – and sustain broad engagement – submissions via social-media technology will be continuous. This initiative will pioneer a highly participative approach to decision-making – and could have future applicability to local and national government. The Council can also seek professional opinion from sector experts, such as Dr Bev Nicholls (health) or Richard Chadderton (corporate finance).

**Digital Embassy:** Evolution, management and execution of a visionary GigaPlan will fall to the Nelson Digital Embassy led by a Digital Ambassador. The ambassador will facilitate Nelson’s digital future and be the leading voice of the GigaPlan, as well as managing the day-to-day activities of the Embassy team and interaction with implementation partners. The quality of person in this CEO-type role is paramount. They must be digitally aware but also a relationship builder, an articulate communicator, politically astute and highly motivated. The Ambassador is largely about building connections, sparking interest, removing roadblocks, motivating action, and creatively ‘directing’ an epic production.

The Embassy will play a vital facilitation role connecting those with needs to those able to respond, as people are often limited not by lack of available solutions as much as their inability to find them. This team will manage funding streams, crowd-sourcing global solutions to local challenges, the annual Tech-Fest, and fostering Nelson’s relationship with Gig-Club regions.



## Section 2: Smart Towns

A Smart Town goes beyond simply a digitally connected town. At its heart is efficiency; of service delivery, resource use, investment and governance. It requires intelligent management, innovation, integrated IT services and active citizen participation. This can be revolutionary like the entirely new smart city, Songdo, South Korea, but without the population or the money to build from scratch. Our aim for GigaNelson is more evolutionary.

A Smart Town (and country) will attract and retain smart people, as seen in Chattanooga. The combination of gigabit connectivity, the Internet of Things, mobility and wearables opens the door to many new opportunities in our community. Being always connected is critical. Without the universal availability of fibre or 4G networks, widespread free or low cost Wi-Fi is a GigaPlan priority. Also important is a growing and distributed network of real-time sensors capturing data around the city, in homes and in businesses. These range from mobile phones to proprietary medical, industrial and environmental sensors.

*“The promise of smart cities is inexorably linked to the general promise of big data—new tools have the potential to usher an information-based scientific revolution.”* Irving Wladawsky-Berger

### Using the Gig

As gigabit connectivity becomes widely available and sensor networks expand, the emphasis for GigaNelson will be on developing applications and services that make living easier and improve productivity.

Our GigaResearch highlighted the ideas of future-thinking Nelsonians about exciting gig-powered products and services. We will use a real-time digital ‘polling’ tool to quantify online community conversations and prioritise where to start on this list:

#### Public Services

- Improved emergency response systems to co-ordinate resources and inform people in times of emergency.
- A ‘polling portal’ to enable policy makers to engage with the public on proposed new policies, allowing the public to highlight emerging areas that require attention.
- Sensors monitoring public facilities and portals for public reporting of problems. HD CCTV around the CBD and parks to promote safety and wellbeing.
- Streaming video from councils and other important meetings with real-time participation for remote attendees.

#### Transport

- Consolidated transportation information services providing both timetable and operational information.
- Revolutionary locally-developed software that creates new transport models such as the mash up of buses, taxis, shuttles, Uber and digital car-pooling.
- Improved traffic congestion management by monitoring the passage of Bluetooth-enabled devices on arterial routes and providing real-time alerts of congestion.

#### Business tools

- ‘Reverse recruitment’ for Nelson job-seekers through a portal with interactive video capability to connect national organisations needing employees or services with Nelson talent.
- Establish updated “branding” for the region with emphasis on the new digital capability to attract businesses and human capital.

#### Public facilities and services

Public facilities, such as libraries, council service centres, hospitals, schools, the Port of Nelson and Nelson Airport will become Intelligent Ports - places to gain access to digital services via free Wi-Fi connectivity. The Digital Embassy will be charged with advocating to public organisations for digital solutions such as voter registration, reporting of asset and service issues, processing of resource consents, and access to public records.

#### Community /Education

- Shared servers and server-less schools enabling the compulsory and informal education sectors to enjoy a much improved ICT infrastructure while saving money on hardware and support.
- Community video conferencing facilities established in locations throughout our region which can be booked and used by organisations or members of the public.
- Home-based adult education provided via multi-party live video group training sessions.
- Educational Community Wi-Fi allowing learning opportunities, resources and support to follow the learner anytime, anywhere.
- Heighten tourists’ digital experience in Nelson, along the lines of Project Janzoon in the Abel Tasman National Park.
- A virtual Performing Arts Centre hosted by NSOM.

#### Environment/Health

- Air pollution monitoring system to display results in real time via graphical interface to the community.
- Real-time in-home health monitoring for high-needs patients and families.
- Online sustainability tools including smart meters for energy consumption.

Development of these solutions will involve funding arrangements and research partnerships covered in Sections 4 and 5.

**Nelson Residents:** Open access to data collected by government agencies and local bodies is already encouraged in GigaNelson so third parties can develop products and services for the community as a whole. Our libraries already seek to become a centre for digital experimentation, and will need to be equipped with the technology and learning spaces to accomplish this. Examples will include experimentation with well-known systems such as Arduino and Raspberry Pi and communications technologies such as NFC and Bluetooth, and new software as it comes available.

**Nelson Visitors:** We will update facilities within the EDA, so that the window into and out of our region for business visitors has state-of-the-art equipment and services. We envisage a comprehensive suite of Tech Cubes with communications capabilities including video conferencing, augmented reality, and 3D printing. The profound role of the online environment in determining tourist behaviour, both in their selection of holiday destinations and their choices while travelling, means it is essential that we focus on making Nelson digitally tourist-friendly. This is both a necessary public service and an economic imperative.

## Digital accessibility and inclusion

Our GigaPlan recognises that fully taking part in a Smart Town, both to contribute and to consume, requires an increasingly digitally competent community. Many mechanisms for achieving this are covered in the Education section. Together our education initiatives aim to share Smart Town benefits as widely as possible. We believe that lack of digital awareness, confidence, and competency are more significant barriers in the digital divide than physical access to technology.

**Beyond boundaries:** GigaNelson will leverage the benefit of cheap and ubiquitous access to 1Gbps internet and extend this access through the connection of gigabit per second fibre access to urban hubs outside the Nelson City boundaries including Richmond and Motueka. This will enable engagement and collaboration in strategic locations around the region. Video conferencing facilities throughout the region will also expand access and inclusion, so that distance is no longer a barrier. Our Gigaplan encourages the use of live video and real-time digital interaction for regional and national meetings and conferences, e.g. councils and special interest groups, such as Federated Farmers, Rural Women, Viticulture NZ, and IITP.

**Expanded Wi-Fi access:** We will also expand existing free Wi-Fi initiatives with the support of businesses as part of their customer engagement. Wi-Fi access into suburbs not served by UFB will also be used in order to expand access to health, education, social and economic services for all sectors of our community.

