How Is One Library Network Building Digital Links Within Their Communities?

By Sarah Tiplady-Scurr
Learning Specialist
Christchurch City Libraries

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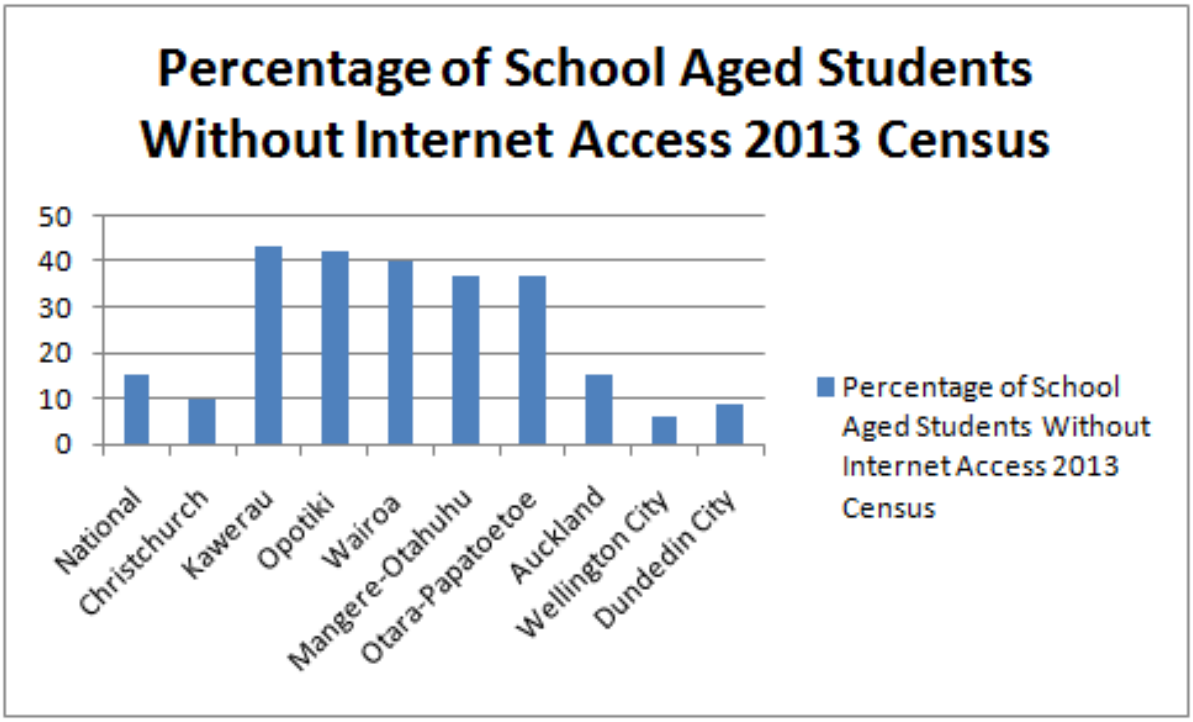
The Digital Divide

The Digital Divide has the capacity to isolate communities. If you can neither access nor use computers or the internet effectively then how do you participate equally in an online society? Libraries are helping to bridge the digital divide. This paper discusses how Christchurch City Libraries are engaging with non internet users; what are they doing to collaborate with the wider community, what impact are they having and what next steps could they take? Finally is it going to be possible to opt out of a digital environment and what motivates the learner to use digital technology?

Income and equality has become a critical issue of our time. It is increasingly hard to move into economic opportunity and a big reason is that people lack digital literacy. This means that they lack the basic digital skills necessary for employment in the current digital age. Recent research has uncovered that children at schools in poor areas continue to lag far behind their wealthy peers, with rising pass rates making only a small dent in the gap. Additionally the 'long tail of underachievement' persists despite 25 years' work, including more than 80 initiatives since 2000 (Johnson:2015).This is an economic divide which runs parallel to the digital divide in the form of web access, devices and information. Libraries can and do fill this void.

The 2020 Trust extrapolated data from the 2013 Census of Population and Dwellings about the internet access. They found that in Christchurch 10% of households with school aged children do not have access to the internet. This is compared to nationally, 15% of households with school-aged children do not have internet access. Regionally Kawerau (43%), Opotiki (42%) and Wairoa (40%) have the highest percentages (2020 Trust:2015). This means that at their home they have no access to the internet. The question did not ask how many devices or which type of device they had, therefore the homes which stated they did have internet access may have had one small phone or tablet compared to my own household with school aged children. We have two Macbook Pro's, a Chromebook, one iPad, one iPad Mini and an iPod Touch for a family with two adults and two school aged children and a preschooler. This is a digital divide of access to devices. How can a student complete an online word processing task for homework on a small tablet with the same ease as on a laptop?

