Waterloo Digital Watering Hole

Addressing the Digital Divide in Waterloo Public Housing

Background

Counterpoint Community Services conducted a survey between April and May to understand how the community was coping with the impacts of Covid-19. In this survey, 91% of participants were from the Waterloo area, with 94% living in public housing. Out of the participants, it was found:

- 18% reported they had unlimited digital access
- 57% had limited digital access
- 10% had insufficient digital access and;
- 14% said no digital access at all.

Reason for Action

Since the recent Covid-19 pandemic, a widening of the pre-existing digital divide has urged for a digital inclusion strategy for public housing residents and other low-income households (Shreenan, 2020). It is especially concerning as many services have moved online and with many people requiring to or wanting to self-isolate, they are therefore unable to access these services (Shreenan, 2020).

Our government is a prime example of a service which has been gradually moving their services online. For many people, particularly those in low and low to middle-income households who access government services, they either do not know how to or cannot access these services online due to a lack of appropriate equipment or knowledge of digital devices or software. It is no longer a person's choice to go digital, and this has increased the pre-existing digital divide and put those at risk of social exclusion at further disadvantage (Citizens Advice Bureau, 2020).

The 2016 Census found that only 35% of public housing households had access to a Wi-Fi connection, and this remains the most reliable data to date (Shreenan, 2020). In a study by Thomas et al (2019, as cited in, Preston, 2020), 4 million and more Australians access the internet exclusively through their mobile phones, however internet usage through a mobile phone is dependent on a person's socioeconomic status (Thomas et al., 2019, as cited in, Preston, 2020).

For low and low to middle-class people, they are likely to rely on low-cost mobile phone or sim card plans which also provides limited access to the internet.

However, for buildings such as Dobell, unstable mobile signals can affect the tenants usage of their phone internet (Shreenan, 2020). In saying that, mobile phone plans for internet access is only a short-term solution for many people (Shreenan, 2020).

In May 2019, NSW Council of Social Services partnered with University of Technology Sydney to survey 730 people from low and low to middle-income households. The survey which is titled, "The Cost of Staying Connected – Telecommunication findings from the 2019 Cost of Living in NSW Survey" found that:

- 14% reported difficulty in paying their phone bill on time
- 16% reported having a mobile phone but without data usage and;
- 29% said they need to limit their mobile phone usage due to financial reasons.

Although Department of Communities and Justice have introduced funding for agencies to apply for technological devices for children, families and young people during Covid-19, it does not support older people living in Redfern and Waterloo who are without children (Shreenan, 2020). Furthermore, the NBN and wireless data responses thus far have not addressed the issue of peoples' lack of equipment, internet connection or knowledge for using the equipment and software (Shreenan, 2020).

In the 'Out of the Maze: Building Digitally Inclusive Communities' (2018) report, it was found that people who do not have internet access experience exclusion, isolation, powerlessness and lack of opportunities. However, it must be noted that low income households do not have a choice in the mentioned social issues as NBN and other forms of internet coverage is usually not a priority due to its cost factor (Preston, 2020).

Children and young people are also not unfamiliar to experiencing digital exclusion. Digital exclusion can have a detrimental effect on young adolescents' education, especially since learning has mostly moved online. For students living in public or rented homes, it is found that they are twice as likely to not have internet access at home (Preston, 2020). For low-income families with limited internet access, studying at home can still be difficult due to lack of appropriate computer software required for schoolwork (Preston, 2020).

As outlined, many services, such as government and education, have moved online. However, for many low and low to middle-income households, they are not given a choice about moving online, nor do they have a choice in experiencing digital exclusion. Due to digital exclusion, they experience many adverse effects such as isolation, powerlessness and lack of opportunities. As

such, they often have to seek assistance from community services which can exacerbate digital exclusion as they need to rely on others for digital access.

Project Evolution

During the early stages of Covid-19, REDWatch approached locally-based organisations and institutions looking for expertise in Wi-Fi with a view to address digital access issues faced by Waterloo public housing tenants.

