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Telecommunications Enquiry Submission

RDA Wheatbelt Inc - July 2018

Contents

Introduction

Regional Development Australia Wheatbelt Inc. (RDAW) makes this submission as a stakeholder and on behalf of the rural, remote and outer remote locations of the WA Wheatbelt. RDA Wheatbelt is a locally based, not-for-profit, incorporated association governed by a volunteer committee and funded by the Federal Government.

The Wheatbelt region with a population of approximately 74,000, covers 156,000 square kilometres incorporating 42 Local Governments made up of over 200 communities. The region also comprises the traditional country of the Ballardong, Yued and Willman Noongar people who represent just over four percent of the total population.

A key role of RDAW is to build and strengthen partnerships across all levels of Government with industry, communities and other regional stakeholders to facilitate economic investment and development in the region.

In its undertaking of this role, RDAW seized the initiative early in developing and implementing the Wheatbelt Digital Action Plan in 2013. A crucial aim of the plan was the identification of strategies, actions and opportunities that would ensure comprehensive utilisation of NBN infrastructure in the region. A revision of the 2013 Digital Action Plan in 2017 supported by a region wide survey of businesses and residents further confirmed the importance effective telecommunications have for the Wheatbelt. Inadequate or inconsistent connection to internet and mobile phone services were seen as a prevailing constraint in developing new businesses or expanding established businesses.

It was projected and expected that the NBN would address the extreme extent of the connectivity issues. However the limitations of existing technology, dispersed nature of the region's population and businesses in addition to an ageing population and elements of disadvantage particularly among the Aboriginal population will continue to challenge accessibility of telecommunications in the region. As such this enquiry offers a timely opportunity for comment and review of approaches to ensure equitable delivery of telecommunication services for the Wheatbelt.

Key areas of interest

1. How are regional Australians using telecommunication services

In the 2017 revision of the Wheatbelt Digital Action Plan, RDAW conducted a region wide survey of businesses and residents that included questions that align with many of the enquiry's key areas of interest[1]. This submission will refer to results and responses derived from the survey where relevant or appropriate.

1.1 How are Wheatbelt businesses using telecommunications services?

1.1.1 Device use

There is a predominate use of mobile phones within Wheatbelt businesses with 94% of non-agribusiness and 93% agribusinesses using mobile phones to conduct business. In addition, 87% of non-agribusinesses and 84% of agribusinesses reported using mobile phones on a daily basis. To give these figures a regional context, there are 5,000 non-agribusinesses and 4,435 agribusinesses in the Wheatbelt[2].

[1] There were 361 surveys which included responses from 245 agribusiness and 82 non-agribusiness participants.

[2] ABS. 2018. Counts of Australian Businesses including entries and exits, June 2013- July 2017. Businesses by Local Government Area by Industry Division by Employment Size Ranges, June 2017 (a) (b), Cat. No. 8165.0.

In regard to other devices used to conduct business, more agribusinesses tended to favour the tablet (80%) over the lap top (70%) and desk top computer (64%). Alternately non-agribusiness were more likely to use lap tops (83%) compared to tablets (77%) and desk tops (63%).

Of note is, based on 2013 data[3], there was a move away from the use of desk top computers with 64% of agribusinesses and 63% of non-agribusinesses using desk top computers in 2017 compared to 76% in 2012.

The increased use of mobile phones and tablets within the agriculture sector suggests that apart from the convenience, agribusinesses are utilising more mobile devices that offer flexibility across the various environments that agribusinesses operate in. Rising use of mobile phones, lap tops and tablets compared to desk top computers in the non-agribusiness sector indicates a similar move away from the static desk top option in the non-agribusiness sector.

1.1.2 Internet use

As would be expected, there are high levels of internet usage with 98% of agribusinesses and 95% of non-agribusinesses utilising the internet. What has changed since 2012, is the increased use of specific services particularly in the areas of sourcing suppliers, ordering and tracking, market research, data management and accounting/banking services. Additionally 93% of agribusinesses surveyed were using the internet to access Government services. In turn, 80% were using the internet to connect with customers, 78% were accessing pest and weed management Apps and 61% were accessing GPS technology. Alternately, there were fewer (83%) non-agribusinesses accessing Government services via the internet but more (85%) were connecting with customers.

There has also been an increase in the use of automated systems, up from an overall business usage of 39% in 2012 to 70% in 2017. More (72%) non-agribusinesses were utilising automated systems compared to agribusinesses (66%). The upwards trend in the use of automated systems since 2012 indicates an increasing acceptance within Wheatbelt businesses of such systems.