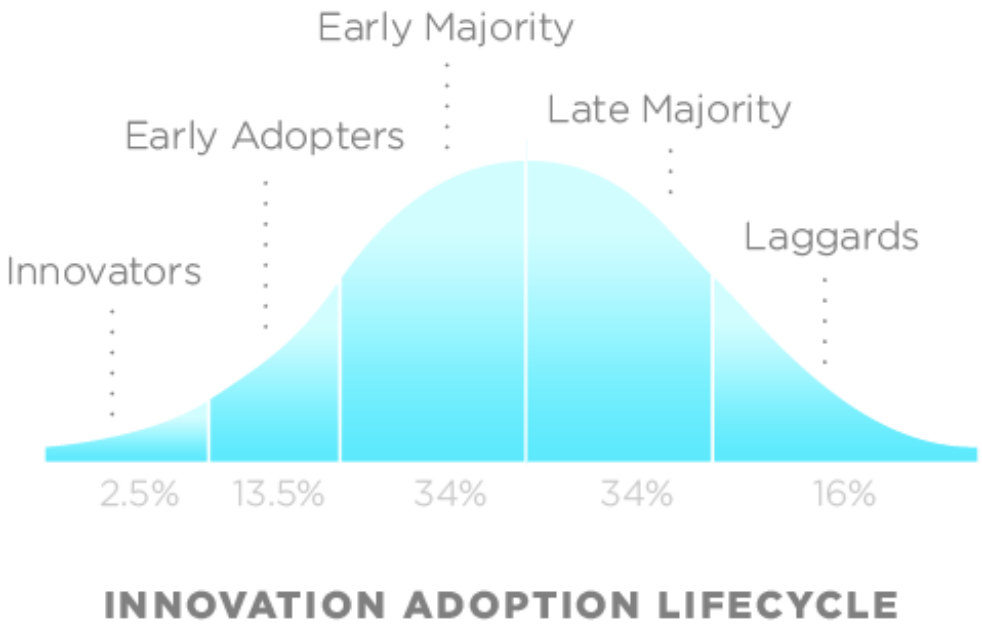


At present in the current social and economic environment it is possible in New Zealand to opt out of a digital environment. For example we can still pay bills by cheque or cash however this has progressively become less easy over the past decades. Institutions such as passport control have started to ask customers to use a 'realme' account; this account can also be used in a job application process. It has started to permeate all areas of society. It is assumed that a functioning individual is able to access the internet and is able to use web based interfaces to solve everyday problems such as job applications, internet banking, social networks, and entertainment. To lack the skills and resources to be online in today's world means being excluded from a great many activities and opportunities which are crucial for living and growth. Government departments, community organisations corporations, and mass media now rely on the internet, and a great amount of the information found there is hard to find and impossible to retrieve from any other source. Governments are now requiring members of the community to perform activities online that once could be handled in person or by phone. And this trend is growing exponentially. Libraries are increasingly becoming the primary or only access point for people to become digitally literate and to have access to the digital world.

What Motivates People to use Digital Technologies

What motivates the learner to use digital technology; if you are a competent user of a device are you a competent digital citizen; and what is it that we need to do to move our customers beyond being passive consumers of technology to become digitally competent users? It is useful to look at Everett Rogers Diffusion of Innovation model. If an individual is able to afford the device and the wireless connection, there is still inequality as there is a digital divide across the generations. At CCL our computer classes and iPad classes are 90% populated with older adults. These classes are nearly always full and often have a waiting list. This generational delineation means that some older adults do not have the means or understanding of how to upskill themselves digitally. Furthermore some older adults do not understand what they are missing or how new technologies could help them with their everyday activities.

<u>Everett Rogers Diffusion of Innovation</u>



Adopter Categories

Innovators: Innovators are individuals willing to try out new ideas, they are "venturesome" (Rogers, 2003:282). And so they are also prepared to cope with unprofitable or unsuccessful innovations and as such a certain level of uncertainty about the innovation. In regards to the social aspect of this theory, innovators may not be respected by all members of their community. In a teaching and learning environment an innovator is the individual who brings their own excitement about an innovation to his or her practise. For example such individuals may use expensive equipment such as robots or coding they have the latest gadgets and are aware of new technologies.

