CCN+ Horizon Scanning – Aotearoa / New Zealand, May 2013

David Beel

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1. Introduction

The following report gives a snapshot into the development of New Zealand's various digital sectors with the primary focus being upon projects that have community and cultural elements to them. This was conducted by talking to the various academics, artists and community activists involved in doing this work and this has allowed for a broad picture to be presented as to the key, current and ground breaking work being conducted in New Zealand. It is greatly understood that this a very much just one slice through the sector in New Zealand and that had time and logistics permitted a much larger study encompassing more people and projects could have been possible. Therefore this report can only been seen as part of the 'story' when looking at how New Zealand has sought to meet the many challenges presented by a burgeoning digital sector.

The report has taken a broad remit in terms of understanding NZ's digital sector but in line with the work of CCN+ there has been strong emphasis upon work that is using digital technologies to help develop digital cultural projects to aid communities. The report has therefore split into four main sections: firstly, a scene setting 'introduction' to NZ. Secondly, 'connectivity', looking at how digital networks are being developed at the present to serve population needs. Thirdly, 'digital arts and culture' giving an overview to work that is being conducted. Fourthly, 'digital humanities' looking at a selection of more academically focussed projects.

This will all be developed from desk based research in the UK and then from conversations with individuals whilst in NZ. Contributions came from people at the University of Canterbury, Archives NZ, Te Papa (National Museum), University of Victoria Wellington, Massey University Wellington, Common Knowledge, Digital NZ and the Aotearoa Digital Arts Network.

1.1 - Context

In order to frame some of the further discussions there is a need to provide a little bit of context and background to New Zealand for those who this might not be too familiar for. NZ sits around 2,250km to the east of Australia, has a population of roughly 4.5 million people and an area of 270,534km². The population is divided across two main islands North and South, with the largest proportion of population being in the North Island, where the most concentrated areas of population are around the city of Auckland.

Figure 1 – Map of New Zealand

The further major population centres are as follows (North to South) Hamilton, Wellington (capital), Christchurch and Dunedin. Ethnically, NZ is white European (Pākehā) 77%, Māori 15%, Asian 10%, Pacific Peoples 7% and this represents successive waves of colonisation and immigration to the Islands since the 13th Century when the first Māori settlers are believed to have arrived[1]. There have been longstanding tensions between Māori and Pākehā populations as this on-going relationship represents the colonial legacy of New Zealand. The cultural differences between Māori and Pākehā also have an influence upon approaches to technology especially with regard to community and cultural artefacts. With some commentators mentioning that Māori populations were much more reticent about digitising some aspects of their cultural repertoire. Interestingly, one current trend in NZ demographics has been the increasing rate of migration from the Pacific Island and Asia, with trends suggesting that by 2026, Asian populations will equal Māori. The Islands have very specific physical geographies with the North Island being much influenced by volcanic activity whereas the South Island is dominated through its centre by the Southern Alps which forms a long mountain range that splits the Island in two, from the south west to the north east. Large proportions of NZ landscape can be described as rural and in this has some similarities to that of Scotland, broadly speaking. Similarities being that the majority of population is based within the accessible and predominantly urban areas but then the rest of population is spread throughout the more rural and

[1] http://www.socialreport.msd.govt.nz/people/ethnic-composition-population.html

disparate areas. Like Scotland, these locations are often separated by mountainous regions which means accessibility to and from these areas can be time consuming and in terms of service provision (connectivity, education, health etc) expensive. Table 1 gives a breakdown to this population distribution from 2006.

Area	Total
Urban/rural profile areas	
Main urban area	2892810
Satellite urban area	128094
Independent urban area	442260
Rural area with high urban influence	124251
Rural area with moderate urban influence	154968
Rural area with low urban influence	220470
Highly rural/remote area	64182
Area outside urban/rural profile	915
Total, New Zealand	4027947

Table 1 – Urban/Rural split, Statistics New Zealand (2006)

Rural living in NZ has being historically dominated by agriculture, with sheep farming, dairy, fruit, wine production and forestry being key industries. It is the rural/agriculture sector in NZ that drives the economy as Table 2 suggests:

Commodity	NZ$ Millions
Milk powder, butter, and cheese	11,428
Meat and edible offal	5,167
Logs, wood, and wood articles	3,160
Crude oil	1,790
Mechanical machinery and equipment	1,716
Fruit	1,563
Fish, crustaceans, and molluscs	1,382
Wine	1,218
Electrical machinery and equipment	1,119
Aluminium and aluminium articles	1,042

Table 2 – Top 10 Grossing Exports, Statistics New Zealand (2012).

Therefore strong emphasis in rural development has been spent on developing and maintaining land for agricultures, where there has also been a keen drive to use digital technology as part of this. However moving away from this, the development of tourism, throughout the country has meant that specifically rural areas due to their surrounding scenery have developed greatly in supporting this industry. This has been especially true in terms of marketing NZ through film and as an action/adventure sports destination. This

represents a total tourism expenditure of $23.4 billion and employs 119,800 full-time workers[2]

[2] http://www.stats.govt.nz/browse_for_stats/industry_sectors/Tourism/tourism-satellite-account-2012/summary-results.aspx