**Access where needed:** The Digital Council will work with telecommunications companies to influence the rollout of connectivity where we see the greatest need. In addition, we will foster co-operatives along the lines of B4RN.org.uk to establish network connectivity where telecommunications companies struggle to establish a viable case for investment.

**Education:** We seek innovative ways to encourage schools that already have good connectivity to open their capability to groups within the community. Further promotion of social media as a means of breaking down barriers is also an important success factor for the region. We will educate a wide cross section of the community, giving them a good understanding of how to use social media effectively and safely. This will require programmes to be delivered within schools and night classes for other sectors in the community. Once network access and community education programmes are in place, it is possible to empower and enable a large percentage of under-privileged people through gradual transition to many-to-many communication models. This is a leveller that gives equal voice to all community members and access to the services they need.

**Accessibility:** A significant part of the plan to tackle the digital divide will be provided through local and central government offices and facilities including libraries.

**New innovations:** To enable more young people to move from being users of digital technologies developed by others, we will work with schools and NMIT to draw youth into environments where they can learn to create software and systems themselves. CoderDojo and the High Tech Youth Network will be key to introducing youth to creative pursuits in the digital realm.

## Encouraging collaboration

Collaboration is one of the main planks of the GigaPlan. Nelson has traditionally operated in silos, but the global economic downturn of 2009 was a catalyst for increased strategic collaboration between local businesses, the two councils and our main infrastructure companies. The Gigatown competition has also brought many smart people and organisations together, who will now stay working together, showcasing the benefits of collaboration.

As a model of collaboration, we are reviewing the good work already done by Nelson schools, and the Ministry of Education, which aim for communities of schools to share educational resources. Our GigaPlan reinforces this work and will showcase it to the community via existing sector networks and the Digital Embassy, so that other groups learn about the power of collaboration.

Our GigaPlan includes establishment of an Innovation Exchange to broker collaboration between those who have needs and those with the capability to meet them. The Nelson Shines project also encourages collaboration, as a hub for Nelson's positive stories.

# GigaNelson

smart town

#AffordableWiFi

#DigitalPollingPortal

#VirtualPerformingArtsCentre

#InternetofThings

#EducationalCommunityNetwork

#BusinessHubs

#InternationalNMIT

#MonitoringSensorsImprovePublicHealthAndSafety

#SmartTrafficSensorsImproveTrafficFlow

#LocalSoftwareRevolutionisesPublicTransport

#ServerlessSchools

#TechIncubator

#JobSeekersFindJobs

#RaisingConfidenceThroughDigitalCompetency

#MKOLearningExchange

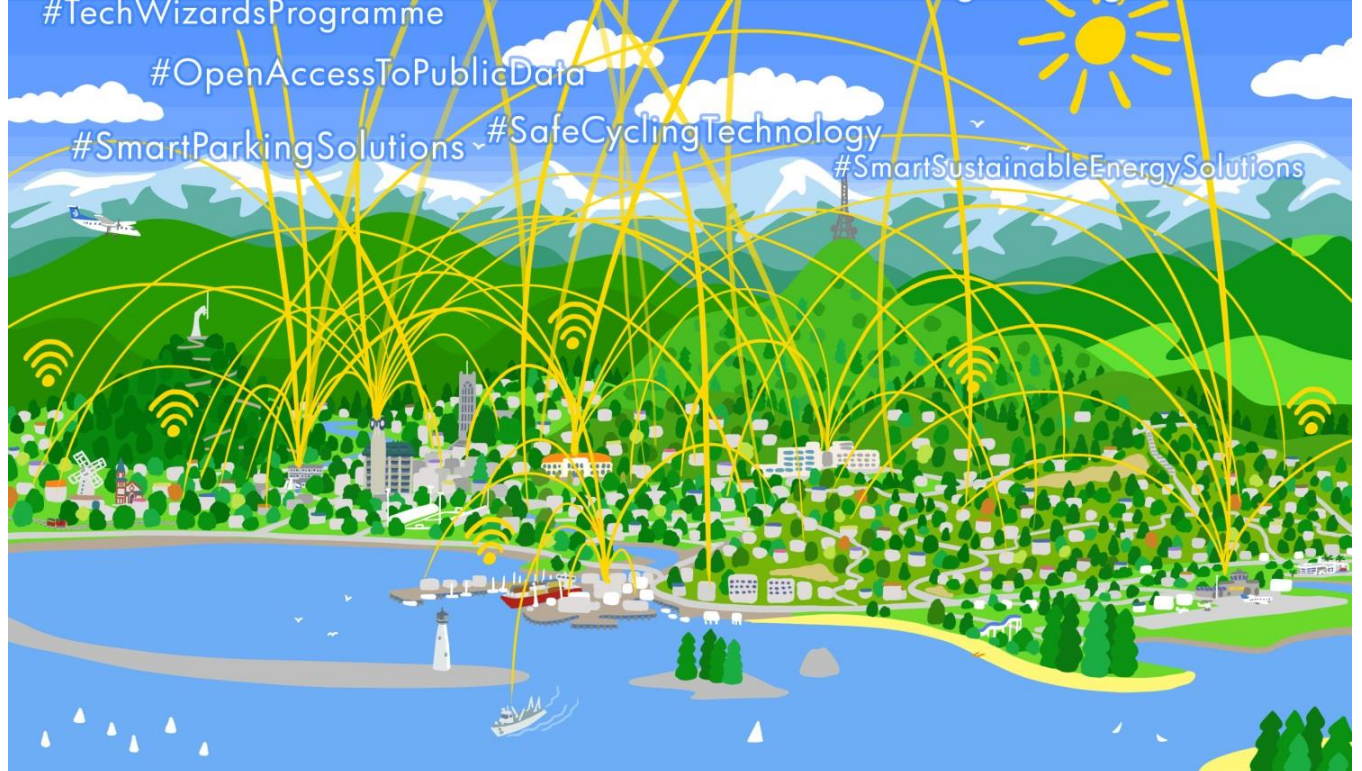
#TechWizardsProgramme

#OpenAccessToPublicData

#SmartParkingSolutions

#SafeCyclingTechnology

#SmartSustainableEnergySolutions



## Section 3: Innovation Eco System

Gig has a huge role to play in innovation, but on its own it will never be a panacea. Gig together with the right people and a culture of many-to-many communication, real-time collaboration, and disruption, will be the catalyst for the next step-change needed. The Digital Embassy will guide, connect and facilitate to unlock latent economic value.

### Stimulating Economic Development

**Fixing problems:** Innovation often starts with a problem that needs fixing.

Our GigaResearch has already unearthed multiple opportunities for local businesses to advance, simply through matching existing solutions to unresolved problems. The Digital Embassy will curate a portal of resources so people with needs can access those able to address their needs. Over time, increased collaboration and digital residency will allow more businesses to make the necessary connections themselves.