The increased reliance of Wheatbelt businesses on the internet has also brought challenges that restrict users from accessing some services and potentially constrains the development of new businesses and expansion of established businesses. These challenges and associated issues are discussed in the sections 1.2-1.5.

1.2 Challenges and constraints for businesses: Mobile phone coverage

The two main overriding issues for businesses in the Wheatbelt were mobile phone coverage and internet connectivity. Having adequate mobile phone coverage was problematic for many businesses despite the increase in the number of mobile phone towers since 2013. Similarly, internet connectivity remained an issue for many including those who had recently been connected to Sky muster services.

1.2.1 Business mobile phone coverage

Access to adequate mobile coverage for Wheatbelt businesses was largely dependent on what the businesses were and by where they were located. Agribusinesses recorded the poorest mobile coverage with over half (54%) of the participants rating their business coverage as not at all or barely adequate. Conversely non-agribusinesses were somewhat better serviced with 50% rating their mobile service as adequate to very good and 24% rating their service as sometimes adequate. These differences are not surprising given that most agribusinesses were farming enterprises situated outside town locations while most non-agribusiness were situated in towns.

Further analysis at sub regional levels showed that Wheatbelt South businesses had the poorest levels of mobile coverage with 67% rating their coverage as not at all (16%), barely adequate (29%) or sometimes adequate (22%). Mobile coverage was similarly problematic for businesses in the Avon

[3] RDAW Digital Action Plan 2013 survey conducted in 2012.

and Central Midlands Sub regions. The only Sub regions to register some level of acceptable mobile phone coverage with businesses rating their coverage as adequate or very good were the Central Coast (80%) and Central East (57%).

Given recent policy initiatives[4] to decrease mobile phone blackspots in rural and regional areas, it could be assumed that the situation as it stood at the time of the survey will be improved. However, it remains to be seen if increased coverage will also have a downward influence on plan costs. As the ensuing section details, costs for mobile phone services are an additional issue facing many Wheatbelt businesses.

1.2.2. Business mobile phone plan costs

Mobile phone plan costs were identified by many business participants as being inequitable (in being more expensive) when compared to city businesses. The survey showed that 73% of agribusiness participants believed they were not paying the same costs as city businesses. Overall 58% of all business owners, managers or employees thought they were paying higher mobile plan costs than their city counterparts. Correspondingly 95% of agribusiness and 84% non-agribusiness respondents agreed that they would like the same plan cost options that are available to city businesses. The following case study highlights the high costs faced by Wheatbelt businesses in connecting to the digital interface.

Case Study

The business, located in the Wheatbelt (Under 70 kms from the Perth CBD) is unable to access fixed wireless/fibre internet and relies on a telecommunications package of satellite, mobile phone, mobile Wi-Fi tethered to mobile phone and landline. The cost of this combined communications package was estimated to be about $3,100 annually.

The reason for this complex mix of telecommunications plans was due to level and quality of the service and the need for the business to meet regular deadlines. The business owner, who is in publishing, originally used a mobile Wi-Fi 4 G device to connect to the internet and retained the device when they connected to satellite (*just in case things didn't work as they should*). In short the satellite connection did not come close to meeting all their requirements in terms of down load and up load speeds which were found to be at times intermittent and could not be relied on when needed. As a result, the satellite connection is used when there are no time constraints with the mobile phone being used for most data down loads and up loads, being the most efficient method.

The business owner also needs to receive and send large data files but finds that files above five to seven Megabytes will not down load or up load. As a result, the owner breaks down the file sizes that they have to send and requests senders to do the same. The owner noted that the urban businesses are surprised by this request. Sending high resolution pictures to the business that prints the publication can also be an issue which at times has led to the owner either using friends fixed wireless/fibre systems to send the pictures or failing that, hand delivering the pictures directly to the printing business.

In short the business owner has adapted to the problematic quality and level of the internet services they use but admits the issues have increased their work hours without any additional remuneration and have decreased productivity by 10%-15%. In turn while the relatively high cost of the telecommunications package accounted for 5% of business turnover, the owner accepted that it was "part of doing business" in a regional area. The owner believed the fundamental issues that affected productivity for their business were internet speeds and reliability in service quality.