Early Adopters: Socially early adopters are more integrated; this allows them to become change agents (Rogers, 2003). They are more likely to hold leadership positions in the social system and as such others may come to them to get advice or information about the innovation. They are not as fast as the innovators but they will know very quickly about the latest technology, they will want to have the latest device - iphone or samsung and will keep up to date with what is happening in the tech world.

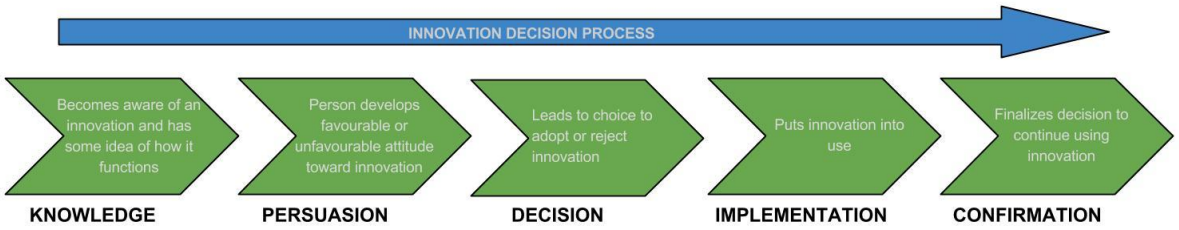
Early Majority: The early majority according to Rogers (2003) adopts an innovation just before the average member of their community. The early majority think and consider an innovation extensively before adopting it. The early majority have thought about the technology and discussed it with their peers and have decided to adopt this innovation because they believe it is the right thing to do.

Late Majority: The late majority takes up an innovation after the average member of a social system, they tend to be sceptical and cautious and require uncertainties to be removed before adopting the innovation (Rogers, 2003). To reduce the uncertainty of the innovation, social networks of peers should persuade the late majority to accept it. Then "the late majority feel that it is safe to adopt" (Rogers, 2003:284). Therefore in the case of the late majority using ipads they will need to be encouraged to do so and perhaps mentored by their peers.

Laggards: Finally the laggards are the last to adopt innovations within a social system (Rogers, 2003). They may be isolated and not participate in social networks within a social system. They use experience as their point of reference and they may be suspicious of innovation and change agents. In the community these individuals may be older adults who do not use their email accounts for communication when everyone else is. They may not start to use email until they absolutely have to.

Understanding community use of ICTs using this model is useful as it helps inform us how to move individuals on. For example the late majority will work well in a group paired with the early majority as they are able to see that they may be missing out and they will want to make sure they 'keep up' with their peers. This may mean that the individual does not learn to use email as they have weighed up the information and decided that digital communication is not for them. However if they are unaware of the ease they could see and talk to a close family member overseas regularly using skype or facetime because they are not informed this becomes an inequality of access issue and is a need that libraries can and do meet.

Five Stages in the Innovation Decision Process



Knowledge: at this stage the person becomes aware of an innovation and has some idea of how it functions. For example a primary school teacher hears about the use of email and may have some friends or colleagues that have used it or use it as a form of communication.

Persuasion: Next the person forms a favourable or unfavourable attitude toward the innovation. The above individual has heard about email and thinks it is a great idea for communicating quickly with others.

Decision: After that the person engages in activities that lead to a choice to adopt or reject the innovation. The individual making a decision about email decides to set up a web based email account.

Implementation: Now the person puts an innovation into use. The individual who is deciding whether or not to use email starts to use it to communicate with family, friends and colleagues.

Confirmation: Finally the person evaluates the results of an innovation-decision which have already been made.

The innovation decision process is Roger's interpretation of how an individual decides to implement a new technology. In the library context this is useful when working with adults who are not separated from the technology by financial means but by perhaps ideological or generational situations.

Christchurch City Libraries

Christchurch City Libraries are meeting some of the needs around the Digital Divide. They are working with their communities to bridge the gap. Over the course of a month, Christchurch City libraries had 412 face to face sessions with customers asking for support in regards to local government enquiries (A. Seaton, personal communication, November 4, 2015). These are such things as Immigration, Birth Certificate, Gun licence, Work and Income New Zealand, New Zealand Transport Association, Children, Young People and Families, District Plan and Inland Revenue. Library staff spent 3074 minutes on 1 on 1 coaching/support sessions and they numbered 372 government transactions and 38 local government transactions. The researcher considered that these may have been underreported as the information differed from the first fortnight to the next. If Christchurch City Libraries were not able to assist these customers who would have?