*“The greatest danger for most of us is not that our aim is too high and we miss it, but that it is too low and we reach it.”*

*Professor Ken Robinson*

**Crowd-sourcing:** Meanwhile, the promotion of crowd-sourced solutions, and parts of solutions, to regional community and business issues will broaden innovation beyond existing networks. Digital platforms enable engagement irrespective of where people are, what time it is, or prior relationships. This has been experienced already in Nelson during the Gigatown competition. It’s a particularly attractive model to draw on the hundreds of relevant but diverse and previously untapped networks.

**Hackathons:** These events will feature regularly on the Nelson calendar, with contestants resolving issues and winning prizes. The Digital Embassy will canvas the community to discover common issues and challenges and these will be fed to teams of entrepreneurs and software developers working together for a weekend. The hackathon model has already started in Nelson with Global Startup Battle.

**CO.STARTERS:** In parallel we will launch the excellent Chattanooga CO.STARTERS programme within our existing Bridge Street Collective, in order to grow our entrepreneurial talent pool. CO.STARTERS helps budding entrepreneurs understand what their real idea is, boil it down to the simplest form, and then figure out how to execute it.

**Innovate:** Over the last year the EDA has been developing an innovation concept, called ‘Innovate,’ physically located within the NMIT campus. Innovate is a hub for physical and digital collaboration to spark innovation within the region and through national and international connections. The collaboration is designed around mentoring and educating both students and business people to develop successful commercial strategies, as well as to apply technology and help founders develop new concepts. Another aspect to Innovate is internships for talented senior students within local businesses who need help. Innovate will also become a focal point for interaction with other innovation hubs around NZ and internationally. For example, we hope to further connect with Lightning Lab and Icehouse to maximise access and sharing across the country.

**Smart-Ups:** Our regional ‘Smart-Up’ strategy will support radical ideas within established businesses, as ‘smarting-up’ existing businesses can offer a faster route to economic growth. For smart-ups we will utilise innovation hubs and an open-ended, many-to-many facilitation model.

**Reverse-Pitch:** Innovate will also host a bi-monthly ‘reverse-pitch’ event, where local companies and organisations pitch their problems/opportunities to a crowd of local entrepreneurs. Each entrepreneur will have 30 days to decide whether to pursue one of the commercial opportunities, develop a solution concept and pitch their approach to the organisation in need.

### Who we seek to attract and why

Nelson’s natural environment, enviable lifestyle, comparatively affording housing, and future potential already attract dynamic people from all over the world. Our GigaPlan targets vibrant industries which need gig and will add social and economic value.

**Entrepreneurs:** Gigabit services will allow entrepreneurs who have business interests that are data-intensive to work here, enjoying the best lifestyle in New Zealand, whilst having the benefits of world-class connectivity.

**Creatives:** Nelson’s strong artistic community enjoys the region’s diverse landscapes, and each other, and we intend to welcome more ‘creatives’ who embrace digital technology. We have a strong musical community, so we will encourage digital music production for all markets, and recording and streaming of our School of Music’s concerts as well as digital delivery of teaching. Equally, to drive innovation in film, documentary and advertisement production, we will expand our existing videography sector by attracting relevant filmmakers and post-production facilities. With gig, film-makers can move large volumes of data around the city. Visual artists and game developers are other creative groups we seek to expand.

**Scientists:** With gigabit we can attract more scientific establishments to undertake and apply their research. A good example is NIWA, whose research accumulates vast quantities of data that needs processing using big data analytics.



**Secondary industries:** We will foster intellectual property creation within an expanding secondary industry, leveraging our strong natural resources in aquaculture and horticulture, fishing and forestry. The economic engines of New Zealand are the primary industries and we intend to increase their horsepower with applied technology and smart people.

**IT sector:** Nelson is blessed with motivated IT companies and a local pool of talent from NMIT's IT degree course. The combination of gig-internet and market opportunities will drive major expansion in our local IT sector servicing out-of-region needs. Our Gigaresearch has identified dissatisfaction amongst a body of New Zealand developers with low-cost but low-performance offshore software testing. GigaNelson will build a software testing sub-industry in our region. More generally, software developers are essential in manifesting entrepreneurs' visions so we want to attract many more to our region.

**Digital residents:** We aim to create and attract 'digital residents:' people and companies who don't see gaps between the virtual and physical parts of their world. These are people who find new ways to create, market and distribute their physical and digital products.

### Helping companies and entrepreneurs flourish

We need the right culture for companies and entrepreneurs to flourish. Many in the region, both private and public organisations, already recognise this. We will work to enhance our regional business culture around positivity and collaboration.

**Mentoring:** Accessing the right advice is as great a requirement as funding for innovators. We already have Venture Accelerator Ltd, and a 'Super-Board' is on its way. The latter will be a partially-funded group of experienced directors available to small and start-up businesses in Nelson. Structured support covering business services and financial assistance will also be offered. Embedded innovation will come from talented young interns from NMIT working inside enterprises on developing products and services, as well as on adoption of enabling digital technologies.

**Funding:** We recognise that New Zealand is under-represented in venture funding and we are working on raising the profile of our angel/venture funding network and increasing collaboration with similar funders around the country. The NG Connect Fund will focus on gig-powered businesses. In the private sector, there is capacity and interest from local accounting firms in gig-enabled businesses, and these companies are well placed to engage deeply on business innovation assistance.

**Celebration:** We will celebrate the successes of the businesses we have attracted, providing them with promotional platforms to showcase their products and services. The super-connected Nelson Innovation Exchange will also help companies promote their successful innovations (See section 4).

### Promoting the Gig and attracting the talent

**The GigaNelson Story:** Our Communications Strategy includes the promotion of the benefits of gig in GigaNelson. Our supportive growth programmes (outlined above and Section 4) and the successes of those achieving with gig, will naturally draw others. This will be overlaid with the story of why people love living in GigaNelson, including schooling, recreation, housing, climate, and jobs. We will leverage video assets and the community momentum from the Gigatown competition to support this showcase of why businesses are in Nelson and what keeps them here.

**Tech Fest:** We will promote and host an annual TechFest to bring technology to the everyday person, showcase successes and demonstrate innovative applications of technology. This will be run in conjunction with the Gig Conference, which will have a specific focus on innovation in the community enabled by digital technology.

**Tech Competition:** We will also run an annual competition for the best ideas for utilising gig technology to enhance our Smart-Town. This competition will have a section for school students from our TechWizards programme.

**University Incentives:** We are developing an incentive programme to encourage universities to locate their gig-research in Nelson. Discussions have already started with Massey University, supported by the ANZ Bank, and with UC Engineering.