[4] Department of Communications and the Arts. 2015. Mobile Blackspot program: Rounds 1 and 2. Funded base stations. https://data.gov.au/dataset/mobile-black-spot-programme-funded-base-stations

It was noted that these issues also affected productivity in the partner's livestock farming operations. The recent advent of weekly online stock auctions could significantly increase farm productivity by decreasing costs derived from transporting stock to market and viewing and buying replacement livestock on-line rather than having to attend the sale in person. However variable levels and reliability of service preclude the owner's partner taking advantage of the technological option.

The importance of good mobile phone coverage cannot be under estimated within the Wheatbelt with importance of mobile coverage for Wheatbelt businesses as illustrated by the 98% of business owners, managers and employees who rated better mobile coverage as important (25%) or most important (73%).

The costs of mobile phone business plans represent an inequity Wheatbelt businesses must carry because of where they operate. Based on the level of mobile phone usage within businesses, high costs cannot be seen as a restraint on doing business but could be seen as an additional 'one percenter' financial impingement on Wheatbelt businesses bottom line.

1.3 Challenges and constraints for businesses: Digital connectivity

Internet connectivity in the Wheatbelt has been an ongoing issue. The launch of Sky Muster™ has offered some level of improvement particularly for those who were not able to connect to the internet at all. But Sky Muster™ has come with its own suite of limitations, particularly in regard to data allowances, adequate speeds and costs[5].

Additionally whereas nbn co. maintain that only 3% of Australian residences will be serviced by Sky Muster™, RDAW modelling based on nbn's connected communities data[6 & 7] estimates that 26% of businesses and 18% of households in the Wheatbelt would have to connect to Sky Muster™ providers. The analyses suggested that connections to Sky Muster in the two sub regions of Central East and Wheatbelt South that have a higher proportion of remote and outer regional locations would approximately be 49% and 73% respectively.

These high level of connections to Sky Muster™ represent some challenges for the Wheatbelt given that any efficiency shortcoming such as data availability or slow down load/up load speeds and or higher costs could constrain economic growth.

1.3.1 Biggest Issues: Internet connectivity

There are a variety of types of internet connection with agribusinesses being mainly connected to mobile WiFi or Sky Muster™ services or a combination of both. In turn non-agribusinesses were connected to either ADSL (46%) or Fixed Wireless services with a third (32%) connected to mobile WiFi.

The biggest issues for businesses were influenced by what type of internet service the businesses or agencies were connected to. For the most part agribusiness participants connected to all types of service identified reliable connection as an issue with 96% of those connected to Sky Muster™ services indicating connectivity as a major issue.

Reliable connection was somewhat less of an issue for non-agribusinesses with slightly fewer respondents rating it as a big issue compared to agribusiness participants. Notably, a lower percentage of non-agribusiness respondents connected to Sky Muster™ services rated reliable connectivity as an

[5] RDA Wheatbelt. 2016. Submission to Productivity Commission: Issues paper; Telecommunications Universal Service Obligation – August 2016, pp. 3, 4 and 5. http://www.rdawheatbelt.com.au/publications/current
[6] http://www.nbnco.com.au/content/dam/nbnco2/documents/website-communities-table.pdf
[7] Three Year Construction Plan 2016 http://www.nbnco.com.au/learn-about-the-nbn/three-year-construction-plan.html

issue. It would seem that connection to Sky Muster™ has added to connectivity issues rather than alleviated them. At the same time the high percentage of business participants connected to ADSL or Fixed Wireless services that identified reliable connection as an issue indicates possible shortcomings with delivery from these services.

It could be that in the case of ADSL services, reliable connection may be subject to the state of existing infrastructure and or the number of customers allocated to a landline exchange. Alternately anecdotal evidence provided by several business respondents connected to nbn Fixed Wireless services indicates that there have been intermittent dropout services. One business customer observed that in the eight months they had been connected to Fixed Wireless, services had dropped out six times with a duration of one to two hours out to 18 hours, a non-business customer has experienced regular down times with one occasion up to 3 days. This experience has discouraged them from connecting to the nbn for work, preferring the reliability of ADSL2. Despite contacting their service provider, they have received no official reason for the cause of the dropouts.

1.3.2 Biggest Issues: Data down/up load speeds and data allowances

Data speeds, both down loads and up loads, were a major issue for Wheatbelt businesses and agencies. All non-agribusinesses and most agribusinesses (88%) respondents in the RDAW survey (2017), connected to Sky muster reported issues with data speeds. There were also issues with ADSL and Fixed Wireless data speeds highlighted by 97% of agribusiness and 90% of non-agribusiness respondents.

