Enhancing digital adaptability of Australian small retail businesses

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Executive Summary

Small businesses (those with fewer than 20 employees) in general and small retail businesses in particular, play a significant role in Australia's economic activities. However, according to the 2019-20 ABS Business Characteristics Survey, although most small retail businesses have internet connectivity, only less than half have used the internet to undertake information sharing, future market trends identification, competitor monitoring, and product innovation. The low application of such basic digital services which refers to internet (fixed and mobile broadband), landline, and mobile telephone, to enable the business operations by Australian small retail businesses indicates the vulnerability of their business models to the sudden changes due to COVID-19 and the urgency for developing their digital adaptability. Digital adaptability in this context is the ability of businesses to respond quickly to adverse events and changing environments using digital technologies, digital services, and other necessary resources.

The COVID-19 pandemic has accelerated the need for advanced digital services. Advanced digital services refer, but are not limited, to e-commerce solutions, social media marketing, productivity software, cloud computing, transaction processing systems, digital accounting solutions, online platforms, network and device management services, and cybersecurity services that transform the design and delivery of products and services. Australian telecommunications service providers, which have historically held important relationships with small businesses in providing basic digital services are now offering a range of advanced digital services targeting small businesses. However, as documented in Telecommunications Industry Ombudsman reports, the relationship between small businesses and telecommunications service providers has not been frictionless.

The evolving relationship between telecommunications service providers and small businesses, in addition to legacy issues, can lead to emerging small business consumer issues. These include the pricing of advanced digital services, cybersecurity, and service bundling. There are also questions about how small businesses undertake product evaluation and trust service providers, and to what extent spillover effects from the experience of using basic digital services influence the choice of advanced digital services. These issues have not been understood in-depth.

Therefore, this project investigates how small retail businesses can enhance their digital adaptability by working with telecommunications service providers. It identifies the challenges that small retail businesses face when using advanced digital services and offers recommendations on how to

address these challenges. To achieve the objectives, interviews (n=9), surveys (n=307), and co-design workshops (n=5) were conducted with key stakeholders, such as small retail businesses, small business associations, telecommunications service providers, and industry associations. The outcome of this process was to derive the following findings and consequent recommendations.

Key Findings

- Basic digital services such as internet (fixed and mobile broadband), Wi-Fi, mobile phone, and landline have been widely adopted by Australian small retail businesses. This shows that Australian small retail businesses have the foundation and connectivity needed for digital adaptability depending on their business expectation and requirements. Nonetheless, not all small retail businesses are satisfied with the quality of their connections and the use of basic digital services. Nearly one in five survey participants indicate that existing internet connectivity is inadequate for their business. Further, small retail businesses interviewed for this research doubt the ability of their telecommunications service providers to deliver advanced digital services due to the perceived poor quality of customer services in providing basic digital services.
- COVID-19 has been a game changer to the business model of small retail businesses. Before COVID-19, 67% of surveyed small retail businesses were either fully store-based (82) or mainly store-based, with some online presence (124). Post COVID-19, there is a shift in the digital business model with 58% either fully online (81), or mainly online with some store-based operations (98). Such a change reflects the increasing need of small retail businesses to adopt advanced digital services to reach existing and new customers and remain competitive.
- Out of the 138 small retail businesses that use advanced digital services, 131 use e-commerce solutions and social media marketing. Productivity software (129), cloud storage (123), cybersecurity (125), IT/tech support (125), digital accounting solutions (123), and business planning tools (119) are the other advanced digital services used by small retail businesses.
- Small retail businesses struggle with an excessive amount of information about advanced digital services. They struggle too with the variety of digital service providers to choose from when considering the advanced digital services that would be most useful for their businesses. Website information such as Google search is a very important source of information when small retail businesses choose advanced digital services, followed by the Digital Solutions program of Australian Small Business Advisory Services, social networks, and industry and small business associations. Telecommunications service providers' advertisements or offers, as well

as social media recommendations, are also key sources of information for choosing advanced digital services.

- Although most survey participants expect telecommunications service providers to play a role in supporting them, the interview and workshop participants lack awareness of what advanced digital services are on offer. They expressed negative sentiments about telecommunications service providers' commitment to them; for example, '*Telcos really don't have an interest in servicing small business owners like myself.*'
- Telecommunications service providers are not yet the main providers of advanced digital services. The advanced digital services offerings made by telecommunications service providers in the Australian marketplace are also difficult for consumers to understand and compare across various carriers. Small retail businesses also perceive that the advanced digital services offered by telecommunications service providers cost too much, have hidden costs, are unsuitable to their needs, are difficult to install, and come with poor customer service experience.
- Small business owners typically prefer to deal with other small business owners or small business associations. They have little confidence in engaging with telecommunications service providers. This is confirmed by several interview participants who sought advice from other small business owners, or advisors from small business associations, about the use of advanced digital services.
- There remains a lack of understanding among government, telecommunications service providers and industry associations about the requirements and expectation of small business owners. This is reflected in the 'one-size-fits-all' approach commonly used for advanced digital services.

Recommendations

Recommendations for Small Retail Businesses

Small business owners and managers need to carefully assess their business needs before committing to advanced digital services. In addition, they need to make cyber resilience a key pillar of their decision making in choosing advanced digital services vendors and products.

Recommendations for Small Business Associations

Small business associations, as trusted small business voices, should organise frequent forums between small business owners and digital service providers to facilitate information sharing around the provision of advanced digital services. They can forge partnerships with the vocational education

training sector, and dual sector universities, to develop skills and training programs that enhance the digital adaptability of small businesses.

Recommendations for Telecommunications Service Providers

Telecommunications service providers can assist small retail businesses to increase their awareness of advanced digital services that telecommunications service providers offer by providing them with tailored information in language that is clear and easy to understand.

Telecommunications service providers should also develop better strategies to bundle basic and advanced digital services together to improve the affordability of such services for small businesses; ensure that advanced digital services are supported by specialist business teams; and ensure their front office staff are adequately informed about small business plans so that they can accurately deal with small business customers, or alternatively direct small business customers to dedicated specialist teams.

For telecommunications service providers to emerge as trustworthy service providers for advanced digital services, they also need to continue to improve their track record in resolving problems and issues that small businesses face in their use of basic digital services.

Recommendations for Telecommunications Industry Ombudsman

The scope of the Telecommunications Industry Ombudsman remit should be expanded to cover issues that small businesses face in using advanced digital services provided by telecommunications service providers.

Recommendations for Government

Government can evaluate past and existing small business digital capability support programs to understand what is working and what does not work, and design integrated program packages that balance the business, technology, cybersecurity, and skills needs of small businesses.

List of Abbreviations

ABS	Australian Bureau of Statistics
ADS	Advanced Digital Services
ACSC	Australian Cyber Security Centre
ASBAS	Australian Small Business Advisory Services
BDS	Basic Digital Services
ROI	Return on investment
SME	Small and medium enterprises
TIO	Telecommunications Industry Ombudsman
TSP	Telecommunications service provider
USG	Universal Service Guarantee

Introduction

There are various definitions of small businesses. The Australian Tax Office treats small businesses as those with annual turnover of less than $10 million. The *Fair Work Act 2009* defines a small business as one with fewer than 15 full-time, part-time, and regular casual employees (Gilfillan, 2015). Small businesses in the Australian Bureau of Statistics classification include non-employing businesses (sole proprietors and partnerships without employees), micro-businesses (1-4 employees), and other small businesses (5-19 employees). In this project, a small business is one that employs fewer than 20 full-time equivalent workers.

Small businesses play a significant role in Australia's economic activities, accounting for no less than 95% of all businesses by number (Gilfillan, 2015; Grose & Imam, 2022). They contribute more than $400 billion to the country's annual gross domestic product and employ more than 40% of the national workforce (Trad and Freudenberg, 2018). In the retail industry, the focus of this project, there are around 49,000 small businesses, accounting for 8% of the total number of small businesses. Retail trade contains the fourth largest number of small businesses, behind construction, professional, scientific and technical services, and other services. Most Australian small retail businesses are either in the 'other store-based retailing' (60%) or food retailing (20%) subsectors. The customer-facing nature of retailers means it is the most common source of interaction between small businesses and the wider community. Online retail sales in Australia since the onset of the COVID-19 pandemic have almost doubled to a monthly average flow of around $3 billion, which offers both opportunities and challenges to small retail businesses.

A number of business trends are being driven by digital technologies, including greater online interactions, rapid growth in data collection and analysis, and growing incidence of and potential disruptions associated with cybercrime (Australian Government, 2020). Telecommunications service providers have historically held important relationships with small businesses in providing basic digital services such as internet access, and fixed-line and mobile telephone services (Market Clarity, 2013). However, according to the ABS Business Characteristics Survey for 2019-20, less than half of small retail businesses have used the internet to undertake information sharing, identify future market trends, monitor competitors, conduct product innovation, allow employees to work remotely, to communicate (excluding email), and to undertake training/learning (ABS, 2021). The low use of some basic digital services by Australian small retail businesses, combined with the low level of in-house information technology support, is broadly consistent with the view that a barrier

to digital transformation for small businesses is due to the lack of adequate resources, and limited in-house expertise and knowledge about information and communication technologies (Todesco, 2021; Zutshi et al., 2021). This also indicates the vulnerability of their business models to external shocks and changing environments.

The COVID-19 pandemic and associated lockdowns have likely accelerated the need for businesses to use advanced digital services to survive and boost their profitability (Business NSW, 2020). Like other businesses, Australian small retail businesses had to adopt advanced digital services so they could adapt to temporary closure of store fronts, the rapid shift in consumer preferences towards online shopping, and remote working for their workforce (Chen et al., 2020; Thukral, 2021). In the small business context, advanced digital services include, but are not limited to, e-commerce solutions, digital marketing, productivity software, cloud storage, digital accounting solutions, business planning tools, cybersecurity, and IT/tech support (Raj et al., 2020; Iva et al., 2021). A significant number of small retail businesses have increased their use of digital services and platforms given the rapid consumer shift to e-commerce associated with lockdown restrictions. The downside to this is the increased vulnerability to cyber-risks (Australian Government, 2020).

Australian telecommunications service providers are offering a range of advanced digital services for small businesses (Australian Government, 2020). Telstra, for instance, offers private or white labelled services for cybersecurity, digital marketing and e-commerce, and IT/tech support. It also offers access to branded services as a licensed distributor for productivity software and cloud computing (for example, Microsoft Office) and digital accounting solutions (for example, MYOB which includes single touch payroll). This means the historical relationship between small businesses and telecommunications service providers is evolving, with several developments contributing to greater offerings by telecommunications service providers given higher demand for, and business use of, advanced digital services. Changing business models and greater flexibility in supply chains add to the dynamic nature of these relationships (Australian Government, 2020).

Project Rationale

The relationship between small businesses and telecommunications service providers has not been frictionless, as indicated by complaints lodged with the Telecommunications Industry Ombudsman (TIO). For example, in 2019-20, there were nearly 18,500 complaints to the TIO. Of these, around two-thirds were due to no or delayed action by telecommunications service providers in resolving customers' problems, and problems relating to service and equipment fees (TIO, 2020). The evolving

relationship between telecommunications service providers and small businesses, in addition to legacy issues, lead to emerging consumer issues, such as change of pricing, cybersecurity, service bundling, product evaluation, trust in service providers, and spill-over effect from the experience of using the basic digital services into advanced digital services, which have not been explored in existing research. Understanding the challenges that small businesses face when using advanced digital services is critical to provide recommendations for enhancing their digital adaptability and supporting their post-COVID-19 recoveries. It also offers insights about important questions, such as the effects of the COVID-19 lockdown on Australian small businesses and how they adapted digitally to change their business models at both the front and back end and the role of telecommunications service providers in the development of small businesses.

Aims and Objectives

The project aims to identify small retail businesses' use of advanced digital services offered by Australian telecommunications service providers. It also investigates the issues and challenges those small businesses face in utilising such advanced digital services. From these findings, the project will offer policy and strategy recommendations to address these issues and challenges. The specific objectives of the project are as follows:

1. Investigate the challenges of small retail businesses in using advanced digital services through expert interviews with key stakeholders, and a national survey to highlight small retail businesses' awareness, behaviour, experience, and expectation about using advanced digital services.
2. Engage small business associations and local councils to advance their understanding of the emerging issues for small retail businesses in using advanced digital services, and to co-develop appropriate solutions to address such issues.
3. Produce recommendations for ACCAN, small businesses, small business associations, telecommunications service providers, and other stakeholders such as local councils, to boost the digital adaptability of small retail businesses.

To address the above objectives, the study adopts a three-stage approach. The first stage involves literature analysis and interviews with key stakeholders, including small business associations, small businesses, telecommunications service providers, and industry associations. This stage enables understanding of what advanced digital services small retail businesses need with respect to what

are currently available, and the perceived issues and challenges they confront.

The second stage uses an online survey of 307 Australian small retail businesses to examine their issues and challenges in using advanced digital services.

The third stage focuses on co-design workshops with key stakeholders to explore strategies, and formulate recommendations, that address issues and challenges identified in the first two stages.

Literature Review

Small businesses have specific characteristics in comparison to large firms including limited human capital, managerial capacity, financial resources, and knowledge management (Walker et al., 2007; Leong, 2019). This makes them vulnerable to constantly changing environments and adverse events (Poon, 2000; Nel & Simpson, 2013; English, 2020) and they usually have a low rate of survival (Market Clarity, 2013; Bartik et al., 2020). As a result, how to develop business adaptability using digital services is critical for maintaining and improving the competitiveness or even survival of small businesses (Ali et al., 2018; Weaven et al., 2021).