2. Digital Connectivity in New Zealand

NZ's location in the world geographically, has also led to a sense of the country being isolated from the rest of the world and this was expressed by some participants as both a historical problem as well as contemporary one. This was considered especially relevant when discussing NZ connection to the internet. NZ is reliant on a single cable that is routed through Australia by the Southern Cross Cable, this is limiting for NZ as it seeks faster upload and download speeds. There has been some discussion of a second connection to the USA but due to the expense of covering such a distance in relation to a population of 4.5 million this is seen as not feasible. This is broadly because as a low population nation, the economies of scale for developing the digital economy in NZ are not so attractive. This is also the case for potential investors, thus companies providing content requiring high bandwidth (e.g. Netflix) have chosen to date not to set up their services. Therefore, this gives a significant difference in the NZ to the UK and Scotland in terms of connectivity and thinking through how digital divides are perceived. In the UK, poorly connected (usually rural) locations are very much aware of the advanced services high-speed broadband can provide whereas in NZ this has not happened yet and hence the demand for higher speeds has not been as strongly argued for.

At the household level, there has been strong uptake for available broadband services and this has successively risen in all regions since 2006 through to 2009, see Figure 1:

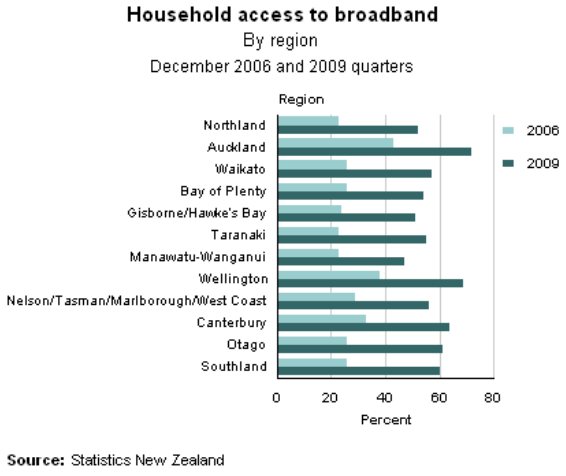

Figure 2 – Household access to broadband, Statistics New Zealand, 2010.

In 2009, the Household Use of Information and Communication Technology (ICT) Survey stated that 75% of New Zealand households had access to the Internet at home. Following on from this a further from the World Internet Project New Zealand (WIPNZ) that from a sample population, 86% of population are now using the Internet and that 91% of home users have a broadband connection (WIPNZ, 2011). This is similar when compared to the UK where broadband uptake is at 76% and slightly ahead of Scotland, being at 68%

(Ofcom, 2012). The NZ Government has also began the roll out of its 'Ultra-Fast Broadband Initiative' (UFBI) which is investing NZ$1.5 billion in order to accelerate the roll-out of ultra-fast broadband (UFB), this aims via to give a fibre optic connection to 75% of homes over the next 10 years, giving speeds of 100/50mbps to users (see Appendix A). What has been interesting about this project is the way in which the NZ Government has shifted in its position by doing this. Through setting up Crown Fibre Holdings (CFB), the government has had to accept that the market will not provide the digital infrastructure that the country needs. This is a significant change in governmental discourse towards provision, as participants suggested that this represented a new discourse concerning a national scale need, in order to legitimize the procurement of a UFB network. Whereby, a language of 'nation building' (not used in recent NZ history) has been deployed to give rationale to this service and infrastructure provision. Therefore like Australia, NZ has embarked on a public/private partnership where the state will aim to develop the fibre network, go where the market will not, and then sell the bandwidth wholesale back to the telecoms companies so that they can then go and compete for customers. This process should be completed by 2019.

The UFBI, through the CFB has five key strategic areas that it is targeting as part of this rollout, as detailed in Appendix A, the five point broadband action plan covers; e-health, e-education, e-business, e-government and e-development. Interestingly, within te-development, strong emphasis has been placed upon rural network development through the Rural Broadband Initiative (RBI) National Advisory Committee. The RBI has been set up to specifically deal with connectivity issues within rural areas and how best to address them. This will run alongside UFB roll out for the rest of the country. As was previously mentioned, NZ's unique physical geography and disparate rural population, makes provision for such areas difficult but they aim to provide:

> It will bring high speed broadband to 252,000 customers and 86% of rural houses and businesses will have access to broadband peak speeds of at least 5Mbps. About 20% of rural homes and businesses at present have access to 5Mbps at present. Around half of the rural community is currently experiencing only dial-up speeds (med.govt.nz:2013).

In 2009 55% of households in 'all rural' areas had broadband access (Statistics New Zealand) and although, this still represents a significant gap between rural and urban areas, the governmental decision to specifically try and address this problem is an important step. The RBI will also make use of other technologies in areas of low population where fibre to the home is not practical. Here wireless solutions will be sought. The long-term success of the RBI in partnership with telecoms companies will be interesting to follow, both in terms of how this potentially makes living in rural locations more sustainable but also in terms of a model for providing better broadband to rural and remote places.

3. Digital Heritage

NZ has a well-developed interest in its own history and heritage and has many people involved in relation to this both at the community and national levels, like can be seen in the UK and Scotland. NZ is rich in history and rich in the number of people keen to explore that history and this has led to a number of interesting digital projects that are attempting to find unique ways to capture and represent that history and heritage. In doing this, there have been a number of parallels to problems faced by similar projects in the UK in terms of trying to find solutions to create sustainable and easily usable digital archives and some examples will be discussed below.