Cicada Innovations expressed interest and together with Counterpoint Community Services, a survey was carried out to locate community needs and feasibility test was performed. While the initial idea was to provide Wi-Fi connection to some of the high-rise buildings in the area, concerns had been raised from The Fact Tree Youth Service about the issues faced by families with school-aged children with limited data for education in the Dobell buidling during the school lockdown.

On the 11th of August 2020, Cicada Innovations surveyed the Dobell site to locate the most suitable way of making Wi-Fi available. Testing of external provision of Wi-Fi beamed from an antenna in the external common area into Dobell units proved unviable given the construction. The survey determined that using the conventional method of installing Wi-Fi (inside the building) would only be able to supply limited Wi-Fi coverage as the steel and concrete construction of the Dobell building limits the transmission of radio frequency used by Wi-Fi. As a result of the tests it was agreed that the solution for this building needs to be internal and a watering hole approach was proposed for an initial delivery trial. The proposed "Digital Watering Hole" will target a community area in which all Dobell residents would be able to easily access Wi-Fi connection with their devices while they are within the space.

Cicada Innovations technical study (see Appendix 1) proposed the following recommendations to address the issue of digital exclusion in Dobell:

- Install a Wi-Fi connection in a community area within the Dobell building
- Program development which will enable residents to develop confidence and helps them to feel comfortable with technology usage
- Improve access through the creation of affordable internet connection at home and access to the right devices (not just a mobile phone!) including home assistance and smart medical devices
- Providing training and support that gives both residents and services essential digital skills to enable them to realise the social and economic benefits.

The site considered by Cicada Innovations was the Community Room in Dobell and testing indicated that they could receive a strong enough 5G signal in this room to make a watering hole viable. A 5G connection would overcome any problems in getting an NBN connection to the room from the NBN hub.

It was considered that the equipment could be put in a wall mounted cage over an existing power outlet to keep the equipment safe. Dobell residents could then access a stable Wi-Fi connection from the community room. The community room will also allow residents to interact and socialise together to share tips and knowledge on digital usage, thus improve socialisation.

The recommendations, as outlined above, raise a few issues given location and technical based considerations:

- The Dobell community room is used for other scheduled activities and would not be available all the time
- Opening hours would need to be set for the Dobell community room and Human Resources will need to staff the Dobell community room during opening hours
- The Wi-Fi connection strength difference between what is being proposed by Cicada Innovations vs a regular NBN connection to the Dobell community room;
- The ongoing cost difference between the 5G being proposed by Cicada Innovations vs a regular NBN connection to the Dobell community room;

The testing shows that a digital watering hole is probably the only solution for Dobell, short of every home having their own low cost NBN connection. There are issues about how to best provide a digital watering hole given access and supervision issues around the use of the community room. In the long term, a NBN connection to the community room would be more cost effective.

The scope of the original proposal was to provide Wi-Fi to the whole building by beaming a Wi-Fi signal in from outside. However, upon site visits and testings of equipment, the technical team encountered built environment challenges where Wi-Fi signal cannot penetrate the structure (see Cicada Innovations Proposal).

Trailing the watering hole approach does not preclude exploring other options for the high-rises, but the time that Cicada was able to put into exploring other options is limited and so they have suggested we proceed with the watering hole and relook at options for the high-rise at a later date. As such, this does not meet the aims and objectives of the scope of the original proposal but it does propose the best alternative action for now.

Here, our concern is that the Dobell building issues may adversely impact the trial and that a trial may be better carried out in another location.

As Cicada Innovations is prepared to proceed with a trial watering hole we are of the view that more people from the neighbourhood would have access to the trial watering hole if it was located centrally at the Waterloo Neighbourhood Centre.

It could be set up so it is not only available to those using the centre but also to those visiting the building; such as multiple agencies outreach programs and community development and social activities in which it can host. It would also allow people in need of an internet connection from within the estate to have access by visiting the shopping centre.

Final Recommendation and Next step

Installation of Wi-Fi connection within the Dobell building may not be best use of resources for a trial. We are now seeking LaHC approval to explore a "Digital Watering Hole" through Waterloo Neighbourhood Centre in partnership with Counterpoint Community Services.