There are numerous studies and industrial projects that have been conducted to understand the use of digital services in small businesses, and the emerging issues and challenges in digital technology use for developing small business adaptability in various situations (Market Clarity, 2013; Ali et al., 2018; Wall & Bellamy, 2019; Papadopoulos et al., 2020; Akpan et al., 2022). In this section we review some relevant industry and government reports and academic research to highlight the role of digital adaptability of small businesses (and wherever possible small retail businesses in particular) and their implications, policy initiatives designed to foster and develop small retail business digital adaptability, and how small retail businesses can enhance their digital adaptability through working with their telecommunications service providers and emerging research on the impact of COVID-19 on small business digital adaptability.

Small Businesses' Use of Basic Digital Services

Basic digital services include fixed voice, VoIP, fixed broadband, mobile voice, mobile broadband, and EFTPOS services which have been widely used in small businesses (Market Clarity, 2013; ACCAN, 2016). Small businesses rely on the use of basic digital services to carry out their business activities, no matter what sector they operate in. Access to and use of phone and internet services, for example, is fundamental to the day to day running of many small businesses (Market Clarity, 2013). When a small business cannot access the internet or make phone calls, orders cannot be taken or processed (Wall & Bellamy, 2019). Interruptions to these services, even for a short period, can adversely impact their business and contribute to financial loss, particularly for small retail businesses which increasingly rely on the internet and social media channels to reach customers (Poon, 2000; Wall & Bellamy, 2019; English, 2020). This shows the critical role that basic digital services play in the development of small businesses.

The importance of basic digital services in the development of small businesses has led to various studies that have sought to understand what issues small businesses have in using basic digital services (Donner, 2004; Vaai, 2008; Akpan et al., 2022). Walker et al. (2003) for example, investigate the rationale of why small businesses fail to adopt basic digital services, and showed that fear of technology (technophobia), lack of skills, and no 'champion' to take a mentor role, are the significant barriers to using basic digital services. Donner (2004) explored the use of mobile phones in small business and showed that connectivity and service quality are critical to small business use of basic digital service. Vaai (2008) examined competition in Samoa's wireless mobile and internet services markets with respect to using basic digital services, revealing that increasing competition and adequate regulation are important to the use of basic digital service. Akpan et al. (2022) studied the implementation and use of the latest digital technologies in small and medium-sized enterprises for improving operations performance and creating sustainable competitive advantages. They stated that there is an urgent need to adopt advanced digital technologies that improve the performance and competitiveness of such enterprises. These studies have demonstrated the important role basic digital services play in small businesses development, and the need for small businesses to develop their digital adaptability using digital technologies that enhance their competitiveness, given the rapid development of information and communication technologies and the increasingly competitive and uncertain environment.

Several industrial projects have been conducted to further understand basic digital services use and the emerging issues and challenges for using basic digital services in small businesses in Australia (Market Clarity, 2013; ACCAN, 2016, 2020; TIO, 2020). Market Clarity (2013) for example, provides an analysis of small business experience with telecommunications services, covering fixed voice, VoIP, fixed broadband, mobile voice, mobile broadband, and EFTPOS services. The analysis was based on interviews with 260 small businesses across 14 vertical industry segments. The study acknowledged wide use of basic digital services: almost 100% of respondents used some types of voice service (fixed voice, mobile voice and/or VoIP), and 99% of respondents had some type of broadband connectivity (fixed and/or mobile broadband). However, the analysis also points out some emerging issues and challenges that need to be addressed from the perspective of telecommunications service providers, including service bundling, service issues, small business satisfaction, and service reliability.

ACCAN (2016) examined in mid to late 2016, the use of basic digital services based on a survey of 100 small businesses predominantly located in the agriculture sector. The study showed that the most used telecommunications services were mobile phones (93%), fixed-line phones (76%), fixed

broadband (54%), and Wi-Fi (53%). It revealed that 96 of 100 respondents indicated they have at least one issue with their telecommunications services. The three most reported problems were associated with internet speed, the experience of internet service congestion during peak periods, and cost. Furthermore, the study found that 64% of respondents indicated it is difficult to resolve these issues. Some 84% of respondents experienced problems contacting their telecommunications service providers to resolve their problems, and 19% contacted the TIO for assistance. The commonly cited reasons for barriers to resolving problems included problems associated with infrastructure and the perceived commitment of resources necessary to resolve the issue. Overall, the study found that reliable access to, and speed of, internet services, and frustration associated with telecommunications service providers not adequately resolving technical issues, were the common problem encountered by small businesses in their use of basic digital services (ACAAN, 2016).

ACCAN (2020) further studied the use of basic digital services in small businesses. This led to identification of several critical issues and challenges including the persistence of problems related to speed, reliability, poor customer service, and high costs that affect the use of basic digital services. Furthermore, TIO (2020) found that small businesses face unsuitable products, longer connection time, the absence of cooperation and collaboration with telecommunications service providers, and no backup plan in their endeavour to use basic digital services for developing their adaptability to adverse events and changing environments and enhancing their operation performance.

An analysis of a recent report of the TIO (TIO, 2021) shows that small businesses lodged 18,478 complaints with the TIO in 2019-2020. The analysis identifies two issues that collectively account for around two-thirds of those complaints: one on delayed actions by the telecommunications service providers to resolve customers' problems (34.2%) and the other relating to service and equipment fees (30.2%) (TIO, 2021). The analysis further reveals that concerns about landline services account for 29% of small business complaints, followed by complaints relating to mobile (22%) and internet services (18%), with complaints about multiple services accounting for 31% of complaints (TIO, 2021).

The latest data available show that small businesses lodged 4,995 complaints about their telecommunications service providers with the TIO in the March quarter 2021, little changed from the previous corresponding period (TIO, 2021). For the first three quarters of 2020-21 for which data are available, complaints by small businesses to the TIO track at an annualised rate of 9% higher than

the 2019-20 financial year. Consistent with the pattern of complaints evident in 2019-20, the top four issues for small businesses are no or delayed actions by their telecommunications service providers of complaints (46%), concerns about service and equipment fees (30%), no phone or internet service (19%), and delay establishing a service (15%). The lockdown restrictions associated with the COVID-19 pandemic have also put pressure on telecommunications service providers' call centres and back office operations, some of which were forced to close. This has led to a rise in complaints relating to the difficulties associated with contacting telecommunications service providers (TIO, 2021).

An examination of all such complaints to the TIO shows that the overwhelming majority of complaints are about technical problems associated with connection and/or disconnection issues, and delays in receiving assistance. The examination identified four key findings around small business complaints. First, small businesses occasionally commit to buying products and services that do not adequately suit their business requirements. Second, there can be long and variable delays associated with connecting new services for small businesses. Third, communication breakdowns can arise between small businesses and their telecommunications service providers when technical faults occur. Fourth, small businesses can experience financial hardship in the event of a disruption to their access to phone and internet services (TIO, 2020). Furthermore, the examination found that the number of complaints about the use of advanced digital services appears to be limited. This may be due to the fact that telecommunications service providers have only recently developed these services and made them available to small businesses.

Small Businesses Digital Adaptability

The ability of small businesses to cope with adversity, and the capacity to adapt to unforeseen events and changing environments using digital services, is critical for the development and even survival of small businesses (Prikladnicki et al., 2019; Chadwick & Raver, 2020; Dhewanto et al., 2021; Gottschalck et al., 2021). Small businesses that have such adaptability can respond rapidly to environmental dynamics through flexibly assembling requisite assets, knowledge, and business relationships at great speed when facing changing environments and adverse events (Lin et al., 2020). As a result, small businesses have been actively pursuing the development of such adaptability to maintain and enhance their competitive advantages during times of uncertainty and turbulence in the business environment (Sharifi & Zhang, 2001).

The adaptability of small businesses is the ability of businesses to respond quickly to their environments with the necessary resources (So et al., 2006). The digital adaptability of small businesses through adverse developments, such as the loss of key employees, declining market shares, and supply chain disruptions, improves the chance of survival and enhances the business performance in an uncertain environment. Adaptable small businesses can sense relevant events, interpret what is happening and assess the consequences, explore options, decide on which actions to take, and then promptly implement appropriate responses (Haeckel, 1999). Achieving this while facing adverse events and economic crises requires small businesses to have adequate resources and capabilities including people, technologies, processes, and knowledge. Such resources can be both tangible and intangible. They provide small businesses with the basis for instantiating changes to address the challenges and concerns arising from adverse events and economic crises.

The use of digital services has the potential to transform the operations of small businesses, leading to the development of digital adaptability (Bai et al., 2021). Developing digital adaptability allows the business to become more agile and resilient in the face of emergent crises and pandemic threats. It is becoming increasingly important due to the rapid development of digital technologies, the presence of changing environments and economic crises, and the surge of pandemics like COVID-19 which threaten the success or even survival of small businesses. Small businesses with digital adaptability can better understand different responses to exogenous changes and shocks using all the available resources, including digital services (Williams & Vorley, 2014).

There are some studies on the development of digital adaptability and its impact on business performance under various circumstances. Raji et al. (2020) for example, investigated how using digital technologies can improve the survival of firms during a crisis by providing continuity in access to customers, stating that the use of digital technologies can enhance the digital adaptability of small businesses in the post-COVID-19 economy. Bai et al. (2021) examined the relationship between digital adaptability and business performance in COVID-19 showing firms with higher digital adaptability perform significantly better. Spagnoletti and Za (2021) studied digital adaptability in high-reliability organisations, revealing that using digital technologies can increase the digital adaptability of organisations in their management of various accidents. All the studies discussed above have demonstrated the role those digital technologies play in developing digital adaptability of organisations for better tackling adverse events, economic crises, and pandemics.

Strong digital adaptabilities are associated with greater speed in launching new products, enhancing the flexibility of start-up firms, improved customer service and greater operational efficiency (Low et

al., 2020; De Vass et al., 2021; Tolstoy et al., 2022). Prior to the COVID-19 pandemic, small businesses in Australia had been improving their digital adaptability for enhancing their productivity and profitability (Corral de Zubielqui et al., 2019; Soriano et al., 2019; Devereux et al., 2020). This leads to the increasing use of specific digital services in various sectors of small businesses (Market Clarity, 2013; ACCAN, 2016, 2020; TIO, 2020).

The emerging COVID-19 pandemic and associated lockdowns nationally forced small businesses to adapt their business models for improving their business performance and ensuring their survival in such an adverse environment (Rashid & Ratten, 2021). This involved the adoption of advanced digital services including e-commerce solutions, digital platforms, and social media for developing their digital adaptability so that such small businesses can better reach existing and new customers (Raj et al., 2020; Iva et al., 2021). However, the lack of adequate resources and in-house information and communication technologies related expertise and knowledge represents a significant barrier to digital transformation for many in their effort to develop and enhance their digital adaptability (Klein & Todesco, 2021; Zutshi et al., 2021).

Both government and telecommunications service providers play an important role in the digital transformation of small businesses that enables them to develop their digital adaptability (Market Clarity, 2013; Chadwick & Raver, 2020; Dhewanto et al., 2021). They can support, facilitate, and encourage the adoption of specific digital technologies, including both basic digital services and advanced digital services to respond in a timely manner to the changing external environment. This leads to the development and implementation of various initiatives for enhancing the digital adaptability of small businesses.

Government Initiatives

Australian Government have announced various initiatives designed to boost the digital adaptability of small businesses, as shown in Table 1. The Commonwealth Government committed $1.2 billion over the next six years to support its Digital Economy Strategy 2030, launched in May 2021. This strategy covers a bundle of existing and new initiatives, including education, support for small and medium-sized enterprises, cybersecurity, artificial intelligence, and additional investment in the national broadband networks (Australian Government, 2021).

The provision of high speed and reliable broadband networks is necessary for the delivery of higher value-added advanced delivery services. The rollout of national broadband networks is largely complete and has delivered high speed wholesale broadband to most businesses and households.

Moreover, the Commonwealth Government has committed to invest by 2023 a further $4.5 billion to provide access to higher wholesale speeds to three-quarters of households and businesses on the fixed-line network (Australian Government, 2020).

Small businesses are particularly vulnerable to the growing incidence of cyber-attacks due to a lack of in-house resources and expertise (Australian Government, 2020). To this end, the Commonwealth Government has committed to invest around $1.7 billion as part of its Cyber Security Strategy 2020. This includes a commitment to expand the 24/7 cybersecurity hotline to provide technical assistance to small and medium-sized enterprises, alongside various measures to safeguard the cybersecurity of small and medium-sized enterprises (Australian Government, 2020).

Table 1. Government Initiatives to Boost Small Business Digital Adaptability

Initiatives	Level of government	Services
Rollout of NBN	Commonwealth	High speed wholesale broadband access to most businesses and households.
Cyber Security Strategy	Commonwealth	$1.7 billion funding to expand the 24/7 cybersecurity hotline to provide technical advice and assistance to small and medium-sized enterprises.
Digital Solutions	Commonwealth	$12.7m funding to support an additional 10,000 small businesses to access expert and independent advice on how to grow their digital capability.
Small Business Digital Program	Victoria	$1,200 rebates for small business to access a range of digital business tools, including website and e-commerce platform development.
Small Business COVID-19 Adaption Grant Program	Queensland	Financial support to small businesses adversely impacted by COVID-19 lockdown restrictions, to adapt and sustain their operations, and build their resilience. This includes facilitating access to digital technologies and adapting to new online opportunities. Maximum grants of $10,000 are available to eligible small or micro businesses.

Digital Solutions is an Australian Small Business Advisory Services program. It is another Commonwealth Government initiative which provides funding of $12.7 million to support an additional 10,000 small businesses to access expert and independent advice regarding how to grow

their digital adaptability. The program offers a 7-hour training package for $44 to small businesses on the use of digital tools to help their business including website and online selling, social media and digital marketing, using small business software, and advice on online security and data privacy.