3.1 – DigitalNZ

DigitalNZ (http://www.digitalnz.org/) has developed out of the National Library of New Zealand as group that can take a lead on the collection and preservation of digital archives in New Zealand. They are not specifically always addressing issues surrounding heritage but this does represent a proportion of the work in which they are involved with as they gather cultural material from museums, galleries, TV, radio as well as various records from government departments and agencies. They also offer a lot of technical support to a number of other projects that this report will discuss. For example, they provide the backend for the CEISMIC project (Section 4.1) and they ensure that all information collected in Kete (Section 3.3) is federated through their portal and backed up. As a leader in digitisation DigitalNZ provides 'Make it digital' guides of best practice for people, organisations and groups to use when wishing to create digital archives. Finally, they are very keen to see the metadata that is harvested used in some way and to help this process along, they have run a series of 'Mix and Mash' competitions that aim to show how people can creatively use and tell stories from the data that is held in DigitalNZ.

It's primary and initial role has been to create a portal that would be like a mini-Europeana for New Zealand that allows users to more easily find digital content. As a small country, that is situated within and is accessing a global internet such information can be easily lost with all the 'noise' from elsewhere, especially in search engines such as Google. Therefore from a number of different sources, DigitalNZ harvests the metadata that people and organisations contribute and makes it more accessible by having an API that sorts and orders the information appropriately. The system currently allows the user to search over 25 million digital items collected from a large number of partners who have given up their metadata to be harvested. This makes such information far more findable and usable for users, Figure 3 below gives a very neat pictorial diagram of how this works:

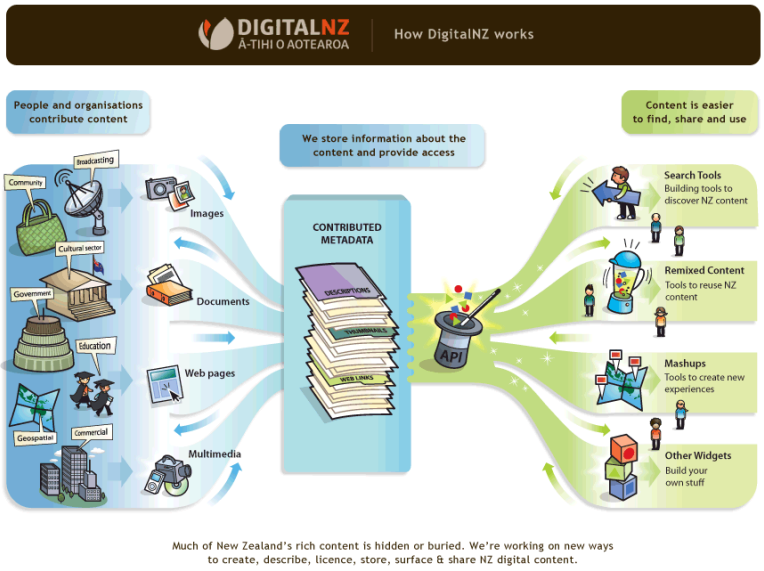

Figure 3 – How DigitalNZ works (www.digitalnz.org/developers)

DigitalNZ has been very successful in growing its collections to make NZ digital content much more searchable but it does face a number of challenges as the project moves forward. Firstly, in terms of resources, DigitalNZ is only a small team and therefore cannot always prioritise all the things it would like to do or be able to develop the technology as far as they would like to. Secondly, there can be issues with the quality of the metadata that they receive and that even though they have a very low barrier in terms what is required for metadata to be harvested, this can sometimes be limiting with regards to what can be done. Thirdly, some government departments and some organisations are reticent about opening up their metadata for harvesting and then for subsequent use, this creates issues for DigitalNZ in terms of what users can then do or not do with the data. A fully open data approach for DigitalNZ would be appealing but this is not really probably due to some of their partners having distinct commercial interests in their data. Despite these on-going challenges, DigitalNZ is still moving forward with future plans, that include improving its harvester, it is tentatively investigating the role open-linked data/semantic web technologies could have for it. They want to consider how crowdsourcing may in the future help improve metadata quality. They want to make their search capabilities much more mobile friendly andt hey also want to develop more international partnership due to a number of non-NZ originations holding data that is highly relevant to NZ.

3.2 – Archives New Zealand

Archives NZ holds the archives for the NZ government as a national body they provide a public service in terms of assisting research, improving public recordkeeping and supporting community archives. In doing this they give guidance for creating and maintaining archives as well as helping to develop access tools to help manage information as is detailed in Public Records Act 2005.

Figure 4 – Outside the Archives NZ office in Christchurch

In their role they operate from four main offices in Auckland, Christchurch, Dunedin and Wellington and like all national archive institutions, they are feeling their way into the digital world through a number of different projects. They see their role within this process, is to take a lead in terms of archival management in which they can assist others in following but not to dictate. This especially the case for Archives NZ (http://archives.govt.nz/) in trying to develop community archives, like Scotland (and the UK) there are a number of community archives throughout the country, along with other cultural institutions such as local museums and libraries. Here, the collecting record is greatly tied to their locale and like in the UK, for such small repositories the ability and capacity to develop practice around digital archive management is limited. For such small archives this is difficult due issues around capacity in terms of staff, volunteers, expertise, skills and financial backing. Hence Archives NZ aim has been to give guidance so local archives can be space from which communities can share their data and knowledge. This has been mediated through the central hub http://thecommunityarchive.org.nz/. The website operates as a portal whereby users can locate records held in community archives across the country from one central point. This aims to give smaller sized archives the opportunity to contribute their data and knowledge to a bigger collection, without the need for them to develop their own digital archive.