Low data allowances on Sky muster services were also identified as a major issue for 100% of non-agribusiness and 88% of agribusiness respondents with 92% of non-agribusiness respondents connected to ADSL/Fixed Wireless also dissatisfied with data allowances.

It could be reasonably accepted that the combined issues of less than adequate data down/up load speeds and data allowances are reducing the productivity efficiencies of Wheatbelt businesses as well as increasing the challenges of undertaking business online. Added to these issues are services costs. Around three quarters of agribusiness and non-agribusiness respondents rated high cost of services as an issue although more agribusiness participants had an issue with Mobile WiFi plan costs.

The issue of high costs could be influenced by the number of business respondents who were using multiple types of service connection. Overall 24% of business respondents had two types of service connections. This included 19% of non-agribusiness respondents who were using a combination of ADSL or Fixed Wireless with mobile WiFi and 15% of agribusiness respondents connected to Sky Muster™ services who were also using mobile WiFi.

Despite the high services costs, 43% of agribusiness and 17% of non-agribusiness respondents indicated that they were prepared to make an additional one off payment to ensure they had reliable, consistent internet connection. RDAW research found that 82% of business respondents with combined Sky Muster™/mobile services and 42% of Sky Muster™ only agribusiness respondents would spend more to ensure good connectivity.

Although most business respondents were prepared to only pay $500-$1,000 as an additional one off payment for improved services, 19% of agribusiness respondents indicated that they would pay between $4,001 and $6,000 and 3% were prepared to pay more than $8,000 to achieve better connectivity.

Another study undertaken in 2017[8], shows that farmers are making or facing those or higher levels of investment as illustrated in exerts from case studies undertaken in the study.

Mudamuckla, East of Ceduna SA- Mainly Cereal with some sheep

"Being on the edge of the mobile phone tower range the reception is between 0 to 2 bars over most of the property which is frustrating with no service, missed calls and dropping out. Cel Fi reception boosters (now over $1,000 each) are in the 3 houses and shed to provide fair phone and internet options."

West Moree, NSW- Cotton, Grain, Pulse Enterprise

"External connectivity is a primary challenge for this highly-innovative operation. Although Keytah is within visible line of sight to a mobile 3G tower (~ 9 km away), slow data speeds have necessitated installing a booster to access the 4G tower in Moree (~32 km away) for their offices. Machine telematics requires a 3G sim card per machine (~$4-500 p.a.) which equates to a significant annual data/machine service charge."

Belrose NSW- Development of business software systems, managed applications services such as online office suites and email services, assist businesses transition to the cloud, assist businesses with managing business and IT priorities by optimising their investments technology architecture, and is also a licensed telecommunication carrier.

"The majority of clients have little or no telecommunications background and so the team needs to have great 'retail engineering' skills. Surprisingly, cost is not a perceived barrier, even though solutions can range from $15-40k plus data, Usually innovative producers who are seeking solutions know their own business and the value of the connectivity to their business- both from enhancing the on-farm living experience of their workers, through to the value of accessing remote connectible devices.

....The cost of accessing MNO infrastructure can be prohibitive; for example just feasibility studies required for tower access can cost tens of thousands of dollars, plus an application fee costs $4-5,000, plus infrastructure rental for that access can cost ~ $900-1100 per month. All of this must be translated onto the client."

1.4 Connectivity: Constraints on Business

Business respondents believed better digital connectivity would deliver major benefits to their businesses and poor connectivity was a constraint on starting or expanding a business. Their responses indicated the potentially limiting effect poor digital connectivity will have on the region's economic growth if it is not acted on.

1.4.1 Constraints on starting a business

Most agribusiness and non-agribusiness respondents felt that poor digital connectivity was a constraint in starting a business. Correspondingly, it was believed that poor connectivity was limiting access to markets and that better connectivity would increase the economic sustainability of both new and established businesses.

[8] Lamb, D, W. 2017. ACCELERATING PRECISION AGRICULTURE TO DECISION AGRICULTURE; review of on-farm telecommunications challenges and opportunities in supporting a digital agriculture future for Australia. University Of New England.

1.5 Connectivity: Sky Muster™

Business respondents were also concerned with the capacity of Sky Muster™ to address connectivity issues.

1.5.1 Reliability and data speeds

High on business concerns was the reliability of Sky muster with only 31% of agribusiness respondents and 24% of non-agribusiness respondents agreeing that the service was or would be better than their current services. Conversely 28% of agribusiness and 27% of non-agribusiness respondents thought that the service was or would not be as reliable as their current services and 42% of agribusiness respondents agreed that data speeds were inadequate.