The Small Business Digital Program is an initiative introduced by the Victorian Government designed to improve the digital adaptability of small businesses. The program offers small businesses $1,200 rebates to access a range of digital business tools to cover up to 12 months access. Some of the approved products include those that can facilitate end-to-end retail, including Shopify and Square, Squarespace which is used for website and e-commerce platform development, and Mr Yum which is used in the food and beverage sector. Eligible products include new products not currently used by the business or an upgrade of an existing product. The program closed on 5 December 2021.

It remains to be seen how effective the government programs are in supporting small businesses to increase their digital adaptability. Some government initiatives and programs have been launched only recently and are ongoing. Furthermore, there are likely to be long and variable lags associated with businesses reaping the productivity benefits from adapting their business models to the uptake of new digital technologies – both in terms of expanding their markets and managing their cost base.

Telecommunications Service Providers' Offerings

A review of the international experience of the telecommunications service providers' product offerings to small businesses reinforces the view that the role of telecommunications service providers is changing with the increasing focus on facilitating the development of digital adaptability of small businesses through digital transformation. To highlight this, Table 2 summarises a comparison of products and services offered by Australia's two largest telecommunications service providers – Telstra and Optus – as well as those of the largest telecommunications service providers in the United States (AT&T) and the United Kingdom (BT Group).

The project has examined the range of advanced digital services offered, including cybersecurity, digital marketing and e-commerce, productivity software and cloud computing, digital accounting solutions, network management, device management, and IT/tech support. The information was retrieved from each of the companies' respective websites on 26 September 2021.

Of the telecommunications service providers in Australia, Telstra appears to offer a greater breadth and range of advanced digital services: Table 2 offers a brief description of each of the services offered and pricing. In Australia, pricing for each service is based on a monthly subscription model

which is consistent with the pricing model adopted by telecommunications service providers in the United States and United Kingdom. Telstra offers its own private or white labelled services for cybersecurity, digital marketing and e-commerce, and IT/tech support. Telstra also offers access to branded services as a licensed distributor for productivity software and cloud computing (Microsoft Office) and digital accounting solutions (MYOB which includes single touch payroll). This business model is similar to other telecommunications service providers that are the subject of the comparative analysis, and which offer a combination of white label and branded services.

Table 2. Advanced Digital Services Offerings to Small Businesses: An International Comparison

	Cybersecurity	Digital marketing and e-commerce	Productivity software and cloud computing	Digital accounting solutions	IT/Tech support	Network management	Device management
Australia							
Telstra	$80/month. 24/7 access to business cybersecurity service over the phone and through online chat. Includes internet, email and endpoint protection, and up to 4 phone assessments per year.	$100/month. Includes the ability to create a new website, an online shopping presence, and customer management and booking tool. Other premium products which offer more tailored services are available & typically include a fixed, up-front fee in addition to the regular monthly fee.	Microsoft 365 includes video conferencing facilities, OneDrive cloud storage, and the Microsoft Office suite of software services. The Business Standard product, aimed at SMEs, includes 1TB of OneDrive cloud storage, Microsoft Teams and Share Point at around $20/month.	MYOB Essential packages include: single touch payroll (STP), the ability to track and prepare BAS, GST, and send unlimited quotes and invoices. Entry points range from $27/month to $60/month.	24/7 online or phone support for internet & network, email, storage & back-up, mobile & landline, devices, apps & hardware, e-commerce, & security & data protection, and up to 4 tech assessments every 12 months. $60/month.	N/A	N/A
Optus	Cybersecurity services offered for email, identity, network	N/A	Optus Cloud Services offers businesses access to a public cloud	N/A	Optus appears to offer a bundled service, which includes cloud-	Network management for business includes sourcing for	MaaS360 device management provides capabilities to

	and endpoint. Separately, McAfee Multi-Access protection is provided for $13/month per account which covers up to 20 devices.		and their own private cloud. Pricing unavailable.		based data backup, remote working using cloud technology, cybersecurity and network solutions. Pricing unavailable.	hardware, developing networks and connections, streamlined networking with advanced SD-WAN, and procurement, installation and maintenance of network devices. Pricing unavailable.	simplify management of smartphones, laptops, tablets, IoT and computing platforms. Pricing unavailable.
United States							
AT&T	Cyber-risk advisory, operations and services offered, including McAfee EndPoint protection from $3/month per subscription.	Two plans offered: Build it for me - Basic ($35/month), and Website plans - Self-design ($10/month).	Tech360 Backup and Go offered automatic, continuous backup, unlimited storage per PC or Mac, 30-day retention of older documents and mobile access to backed up data. From $7/month per computer.	N/A	24/7 remote tech services for desktops, laptops, tablets, mobile, IoT and connected devices. US$19/month per subscription.	N/A	N/A

			Email marketing and Business class email products offered for up to $18/month.				
United Kingdom							
BT Group	Secure Business Backup by Acronis, which includes encrypted cloud backup and cybersecurity (antimalware) technology. Product offerings range in price from £5 to £13 per month.	Business domain name registration offered at £6 per year (ex VAT).	Microsoft 365 Business Standard includes access to full suite of features for £9.4 per month per user. This includes latest versions of MS Office applications, anywhere on any device, 1TB of cloud storage per user, business-class office tools with 50GB email storage and video conferencing facilities.	N/A	24/7 remote IT support from £7.50 per month (ex VAT).	N/A	N/A

Small Business Adaptability and the COVID-19 Pandemic

The COVID-19 pandemic and associated restrictions on the movement of people have tested the adaptability of the business sector in Australia (Maritz et al., 2020; Rahman et al., 2021). This is particularly true for small businesses which have lower average survival rates than large enterprises (Market Clarity, 2013; Bartik et al., 2020), are more credit constrained and exhibit lower average profitability (Connolly & Bank, 2018). Moreover, many small businesses are operating in industries which have been highly vulnerable to the effect of lockdown restrictions, such as accommodation and food services, arts and recreation, and retailing.

Following the onset of the COVID-19 pandemic, many small businesses have had little choice but to adapt their business models, a fundamental part of which has involved digital transformation of their operations due in large part to the rapid migration of the consumer to online shopping (Maritz et al., 2020; Iva et al., 2021). According to the Australian Chamber of Commerce and Industry, in the months around the onset of the pandemic in early to mid-2020, 31% of 1,497 businesses surveyed indicated that they had increased their online presence, 25% had changed their mode of delivery and 23% had diversified into new product lines and services (Business NSW, 2020).

As of mid-2021, a quarter of small businesses reported a deterioration in revenue conditions over the prior month compared to only 14% of large enterprises (ABS, 2021). Furthermore, only 10% of small businesses expect to hire more workers over the next month compared to more than 20% of medium and large enterprises, while 16% of small businesses responded that it would be difficult or very difficult to meet their financial commitments over the next three months, compared to only 9% of large enterprises. The discussion above has demonstrated the need for small businesses to develop their digital adaptability through using the latest digital technologies and services to improve their performance or even survival in such an uncertain environment.

Collaboration and cooperation between small businesses and telecommunications service providers can facilitate development of the digital adaptability of small businesses (Market Clarity, 2013; Dua et al., 2020; Bai et al., 2021). Dua et al. (2020) for example, show that small businesses need to develop their adaptability for recovering from the COVID-19 pandemic through protecting the health and safety of employees and customers, adapting business models, investing in talent and technology, and adjusting staffing models and labour practices. Bartik et al. (2020) examine how small businesses can recover from the COVID-19 disruption revealing that small businesses need to be innovative in the use of digital technologies for addressing the challenges that COVID-19

pandemic presents in their endeavour to maintain and improve their competitiveness and/or even survival. Bai et al. (2021) point out that small businesses must develop their adaptability through digital transformation for ensuring business continuity and sustainable production and consumption. The studies above have demonstrated the importance of developing digital adaptability of small businesses through various means including the use of various digital services to effectively deal with the challenges and issues that the COVID-19 pandemic presents in today's uncertain environment.

Summary

Digital technologies have been playing an increasingly important role in the development of digital adaptability of small businesses for adequately dealing with adverse events and changing environments (Dua et al., 2020; Bai et al., 2021). The studies above have shown that small businesses have widely used various basic digital services in their active pursuit of competitive advantages and sustainable performance. These studies have also revealed that some specific issues and challenges need to be dealt with for facilitating the use of basic digital services. Furthermore, these studies have pointed out that small businesses need to further develop their digital adaptability through digital transformation using various digital services, in particular advanced digital services which have not been widely used yet, in effectively addressing the adverse events and changing environments in today's uncertain environment.

Methodology

This project adopts a multi-method approach combining stakeholder interviews, a survey, and co-design workshops to address the objectives of the project.

Stakeholder Interviews

To understand the needs and challenges of Australian small retail businesses in using advanced digital services, ten interviews were conducted from October to December 2021 with experts and key stakeholders, including small retail businesses, small business associations, retail industry associations, and telecommunications service providers. The interviews explored the advanced digital services that small retail businesses use, their needs for such services, the current provision and availability of these services by Australian telecommunications service providers, and the perceived issues and challenges in using advanced digital services.

One interview with a small retail business was excluded from data analysis due to the size of the business being more than 20 full-time equivalent employees. Out of the nine interviews, six were with small retail business owners and/or operators, one was with a small business association, one with a retail industry association, and one with a telecommunications service provider. Small retail business participants were diverse in terms of their business size, level of digital development and longevity, with some having launched more than a decade ago while others established their business as recently as the second half of 2021. Table 3 presents an overview of the interview participants.

Survey

To get a wider perspective and develop a comprehensive insight into the issues and challenges of Australian small retail businesses in using advanced digital services, an online survey of Australian small retail businesses was conducted. The use of the survey enables the triangulation of the findings from the interviews with a larger sample.

The survey was developed based on the findings of the review of the literature and stakeholder interviews. Survey questions cover the demographics of participants, the diversity of basic and advanced digital services small retail businesses use in general and from Australian

telecommunications service providers in particular and the experiences and issues that small retail businesses encounter in choosing and using such digital services. The survey questionnaire can be found in the Appendix.

Table 3. Profiles of Interview Participants

Participant pseudonym	Interviewee	Profile
SBA	Small business association	Involved in the provision of advice and training to small businesses.
IA	Industry association	Not-for-profit organisation that represents the interests of retailers.
TSP	Telecommunications service provider	Australian telecommunications service provider.
SR1	Small retail business 1	Melbourne-based clothing and apparel retailer, with less than 10 years' experience and less than 5 FTE staff.
SR2	Small retail business 2	Melbourne-based giftware and handmade crafts retailer which sources products from independent artists, with about 15 years' experience and employing fewer than 5 FTE.
SR3	Small retail business 3	Australia's largest independent giftware retailer, with locations in Brisbane, Sydney, and Melbourne, with about 15 years' experience and employing fewer than 20 FTE.
SR4	Small retail business 4	Melbourne-based manufacturer, wholesaler and retailer of cheese and dairy products, with about 25 years' experience and employing fewer than 20 FTE.
SR5	Small retail business 5	Melbourne-based boutique garden design studio, with about 3 years' experience and employing fewer than 5 FTE.
SR6	Small retail business 6	Melbourne-based wellness medicine clinic focuses on personalised natural health care, with about 3 years' experience and employing fewer than 5 FTE.

The survey targeted the owners/managers of Australian small retail businesses. In view of the study's objective to distil issues that small retail businesses face in using advanced digital services offered by Australian telecommunications service providers, the project adopted a non-probability and quota sampling method. An *a priori* estimation of the proportion of small retail businesses that use telecommunications service providers' advanced digital services was impossible. The effort to get this estimation from the telecommunications service providers, small business associations and pilot studies advertising the survey through ACCAN and LinkedIn, failed to produce usable insight. As a result, in discussion with a commercial research panel service provider and within the constraint of

the budget available to the project, a service agreement was drawn up with Qualtrics to sample 300 participants of which at least 33% should be using advanced digital services, as defined in this study.

The survey was hosted online on Qualtrics. To ensure that the survey satisfies the quota sampling requirements, participants were required to meet the following screening criteria: be at least 18 years old, be the decision-maker (owner/manager) in Australian small retail businesses, and have fewer than 20 full time equivalent employees in the business. The data were collected from March to April 2022 and stopped once the quota was reached. In addition to the data cleaning and validation provided by Qualtrics (that is, bot checks, double opt-in confirmations, incomplete and straight-line response, GeoIP and postcode risk scoring) (Qualtrics, 2019), we have undertaken additional data verification. At the beginning of the survey, participants are asked to choose the category of retail trade that their businesses are in. The same question was asked in an open-ended question in the middle of the survey where the participants need to type in the responses. Both responses were checked with inconsistent responses removed. At the conclusion of the survey 307 useable responses were obtained for analysis.

Different statistical methods were used for survey data analysis, including exploratory data analysis and *t*-test. Exploratory data analysis is used to understand the attitude of survey participants in their use of advanced digital services. A *t*-test is employed to assess whether some of the characteristics of two groups of small retail businesses are statistically different from each other.

The profile of the survey participants is summarised in Table 4. Of the 307 respondents, 88% describe themselves as the owner manager or managing director and the remaining as store managers (see Table 4). In terms of gender distribution, 65% are male. Geographically, 69% operate in metropolitan areas, 27% in regional areas, and 4% in rural areas. Size wise, almost 160 respondents or 51% have 5-19 full-time equivalent staff while 33% of respondents have 1-4 full-time equivalent workers. 87% report an annual turnover of less than AUD$2 million.