In terms of searching their records they operate Archway, which is an archival management system that allows you to search online through some 4 million records. The system contains considerable information on the NZ government since 1840 in a descriptive form, rather than actual government records, the purpose being to allow people to locate records, so that they can then go and view them at where they are stored. Beyond this Archives NZ have been attempting to digitise vast amounts of their collection to make it available in online formats. Their approach to digital strategy has been one of openness and adaptability. Openness is terms of being willing to place and give access to archival data online but also openness in terms allowing their data to be used by others. Their emphasis to date has been on digitising NZ's vast priority has been to place records online that they feel would be most used and relevant to the population. This is an on-going project but at the moment key digitisations have been

For Archives NZ, in the process of digitising materials, due to the vastness of their collections there have been a number of difficulties in doing this. The main issues they have faced have been around the decisions of what to digitise, the time and cost of doing this (especially in terms of labour), data storage and continued guaranteed access (server space etc) and finally what formats to use, especially due to continually changing standards in data management.

3.3 – Kete

Kete[3] is a digital community heritage project that takes a novel approach to allowing individuals and communities to upload their own collections to an online repository, as they state:

> Kete is a collaboration engine. It is open source software that you can use to create and share online. Write topics and upload images, audio, video, documents. Discuss them all. Link them together. It's a fun way to get things done (www.Kete.net.nz, 2013).

It was developed by Horowhenua Library Trust and Katipo Communications Ltd in partnership with Horowhenua District Council, and with funding from the National Digital Strategy: Community Partnership Fund. It is an open source software platform, that allows communities to collect together their privately owned materials an get them entered into a community archive and then published on their own website[4] (a full list of Kete sites is available here http://kete.net.nz/site/kete_sites) . The project is free for any community to enter and has largely been organised by place based interest with many areas being covered by some form of Kete. One of the novel things about Kete is how it has attempted to get around issues of digital connectivity in areas of low broadband take-up, lower rural connectivity and for users who lack the necessary equipment to upload pictures and other documentation. By following on from delivery of free internet to many of NZ's libraries by the Aotearoa Peoples Network (http://www.aotearoapeoplesnetwork.org/) Kete was able to use this to install a series of upload suites (with appropriate recording and scanning equipment) that would allow people to upload their own materials to the digital archive. Supported by National Libraries of NZ and backed up by Digital NZ, the resource has been relatively successful in collecting creating digital libraries of information about the art, culture and heritage of different communities.

In discussion with some participants one of the things that has held it back has been overtime the difficulty people have had with its usability. With suggestions being that it is a little clunky and awkward to use. This maybe the case but as a developing piece of open source software, the concept and to date the attempted implementation of it, despite

[3] Kete are traditional baskets made and used by New Zealand's Māori people.
[4] This gives an interesting comparisons to the CURIOS project in terms of how to rollout such a project on a large scale.

restraints is very impressive. Kete is now on stable version 1.3 and discussions about moving to version 1.4 are on-going. Further to this, discussions are also happening with regards a larger change to the project in terms of Kete 2.0 with discussion around this, taking place here http://kete.lighthouseapp.com/projects/14288-kete/milestones/71926-20. Kete therefore offers a very interesting and active model for collecting community heritage information from across different areas of a country. In relation to the UK and Scotland with its many community archives and history societies, represents a useful model that could potentially provide a sustainable digital presence for such groups.

3.4 – Our Spaces - The National Museum of New Zealand Te Papa Tongarewa

Te Papa is the National Museum of New Zealand is based in the capital Wellington. It current home is in the building picture in Figure 7, which has been its current home since 1998.

Figure 5 - Te Papa Museum, Wellington (image hoovered off Google please do not re-use)

The museum has been involved in a number of digital projects and has offered support to many more. For Te Papa its main aim is to find ways to engage users more effectively with the museum's collection. Digital strategies represent one strand in which this can be potentially done. To date, Te Papa has listed 200,000 items from its collection online (http://collections.tepapa.govt.nz/) for the public to browse and part of its strategy is to add to this and continually update the collections database. Beyond this, there are on-going attempts to find ways in which they can push the collections out into communities and engage people with the museum's collection. In doing this with previous projects one issues has arisen is that needs to be stronger sense as to what the plan for long-term storage and usage of the data is. For example the 2008 Our Space attempted to express and explore NZ identity, it was a custom built system, that collected data with regards to

contemporary and intangible heritage and included around 10,000 photographs. This was developed with a community to build that data but with the project finishing there was then no long-term plan with what to do with that data or how to continue working with the community engagement. For curators this has been a learning curve for future planned projects and

3.5 – RECOLLECT

RECOLLECT (http://uhcl.recollect.co.nz/) is a community archive that is based at the Upper Hutt City Library it has a collection heritage collection that includes photographs, newspapers, archives, manuscripts, maps, oral history tapes, and other material relating to the history of Upper Hutt and its people, Figure 6 below shows how you are greeted on their webpage:

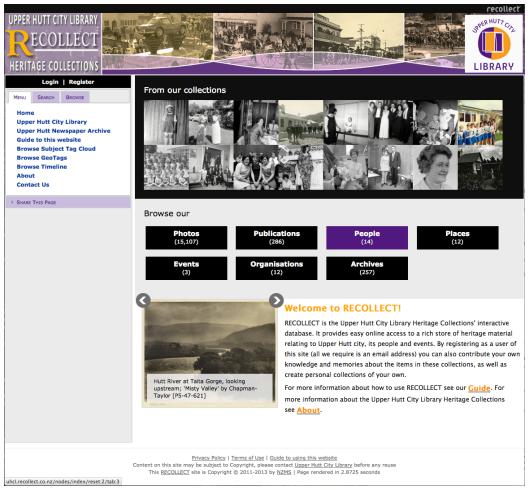

Figure 6 – RECOLLECT home page (http://uhcl.recollect.co.nz/)

In many respects, it has the types of materials that anyone who is familiar with community archives will recognise. What is interesting about this project is that they have produced an online platform for presenting their collections which has been developed with New Zealand Micrographics Services (NZMS) and is open source. As they state:

> It has been specifically designed for fostering community participation, enabling heritage organisations to draw on the valuable knowledge, stories, and energy out there in their respective communities to add value to their collections. Constructed using proven open source tools, RECOLLECT is easy to navigate and provides an exciting range of options — such as annotation, geo-tagging, and bookmarking — to enhance the user experience. (http://uhcl.recollect.co.nz/pages/about, 2013)

Therefore there main aims for this have been to promote community engagement with local heritage and to crowd source further information. With its easy to use interface this should have meant lots of activity and uploading but this was not initially the case. This

was primarily due to the demographics of those interested and involved with the heritage project being of an older age and not fully comfortable with using technology. This caused to be low numbers contributing to RECOLLECT, even though the system was very capable. Therefore to get round this a really interesting strategy of community engagement was used to move 'analog' information into digital forms. To do this the project used a variety of techniques to tap into the valuable information and heritage held within its contributing members. This included wall displays where people could write comments next to images allowing them to contribute their knowledge to particular themes, events or photographs. The comments could then be inputted into the digital archive with the digital image. They also printed and circulated 'mystery photographs', this was for when there was no information for particular images. This then allowed people who recognised the image to contribute, so that image could be given some context and meaning. Finally, they also developed more focussed groups of interest so that people with a particular interest in an area of the communities history could come together and work more intensively on making a more complete record of that.

The RECOLLECT project shows that when crowdsourcing community heritage information, even though you may build a very effective digital archive for that, the need to build your crowd and their relative digital skills is essential. Added to this, there is a need to also think how might such digital techniques be alienating to some and what ways can be sought to move around this so that valuable heritage information is not lost. For projects like this in Scotland and the UK, such as CURIOS, RECOLLECT points out some really strong lessons that need to be heeded in terms of engaging heritage communities and that presuming your well designed digital interface will be enough to scoop up some of the most 'vulnerable' and intangible heritage, will not be enough.

4. Digital Humanities

New Zealand like the UK has a burgeoning digital humanities (DH) field, although some commentators felt it was not as developed as the UK's both are still similarly finding their feet and working out the ways in which they represent an appropriate research methodology for the humanities moving forward. In discussions with individuals working in the field of DH a number of similar issues were brought up that are also relevant to the UK. Key issues that were flagged were mainly in relation of how to fold e-research into the existing discipline and research methodologies. Therefore concerns were raised over issues created by a growing skills gap that exists within the humanities, in terms of academics capable of using digital methods for research and those that cannot. This can create real issues in terms of work is then consider valid. Questions were raised then about how best to engage students with DH in order to digitally equip them with the

necessary skills. This is especially difficult when a number of humanities academics are not equipped to teach those skills and do not have the time to retrain. There are issues surrounding the use of DH tools for aiding with analysis, which leads to questions about how to comprehend rigour in that process. This is really important to consider in terms of thinking how your choice of digital tool (much like your choice of analysis framework) that you use is helping to shape your research. Concerns were raised about how best to articulate the very qualitative nature of DH research in a growing academy that thinks in quantitative terms. Finally, the size of DH expertise in NZ was seen as a problem with only small pockets of expertise, sited throughout the country at different institutions working in this field. Although this field is growing, with the University of Canterbury offering the countries first full degree from next year. The lack of funding across the board however makes it difficult for expertise to develop more quickly in NZ. This then creates further issues post-academic study when there is a lack of individuals, with the appropriate skills, to develop further DH outside of academia, where projects working on community heritage, cultural or arts (like those detailed in this report) would benefit massively from people having these skills. These issues are very much being grappled with in the UK too by academics working in the DH field and the NZ example is one that helps highlight how this is a shared problem across the DH.

Within the DH there has been a strong turn towards finding ways in which crowd sourced information can be used to reduce the labour required in order process analog information into digital forms. Prior to my arrival in Wellington a crowdsourcing workshop was held at the Victoria University of Wellington, details about the projects discussed can be found here (http://wtap.vuw.ac.nz/wordpress/digital-history/events/crowdsourcing-workshop/presenters/) with some detailed in this report. The workshop highlighted to organisers a number of interesting questions about how best to use crowdsourcing for projects whilst raising a series of interesting questions about research methodologies that employ this that are of real relevance to academics in the UK wanting to use such approaches also. The following section (4.1) will move to detail the CEISMIC project that has been using crowdsourcing to collect data. The project has both a DH research functions as well as a specific community emphsis.