Although 44% of agribusiness respondents thought that Sky muster was the best alternative and 31% believed it was better than what they had previously, 37% held that other options of delivery such as fibre and wireless were better alternatives.

These concerns reflect similar concerns raised in the Productivity Commission's Telecommunications Universal Service Obligation inquiry[9]. It could be taken that such concerns are influencing many of the businesses using Sky muster services preparedness to spend more on alternative delivery systems. At the same time it would seem according to Laurie Patton[10] that such concerns are well founded. As Patton observed, the Sky Muster™ satellite service has pre-existing data and speed limitations which will increasingly decline as more businesses and residents use the services. If this situation is not redressed, Patton believes that the Australian population will be divided between the digital 'haves' and 'have nots'.

2. Social connectivity

As equally important in the Wheatbelt's digital space is social connectivity. The survey undertaken as part of RDAW's 2017 revision of its Digital Action Plan identified an increasing trend in digital communications in maintaining social connectedness, community engagement and accessing health and education services. This section describes how the survey respondents were accommodating and interacting in the digital social interface.

2.2.1 Internet access by age groups

Almost all (98%) respondents accessed the internet at home with place of employment being the other point of high (80%) access. Although 100% of the 18-34 year old respondents were accessing the internet with 93% accessing it on a daily basis, internet use across the most of the age groups was comparatively high. Levels of access and daily access were similar between the 35-44, 45-54 and 55-64 year olds with access levels of 98%-99% and daily access levels between 90%-92%. It was only in the 65+ age category where access was slightly lower at 93% and daily access at 86%.

It is plausible that the high levels of internet access were attributable to the multiple devices used by respondents. Over half (54%) used four or more devices while just 6% used one device and 7% used six devices.

As to device use compared with 2012 data[11] mobile phones were the most used at 93% compared to 78% in 2012. Similarly tablet use had increased to 72% up from 45% in 2012 and digital TV up from 11% in 2012 to 40% in 2017. The increase in the less cumbersome and more portable devices of mobile

[9] Productivity Commission 2017, *Telecommunications Universal Service Obligation,* Report No. 83, Canberra.
[10] Patton, L. 2016. Broadband: It's buggered in the bush: https://johnmenadue.com/laurie-patton-broadband-its-buggered-in-the-bush/
[11] RDAW Digital Action Plan 2013, 2012 survey

phone and tablet appeared to be at the expense of the desk top computer, where usage levels had declined from 76% to 61% between 2012 and 2017 and lap tops which had slipped from 81% to 76%.

2.2.2 Device use by age

Mobile phone use was comparatively high across all age categories with the highest use being among 35-44 year olds (96%), 18-34 years olds (95%) and 45-54 years olds (94%) with 55-64 and 65 + age categories usage slightly at 87% and 86% respectively. The mobility of the tablet device was more appealing to the 18-34 (80%) and 35-44 year olds (78%) than the other age groups. However the 35-44 year olds also showed a much higher preference for lap tops (86%) compared to usage levels across the other groups which ranged from 77% in the 18-34 year group to 65% in the 65 and over age group.

The predominance of the mobile phone was further reinforced by the number of people who used the device daily. This ranged from 93% in the 18-34 years age group, 89% and 86% in the 35-44 and 45 -54 age groups respectively and 62% in the 65+ age group.

However, a large proportion of the survey sample were using multiple devices to access the internet with 54% using four or more devices and 27% using at least three devices.

2.2.3 What is the internet being used for?

The most common activities for accessing the internet were:

- Paying accounts and online banking- 96%
- News and/or research- 95%
- Email friends and family- 92%
- Access Government services- 90%
- Online shopping- 86%
- Social media- 85%

In addition to these activities, there had been a substantial growth in the number of respondents accessing online health services, up from 23% in 2012 to 63% in 2017. There had also been increases in down loading music or movies (from 45% in 2012 to 56% in 2017) and making voice/video calls (from 38% in 2012 to 51% in 2017).

There was little variation across the age groups in paying accounts or banking online with 18-34 year old respondents being the highest users (98%) of the service followed by the over 65 age group (97%) and the 55-64 year-olds being the lowest users at 92%. Likewise, the levels of accessing Government services were comparatively high. The highest users were the 18-34 year olds at 95% followed by the 35-44 year olds with 91% and the 45-54 year olds at 90%. While not at the same levels of the younger age groups, accessing Government services was still quite high with 84% of 55-64 year olds and 83% of respondents 65 and older were also using the online services.