The highest educational level of the respondents is an undergraduate degree (45%), followed by certificate/diploma (23%) and postgraduate degree (22%). Almost two-thirds of the respondents have been running their business for between 1 and 7 years, while 29% of the respondents have been running their business for more than 7 years. 100 respondents operated businesses in food retailing. Around 95 respondents operated in other store-based retailing such as electrical, apparel and pharmaceutical. 35% of respondents are in NSW, with 21% of respondents in both Victoria and Queensland.

Table 4. Profiles of Survey Participants

Description	Count	Percentage		Description	Count	Percentage
Role in business				**Average annual turnover**		
Managing Director/Owner Manager	269	88%		Less than $2 million	267	87%
Store Manager	38	12%		More than $2 million	40	13%
Gender				**Employment size (full-time equivalent)**		
Male	200	65%		Less than 1	49	16%
Female	106	35%		1-4	102	33%
Prefer not to say	1	0%		5-19	156	51%
Education qualification				**Duration in business**		
Primary education	1	0%		< 1 year	19	6%
Secondary education	37	12%		1-3 years	103	34%
Certificate/Diploma	72	23%		3-7 years	95	31%
Undergraduate degree	139	45%		7-10 years	56	18%
Postgraduate degree	58	19%		> 10 years	34	11%
Area				**State**		
Metropolitan	212	69%		Australian Capital Territory	4	1%
Regional	84	27%		New South Wales	108	35%
Rural	11	4%		Northern Territory	1	0%
Sub-category of retail				Queensland	65	21%
Food Retailing	100	33%		South Australia	38	12%
Fuel Retailing	12	4%		Tasmania	4	1%
Motor Vehicle and Motor Vehicle Parts Retailing	25	8%		Victoria	65	21%
Non-Store Retailing and Retail Commission Based Buying and/or Selling	24	8%		Western Australia	22	7%
Other Store-Based Retailing	96	31%				
Others	50	16%				

Co-design Workshop

The purpose of the workshop is to co-develop recommendations to address the key issues and challenges that small retail businesses face and to co-develop strategies on how to engage small retail businesses in using advanced digital services. The workshop was also used to co-create the changes expected of stakeholders such as telecommunications service providers, small business associations and government to support the digital adaptability of small businesses.

Two workshops were conducted in April 2022 with a total of five participants. The first workshop had three participants, one from the small business association and two from small retail businesses. The second workshop had two participants, one from a government agency and one small business owner. Table 5 provides the profile of workshop participants.

Table 5. Profiles of Co-design Workshop Participants

Participant pseudonym	Participant organisation	Profile
SBA	Small business association	Involved in providing advice and training to small businesses.
SBC	Small business commission	A government agency that offers dispute resolution services including mediation and champions the rights of small businesses.
SR1	Small retail business 1	Melbourne-based clothing and apparel retailer, with fewer than 10 years' experience and fewer than 5 FTE staff.
SR2	Small retail business 2	Melbourne-based giftware and handmade crafts retailer which sources products from independent artists, with about 15 years' experience and employing fewer than 5 FTE.
SR3	Small retail business 3	Giftware retailer with operations in Brisbane, Sydney, and Melbourne, with about 15 years' experience and employing fewer than 20 FTE.

In the workshops, participants were provided (through a PowerPoint presentation) with findings from the interview and survey phases about advanced digital services small retail businesses use, their need for such services, the current provision of these services, and the perceived issues and challenges in using advanced digital services. To get a consensus on the problem definition, workshop participants were asked to discuss if the presented findings reflected their experience and understanding.

Furthermore, the participants were asked to generate as many solution ideas as possible in four categories: actions for small businesses, small business associations, regulatory agencies, and

telecommunications service providers. The output and data collected through this process was used both in the discussion of the findings and in developing the recommendations.

The use of co-design workshop in this project inspires the generation of innovative solutions to address the issues and challenges raised by small retail businesses in using digital services to boost their digital adaptability in their pursuit of competitiveness or even survival.

Findings

Small Retail Business Use of Basic Digital Services

Basic digital services have been widely adopted by surveyed Australian small retail businesses. All participants have at least one form of connection to the internet. This is consistent with the ABS Business Characteristics Survey (ABS, 2021) which finds that 98.3% of all small retail businesses have internet access. Mobile phone is used by the vast majority (295) of surveyed small retail businesses, followed by fixed broadband (278) such as ADSL, cable and NBN. Wi-Fi (275) and Mobile broadband (264) are the other key services used by small retail businesses, while landline is used by 76% of participants (233), as shown in Figure 1.

Figure 1. Small Retail Business Use of Basic Digital Services

Compared with the findings from Market Clarity (2013) about small business use of basic digital services from telecommunications service providers, there is a dramatic increase in the use of mobile broadband in small businesses from 45% (n=260) in 2013 to 86% (n=307), an increase of mobile phone use from 89% in 2013 to 96%, and a decrease of landline use from 95% in 2013 to 76%. Compared with the overall population of Australian small retail businesses with low use of basic digital services (ABS, 2021), our sampled small retail businesses have higher digital connectivity.

Impact of COVID-19 on Small Retail Businesses' Business Model

COVID-19 is a game changer to the business model of small retail businesses. Many have had little choice but to adapt their business models due to the rapid migration of consumers to online

shopping (Iva et al., 2021). Our project finds that before COVID-19, 67% of small retail businesses were either fully store-based (82) or mainly store-based with some online presence (124). Post COVID-19, there is a dramatic shift in the digital business model of small retail businesses with 58% either fully online (81), or mainly online with some store-based operation (98) (see Figure 2). As such, while the percentage of small retail businesses that operate fully online after COVID-19 increased by 7%, the percentage of fully store-based small retail businesses decreased by 12%. This observation is consistent with other studies. According to the Australian Chamber of Commerce and Industry, in the months around the onset of the COVID-19 pandemic in early to mid-2020, 31% of 1,497 businesses surveyed indicated that they had increased their online presence and 25% had changed their mode of delivery (ACCI, 2020).

One interview participant explained that the majority of their business migrated to online sales during the pandemic:

> *… so obviously during COVID, you know when my Melbourne stores were closed and Sydney stores were closed, you know, Brisbane was open... we had a huge increase on our online sales which went from 15% of sales in terms of our pure online website to literally 80% of sales.* (SR3)

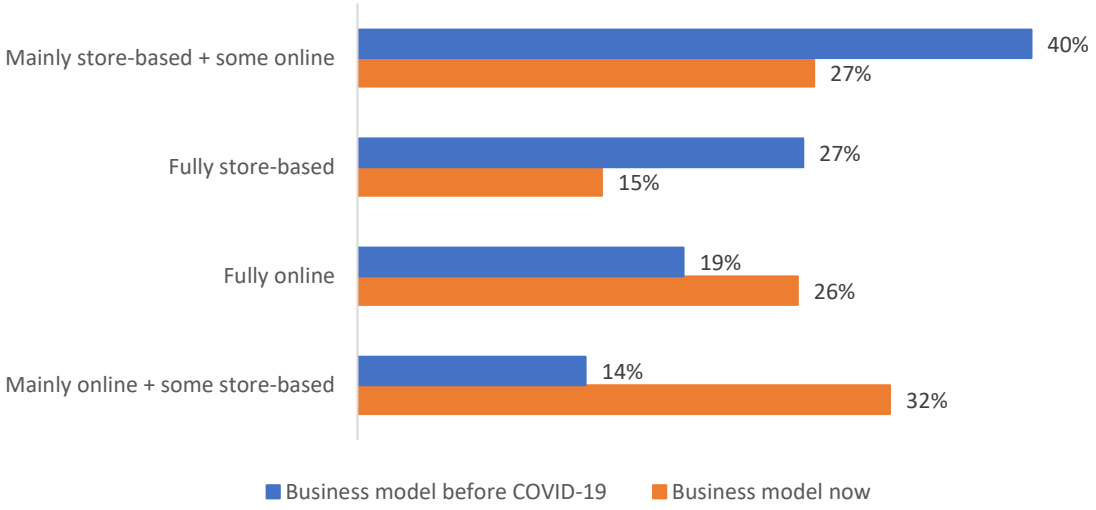

Figure 2. Business Model of Small Retail Businesses Before COVID-19 and Now

The survey findings are in line with our expert interview findings that out of seven interviewed small retail businesses, five have established both online stores and bricks and mortar presence post COVID-19. Three participants indicated that their small businesses had undergone a digital transformation prior to the pandemic while another two had launched online stores in the second half of 2021.

When asked what represented the key challenges they faced in the past two years, all interview participants discussed navigating their way through the lockdowns associated with the global pandemic. Two participants who originally launched their businesses with storefronts as the primary means to reach customers indicated that they had invested heavily in a digital transformation prior to the COVID-19 pandemic, and consequently were able to adapt their business models to the rapid shift to online shopping during lockdowns. One interview participant explained:

> *Digital world allows you to scale. It is about scale and broadening your reach.* (SR6)

For those two participants, this involved upgrading their point-of-sales platform that could integrate their online store with their bricks and mortar sales, along with integrating with their other cloud computing services such as accounting software packages. One of these participants indicated that the incremental sales from the growth of online sales was equivalent to adding 1.5 new shop fronts because the fixed costs associated with online sales were considerably lower.

Expectation of Support for Digital Adaptability

When asked about the role of governments, industry associations, telecommunications service providers, and local Council in supporting the use of advanced digital services, 68% of surveyed small retail businesses believe telecommunications service providers should play a key role, followed by government programs/grants (67%), industry associations (66%), governments (63%), and local Council (56%) (see Figure 3).

Although most survey participants expect telecommunications service providers to play a role in supporting them, the interview and workshop participants lack awareness of what advanced digital services telecommunications service providers offer and expressed negative sentiments about the commitment of telecommunications service providers to them. As one interview participant indicated:

> *Telcos really don't have an interest in servicing small business owners like myself. They might have an interest, but they don't actually have the resources and the product suite often to be able to help us out. My business is probably too small for some of these telcos to even really, really be bothered by us in some ways. And you know, [I do not recall] the last time I had anyone from a telco, …called on me to be able to ascertain my needs or to be able to actually even tell me what they have on offer.* (SR6)

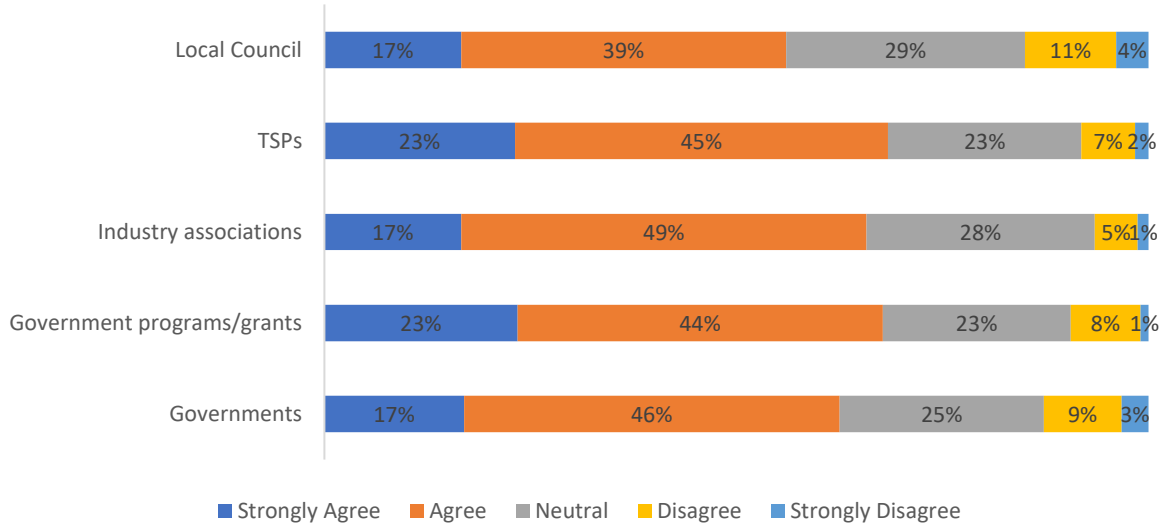

Figure 3. Expectation of Support for Digital Adaptability

From the interview, several participants were aware of government grants available for small businesses to boost their digital capabilities; however, they did not qualify because they were not interested in purchasing any cloud computing services on the accredited list that they didn't already use.

Use of Advanced Digital Services

Out of 307 surveyed small retail businesses, 45% (138) has been using the advanced digital services including e-commerce solutions, social media marketing, productivity software, cloud storage, digital accounting solutions, business planning tools, cybersecurity, and IT/tech support (see Figure 4). E-commerce solutions and social media marketing have been used by the majority of participants (131), followed by the use of productivity software (129). This is a reflection of the COVID-19 pandemic impact on small retail businesses use of advanced digital services, given the rapid consumer shift to e-commerce as well as remote working associated with lockdown restrictions.

91% of small businesses (125) are using the cybersecurity services while the same number of participants (125) use IT/tech support. Digital accounting solutions/cloud storage, and business planning tools have been used by 123 and 119 small retail businesses respectively.