4.1 – CEISMIC – Canterbury Earthquake Digital Archive

On February 22nd 2011, an earthquake of magnitude 6.3 hit the Canterbury region this followed a 7.1 magnitude earthquake in September 2010. Although less powerful than the first quake, the second quake killed 185 people and destroyed many buildings in region and specifically in the city of Christchurch. This laid the ground for an exceedingly ambitious digital humanities project to document in digital archive form as many facets surrounding the earthquake as possible. Following from a similar project in the wake of

Hurricane Katrina, researchers at the University of Canterbury, within the digital humanities team, saw the opportunity to begin a similar digital archive that could catalogue and detail anything of relevance from the events and stories that unfolded from the earthquakes. This resulted in the creation of CEISMIC (Canterbury Earthquake Images, Stories and Media Integrated Collection) which would act as digital archive for collecting all relevant materials, Figure 7 below shows the homepage:

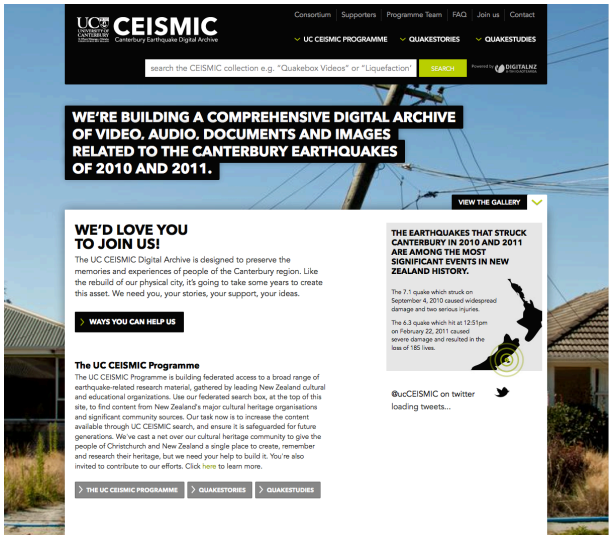

Figure 7 – Front page for CEISMIC (www.ceismic.org.nz)

CEISMIC from the start has had the aim to make a contribution to the rebuilding of Christchurch and the Canterbury region therefore as a repository, it has aimed to collect as broadly as possible the different digital materials that are produced when earthquakes like this take place. This includes videos, images, audio and documents but also data from amenity providers such as the emergency services, telephone companies, the water board, electricity providers and so on. This has allowed a dense archive to develop that can federate data from a number of different data providers as well as different collaborators. These include - the National Library, the Ministry for Culture and Heritage, the Canterbury Earthquake Recovery Authority, Christchurch City Libraries, Te Papa, NZ On Screen, the Canterbury Museum, the Ngai Tahu Research Centre and The Film Archive. With the project being highly collaborative, it has allowed the multifaceted collection into nature of experiencing and living with effects of such catastrophic events. Here, by CEISMIC working with other groups that have already been established, it is able to harvest valuable data and information without the need to replicate it or replicate the process by which it has been collected. To date, the project has engaged with text encoding, digital archiving, GIS mapping, data visualization, 'big data' analysis, blogging, tweeting and online publishing.

In terms of contributing to the archive there are a number of ways in which this can be done. ‘QuakeStories’ (http://www.quakestories.govt.nz/) is a way for members of the public to upload their stories and images that are related to the quake. ‘When My House

Shook' (http://whenmyhomeshook.co.nz/) is a way in which children and schools can make similar contributions. 'Kete Christchurch - Canterbury Earthquakes 2010/2011' (http://ketechristchurch.peoplesnetworknz.info/canterbury_earthquakes_2010_2011) represents a further way in which individuals can contribute to the archive. These projects along could have within Section 3 as community heritage projects in their own right as they have collected a wealth of information surrounding experiences with regards to the earthquakes.

From a more academic, digital humanities perspective, 'QuakeStudies' (http://www.ceismic.org.nz/quakestudies) has been created as again a way to bring together, in a holistic sense the whole cornucopia of research material available in a secure, safe and ethical archive. The potential for CEISMIC to be used as an academic resource into the future, is huge, due to the vastness of the data that has been collected and the different ways in which it could be used. From understanding first responses and the actions people take, to the disaster recovery efforts during the 'crisis', through to the rebuilding, remembering and the memorialising of loss. There are whole sets of data available within the digital archive that allow for different academic research to take place into what happens during and after an earthquake takes place. The purpose to this is twofold: one, in an applied sense, to keep an account so that if future earthquakes occur, lessons surrounding best practice can be learnt and if similar natural disasters happen elsewhere, that understanding of best practice can be shared. Two, it allows for a series of more social sciences related questions to be asked about how individuals and communities deal with such disasters in order to rebuild.

As a digital humanities project, it is unique for NZ, for as some commentators expressed, it has received substantial resources to conduct its work and hence is not truly representative of what doing digital humanities in NZ was normally like. With resources usually being far more limited within the research funding of NZ, the earthquake really created the opportunity and support for such an essential project to take place. Further to this, as was previously mentioned, key to this project has been the sense (even if in just a small way) the digital archive can be used as a way to help in reconstruction post-earthquake. What is interesting (and also relatively unique beyond NZ) about this is that most 'active[5]' archives that are involved with 'community' and 'place' (re)building are often very safe, in terms of the content they choose to collect and display, often shying away from difficult issues in order to give a 'rose tinted' view. Here though, through the difficult events caused by the earthquakes (death, loss of jobs, homes, community buildings, infrastructure etc) there is an attempt to confront and reconcile these challenging circumstances in order to help rebuild what has been lost. The archive therefore becomes a site to reconcile and construct new understandings of place where the 'old' spaces of

[5] Active in the sense that it is being currently produced by a broad community of interests.

the city (and region) have been lost. Part of a process of remembrance as well as reconstruction the digital archive represents a methodology for individuals and communities to move forward whilst always being able to look back. As the project progresses and the time between the earthquakes and the present increases, it will be fascinating to follow what role(s) the archive finds for it within the history of the Canterbury region.