Christchurch City Libraries are meeting this need in a varied approach. Firstly at the network libraries they have the staff available to help customers who either 'book a librarian' which is a free one off half an hour booked session available at all libraries. Or Christchurch City Libraries also run weekly computer 'Drop Ins' at at least eight libraries across the network where community members can bring their device or computer based need to a drop in and get help as needed. These needs vary

from a question such as how to upload a photo from a phone to a laptop to using advanced photo manipulation software or connecting a device to the internet.

Christchurch City Libraries have strategically integrated learning centres as vibrant collaborative learning spaces with customer access to a variety of technologies supported by an annual programme plan. Learning centres exist in a number of their community libraries and there is one planned for the New Central Library planned to open in 2018. The Libraries Programme Design and Delivery team, based at the South Learning Centre, in the South Library, supports the innovation, implementation and rollout of digital literacy and digital innovation programmes across all libraries' Learning Centres. At Christchurch City Libraries Learning Centres there are 5 FTE Learning Specialists and a Team Leader, who are educators employed to run classes for the community. The mission statement for the Learning Centre is 'To provide, promote and advocate quality technology-based learning experiences tailored to the needs of our diverse communities. To foster partnerships and collaboration, supporting our communities to engage in library programmes and spaces; to invite, delight, inspire and transform'. During a typical week at South Learning Centre 23 classes were run, with 340 students taught. In addition to this every school holidays the Learning Centre runs holiday programmes for school aged students. These are fun technology focused half or whole day sessions for primary aged students. The holiday programmes run through Christchurch City Libraries are always low cost or no cost to provide access for all. Some examples of the holiday programmes are: Digital design using a paint programme, Creative Minecraft, Stopmotion animation, T-shirt Logo design, Music Garageband on ipads.

In terms of community classes the Christchurch City Libraries Learning Centres offer the following classes:

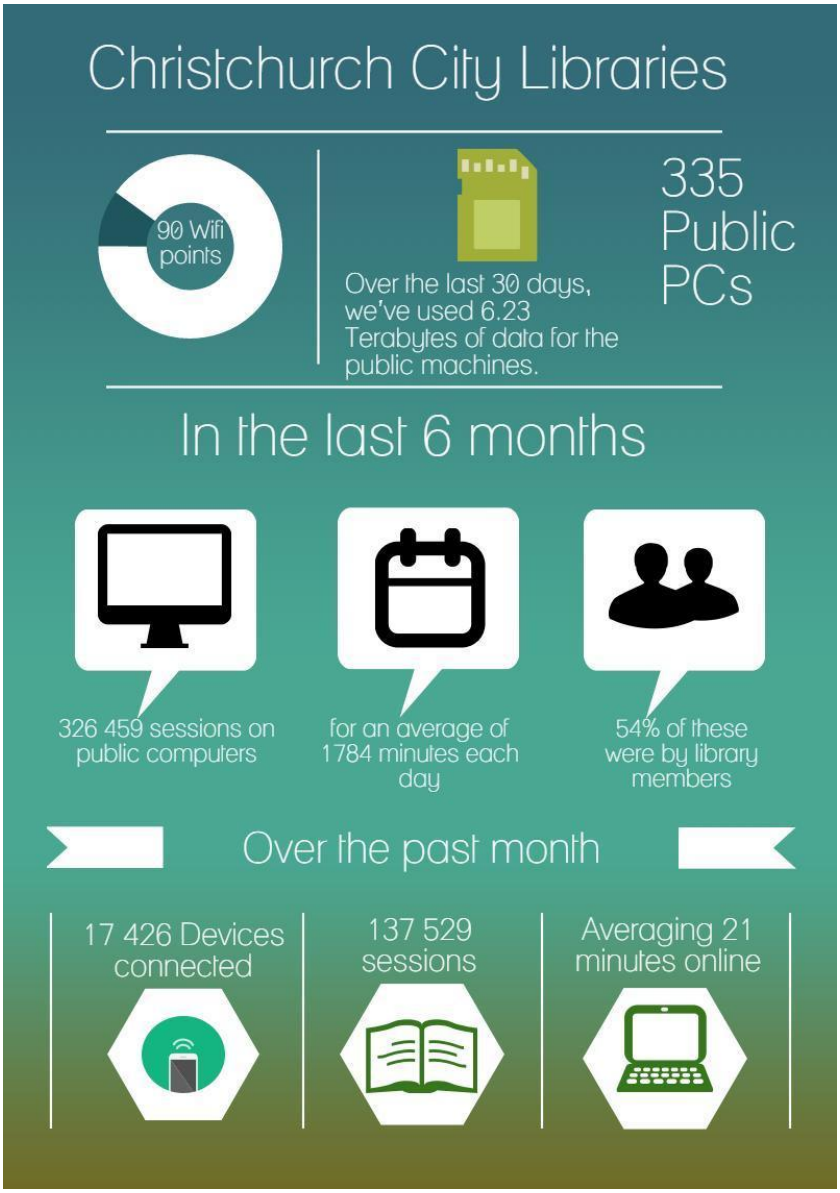
- Introduction to eBooks
- Beginners 3D & Printing
- Beginning Computer Skills
- Beyond Beginners
- Introduction to iPads
- Skillwise - people with disabilities
- Family History
- Using your Digital Camera
- Getting to know your Android Tablet
- Alzheimers Next Chapters Book Group
- Ready Steady Tap - preschooler and parent ipad classes
- Computer Drop-in Sessions