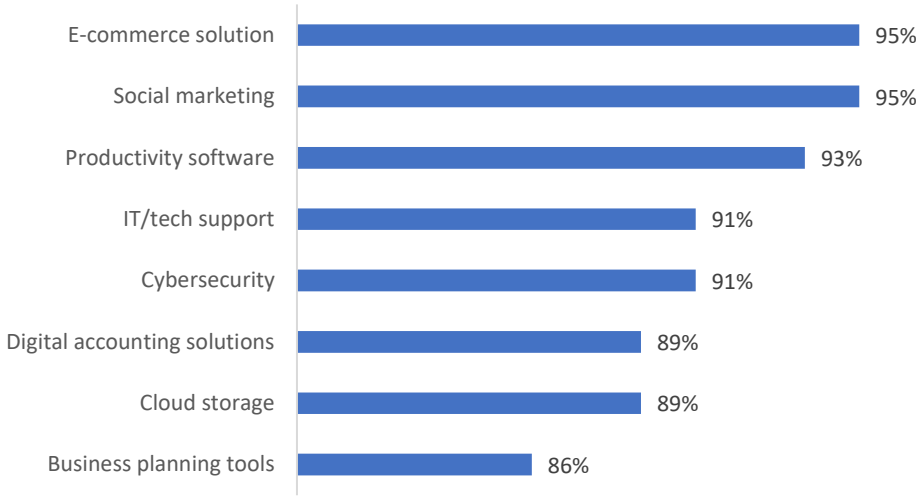

Figure 4. Small Retail Business use of Advanced Digital Services

E-commerce Solutions

E-commerce solutions includes e-commerce website design and hosting, online store creation and maintenance, and point-of-sale systems. The increasing demand for online shopping due to COVID-19 has driven the need of small retail businesses to adopt e-commerce solutions to suit the needs of consumers. Out of 138 small retailers surveyed that have been using advanced digital services, 131 small retail businesses adopted e-commerce solutions, of which 89% have been with the service from telecommunications service providers (see Table 6).

Table 6. E-commerce Solution Use

E-commerce solution	Telco	Non-Telco
Count	117	14
Percentage	89%	11%

Four interview participants have been using e-commerce solutions such as Square and Shopify. One interview participant drew attention to the importance of the e-commerce solution to the business model:

> *Point-of-sale is the primary underlying component that the business was built on six years ago... this connects to the online platform Shopify*. (SR1)

This interview participant further explained that these solutions include a range of applications which typically integrate with other cloud-based online services, such as search engine optimisation and online shipping channels offered by the likes of Shippit and Australia Post:

> *We've got another app on there that allows us to take all of our orders and enter them and integrate with the Australian Post API.* (SR1)

Social Media Marketing

Social media marketing is related to leveraging internet and social media to attract customers and/or enhance customer experience. Social media marketing services mainly include marketing campaign management, search engine optimisation, keyword search, blog or Google business profile management, social media business page, real-time reporting to campaign performance, and post-campaign performance analysis. In our survey, out of 138 small retails that have been using advanced digital services, 131 small retail businesses are using social media marketing services, almost 90% are using the service from telecommunications service providers (see Table 7).

Table 7. Social Media Marketing Use

Social media marketing	Telco	Non-Telco
Count	116	15
Percentage	89%	11%

In the interview sample, all participants were aware of the need to direct traffic to their online stores, including those that have physical store fronts. They all discussed the importance of SEO to increase the website's ranking in Google's hierarchy and most advertised through Google Ad Words, Facebook and/or Instagram. For developing and maintaining customer lists to facilitate the use of email marketing campaigns, some participants indicated that they use Mailchimp, an integrated marketing platform for small businesses.

Productivity Software

Productivity software is the application software used in small businesses for producing and managing information, such as word processing, presentation, and project management software. These software products are used to boost productivity of the business. In the survey, out of 138 small retails that have been using advanced digital services, 129 small retail businesses are using

productivity software, of which 86% are using those provided by telecommunications service providers (Table 8).

Table 8. Productivity Software Use

Productivity software	Telco	Non-Telco
Count	111	18
Percentage	86%	14%

Interview participants, on the other hand, mainly used productivity software tools such as Google's suite of products, including Gmail, and Microsoft 365 provided by non-telco IT companies. Some also used messaging services or platforms including WhatsApp and Slack to facilitate communication among employees while many participants used cloud-based record keeping software such as Xero.

IT/Tech Support

IT/Tech support covers service and solutions to hardware, software or network challenges faced by small businesses, from device and hardware troubleshooting, daily system and software maintenance, to network issues diagnosis. Out of 138 small retails surveyed that have been using advanced digital services, 125 participants used IT/tech support, of which the majority (87%) have been provided the service by telecommunications service providers (see Table 9).

Table 9. IT/Tech Support Use

IT/tech support	Telco	Non-Telco
Count	109	16
Percentage	87%	13%

Cybersecurity

The increasing use of digital services and platforms by small businesses has increased their vulnerability to threats (Australian Government, 2020). Cybersecurity services mainly help to protect small businesses against cyber threats. Such services range from providing security assessment tools, security education and training services, and data backup plan, to managing hardware, software, and network cybersecurity. Out of 138 small retails that are using advanced digital services, the majority (84%) of the surveyed small retail businesses that have been using cybersecurity services have such services from telecommunications service providers (see Table 10).

Table 10. Cybersecurity Use

Cybersecurity	Telco	Non-Telco
Count	105	20
Percentage	84%	16%

Most interview participants subscribed to cloud-based cybersecurity services directly from third party vendors. One participant indicated that his small business had been subject to a cyber-attack in the past month, but the issue had been resolved without incurring a significant loss of business.

Digital Accounting Solutions

Digital accounting solutions commonly include products or services to streamline the accounting and finance process in small businesses, such as solutions to manage accounting, tax, bookkeeping, and finance advisory services. Out of 138 small retails surveyed that have been using advanced digital services, 123 small retail businesses adopted digital accounting solutions, of which 85% have been with the service from telecommunications service providers (see Table 11).

Table 11. Digital Accounting Solutions

Digital accounting	Telco	Non-Telco
Count	105	18
Percentage	85%	15%

Many interview participants used cloud-based record keeping and accounting software packages such as Xero or MYOB. One interview participant explained that:

> *Flashpoint itself seems it doesn't have the same integrations into Xero and in to have the same levels of stock control capability as our current... the email tool talks to Shopify and Xero, which talks to the point-of-sale system.* (SR1)

Cloud Storage

Cloud storage is a type of advanced digital services that provides fast, easy to access, and highly durable storage for business data. It is mainly for data backups and archives. In our survey, out of 138 small retails that have been using advanced digital services, 123 small retail businesses are using

cloud storage, 86% of which are using the service from telecommunications service providers (see Table 12).

Table 12. Cloud Storage Use

Cloud storage	Telco	Non-Telco
Count	106	17
Percentage	86%	14%

Three interview participants indicated that paramount in their use of advanced digital services was that 'bolt on' services could integrate with their existing cloud-based computing services. One participant explained that small businesses had many options to choose from in terms of third-party cloud-based software services, illustrating there were five to six e-commerce platforms on the market targeting small business.

Business Planning Solutions

Business planning solutions include digital tools and resources for the strategic planning of business, such as business digital readiness assessment, and strategic planning resources. Out of 138 small retails surveyed that have been using advanced digital services, 119 small retail businesses adopted business planning tools, of which 87% have been with the service from telecommunications service providers.

Table 13. Business Planning Solution Use

Business planning	Telco	Non-Telco
Count	103	16
Percentage	87%	13%

Figure 5 is an overview of various advanced digital services used by the interviewed small retail businesses.

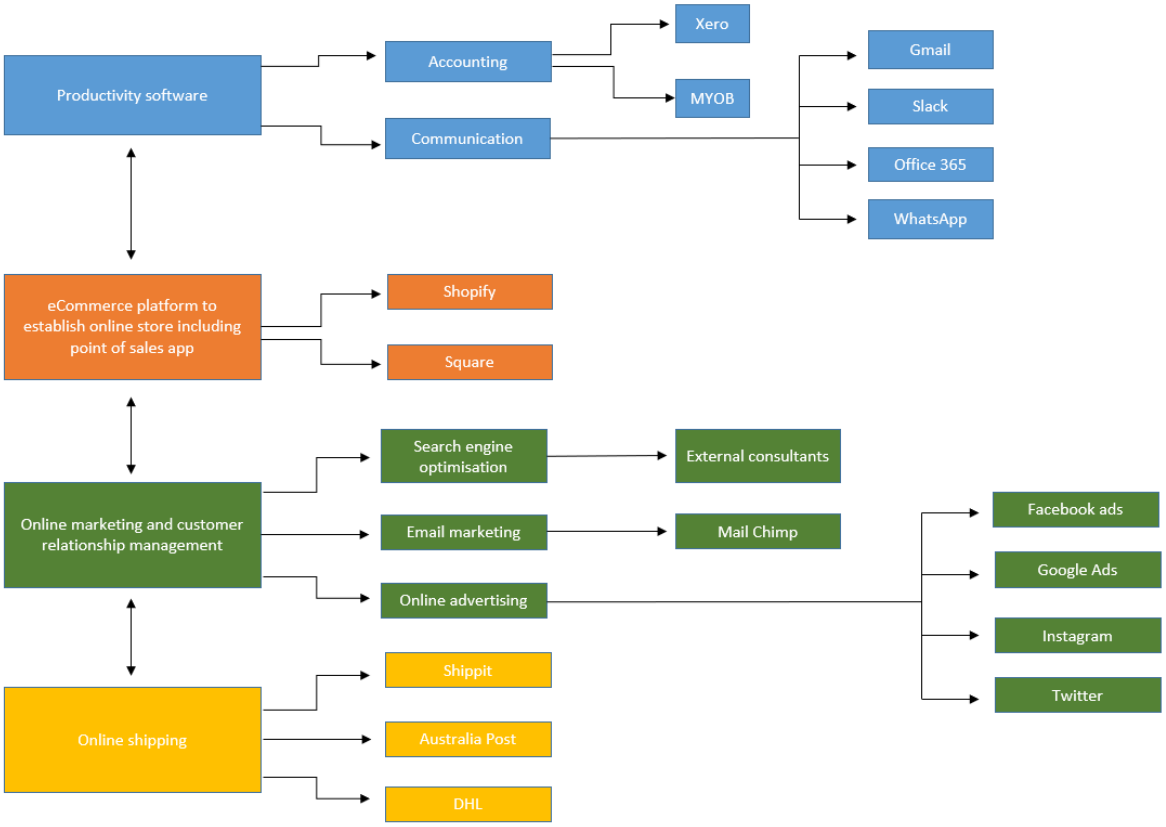

Figure 5. An Overview of Advanced Digital Services Used by Interview Participants

Choosing Advanced Digital Service Providers

Digital Literacy of Australian Small Retail Businesses

Digital literacy refers to the multiplicity of literacies associated with the use of digital technologies (Ng, 2012). The digital literacy of small retail business owners was assessed in the survey as their ability to find and evaluate information through various media for supporting their business decision making (Priyono et al., 2020). In general, survey small retail businesses have high digital literacy. Almost 90% of participants have moderate to extremely high competency in using copyrighted online information in an appropriate way and can deal with software problems. 87% participants know how to effectively synthesise and choose reliable online information for decision making (see Figure 6).

The high digital literacy of small business owners reflects their strong competency in identifying and evaluating information from various sources, such as personal search, government advisory services,

social network, industry association, and service provider websites when deciding which advanced digital services to use and from which service provider.

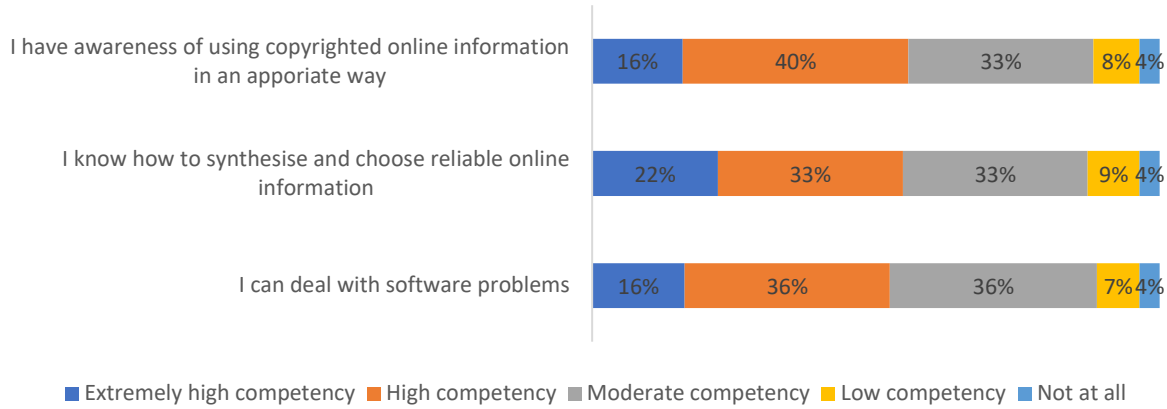

Figure 6. Digital Literacy of Small Retail Business Owners

Personal Search

The vast majority of surveyed small retail businesses (110) that have been using advanced digital services (138) (see Figure 7) indicated that website information such as Google search is a very important source of information when they choose advanced digital services.

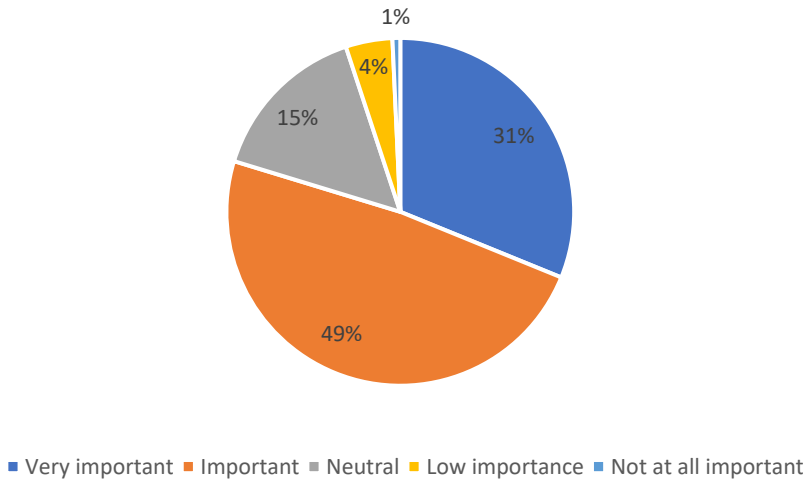

Figure 7. Information Source – Personal Search

Some interview participants drew on their own backgrounds in technology, were self-taught and engaged in a process of learning by doing in terms of improving their digital capabilities.