5. Digital Arts

5.1 – Aotearoa Digital Arts Network (ADA)

ADA is digital arts project researching and promoting digital art where is focuses upon media, new media, electronic and digital art. It has been running since around 2003 when their first symposium took place. Central to it aims is to promote and enhance communication between artists, curators, teachers, critics, theorists, writers and the interested public. The website (Figure 8) operates as an online forum for sharing the work of ADA, so that it can foster understanding with regards to digital art but also as a focal point for artists who may have felt isolated within this field, whilst working in NZ.

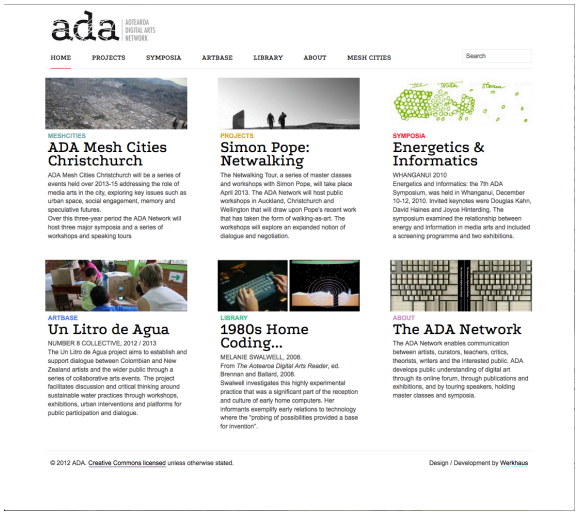

Figure 8 – The ADA website front page (www.ada.net.nz)

As a national organisation with charitable status, the ADA Network is run by trustees who come from a variety of academic and artist/practitioner backgrounds. ADA aims to create a space for dialogue between members to promote NZ digital art alongside international work as well as to connect with a NZ diaspora of artists. Their website details the varied array of projects over ADA's existence that have taken place and gives a neat archive for anyone to trace back through. ADA has also been keen to ensure that artists and interested people get the opportunity to come together and have therefore staged yearly

symposiums to further develop the digital arts communities. As well as this, in 2008 they as produced the ADA reader[6] to give a snapshot into digital artwork in New Zealand.

As way of an example a current ADA project is Mesh Cities Christchurch which is a *'series of events held over 2013-14 addressing the role of media arts in the city – exploring key issues such as urban space, social engagement, memory and speculative futures.'*[7] As the project suggests it has taken its start point from the earthquake to allow artists through symposia and a variety of other events (screenings, exhibitions and performances) to critically engage with aspects of the role of media art in the city especially with reference to an overlaid 'growth machine agenda'. At the core of this is to make work, people and art flow/move through Christchurch again in order to aid in its reconstruction and to examine how cities choose to remember themselves.. A further project related to this is Gap Filler (http://www.gapfiller.org.nz/) which maps and 'activates' vacant and unused spaces within the city, as shown in Figure 9:

Figure 9 – The Pallet Pavilion, Christchurch (http://www.gapfiller.org.nz/summer-pallet-pavilion-2/)

Although not a ADA project, it still highlights some of the creative work being done to aid the rebuilding of Christchurch that isn't conventional in its practice and Mesh Cities aims to develop conversation further to make similarly creative and critical interventions.

ADA has been received funding from Creative New Zealand and one of the key issues for the network as well as more broadly the arts in NZ is how funding continues into the future.[8] For ADA, as a unique set of collaborations centred on digital art where it fits in traditional funding models has often been difficult place. For the network which is trying to gain funding in NZ this has at times proved difficult especially and this has also been compounded by the economic downturn in Europe/UK meaning international funding for collaboration is even more scarce. Finally, there has been a growing sense of competition for funding increasing (which would fall towards a more UK model) although not talked

[6] Available here http://www.ada.net.nz/projects/the-aotearoa-digital-arts-reader/
[7] http://www.ada.net.nz/meshcities/ada-mesh-cities-christchurch/
[8] There could be an interesting comparison in the future with the (highly problematic) approaches taken by Creative Scotland.

about in great depth it was suggested that this was also leading to a stifling of collaboration between individuals and organisations. All things collectively, mean that for ADA and the promotion of digital arts limitations in terms of available resources, makes their interesting and valuable work all the more difficult.

Due to a number of projects encompassing elements of arts, cultural and humanities work, I have decided to place them together in their own section. This is because the variety of projects that are going to be discussed cut across these boundaries and therefore separating them becomes overly arbitrary and difficult. Given the relative size of NZ there are a number of really innovative and fascinating digital cultural projects taking place. The following section will detail the projects discussed during the research period, giving a description of the work being done as well as some commentary with regards to the projects themselves.