**Smart Town:** Our future-focused approach to education within the community and businesses, is central to our GigaPlan. GigaNelson will be the place to come if you want to work with gig-enlightened people. Better connectivity, disciplined business support services and a community-wide innovation culture, will attract the financial resources that are necessary for development. As part of our 'Science Outside' concept (See Section 5) we will expand intra-regional ties with research institutes (Cawthron, Plant & Food, NIWA and NMIT) binding them further into our community in the manner of the Boston universities.

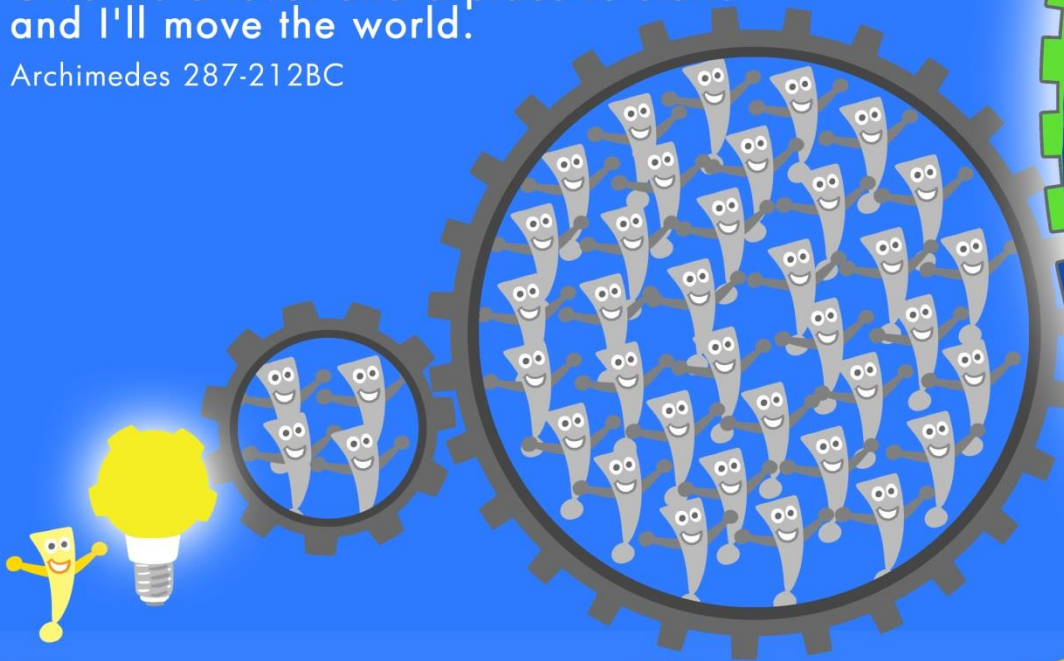
**Chattanooga:** Finally we will use the Chattanooga story as a way to illustrate the significance of the opportunity in GigaNelson.

# GigaNelson

innovation

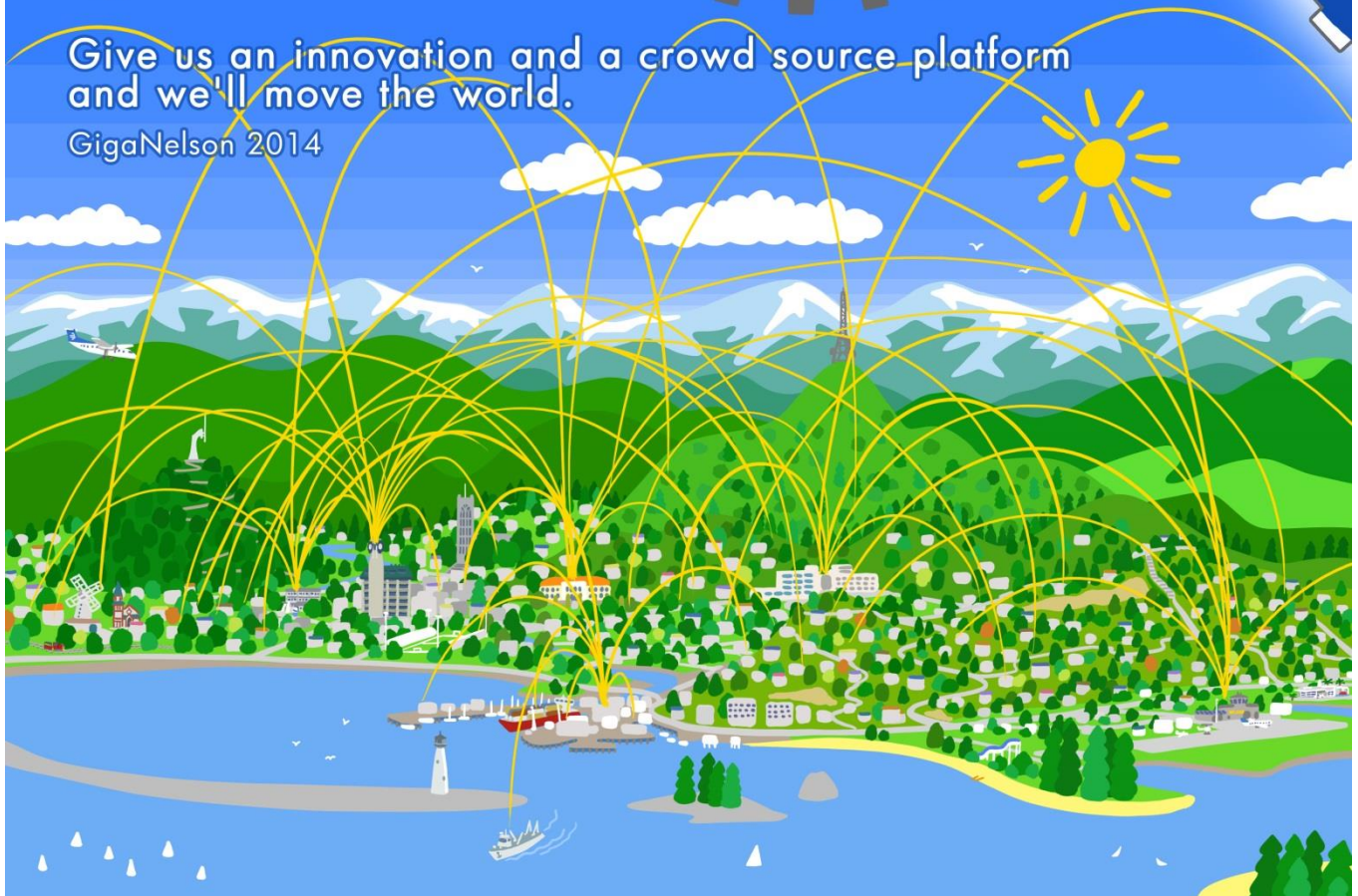
Give me a lever and a place to stand  
and I'll move the world.

Archimedes 287-212BC



Give us an innovation and a crowd source platform  
and we'll move the world.