I would consider my business a fairly technical, we are quite advanced in terms of what we've done over the last years on our own back. We've done from asking and literally searching the Internet and digging around trying to find answers to solutions that have cropped up. (SR3)

Australian Small Business Advisory Services

ASBAS is another key source that provides small retail businesses information for their use of advanced digital services. ASBAS is a support program provided by Commonwealth Government to small businesses to access expert and independent advice regarding how to grow their digital capability. The program offers advice to small businesses on the use of digital tools to help their business, including websites and selling online, social media and digital marketing, using small business software, online security, and data privacy (ASBAS, 2022). 77% of survey small retail businesses (106) that have been using advanced digital services indicated that ASBAS is an important source of information for advice (see Figure 8).

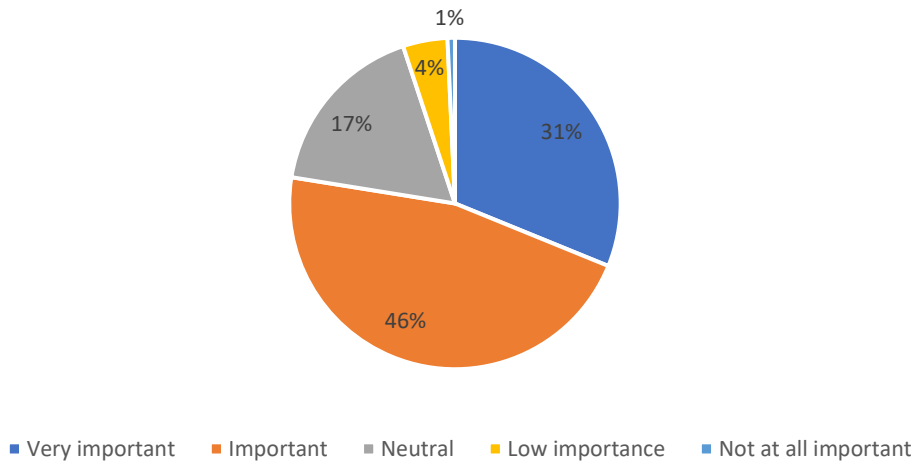

Figure 8. Information Source – ASBAS

Social Networks

Social networks are considered another key information source for small retail businesses in their use of advanced digital services. 76% of surveyed small retail businesses (105) that have been using advanced digital services indicated that they get advice from community organisation, while 74% of participants get recommendations of advanced digital services from their family, friends, or colleagues (see Figure 9).

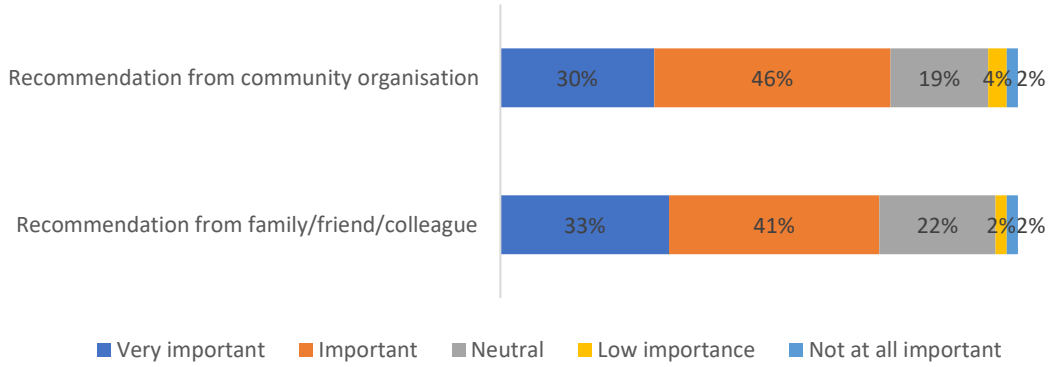

Figure 9. Information Source – Social Network

Interview participants cited different sources of social networks around their use of advanced digital services, ranging from peer recommendations and engaging external digital experts and consultants.

Peer recommendations: One of the small business association participants explained that small business owners typically prefer to deal with other small business owners or small business associations. They have little confidence in engaging with employees from their telecommunications service providers. This is confirmed by several interview participants that they spoke to other small business owners or advisors from small business associations for advice.

> *So if you want to get the attention of small business owners through someone, they have a level of trust with now or that they go. Yeah, that person's just like me. So they're accountant. In some cases, the accountant is more than purely doing the tax return and the asset return and those sorts of things. So if there's a good relationship between an accountant, the accountant should be used as a channel to get the interest and to get the awareness and attention initially of the business owner.* (SBA)

Engaging external digital experts and consultants: A few interview participants engaged contractors and/or agencies that specialised in digital marketing and web design. They had come to know about these experts either through word of mouth from sources that they believed to be trustworthy and credible or through previous experiences. The focus of many participants was to seek knowledge and expertise on search engine optimisation to increase traffic to their website.

Industry and Small Business Association

77% of surveyed small retail businesses 106 out of 138 who have been using advanced digital services state that industry and small business associations are important sources of information

when they choose to use advanced digital services (see Figure 10). This finding is supported by our interviews and workshops where services and training resources provided by small business associations are found useful to small retail businesses.

The small business association participant explained that they offer digital training to their members including face to face, online and hybrid sessions.

> *[Small business] can access very specific practical video lessons and tools on how to think about and do particular things inside a business. And then the fourth area inside business advantage is live training so they can attend monthly live interactive webinars if they can't attend them live, they can access replays of them as well as a set of online training in management and people management skills, sales skills. You know dealing with supplier type skills. So there are training videos that they can access inside there, so that's called business advantage. That's our premium membership.* (SBA)

One of the small business interview participants said that she completed digital training offered by the Victorian Chamber of Commerce which she found invaluable.

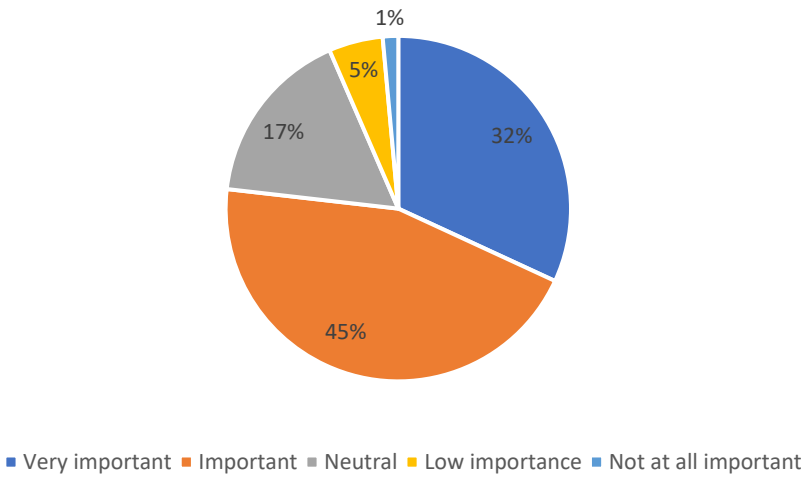

Figure 10. Information Source – Industry and Small Business Associations

Service Provider Marketing

Out of 138 surveyed small retail businesses that have been using advanced digital services, 72% service providers' advertisement or offers, as well as social media recommendations, as key sources of information for choosing advanced digital services (see Figure 11).

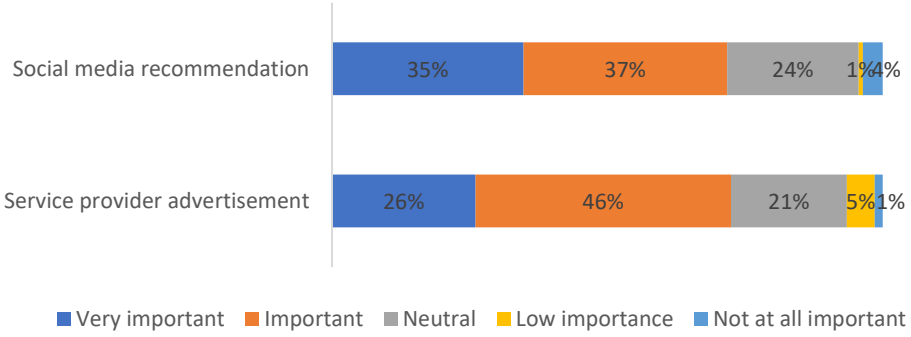

Figure 11. Information Source – Service Provider Marketing

Digital Service Provider Switching Behavior

Small retail businesses were asked in the survey if they had switched to another service provider for their advanced digital services in the past three years. The top five advanced digital services that small retail businesses have switched providers for include e-commerce solution (41%), IT/tech support (39%), social media marketing (36%), digital accounting solutions (36%), and cloud storage (36%). In addition, in the past three years more than 30% of small retail businesses have also switched service providers in business planning tools, cybersecurity, and productivity software (see Figure 12).

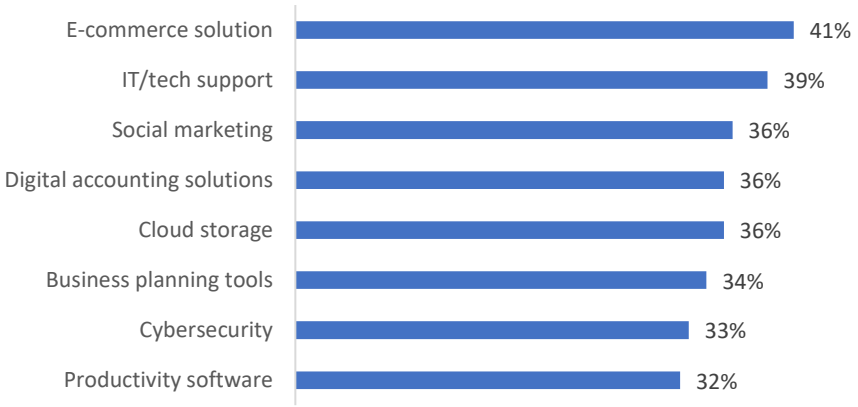

Figure 12. Small Retail Business Advanced Digital Service Provider Switching Behaviour

State of Digital Services in Small Retail Businesses

The internet has been widely adopted in surveyed small retail businesses. Nonetheless, not all small retail businesses are satisfied by the quality of their connection. Nearly one in five survey participants indicated that the existing internet connectivity is inadequate for their businesses. 73% of surveyed small retail businesses have established and are running an online store while 71% of respondents have a website that is optimised to support mobile browsers (see Table 14). More than 80% of respondents indicated that they are using various software to manage their business functions across accounting, sales, payment processing, storage, project management, customer relationship management, and office management. 74% of respondents indicate that search engine optimisation tools are used to direct traffic to their website. 73% of respondents believe that measures around cybersecurity they have implemented offer effective protection. More than three-quarters of respondents said they are using social media and engaging in digital marketing to attract new customers and retain existing customers.

Table 14. State of Digital Service in Small Retail Businesses

Description	Count	Percentage
The existing internet connectivity is adequate for my business	251	82%
Small business software is used within and across my business	248	81%
An online store is up and running	224	73%
Website is optimised to support mobile browsers	218	71%
Website is optimised for search engines	226	74%
Social media and digital marketing are effectively used	236	77%
Cybersecurity is adequately protected; data privacy is effectively maintained	224	73%

Small Retail Business Performance

The last three years have seen some changes in the small retail business segment. 80% of surveyed small retail businesses have attracted new customers over the past three years. 76% have improved customer retention, while 75% said they had introduced new products/services (see Figure 13).

Between 55% and 74% of respondents indicated that they increased sales, expanded turnover, undertook product and/service innovation, and improved their profitability.

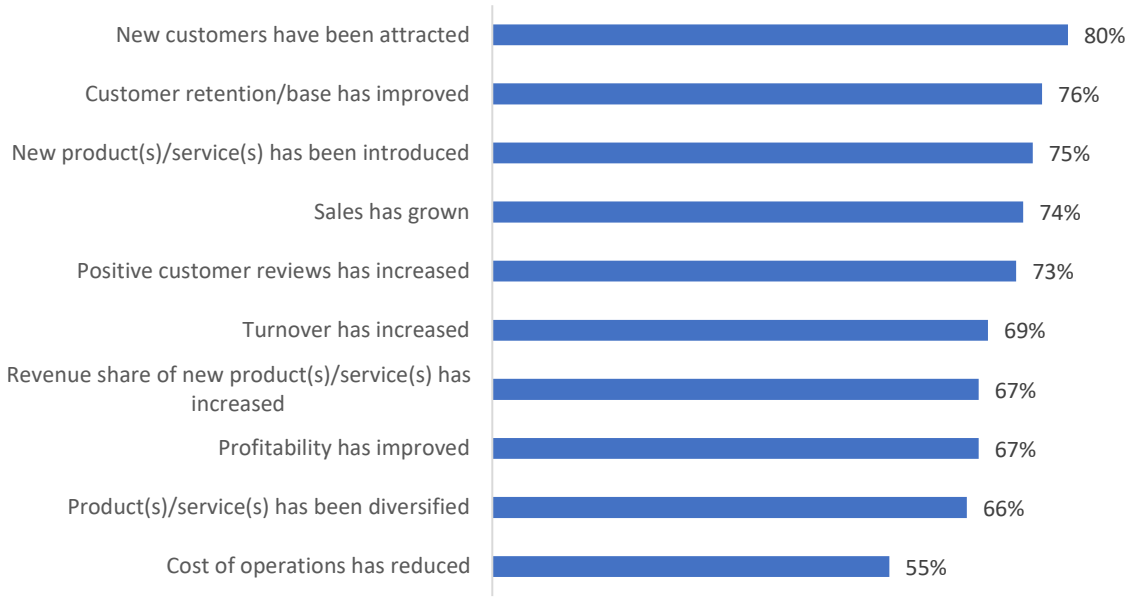

Figure 13. Business Performance in the Past Three Years

Part of the reason for this improvement in performance may be attributed to the change in the business model over last three years, with a greater share of the businesses opting for a greater online presence as discussed previously (see Figure 2). The effect of the online presence of small retail businesses on their performance is illustrated by an interview with a small business owner:

> *… we're lucky enough to completely transform our web presence, that was pretty much in readiness for the start of COVID, which was perfect, and now… my online presence where I think we grew 800% just purely from an online perspective last year*. (SR1)

Compared to small retail businesses that have not adopted advanced digital services, a slightly greater percentage of small retail businesses that have adopted advanced digital services stated that they strongly agree or agree with the statement that their customer retention/base has improved over the last three years, although this difference is not statistically significant (*p*-value = 0.497). This low level of statistical confidence is not surprising. Only about 40% of the small retail businesses reported that they have increased their online presence over the last three years, while 55% reported no change in their business model, and 5% reported a decrease in their online business. Moreover, not all small retail business that increase their online business use advanced digital services. More importantly, the impact of COVID-19 is a general decrease in demand for many retail

products and services. Therefore, only a small percentage of businesses will experience an increase in their customer base or retention (see Figure 14 and Figure 15).