Conclusion

Ultimately, the provision of low cost entry NBN packages for each tenancy will deliver the best results. Public Wi-Fi should also be considered in the long term. With services quickly moving online, the challenge of digital equity is an urgent issue that cannot wait for the estate redevelopment. These issues have to be addressed as soon as possible.

This project proposal is just a starting point and we have to find solutions for difficult buildings like Dobell, the walk-ups and the high-rises.

Provision of access to the internet is just one part of addressing the digital divide. In addition, people need access to equipment to navigate the internet and the knowledge and confidence to utilise online services safely.

With more government services moving online, digital access is an urgent issue for tenants who need to interact with these government services.

This is a partnership proposal by Counterpoint Community Services, Cicada Innovations and REDWatch.

About Counterpoint Community Services INC

Counterpoint Community Services Inc. provides a wide range of community support services in the Inner City and South East Sydney LGAs. We have operated in the heart of Waterloo since 1968 and 1977, with a particular focus on working with social housing tenants and diverse communities.

We operate The Factory Community Centre in Waterloo, Counterpoint Multicultural Centre in Alexandria, Poet's Corner pre-school in Redfern and act as lead agency for many local grass root groups and services including the Redfern and Waterloo Social Housing Neighbourhood Advisory Boards.

We also are hosting the independent community development worker, and bilingual educators funded by FACS Land and Housing Cooperation to support the community during the redevelopment of the Waterloo Estate.

Our EO, Michael Shreenan also chairs the Redfern and Waterloo Groundswell collation consisting of local and peak body NGO's who are working together to resource local residents, through the Waterloo Estate redevelopment process. He is also the current convenor of REDWatch who monitors government activities for the area and share information with the community and advocates on a wide range of issues and is a board member of LCSA.

About Cicada Innovations

We are Australia's pioneer deep tech Incubator, supporting start-ups and scale-ups solving the world's most pressing problems.

A melting pot of business, industry and science, we provide visionary researchers, entrepreneurs and ventures with whatever they need to be successful from concept to commercialisation, through scale-up and hyper growth: this could mean specialised infrastructure like lab or prototyping space, access to mentors, experts and investors in their fields, 1:1 coaching from the Cicada team, short-term intensive growth programs and much more.

About REDWatch

REDWatch is a community group which covers the Sydney suburbs of Redfern Eveleigh Darlington and Waterloo. These suburbs make up what the NSW Government generally refers to as Redfern - Waterloo. The area has been subject to various NSW Government interventions since the early 2000's and had its own Government Minister from 2004 to 2011. Interventions have included removing planning responsibilities from City of Sydney Council and having place specific interventions on human services, infrastructure and employment. This history is captured on this website. Currently the focus is on Central to Eveleigh and the proposed redevelopment of the Waterloo Public Housing Estate.

Citizens Advice Bureau. (2020). Face to face with digital exclusion. Retrieved from https://www.cab.org.nz/assets/Documents/Face-to-Face-with-Digital-Exclusion-/9c5f26012e/FINAL_CABNZ-report_Face-to-face-with-Digital-Exclusion.pdf

Counterpoint Community Services Inc. (2020). *Counterpoint COVID19 support and well-being survey report.* [Appendix 2].

Counterpoint Community Services Inc. (2020). *Waterloo impact: Final recommendations.*

Preston, B. (2020). *Digital inclusion for all public school students: Home internet access, family income, remoteness, mobility, family type, English proficiency, disability, housing, Aboriginal and Torres Strait Islander status, and the impact of the 2019-2020 bushfires.* Retrieved from Australian Education Union: http://www.aeufederal.org.au/application/files/5315/9372/9335/DigitalInclusion_BPreston.pdf

Shreenan, M. (2020, May 6). Digital inclusion challenge for public housing. *South Sydney Herald.* Retrieved from https://www.southsydneyherald.com.au

Appendix 1: Cicada Innovations Dobell Wi-Fi Proposal

Introduction

Following on from our site survey and further discussion with stakeholders at the Dobell public housing site, Cicada Innovations would like to propose the following solution for community Wi-Fi access in the Dobell building. This pilot site would be a technical feasibility study, and as such will help guide future projects depending on the levels of success achieved.