GigaNelson 2014



## Section 4: Funding and Investment

Investment is the catalyst for Nelson’s innovations to go global. For the evolution of our GigaPlan, investment needs to be disciplined. Sustainable long-term growth comes from delivering to the needs of a community, whereas imprudent investment only generates growth until the money runs out.

Where needs and solutions meet, business transacts naturally. For ‘community good’ projects, other funding options such as grants and sponsorships come into play. The Embassy has a role in facilitating awareness and access to all possible funding and investment resources for innovation.

### Attracting investment and funding

Often a major hurdle for enterprises seeking funding is understanding what is available, and which funds are suitable. In

*“Big breakthroughs happen when what is suddenly possible meets what is desperately needed.” Thomas L. Friedman*

response, the Nelson Embassy will research and collate information about the financing entities and their requirements. Financial advisers will then be educated about this resource, and how to promote it.

Once entrepreneurs know where funds might come from, they need to be ready and prepared if they want success. Feedback from Nelson’s angel investors is that investment-ready companies are not common. Our GigaPlan aims to address both attraction of funds and preparation of companies.

**Preparation:** Through our planned Investment Ready Course, for a nominal fee innovative Nelson financial companies will assist enterprises from student entrepreneurs to sophisticated start-ups, existing companies and not-for-profits, to put together a business and investment plan. Enterprises will then be certified as ‘Investor Ready.’ As part of our Start-Up Mentoring Programme we will draw on the large pool of talented retirees in Nelson who have been very successful in business.

With this highly professional approach, and the active promotion of investment successes in bringing these enterprises to market, we will attract interest from new national and international investor partners, and increase the intensity of our business culture.

**Innovation Exchange:** Our GigaResearch identified a number of industries, such as farming, forestry and retail that had innovation requirements that could be met within our tech community or elsewhere in New Zealand. With a Nelson Innovation Exchange in place we will look to make-a-market in innovation solutions. This exciting concept will be developed with best commercial practices to ensure that all transactions are at appropriate arms-length, to avoid market distortions. We will investigate whether GigaPlan funding can be raised via a commission per transaction.

**Smart-Up Fund:** Innovation within existing enterprises requires a new funding model to operate in the space around angel and venture capital investing that we call a Smart-Up Fund. The aim is to apply risk capital into step-change innovation within proven businesses. This will generate lower volatility and more highly diversified returns than existing start-up and angel investing funds provide. Smart-Ups have the potential to more quickly generate job-growth and add value to the economy.

By combining the urgency and creativity of a start-up mind-set with an existing structure, resources and market channels in Nelson’s export-focused primary industries, we aim to attract investors from around NZ into our Smart-Up Fund. The Fund will invest in SMEs, which generate 40% of the economy’s output, as well as larger organisations. Like the Innovation Exchange, the Smart-up Fund provides a potential revenue stream for the GigaPlan implementation.

Meanwhile, some Nelson start-ups will source money through crowd-funding and giving platforms that best suit their needs. The scale, timeframe and culture associated with crowd-funding is often attractive for early-stage entrepreneurs, and as part of our GigaPlan we will monitor the developments in this space, and facilitate assistance for those seeking crowd sourced funding.

**Not-for-Profit:** Various Nelson community services help to address equity, targeting those in the community who are impoverished with respect to knowledge, resources or opportunity. Funding for this type of activity would be from sources such as the Communications 2020 Trust, community grants, charitable trusts and corporate sponsorship. The Embassy would facilitate and coordinate funding for these services. As with commercial enterprises seeking investment, these not-for-profits would undergo a ‘Funder Ready’ certification.

**Venture Capital:** At the other end of the financing spectrum is the need to build a more active venture capital business. Despite a strong research base NZ is well below OECD averages on private equity venture funding so we would like to help improve deal flow at this end of the market. We will utilise Nelson’s existing local venture accelerator company (Venture Accelerator Ltd) to bring together available angel and venture funding networks with government co-funding through the New Zealand Venture Investment Fund.

### Public/Private Partnerships

Our GigaResearch highlighted services that could be funded at a lower cost of capital by local companies in partnership with central government and also by local government in partnership with major global vendors.

This public/private model works for services that have long term financial and community benefits, and for projects that generate a direct financial return, such as smarter parking space management. Other popular projects with currently prohibitive high initial capital outlay include: traffic and road management systems, intelligent street lighting and pollen density sensing, all initiatives that would solve problems identified in our GigaResearch. The Embassy, community representatives, funding body representatives and any interested corporate parties will negotiate service provisions and costs on this basis.

Our GigaPlan also includes public/private financing models for community services, such as employment, health and education. For example, we will significantly extend NMIT and schools' adult education courses. Evening courses could be financed by a mixture of co-pay (eg sharing costs between user and government), and public /private financing, depending on the courses, the expected outcomes and their benefit to the community. A similar approach will be looked at in community health.

The existing Primary Growth Partnership funding from central government is a successful model, and the Nelson region is actively involved with this in both the forestry and fishing sectors. Assuming ongoing government support for this programme, we will identify and develop a third major project for this funding.

Building closer links to Callaghan Innovation and raising the awareness of its work in supporting the financing of innovative businesses in our community is part of our GigaPlan. Callaghan Innovation's transfer of expertise into businesses from researchers, scientists, engineers, technologists and financial experts is just as valuable as financial investment in many instances.

### Supporting Gigatown funding winners

Collaboration is at the heart of sustained future success in Nelson and the most important factor in supporting funding winners will be ensuring they are part of our collaborative ecosystem. Collaboration within and between sectors, amongst public and private organisations, even between traditionally competitive companies, needs to become the new normal.

To be successful an enterprise must have a strong foundation in operations, financial management and marketing. Typically only one or maybe two of these skills are present in the early stage of an enterprises development. The Digital Embassy will facilitate the provision of complementary skills to the winner of the NG Connect Fund safeguarding a well-balanced healthy organisation.

**Operations:** Firstly, we would draw upon our Start-up and Smart-Up mentors to assist each enterprise in staying focussed operationally, utilising networks to overcome technical obstacles and provide an arm-around-the-shoulder from an entrepreneur who has already walked the development path.

**Finance:** Next, we would facilitate access to the innovative financial accounting partners who have offered their services in planning and modelling to provide ongoing audit of the commerciality of the proposition – keeping it on track - and assisting the enterprise in maintaining its focus on a clear channel to a reasonable sized market.

**Marketing:** At as early a stage after proof- of-concept as possible the Embassy would assist the enterprise in matching-up with creative marketing, branding and PR partners to beginning formulating and developing the strategies to create interest and excitement around the product or service to maximise impact in the market.

**Super-Board:** This process acknowledges that access to advice and assistance from more knowledgeable others is frequently of greater value than financial assistance in the early stages of a concept's development. Many small businesses cannot afford to retain experienced directors and therefore lack appropriate external perspectives. To address this universal issue we are formulating a community wide "Super-Board" of experienced directors. This group will provide mentoring services to as wide a range of community entities and businesses as possible, helping to optimise performance as well as prepare the ground for effective funding rounds.