Correspondingly there were high internet access rates across all age groups for news and general research ranging from 90% in the 65+ age group through to 99% of the 35-44 year olds with the three other age groups ranging between 93% and 97%.

Conversely online shopping utilisation appeared to be more generationally aligned with 95% of the 18-34 year olds and 93% of 35-44 year olds using the option compared to 62% of the 65 and over age group. In turn the same could be said about access rates for online health services with the highest users being the 18-34 year olds (73%) and 45-54 year olds (70%) compared to the 55-64 year olds (55%) and 65 and over age group (41%).

The same could be said from a social perspective as there was a much greater differentiation between the age groups in the online social mediums used with the exception of email. The younger age groups of the 18-34 and 35-44 years were the highest engagers in social media at 97% and 92 % respectively

with the 45-54 year olds use was only marginally less at 89%. These levels fell away among the older respondents with 72% of 55-64 year olds and just 57% of the 65 and over group participating on social media.

With the advent and increased accessibility of other online services such as employment, professional networking and education/training, the survey examined the level of uptake in the region. As would be anticipated it was the digital age group of 18-34 years who registered the most consistent high levels of access of these three services with 56% using online employment services and 76% using the online medium for professional networking and education/training. Although the other three age groups made less use of online employment services they showed relatively high usage levels of online professional networking and education/training services.

This growing level of use suggests that increased digitisation in the Wheatbelt is and will continue to underpin social connectedness and act as a disrupter in building business and employment capacities in the region.

2.2.4 Community connectedness

The 2017 survey results indicate that the increased digital competencies and increasing digital capacities in the Wheatbelt are influencing changes in the way people connect with their communities. Although word of mouth remains the principal process for connecting with community (89%), participants were using the internet to participate in online local networks (69%), local research (71%), access local shire websites (72%) and e-newsletters (65%). The only community communication medium that showed a reduction in usage was the print media down from 86% in 2012 to 77% in 2017. This appears to be part of a broader universal trend across society in general.

The responses of the 65+ age group indicate that the internet has become an important mechanism for maintaining contact with families (93%) and continuing to participate in and expand social and support networks (86%). In comparison the average across all respondents for maintaining contact with family and friends was 88% and 74% for expanding social networks.

From these results, it could be posited that the internet is delivering, or has the potential to deliver important beneficial social and mental health outcomes for the region's older population. This may well be through reducing the sense of detachment and isolation that older people traditionally have experienced in a less digital time as they have retired and had become less able to physically participate in community activities.

2.2.5 What's important and what's needed

In terms of what was most important and needed, 98% of respondents were unequivocal in their assessments that there respectively needed to be better mobile coverage, data speeds and reliable internet connectivity. Notably the importance and need for better mobile coverage and data speed has substantially increased on the 2012 survey in which 67% had rated mobile coverage as important and 56% had rated data speeds as important.

The lift in the importance of mobile coverage and data speeds between the two surveys most likely corresponds with the increased use and reliance on mobile phones and other digital devices during the intervening period.

RDAW research showed that fewer (56%) respondents thought it was important to access online health services which was down from 64% in the 2012 survey. Additionally fewer (58%) respondents felt it was important that they have access to teleworking opportunities although this figure represented an increase on the 38% in the 2012 survey. Just over half (54%) of the respondents thought that having alternative internet providers was important which was also an increase on the 2012 levels of 30% and 62% identified online education/training options as important.

As with other survey categories there were marked differences and similarities between age groups. For instance, the importance of access to online health services was most highly rated in the 18-34 age group (68%) and 65+ age group (58%) but was less important within the 45-54 age group (49%). Alternately teleworking was more important within the 35-44 age group (68%) and less important within the 55-64 age group (52%) while alternative internet providers were more important for the 45-54 age group (65%) and not as important for the 65's and over (41%).

Although it appeared that the differences between age groups extended to accessing online education/training services, it is feasible that this was related to the employment life cycle more so than lack of capacity or willingness to utilise the online option. As the data showed, the highest level of importance attached to such services was among the 18-34 age groups (74%) followed by the 45-54 age groups (69%) and the 35-44 age group (67%) while the level of importance was just 53% in the 55-64 age groups.