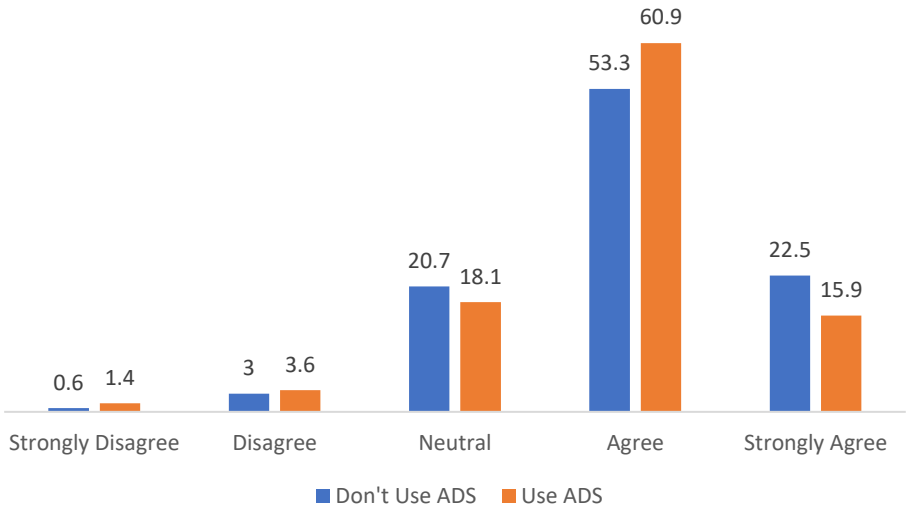

Figure 14. Small Retail Businesses Use of Advanced Digital Services and Customer Retention

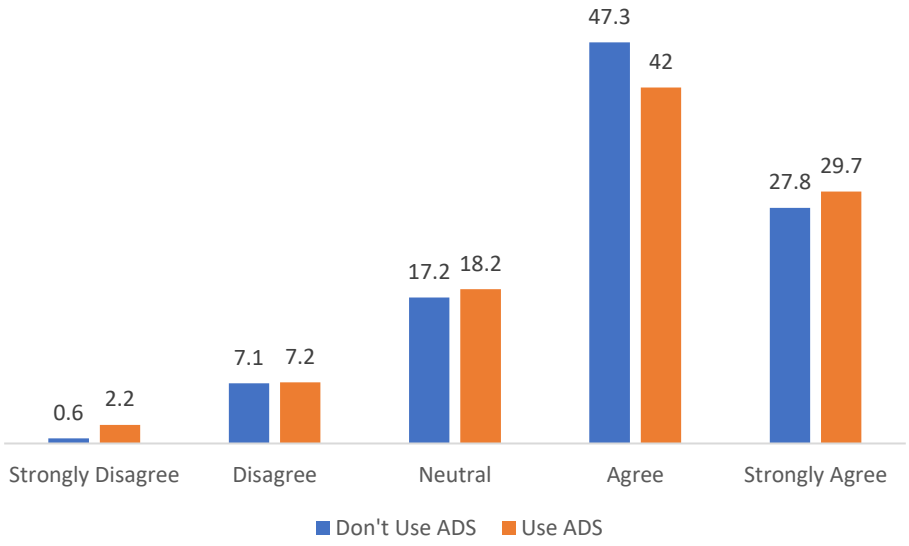

Figure 15. Small Retail Businesses Use of Advanced Digital Services and Sales Grown

Challenges Leading to Not Using Advanced Digital Services

169 survey participants who are not using advanced digital services were asked about the perceived challenges. The key barriers include information challenge, uncertain ROI, poor customer service, and poor user experience.

Information Challenge

Our interviews found that two of the main challenges that prevent small retail businesses from using advanced digital services is the proliferation and complexity of information to consider when choosing the products and services, and too many digital service providers to choose from. The schematic diagram depicted in Figure 5 illustrates just some of the number of decision variables associated with their adoption of advanced digital services. Some of the complexity stems from the fact that for a small business owner, their use of advanced digital services represents an ecosystem. Each piece of functional software must be managed effectively in its own right but must also integrate with their existing digital architecture. Two small retail businesses and one small business association interviewed believed telecommunications service providers could not cater to the complexity of the small business' business model and digital requirements.

One interview participant explained that the value of having a telecommunications service provider act as an intermediary between advanced digital service providers and small business owners was questionable given the accessibility of those suppliers.

> *So I don't need to create my own environment or leverage a public cloud data telco would provide to put my tools on their space. Everything that I'm using and leveraging from software perspective is already publicly accessible via an Internet browser.* (SR1)

The finding from interviews is supported by the survey results which show the excessive amount of information to consider, and excessive number of digital service providers to choose from, represented key obstacles for small business use of advanced digital services, with 66% and 59% of 169 respondents citing these reasons respectively (see Figure 16).

The information challenge to small retail businesses when choosing advanced digital services echoes findings from the Australian Government (2018). The Taskforce found that information overload is a key barrier to small business 'going digital' as small business owners looking into digital services quickly become overwhelmed by the amount of information they are confronted with. It is difficult

to know what information to trust and what to ignore. One recommendation to overcome such an issue is to have reliable, trustworthy channels for accessing tailored information for small businesses.

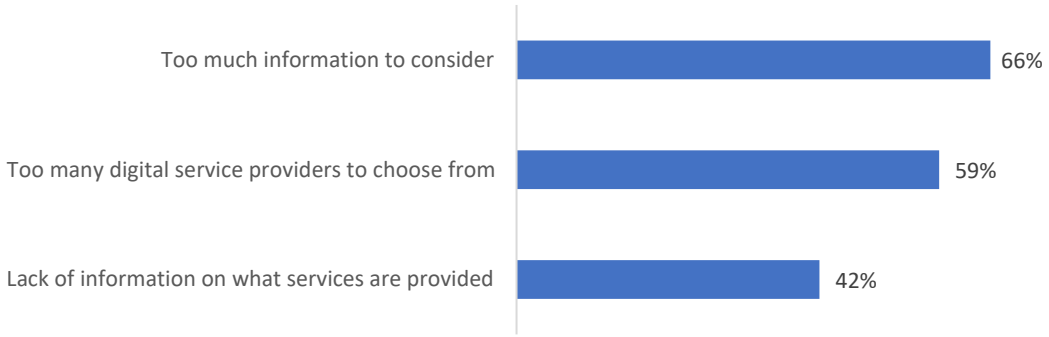

Figure 16. Information Challenge

Of 169 survey participants who are not using advanced digital services, 42% indicate a lack of information about what digital services telecommunications service providers are offering. This is explained by interview participants, none of whom used their telecommunications service providers to deliver advanced digital services. Of the seven retailers interviewed, four cited a lack of awareness that their telecommunications service providers even offered such services. A participant's response to the question was representative of this lack of awareness.

> *Well, we're with Telstra and it didn't occur to me to go to them to see what [advanced digital] services they might provide. I think we'd assume we'd received better service by someone who sort of specialises in that area and, you know, we go out and see who was available. To be quite honest, I didn't even know that Telstra offered those services, so the thought didn't occur to me to go to them.* (SR5)

The large information asymmetries evident in the provision of, and demand for, advanced digital services from small business owners was evident in a comment from SBA.

> *Some [service providers] make themselves look like... a global advertising agency, and the next thing you know is a small business owner and you're desperate. You're pumping cash out to them and you've got no real way of determining what their quality is, whether you're getting value, etcetera. So it might be something to be considered some form of accreditation, some symbol that a customer can use as a surrogate for quality.* (SBA)

Uncertain Return on Investment

Uncertain return on investment (ROI) is another key barrier preventing small retail businesses from using advanced digital services, with 57% of 169 survey participants that did not adopt any advanced digital services expressing such concerns (see Figure 17). This has been reported as an ongoing issue in small businesses in adopting digital technologies and services. As shown by the Australian Government (2018), fear of the unknown including the uncertain ROI is a major concern for small business owners when they plan to 'go digital' by adopting digital services.

This view is supported by our workshop participant who said:

> *They [small businesses] are not sure of if they spend X amount of dollars doing it [adopting advanced digital services] can get Y dollars back. So that return on investment thing is very real... most business owners would spend as much money as a digital marketing company wanted as long as for every dollar they paid, they got more back in margin. Now on the product or service that they [telecommunications service providers] sold. And even then there's an issue amongst them.* (SBA)

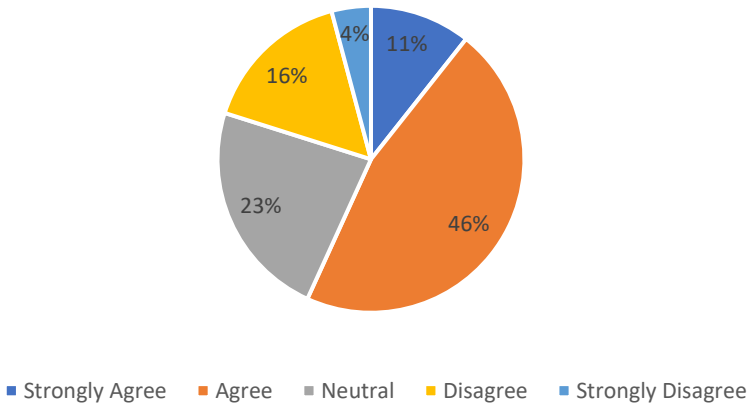

Figure 17. Uncertain Return on Investment

Spillover Effect

More than 30% of 169 survey participants who had not used advanced digital services from telecommunications service providers indicate key barriers to their use of advanced digital services were poor user experience of other products from telecommunications service providers, and poor customer service satisfaction (see Figure 18).

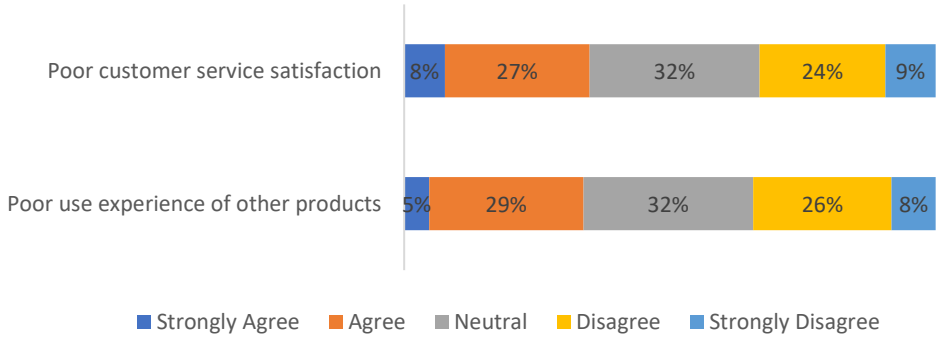

Figure 18. Spillover Effect

This finding is confirmed by several interview participants who had experienced difficulties with their telecommunications service providers in their use of basic digital services, including experiencing prolonged periods of poor internet connectivity issues and having to resort to using their mobile hotspot. There is concern about attempting unsuccessfully to resolve such issues with their telecommunications service providers, particularly the experience of being transferred on the phone to up to five different departments. They expressed doubts about the ability of their telecommunications service providers to adequately deliver advanced digital services given the perceived poor quality of customer service in providing basic digital services.

> … *when I've tried to contact them [telecommunications service providers], it's been a ridiculously painful experience. We went several years without even having a stable Internet connection, so you know, I would look anywhere else, but not Telco for [advanced] technology services.* (SR2)

Lack of Trust in Telecommunications Service Providers

Three interviewed small business participants cited a lack of trust around the level of their telecommunications service providers' expertise and competence in providing advanced digital services. For two of those participants, the lack of trust arose from a perception of poor quality of service and reliability around providing voice and/or broadband services. One of those participants expressed concerns about the level of understanding of, engagement with, and commitment to their business requirements demonstrated by hired telecommunications service provider staff who are located in offshore call centers. Both participants had experienced ongoing problems with reliable access to broadband prior to, and since, the migration to NBN. One small retail business interview participant explained that:

I mean Telstra was who was responsible for me not having the internet for a few years so. (SR 1)

Such a view is supported by the survey finding that 32% of surveyed small retail businesses not using advanced digital services consider the key barrier to adopting them is lack of trust in Australian telecommunications service providers (see Figure 19).