Our desire for the allocation of Gigatown funding is to enable, support and promote success. The wider and longer-term benefit from this money will be in the belief and momentum created throughout the region. People need models of success to follow therefore it is imperative that those receiving funding do succeed. In the end the winners will not only be the organisations receiving Gigatown funding but all those who learn or are inspired from their journeys.

*"I love the Nelson GigaPlan: new governance and funding ideas, an environment where entrepreneurs can 'fail fast' and rebound, investment in areas where we have existing strengths, and overall an 'open source' mentality of sharing and giving back."*

*Simon Gutschlag, Nelson Institute of IT Professionals*

# GigaNelson

investment

<b>Public Private Smart City Financing</b>	Smart-Up Funding	Start-Up Funding	Community Grants to address Digital Divide	Lottery Grants Community Projects	<b>Crowd Source Financing Campaigns</b>
Corporates' Event Sponsorship	<div style="text-align: center;"> <p>Collaboration COMMUNITY CHEST</p> <p><b>#GigatownNelson</b> Winning changes everything.</p> <p>Do Nothing CHANCE</p> </div>				Venture & Angel Funding with NZVIF
Govt. R&D Grants					Regional Economic Development Agency Funding
Super Board Advisory Pay Nominal Fee					Chorus Community Fund Collect 500k
Funding Ready Lab Pay Nominal Fee					NG Connect Development Fund Collect 200k
<b>Innovation Exchange 'Pimp my Innovation'</b>	Innovate Lab Co-Pay	Investment Ready Lab Pay Nominal Fee	Smart-up Mentoring	Start-Up Mentoring	<b>GO</b> Faster with GIG



## Section 5: Education

Technology has made our lives incredibly transparent, both empowering us with knowledge and opportunity, as well as threatening our traditional methods of doing business and working in the community. This is one of the forces dictating that education and re-education is critical to enable progress.

Education is pivotal to our GigaPlan. GigaNelson is mobilising all available educational resources to assist people to learn continuously as they make the journey from 'Digital Tourists,' visiting the digital world superficially, to 'Digital Residents' confident in the increasingly ubiquitous virtual environment.

***“Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family.” Kofi Annan***

### The role of education

Education will foster a confident and connected digital Nelson community, a community empowered to overcome digital isolation. Our entrepreneurs need a more tech-savvy workforce so they can take advantage of ubiquitous connectivity in a global marketplace. This savviness is also crucial if we are to facilitate R&D that adds value to existing and emerging enterprise.

Nelson is ready. We are excited that the empowering digital technologies accelerated by gig are redefining education, educators and learning. Now GigaNelson aims to break the shackles of the traditional mind-set by unpicking “time, space and place” to achieve a new model that meets the 21st century challenges.

The award-winning Nelson Loop fibre network is powering GigaNelson schools and pre-schools to become acknowledged leaders in adopting e-learning. Nelson schools are already embracing Ministry of Education’s IES initiatives to advance future-focused learning through communities of schools and a teacher-led innovation fund. GigaNelson is aligning with the Network for Learning’s drive towards community hubs and ubiquitous access to learning from schools, community nodes and homes. With the gig, children can have access to the same high speed services at home, as they have enjoyed at school.

This ubiquitous gigabit connectivity enables schools to take advantage of new educational models such as 'flipped classrooms' (school work at home, and homework at school), and 'rewindable learning' (recorded teaching, demonstrations and resources for repeated access by learners). This is blended learning that offers more decentralised and virtualised educational opportunities to build broader community capacity within our region and beyond. This will redefine education as we know it including reversing the traditional Tuakana – Teina relationship, where the apprentice now sometimes guides the elder, often in the safety of their own home for more effective learning.

Educators are now anyone who contributes to learning - MKO’s (More Knowledgeable Others). MKO’s are grandparents, kaumatua, experts, teenagers, coaches and peers, as well as teachers. GigaNelson will use the gig to establish new connections and unleash this as yet largely untapped potential. The MKO Exchange will use connectivity and gigabit access to hook learners to the learned, across a whole range of academic and practical pursuits via physical and virtual learning exchanges. Part of this would see people learning to use the gig environment from other willing learners - as is promoted by Nelson’s recently launched instance of Chalkle. There is also huge potential to refresh and expand the reach of a revamped SeniorNet into retirement villages and individual homes across the community.

Now, more than ever before, ubiquitous access makes it possible via e-learning, webinars, blogs, Massively Open Online Courses (MOOCs) and virtual mentoring to reach all who seek digital knowledge and tuition, and we mean all! A dedicated Educational Community Wi-Fi will allow NMIT, Nelson’s schools and community education providers to offer learning opportunities, resources and support to follow the learner anytime anywhere. This service needs to be supported by gig as we move beyond text-based social media to an all-embracing digital emersion platform.

As Alvin Tofler once said, “the illiterate of the 21st Century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.” Attempting to address the digital divide is a major GigaNelson challenge, and opportunity. Given this enhanced connectivity, we will look to leverage the ICT resources in schools to benefit the wider community, including those from socio economic groups needing more help on their journey.

The anchor of our education strategy is the development of the community-wide RCDC (Raising Confidence Through Digital Competency) initiative to meet the growing demand for a comprehensive programme building digital competency right across the Nelson community. The ambitious vision for the RCDC Initiative is to harness local and global, formal and informal, physical and virtual courses, resources and facilities in a collaborative learning environment that can reach the whole community regardless of their age, job and circumstances.

By facilitating greater collaboration between schools and other community education providers, we can leverage existing pre-school, school and community education, including the 2020 Trust's Computers-in-Homes initiative, SeniorNet, after-school programmes, Nelson's strong night-class regime, the New Arrivals programmes, marae-based provision and home schooling. The key is to make this accessible to the learner where ever they maybe, while sustaining the mentoring that is crucial when people start to work with digital technologies. This is already happening in isolated pockets. The challenge we are embracing is to provide the coordination and support needed to scale these across the community.

We will also build on Nelson's Victory Community's existing model and expand activities around our schools, as natural gathering points within each community. Examples include after-school access to computers to teach practical cyber safety programmes and the provision of space and services to groups such as CoderDojo and the High Tech Youth Network. The new Tech Wizards Programme will provide mentoring for young students and an environment where they can show their wares, and receive support and encouragement from the business and educational community. This will include a fun team-based Dragon's Den type competition and an angel capital fund to take these young entrepreneurs' very best ideas to market. The smartest innovations would also be highlighted at the annual Nelson TechFest.

Finally, the Nelson Loop has proved that, with access to gig, it is possible for schools to share ICT infrastructure and become server-less. This game-changing move to collaborative provisioning enables much improved ICT infrastructure at schools, while saving money on hardware and support. The region's other educational providers, such as pre-schools, can also benefit from such collaborative offerings. It will then be easier to coordinate the resources that the wider community needs to share.