From a more general digital perspective most respondents ascribed a high level of importance (90%) to digital innovation and technology. But somewhat fewer respondents (84%) placed importance on the rollout of NBN. The high percentage of respondents who acknowledged the importance of digital innovation and technology may suggest that there is a heightening awareness in the Wheatbelt of the potential economic and social benefits that the technology could deliver to the region.

Correspondingly the lower levels of appraisal of the importance of the NBN rollout may be derived from some respondent's cognitive dissonance with the quality of services after connection or the somewhat less than positive media coverage associated with the rollout.

From a regional viewpoint within the digital context, most respondent's recognised the importance of digital connection and technology to creating employment (91%), retaining youth in the region (92%) and increasing collaboration between the Wheatbelt's Sub regions and LGAs (87%).

3. Personal challenges in using digital telecommunications

To explore what respondents viewed as personal challenges or constraints in optimising use of digital communications, the survey examined responses to questions of:

- Security
- Using current technology
- Understanding of the technology
- Access to IT support

These questions were included so that responses could be compared to the 2012 survey results to see if there had been changes. Analysis of the 2017 survey data compared responses across the age groups to ascertain if such issues were age specific or common within all age groups.

3.3.1 Challenges and concerns-security, technology, understanding and IT support

Overall concerns about security decreased slightly between 2012 and 2017 down from 72% to 62%. However security concerns were age group specific with the 55-64 age group (83%) and the 65's and over (84%) substantially more concerned than the 18-34 age group (53%) and 35-44 age group (54%). Similarly current technology had become more of an issue for respondents in 2017 up from 51% in 2012 to 73% in 2017. That being said, it was less of an issue among the 18-34 year olds (57%) compared to the 55 and older respondents (84%).

Equally more respondents were struggling with understanding the technology in 2017 (45%) compared to 2012 (33%). Likewise it could be seen as a generational response given 71% of 55-64 year olds and 58% of the 65 and over age group were having difficulties whereas only about a third of the 18-34 and 35-44 year olds found the technology challenging.

Being able to access IT support was another area that respondents believed had become more challenging with 70% identifying it as an issue compared to 53% in 2012. Generally it was somewhat less of an issue for the 18-34 year olds (61%) and 35-44 year olds (62%) compared to the 65's and over (84%) and the 55-64 year olds (77%).

It could be speculated that these responses again point to the exponential advances and expansion in digital technology and applications that are occurring across all sectors of industry and society. Therefore it is conceivable that many of the participants may have felt somewhat overwhelmed with the seemingly endless flow of new and updated technology that is being developed and applied.

4. Regional Education

Although Wheatbelt Schools have an integrated IT curriculum, a study undertaken as part of RDAW's submission to the Independent review of Regional, Rural, Remote Education[12] indicated that there were issues with delivery of the curriculum. Although 54% of survey parents thought the delivery mode was effective, only 36% of teachers concurred while 23% of teachers believed the delivery mode was of little or no effectiveness.

The main issues with the delivery were poor connectivity, slow speeds and limited data allowances but it appears that these issues are being addressed. Education sources indicate that there is an Education Department's initiative to connect 98% of the state's schools to fibre.

5. Connectivity and access- Where to from here?

RDAW believes that the social and economic development of the Wheatbelt alongside population growth is largely dependent on reliable digital connectivity. Based on this assessment RDAW has supported and will continue to support LGA's and other invested regional stakeholders access investment to establish systems that will meet current and future technology needs for wheatbelt businesses and residents.

5.1 Expand mobile coverage and capacity

Over the last four years Government Black Spot projects have improved the Wheatbelt's mobile coverage however there remains gaps in the coverage as shown in the RDAW 2017 survey. RDAW view the continuation of improved coverage in the region as an imperative in regard not only to economic considerations but safety considerations as well. This position is supported by the survey results which have shown an exponential increase in the level of use of mobile phones for business and social purposes.

5.2 Improve digital connectivity

RDAW has continued to investigate options to progress further WiFi spots within the region and targeting LGAs best suited to progress this. RDAW will continue to identify possible funding sources, support and collaborate with the relevant LGAs and other invested regional and local stakeholder organisations to progress this initiative.