The Christchurch City Libraries Learning Centres also work closely with Christchurch schools. Classes and groups come to the Learning Centres (one of four locations around the city which have a variety of learning spaces) or the learning specialists go out to schools, often along with the local Information or Community Learning Librarian. The Learning Centres have a focus on digital innovation and as such run small groups units of work with primary school students using new and exciting technologies. These units of work are called Horizons and they usually consist of a six week project with four students from three schools working together on topics such as Coding, 3D Printing, Robotics or Multi Media Presentations. The Learning Centres also run specialised programmes and for example in 2015 they ran a Film School, a Television Station, a Minecraft whole class world project and Photoshop and Illustrator courses. The Learning Centres also offer free whole class library based sessions on topics such as Information Literacy, Matariki, World War 1, Cyber Citizenship, and Library Skills. These are generally based on site but can be offered at Christchurch schools. Additionally the Learning Centres go out to schools weekly for a whole class session aimed at Years 3-6 sharing about the Christchurch City Libraries resources and the students use the iPads to complete a fun activity and watch an augmented reality e-book.

The Learning Centres run several after school programmes. These consist of Girls Zone and Workshop Makerspaces. Both of these run weekly during term time for students aged from 9-12. There is often a waiting list and students can sign up for a maximum of two terms. The cost for this is set at twenty dollars to keep it accessible. The topics covered include 3D modelling, coding, aurasma, robotics, digital photography and manipulation, e-textiles, papertronics, and stopmotion animation. The Learning Centres also run four Minecraft Clubs including a girls Minecraft club, a Pasifika after school club and an e-Book club.

CCL have 335 public PCs. In the last 6 months there have been 294 731 sessions on public computers, for an average of 1754 each day. 47% of these were by library members (although library members may have been using visitor slips). Over the last 30 days, we've used 6.23 Terabytes of data for the public machines. Christchurch has 90 wifi access points across the city including Libraries (69), Mobile Library vans and some other locations eg Pioneer Sports Facility. Over the course of a month in 2014 we had 17 426 devices (phones, tablets, laptops) connected using 137 529 sessions and with each device averaging 21 minutes online. They have used an average of 380 mb each and we have provided an average speed of 2.1 megabits per second to each device across each session (J. Panisset, personal communication, November 5, 2015).

While Christchurch City Libraries and other public libraries across the world are doing much to meet the digital needs of their community, there is still much that could be done. One hundred years ago books were expensive and out of reach of a lot of society, now we can compare books to devices, they are expensive and out of reach for a lot of society. Could public libraries lend these out like books as a matter of course? I know this has been trialed and works in libraries around the world. In Christchurch there is a need to build more networks with non-traditional library users although there is some great work being done by the outreach team and individual libraries. Perhaps there is an opportunity to target church groups or maraes, especially those areas which have no library access such as a rural marae.



In conclusion it is true that the digital divide has the capacity to isolate communities. Some families do not have access to the internet or devices which has a real impact on school aged students in terms of their equality of access to information. Additionally a significant proportion of society are dissociated from devices and the internet due to their decisions on whether or not to utilize an emerging technology and then the process they move through when adopting an innovation. Roger Everett's Diffusion of Innovations Model is useful when considering these needs. Christchurch City Libraries have various approaches to meet these needs. They have community classes to teach people how to use their devices, they are meeting the needs of school age students who do not have access to emerging technologies by providing free or low cost classes using these. They also provide public computers and wireless access free of charge. Additionally library staff are on hand for a casual query, a drop in computer class or a book a librarian session. In the future Christchurch City Libraries could look at going further than their existing extensive services by offering a borrow a device service or begin to meet information needs across the community by working out of community spaces such as churches or a return to working in a learning capacity on maraes although this has been executed successfully previously.

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