### **The role of research and tertiary institutes**

Nelson's Cawthron Institute (the largest private research institute in the country) is modelling a powerful Science Outside partnership between scientists and local industry for long-term economic development. Our GigaPlan aims to attract more applied research organisations excited by excellent communications, the opportunity to work with key local industries such as software development, fishing, aquaculture, forestry, viticulture and horticulture and a very attractive lifestyle. This close coupling of research bodies and the primary sector will lead to increased innovation, further advancing the productivity of established and emerging local industries.

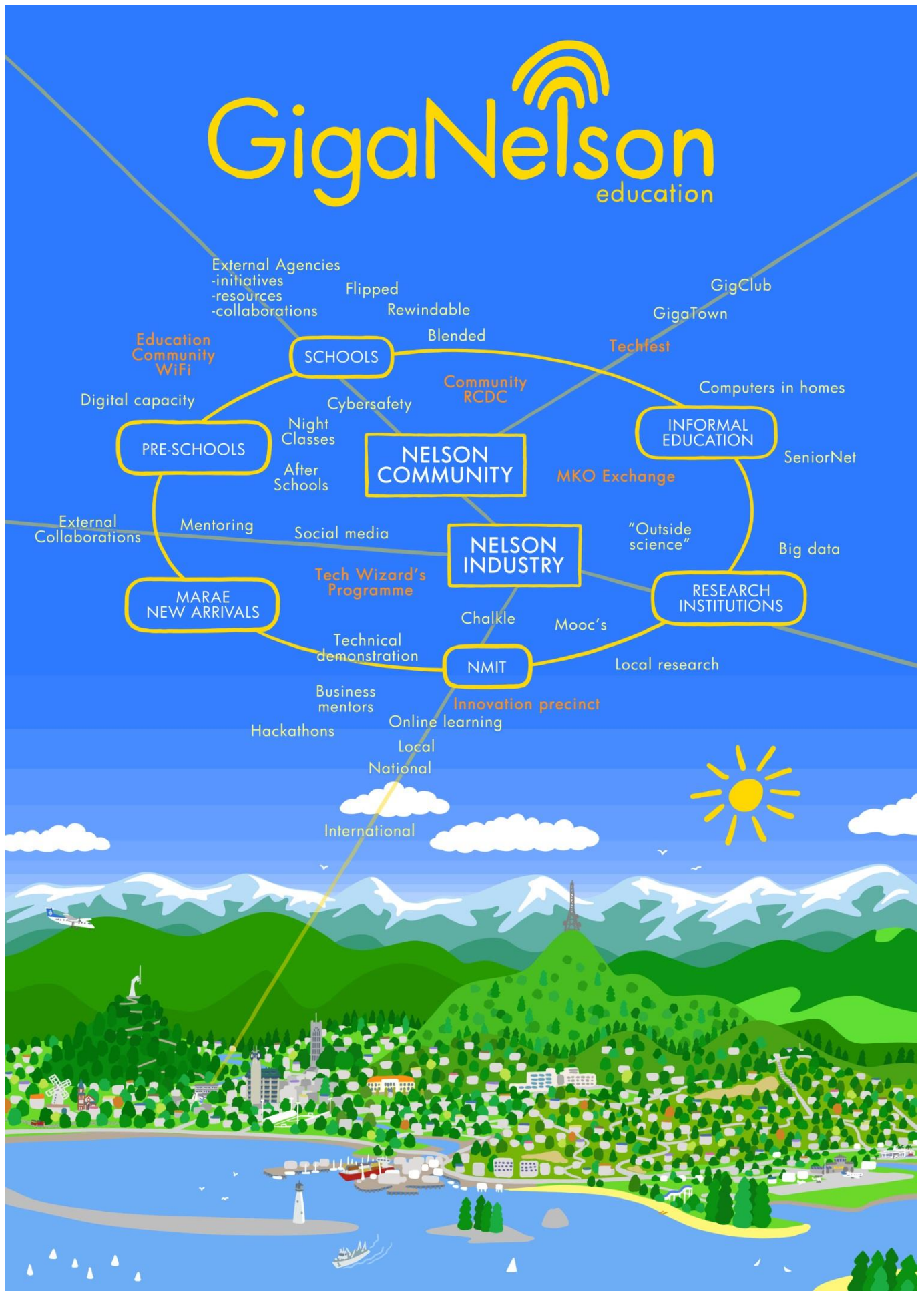
Massey and Canterbury universities are both active in Nelson. Massey's focus is on food and agri-tech, while Canterbury University's College of Engineering has multiple forestry research projects, and its School of Education is training primary teachers. We will look to expand university research activity within Nelson, to gather data and carry out experimental work in pursuit of improved yields and productivity. Our city-wide gig network will grow the existing Nelson research hub, and we will partner with other regions who share the same focus on mixed-use rural and maritime industries, in the first instance.

Supported by gig, our own NMIT is well placed to lead the application of existing science locally. NMIT will become a virtual national Centre of Excellence for specialist added-value subjects such as Aquaculture, Viticulture and marine engineering. In addition NMIT is producing quality IT graduates to feed and expand local industry.

Developed in conjunction with the EDA and NCC, the new Innovate Precinct on NMIT's campus specifically aims to generate economic returns through physical and online collaboration between academia and industry. This initiative gives innovation a better chance than ever before. NMIT classes will also cater to those in the business community who use digital technology as an enabler or disruptor of business. And, senior students will assist assigned businesses with the exploration or resolution of their needs and problems.

NMIT has embarked on ambitious e-learning initiatives using Open Education Resources and are committed to working within a collaborative digital campus and are using virtual worlds for education. There are also opportunities with wikieducator. Seminars will be held for the local community to introduce emerging technology and demonstrate its applications, and hackathons will be promoted for tackling real world challenges and problems that limit local industry and the community.

Adding to our research hub, GigaNelson will be well placed to attract research that relies on big data for processing to gain insights into such things as weather, water quality or arable farming optimisation. We will also seek funding for research into the impact of this digital transformation in a regional centre, so that the Nelson experience can help inform others across New Zealand, and internationally.





## Section 6: The Gig-Club

Nelson is a small city and New Zealand is a small country. We need to pool our best ideas, work together and build on each other's success. Nelson is convinced by the Chattanooga experience that collaboration is the answer. We see the Gig-Club as a set of collective and collaborative responses to meet the challenge of sustainable and equitable prosperity. These responses offer not just benefits of scale - critically important for a small economy - but help overcome isolation and foster a culture of continual innovation.

The Gig-Club is a stepping stone from Gigatown to Giganation.