4. Participants

Participant	Institution/Organisation
Ian Goodwin	Massey University - Wellington
Donelle McKinley	Victoria University Wellington - Wat-te-ata Press
John Roberts	Archives New Zealand
Adrian Kingston	Te Papa National Museum
Fiona Fieldsend	Digital New Zealand
Stephen Blyth	Common Knowledge
Vicki Smith	Aotearoa Digital Art Network and upstage.org
James Smithies	University of Canterbury
Erin Kimber	University of Canterbury - Macmillian Brown Library
Alison Loveridge	University of Canterbury
Chris Adam	Archives New Zealand
Sydney Shep	Victoria University Wellington Wat-te-ata Press

6. Conclusions

In terms of connectivity, NZ gives a very useful example as to how the problems of the UK market-led approach (especially for remote rural areas in Northern England and Scotland) can mitigated with an alternative and more state mediated approach. What NZ also shows in relation to digital connective is that how on the back of this digital community and cultural projects can develop even with limited internet access. Kete for example shows how limited domestic usage can circumnavigate by more readily taking advantage of existing infrastructure such as libraries. What these projects also show is that there are very similar cultural trends taking place in terms of community heritage. As historical societies in both the UK and NZ seem to have similar interests in terms of what want to collect, preserve, digitise, and publish for themselves and future generations.

New Zealand due to its location and size gains both opportunities and disadvantages due to this. Opportunities in that, due its veritable size it can make collaboration between institutions much more possible, as has been highlighted in the detailing of projects, many of them are run at a national level and are able to bring together a number of key players from across the country into them. There is obviously a politics within this (that this report does not deal with) but in comparison to the UK and even to Scotland alone, this type of collaboration happens much less often. The same need as is expressed by the work of DigitalNZ or ADA which aim to be spaces that can represent different aspects of NZ culture and art in a global information society, where a small nation like NZ is swamped from outside, is very rarely a motivation for collaboration in the UK. This is potentially due to the a number of things, such as size (population), the number of competing institutions (museums, libraries, archives, universities, government organisations etc) within these fields wanting to do similar things but not collaborating, different nationalisms with again their own respective institutions and finally there is not the same scarcity of resources (both and opportunity and disadvantage) that forces such collaborations to take place as often – though this may change.

As was stated at the beginning this report is very much a slice through some of the work that is being conducted in NZ and with more time and resources this could easily been expanded to encompass more of the work that is being conducted that is of relevance to the CCN+ Network. As well as being able to add more detail with regards to each of the projects and further projects with more time this report would have really liked to engage in some more geographical and sociological questions with regards to digital usage in NZ. To see who is using such technologies and what differences socio-demographics make to the picture of usage in NZ. Although I engaged with a number of people and projects, I was unable gather in such a short period of time, a real sense as to who the active participants were in the projects. Therefore patterns of usage surrounding ethnicity, age,

sex, orientation and so on would have given a much richer and deeper understanding to the role community focused digital projects have in NZ.

Appendix A – New Zealand's Broadband Vision

The vision of Crown Fibre Holdings is to lead the rollout of Ultra-Fast Broadband to 75% of New Zealanders by 2019. CFH will lead the telecommunications industry in rolling out Ultra-Fast Broadband rapidly, efficiently and cost-effectively, and will enable and drive uptake of Ultra-Fast Broadband across New Zealand. This will:

- provide world class telecommunications infrastructure, to enable a more productive New Zealand economy;
- deliver better outcomes in service delivery in key areas such as health and education; and
- benefit New Zealanders through enabling new and improved Internet-based services using Ultra-Fast Broadband.

The Government has a **Five Point Broadband Action Plan** which provides an overview of what the Government is doing to support the benefits of faster broadband in five key sectors:

e-Health

- Health innovation hub to test, commercialise and encourage funding and uptake of IT applications for fibre, through DHBs;
- National Health IT Plan including:
    - e-referrals, e-prescribing and online records of medications;
    - access to surgical buses;
    - shared care records by 2014;
    - provide communities with remote diagnosis via Integrated Family Health Centres;
    - provide in home health monitoring and video conferencing for the elderly.

e-Business

- Information about the benefits of faster broadband to business provided through Government business channels such as New Zealand Trade and Enterprise and the Ministry of Science and Innovation (MSI);
- Digital tools and applications to enhance business productivity;
- MSI funding support:
    - the Wynyard Quarter Innovation Precinct;
    - assistance to NZ tech companies to establish and operate in Silicon Valley;
    - ICT Entrepreneurs Scheme.

e-Education

- Creation of a Network for Learning;
- School Network Upgrade Programme (SNUP);
- Use of Broadband for Maori in schools and ICT careers;
- Funded school lead-ins (drops);
- Professional learning and development for teachers.

e-Development

- Local Government and stakeholders establishing Digitial Leadership Forums or similar to leverage the benefits of the UFB investment locally, holding six-monthly RBI meetings;
- Rural Broadband Initiative (RBI) National Advisory Committee;
- Work with Nga Pu Waea, the Maori broadband working group, to maximise opportunities for Maori from the initiative; improve digital literacy and confidence;
- Improve digital literacy and confidence to use UFB via DIA ICT programmes (eg Computers in Homes, Computer Clubhouse);
- Deliver fibre to all libraries.

e-Government

- New applications and services for government;
- Better access to government data;
- Increased use of the web as a channel;
- Centralised ICT services, business processes and information;
- Individual agency ICT initiatives.

Further details at: http://www.crownfibre.govt.nz/about/new-zealands-broadband-vision