From an overarching perspective, RDAW views the continuation of all three of these actions as an imperative for increasing business numbers, employment and populations growth. As Mr Philip Attard, Co-owner of Gostwyck farm at Uralla in NSW who is direct marketing the farm's wool to high fashion international knitwear brands, said in an interview on Landline[13]:

[12] RDA Wheatbelt. 2017. Submission to the Independent Review into Regional, Rural, Remote Education available at http://www.rdawheatbelt.com.au/publications/current

[13] ABC Landline. 2017. Sean Murphy-Reporter. "From fashion to farming: On-farm businesses embrace the world of online opportunities." http://www.abc.net.au/news/2017-10-21/from-fashion-to-farming-and-the-world-online/9065434

"...patchy internet connectivity was a challenge... It's improved a little bit since the Sky Muster, but the speed and the amount of data that you need, needs to improve. We're hoping the amount of data will improve again but we need to be able to get through into 100mb lines here in order to do those things comfortably and efficiently, otherwise you have to have an office in town and I want to avoid that. The other thing is we want to stay regional, we want to bring the jobs into the region not go down to the cities because that's where the skills are."

These comments are equally applicable to many of the Wheatbelt's businesses and highlight the constraints regional, rural and remote businesses face in developing and growing their businesses. At the same time, information provided by a participant with a telecommunications background at the Productivity Commissioners USO Enquiry consultation in Perth in 2017 indicated that there are viable options for improving internet connectivity in country areas.

Such options included accessing of existing dark or grey fibre that runs throughout the regional and remote areas but is not accessible for general public use. The participant's suggestion was that the various Government Departments that own the fibre could become digital wholesalers through selling access to small local digital services that could on sell to local and regional clients.

Although these options have not been progressed, an example of the process can be seen in the North Eastern Wheatbelt Regional Organisation of Councils (NEWROC) project where NBN fibre was utilised to improve internet access and data speed in the region. This was done via the installation of a 1 GB data centre with an inbuilt generator and 11 strategically placed solar powered relay stations throughout the North Eastern Wheatbelt[14]. The project, strongly supported by RDAW, received funding through the Australian Government's Building Better Regions Fund.

At the same time, individual regional agribusinesses are taking action to not only address connectivity issues but to facilitate the transition from 'Precision' agriculture to 'Digital' agriculture[15]. This has included the installation of on farm Cel Fi reception boosters ($1,000 each) to improve mobile coverage, privately owned base stations shared with neighbours and installation of an on farm booster to access a 4 G Tower, 32 kilometres from the farm.

These examples demonstrate not only the need to improve regional digital connectivity but the extent regional organisations and individuals will go to achieve it. Notably, for the most part, Lamb's[16] research found that cost which could range between $15 and $40 thousand was less of a constraint in individual agribusinesses approaches to addressing digital shortcomings. The main constraint identified by second tier network carriers in the study, was potential client's lack of understanding of basic telecommunications concepts that weakened their confidence and therefore willingness to invest in digital infrastructure solutions. This observation suggests that there may be a need to focus more on this area.

[14] Media Releases. 2018. The Hon Dr John McVeigh, Minister for Regional Development, Territories and Local Government. Access to super-fast data services improves in WA Wheatbelt. http://minister.infrastructure.gov.au/mcveigh/releases/2018/april/jm075_2018.aspx

[15] Lamb, D, W. 2017. ACCELERATING PRECISION AGRICULTURE TO DECISION AGRICULTURE; review of on-farm telecommunications challenges and opportunities in supporting a digital agriculture future for Australia. University Of New England.

[16] Lamb, D, W. 2017. ACCELERATING PRECISION AGRICULTURE TO DECISION AGRICULTURE; review of on-farm telecommunications challenges and opportunities in supporting a digital agriculture future for Australia. University Of New England.

6. Conclusion

The results of RDAW's 2017 survey along with the other literature cited in this submission indicate that in many ways, utilisation of digital space in the Wheatbelt and other rural regions across Australia has matured and is now organically evolving. In effect businesses and residents have moved beyond the novelty of the technology and now view the technology as an integral part of their businesses and daily lives. With this shift, particularly for businesses, has come a growing awareness of the high potential the digital domain offers them if there is reliable connectivity.

RDAW's research articulates the indisputable importance reliable digital telecommunications has for the Wheatbelt's ongoing economic development and supporting population growth in the region. The survey responses could be seen as having a parallel with the businesses and residents of the 19th and 20th century Wheatbelt who for the same reasons, petitioned Governments for rail lines and roads.

Essentially the internet and mobile phone are the Wheatbelt's 21st century's logistical infrastructure that could or should be delivering a scale of impacts beyond those delivered in the 19th and 20th century by the region's rail and road networks. Therefore it could be argued that any inadequacies in the digital system are and may continue to impede the economic and social development of the region. As RDAW's research showed, better connectivity is key to the economic sustainability and future growth of the Wheatbelt.