### Marketing Gigatown

The GigaNelson Communications Strategy is a mix of PR and Marketing, utilising multiple online media channels, as well as traditional off-line channels in New Zealand and globally. Some examples of tactics include:

**Online Media:** We have been successful in mobilising more people in our community than ever before to use social media during the Gigatown campaign. This is a very useful channel for residents to regularly share the changes in their lives with their local, national and international networks.

**Offline Media:** We will partner with an offline media group in a national advertorial programme that encourages people to engage with us online. Nelson Tasman Tourism will be charged with educating national and international tourism media about GigaNelson.

**Online Collateral:** We will provide all our region's organisations with a logo and messages they can use on their websites as well as in email communications with their national and international partners. Gigatown will become part of the regional brand.

**Offline Collateral:** Messages will be used consistently across official regional collateral, such as newsletters, reports, flyers, and promotional videos. Businesses and community organisations will also be encouraged to use these messages in their own material. All regional entry points will welcome visitors to GigaNelson.

**Regional flag flyers:** Many GigaNelson people have already agreed to help fly the GigaNelson flag locally, nationally and globally. These flag flyers include business, sector and community leaders, iwi leaders, innovators, young people, politicians and bureaucrats.

**Leveraging Nelson Shines:** Supported by the EDA and both local councils, a team of communications experts is currently developing a Nelson Regional Identity project, called Nelson Shines. The project includes a community-wide story telling website (for news, case studies, community leader stories, events, social feeds), a global ambassador network (to link sector leaders with others outside of the region), an awards programme (to encourage national and international award entries) and a keynote speaker programme (to secure local and global speaking opportunities). The project leaders are involved with Gigatown, and have included GigaNelson in the Nelson Shines strategy, to ensure the message is up-front and centre.

The Gigatown Nelson HQ will remain as a physical hub for digital awareness and coordination, and become the home of the Digital Embassy.

### Sharing with others

**Teaching and learning:** The Gig-Club is two-way; as much about Nelson sharing its journey nationally, and then globally, to meet the digital and communication challenges of the 21st century, as learning from the journey other communities are making. The focus of collaboration should be to garner the most positive social and economic outcomes as possible for the benefit of all New Zealanders, and extend internationally as appropriate.

This collaboration covers sharing knowledge and skills, increasing efficiency, encouraging specialisation, avoiding duplication, avoiding the replication of errors, and creating a collective voice to address the challenges we face. The Gig-Club will help us learn from one another's successes and failures, for the benefit of all. We will look to draw on the resources of the entire community to address national and international challenges by improving the intra- as well as inter-connectivity of our communities. We will have bi-monthly meetings between our Digital Embassy and its counterparts in other cities via online conferencing, with one physical meeting a year.

**Permission to celebrate:** To increase collaboration and performance we acknowledge the need to change a mind-set, which is perhaps more prevalent in New Zealand, by giving our innovators permission to celebrate and promote their achievements. We aim to gradually alter the culture around embracing success. By showing that we can all be successful, given the opportunity and the voice, we can overcome our Tall Poppy Syndrome. If we can accept that to cooperate is better than to go it alone, if we can change our focus from Bridge St vs. Halifax Street, or Nelson vs. Timaru, then it becomes easier to focus on the real challenge,

*"We need to develop and disseminate an entirely new paradigm and practice of collaboration that supersedes the traditional silos that have divided governments, philanthropies and private enterprises for decades and replace it with networks of partnerships working together to create a globally prosperous society."*

*Simon Mainwaring*

which is how do we make a small country globally competitive in the products and services we offer. Throughout history, the adoption of new ideas has been thwarted by misunderstandings, mistrust and fear. Nelson looks to overcome this resistance by showcasing and celebrating successful outcomes in the adoption of digital technology via the communications strategy outlined earlier.

**Porirua and Nelson:** We have already established a sharing alliance with Porirua, and have begun discussions with Wellington. As we develop best practice for sharing, we will expand this model to other centres with the priority being the other four Gigatown finalists. The model will include both physical and online collaboration. And, to achieve the best cut-through the model will have a sector focus, to leverage existing channels for sharing. For example:

**Education Sector:** We have started talking about interchanges between teachers in Porirua and Nelson to collaborate on the curation, sharing, and most importantly, use of innovative digital resources. Once this particular model of sharing is established, it will be reviewed for implementation to more schools, and to other sectors, such as health and social services. Porirua and Nelson also have complementary expertise in teaching and encouraging music creation and recording. We will build a collaborative environment and encourage participants in both locations to work together online. Once this is established, we will seek to grow the capability in other digital media and with other centres. Likewise NMIT has embarked on ambitious e-learning initiatives using open education resources (OER) and is committed to working within a collaborative digital campus and using virtual worlds for education.

**Smart Towns:** The development of smart-town infrastructure, applications and services is a perfect example of work that can be shared amongst gig-club members. We intend for GigaNelson ideas to be rolled out in other centres around the country and in return hope to benefit from smart-town initiatives devised or perfected elsewhere.

We will also bring the community together around what's new digitally. Our annual TechFest will be held in Nelson, but co-hosted in other gig-club communities that want to take part. The first TechFest will be co-hosted with Porirua and live-streamed online. Day one will be physically hosted in Nelson and day two will be physically hosted in Porirua. We will share interactive content and demonstrate how effective it can be to collaborate online with partners.

## Gig-Club Conference

**Celebrate:** We will run an annual international Gig-Club Conference in conjunction with our annual TechFest. The primary focus of the conference will be to showcase and celebrate success, with a view to bringing more people further towards digital competency and residency. Our Digital Ambassador will deliver a 'State-of-the-GigaNation' address to highlight activities, challenges, successes and failures over the previous 12 months. The primary conference speakers will be local, national and international innovators with authentic stories to share, as well as leading academics, business leaders and social entrepreneurs to educate and inspire us all. We will also invite workshop conveners from other towns and cities in New Zealand who have enjoyed successes to share ideas, open minds and effect cultural change.

**Cross-sector:** Content for the conference will be delivered in multiple streams covering key sectors, such as education, health, community, industry, arts and business. Questions and contributions from the audience (local and remote) will be captured in real-time via social media.

**Co-hosting:** As a truly international conference operating in the new world without borders, we will collaborate with other Gig-Club centres in the organisation of this conference. For example, having identified an international keynote speaker for the conference, we will share the costs and benefits of bringing this person to New Zealand with other centres. We would like to invite Dr Glenn Ricart, founder of US Ignite, to speak at the conference and we would make him available to other centres who have participated in the development and cost of the conference.

**Inspirational leaders:** Other speakers we will seek over time include Robert Bell, co-founder of the Intelligent Community Forum; Victoria Ransom, social media entrepreneur; Seth Godin, influential American author and entrepreneur; Guy Kawasaki, celebrated futurist; Dr George Westerman, MIT Center of Digital Business; Ian Taylor, Dunedin-based entrepreneur; Rod Drury, Hawkes Bay-based entrepreneur; and Sam Morgan, Nelson-based entrepreneur.