The system in this proposal features low maintenance high-reliability Cisco equipment designed to ensure maximum uptime. The cloud-enabled router allows for remote administration while DynDNS provides enterprise-grade content filtering.

Coverage

On the 11th of August, a Wi-Fi survey conducted to determine the best approach to achieving Wi-Fi coverage for residents in the Dobell public housing estate.

The results of the site survey concluded that there would be limited Wi-Fi coverage using conventional installation methods due to the steel and concrete construction of the building, stopping the propagation of the radio frequencies used by Wi-Fi.

The best course of action would be to target a community area that was accessible by all in the building and create a "Digital Watering Hole" where clients are able to access the Wi-Fi with their laptops, phones, and tablets while inside that space.

Hardware

The electronics hardware used by the project will be donated by Cicada innovations and is as follows, this list is subject to change should another hardware item be more suitable. The equipment is in used condition but is recent and in good working order. The equipment is commercial grade and similar to what might typically be found in a hotel or airport.

Item	Brand	Model	RRP (New)
Router	Maraki	Z1	$395
Wi-Fi access point	Cisco	AIR-AP1852I-Z-K9C	$759
PoE injector	Cisco	AIR-PWRINJ6	$149
		Total	$1303

Labour

Cicada innovations will supply installation and configuration of the equipment above. The equipment will be configured off-site at cicada and installed.
Quote:
5 Hours x $132 per hour

- Configure equipment and update firmware
- Installation and configuration of content filtering software
- Testing and installation into equipment rack

Additional Materials (not donated)

Cellular 5dB Magnetic Base Antenna $90
Network and power cables $40
Sundries $50

Total Cost: $840 inc GST

Physical security

For the equipment security, it is recommended that a lockable network cabinet be installed on-site prior to the installation of equipment. The installation of this equipment rack is beyond the scope of this proposal and should be carried out by facility staff or another contractor. Our recommended cabinet is "4Cabiling" brand, Model Number: 002.013.0445 can be ordered online for a cost of $273

Power

The equipment will require a single power outlet. Ideally, the equipment rack will be installed over the top of this to ensure the equipment is not turned off (either unintentionally, or deliberately)

Support

Support will be conducted on a best endeavours basis and charged by the hour rather than a maintenance agreement. Given this site is a technical feasibility study, both parties understand that there is the possibility that for various reasons, the project may not work as intended.

Ongoing Costs and Subscriptions

To be paid for by the client
Dyndns Content filter five years: $220
Meraki Cloud Enterprise License and Support 3 years: $110.74
Telstra Business Mobile XL Plan with Telstra 5G Pro Modem: $124.91 Per Month

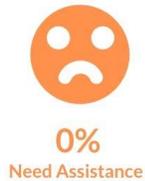# Counterpoint COVID19 Support and Well-being Survey Report

Counterpoint Community Services conducted a well-being survey to understand how the community was coping with the impacts of the current COVID-19 pandemic and the restrictions on movement required as a result. The survey addresses participants understanding of public health guidance, impacts to food security, internet access, social connections as well as other issues of concern to the participants.

Food Security

78%	20%	2%
No Issue	Have Assistance	Need Assitance

Medical Access

90%	10%	0%
No Issue	Have Assistance	Need Assistance

Social Connections

24%	65%	10%
Daily	Reported Adequate	Need Assistance

Digital Access

18%	57%	10%	14%
Unlimited	Limited	Insufficient	No Access

Other Issues

74%	18%	8%
No Concern	Limited Concern	Need Assistance

*reporting of issues for housing maintenance, odd jobs such as cleaning and filling in forms, some had concerns about upcoming bills and the remainder had requested calls for greater social connection activities...

Notes: 91% of participants who completed the survey were from Waterloo with 94% being from public housing. Over 62% were over the age of 65 and 23% were aged between 55-64 with the remaining group aged between 18 and 54 and no participants under the age of 18.