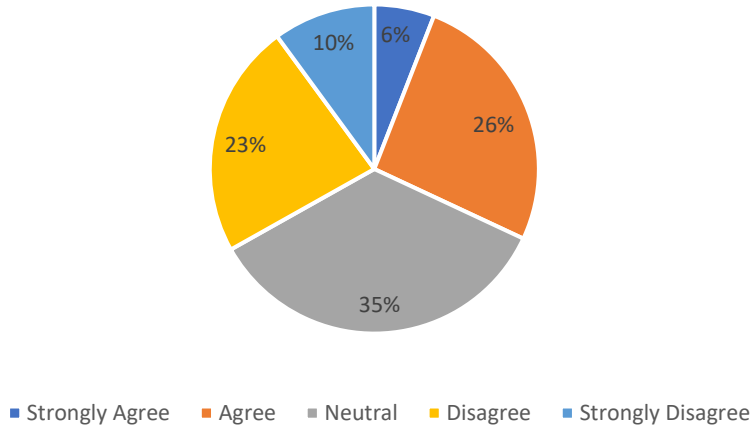

Figure 19. Lack of Trust in Telecommunications Service Providers

Issues in Using Advanced Digital Services

Business Issues

One of the issues that influences the adoption of advanced digital services is small businesses' propensity for risk taking. Small businesses are traditionally believed to be risk adverse towards technology adoption (Poon, 2000; English, 2020). To understand the risk-taking culture of small retail businesses participants were asked to assess the extent to which: risk-taking is encouraged in their business; the business owner is actively seeking innovative ideas; and the business is often the first to market with new products and services. The result shows 53% of the survey participants do not believe risk-taking is well developed. To test the association between their ability to take risk and use of advanced digital services, a *t*-test analysis was conducted.

The result shows that those small businesses that are risk-takers are more likely to use advanced digital services. These businesses featured a risk-taking culture, the business owner was actively seeking innovative ideas, and was often first to market with new products and services (see Table 15).

Table 15. Risk Taking Culture and the use of Advanced Digital Services

Risk taking	Mean		F	Significance
	Use ADS	Non-use ADS		
Risk taking is encouraged in my business	3.39	3.31	4.556	0.034*
The business owner (I) is actively seeking innovative ideas	3.83	3.75	9.026	0.003**
My business is often the first to market with new products and services	3.62	3.34	4.329	0.038*

**p<0.05, **p<0.01*

Telecommunications Service Providers Issues

Out of 138 small retail businesses that had been using advanced digital services, most respondents cited one or more of five problems as barriers associated with using advanced digital services: high cost (92%), unsuitable products and services (86%), difficulty with installation (81%), poor customer service experience (80%), and hidden costs (77%) (see Figure 20).

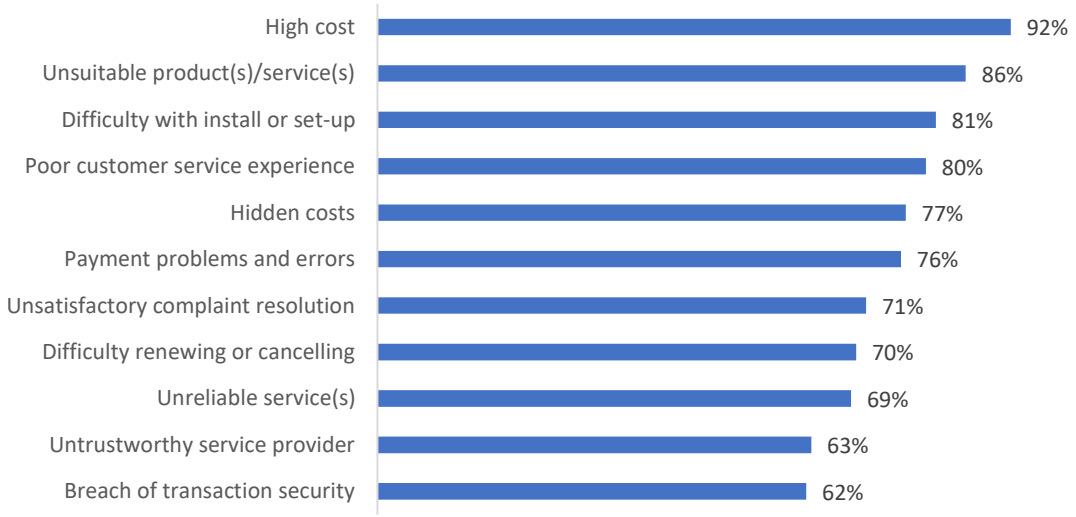

Figure 20. Issues Small Businesses Encountered with using Advanced Digital Services

Cost

92% of 138 surveyed small retail businesses that use advanced digital services reported high cost as the main issue in their use of advanced digital services. This can be related to the unique characteristics of small businesses in the lack of financial resources (Leong, 2019). In the findings from ACCAN (2016, 2020), high cost has been reported as a real issue faced by small businesses in

their use of basic digital services from telecommunications service providers. As a result, they tend to opt for cheaper services that down the track may not perform as needed.

Our project finds that high cost is also an issue for small business use of advanced digital services.

> *I've gone out to variety of different agencies [telecommunications service providers] who provide those services [advanced digital services] and every element of what you need to be successful in this space would generally cost anywhere between 3 even potentially up to 5 grand [thousand] a month to deploy this… Then you got the advertising spend on top of that and if you want to do that well it could be anywhere between $1,500 a month. So this say 18K to do it well... So there's a lot of deep expertise required and a lot of cost to do it properly.* (SR1)

Hidden cost is perceived as another issue among 77% of 138 surveyed small retail businesses when using advanced digital services. This issue was reported by the TIO (2021) in its investigation of telco consumers' use of basic digital services. The findings show that the advertising and point-of-sale information does not cover key terms like total cost, and any relevant exclusions or limitations. To service users this information appears to be misleading, and so influences their decision to adopt advanced digital services.

Unsuitable Products or Services

86% of 138 surveyed small retail businesses that had been using advanced digital services cited unsuitable products and services as a key problem. This echoes the finding from the TIO (2020) in that the top complaint from small businesses in using telecommunications service providers' products are the unsuitable products or services they have committed to. When choosing advanced digital services, small retail businesses have many products/services and providers to consider, as demonstrated in the earlier discussion. The costs of getting the options wrong, particularly when combined with poor sales advice and recommendations from telecommunications service providers, can lead to purchasing unsuitable products and services. One recommendation for solving such issues is to assess small business capability and identify business requirements before selecting advanced digital services.

Poor Customer Service Experience

80% of 138 surveyed small retail businesses that had been using advanced digital services cited poor customer service experience as a key issue. This finding echoes findings from several earlier investigations (Market Clarity, 2013; ACCAN, 2016, 2020; TIO, 2020, 2021) of basic digital services usage from telecommunications service providers. Several interview participants expressed their concerns about the poor experience in dealing with telecommunications service providers.

Telecommunications service providers were not seen as being responsive to the needs of small business customers, particularly around timelines.

> *Now I bet you if I called up Telstra service to get a website setup. Would probably cost me four times more and they'd be sort of booking it all in for probably. You know, maybe I can speak to the consultant at the end of next week and you know.* (SBA)

Ecosystem Issues

There are several ecosystem issues arise from the interview and the co-design workshops that are considered important to be tackled for encouraging the use of advanced digital services in small retail businesses.

Lack of Understanding of Small Business Requirements

Several interview and workshop participants expressed frustration at the lack of understanding of small business requirements displayed by governments and industry associations. There was a view that a 'one-size-fits-all' approach to small business requirements around digital capabilities was inappropriate and misguided. One small retail business participant cited the example that at one workshop the expert recommended that small business owners set up and manage an Instagram account as their main digital marketing strategy. The participant's view was that this was inappropriate for some small business owners in attendance with low digital literacy. This reflects a perceived failure to understand the requirements of small business owners. The participant added that:

> *Grouping different kind of businesses with different kinds of revenue and different types of, you know, retail businesses are very different to manufacturing businesses and so on and their needs are very different. So maybe there's room within that to kind of segment out and provide better and more tailored information to those groups*. (SR2)

Another interview participant pointed out that some state government grants designed to encourage small business owners to improve their digital capabilities were either inappropriate or not carefully tailored to small business needs.

> *We weren't eligible for that because we're already set up on some of the software. I was really surprised that some of the software they had on there was like very niche or not relevant.* (SR1)

The participant from a small business association further added:

> *Providing a $1200 you know for the first year of subscribing to some software package, let's say Salesforce.com, for a CRM system, it is generally speaking a waste of time because the business owners don't really then invest unless there's some money that they're putting in as well some payment, they'll have a crack at something for free. But generally speaking, it's all a bit too hard and they don't really have the time. But if they're not prepared to put a bit of money in and then invest some effort in the basic educational essentials.* (SBA)

Lack of Quality Advisor

This whole digital business area, particularly digital marketing, is incredibly complicated. Digital platforms change at a far faster rate than traditional professions. Yet in those professions there are minimum education requirements and professional standards, alongside ongoing continuing professional development requirements. Our interview and workshop participants raised the issue that at small business workshops and other forums there is a lack of quality advisors who understand small business operators' levels of digital literacy:

> *I did a workshop with the Chamber of Commerce, which was called advanced social media. The tutor gave me the advice that I should get my business onto Myspace because that's where all the young people are… I was so upset because I had to sit through six-hour workshop that I could have talked better, but also I was watching all of the people in the workshop be given this inappropriate advice… We're being told to use all these services that are not going to be beneficial for us and are actually gonna waste all of our time.* (SR2)

Conclusion

The project aims to identify small retail businesses use of advanced digital services offered by Australian telecommunications service providers. It also investigates the issues and challenges those small businesses face in utilising such digital services.

Our results show that COVID-19 has been a game changer to the business model of small businesses. Such a change reflects the increasing needs of small retail businesses to remain competitive by reaching existing and new customers through accessing advanced digital services, including e-commerce solutions, digital platforms, and social media.

A comparative analysis of advanced digital services being offered to small businesses reveals that the breadth and range of such services, and the pricing models adopted by the major telecommunications service providers in Australia, are comparable to their peers in the United States and United Kingdom. Nonetheless, most of the interview and survey participants indicated that they prefer other service providers for advanced digital services rather than telecommunications service providers. This was due to lack of awareness that their telecommunications service providers offered such services, and/or a lack of confidence in the ability of the telecommunications service providers to cater to the digital requirements of their business. Subject to their level of digital expertise and available resources, participants either undertook a digital transformation themselves or hired external consultants. Consequently, the reluctance to use telecommunications service providers did not appear to be a significant barrier to our sample of small businesses in enhancing their digital adaptability. Given that small businesses can use advanced digital services through third party vendors directly, or via external contractors, there does not appear to be a compelling case to subject telecommunications service providers to universal service obligations around their provision of advanced digital services.

The research shows that telecommunications service providers are not yet the main providers of advanced digital services. Nevertheless, the issues and disruptions small businesses face in basic digital services affect their digital business model. Further research is needed to model and estimate the full effect of telecommunications service issues on small businesses.

There is some evidence to suggest the advanced digital services offerings made by telecommunications service providers in the Australian marketplace are difficult for consumers to understand and compare across carriers (Australian Government, 2021). As small businesses use of,

and demand for, advanced digital services continue to grow, what mechanisms are in place to ensure that they are treated fairly and is there scope to strengthen safeguards? The Telecommunications Consumer Protections Code safeguards the rights of consumers of telecommunications products and services, which would include advanced digital services. ACMA enforces the code of conduct which is designed to ensure good service and fair outcomes for consumers. Separately, telecommunications service providers in Australia are subject to the government's Universal Service Guarantee (USG) which is designed to protect customers' access to broadband and voice services, regardless of their location.

The case for extending USG to the provision of advanced digital services is unclear for two reasons. First, business customers can source such services from third party vendors directly, notably firms that produce and sell cybersecurity services, paid cloud computing services and productivity software. Second, careful consideration would need to be given to developing robust measures of the minimum level and/or quality of advanced digital services to be delivered under a USG thanks to the heterogeneous nature of the service offerings.

The study has several limitations. The small sample size of the study might not be representative of the population of small retail businesses and their use of advanced digital services. Obviously retail industry is more focused on e-commerce, digital marketing and customer experience solutions which are not a priority for small businesses in other sectors. Thus, the findings should be interpreted as being indicative only rather than conclusive. Research that investigates the digital adaptability of small businesses in other sectors is needed to establish the validity of the findings in this study for other small business sectors. Further, this project has a limited voice from telecommunications service providers. Although we sought to obtain the views of, and insights from different telecommunications service providers, we only secured one representative from a telecommunications service provider. Thus, the findings of this project may not have captured the full picture of small retail businesses use of advanced digital services from the telecommunications service providers' perspective.

Digital adaptability is a means to success rather than an end objective. The end goal should be improving the productivity, competitiveness, and resilience of small businesses. Research into the effect of digital adaptability on small businesses productivity is needed to identify what conditions and strategies enable small businesses to achieve productivity outcomes by adopting advanced digital services and digital adaptability.

The research shows that telecommunications service providers are not the main providers of advanced digital services. Nevertheless, the issues and disruptions small businesses face in basic digital services affect their digital business model. Further research is needed to model and estimate the full effect of telecommunications service issues on small businesses.

Recommendations

Recommendations for Small Businesses

When choosing advanced digital services, small retail businesses have many products/services and providers to consider. The costs of getting the options wrong, particularity when combined with poor sales advice and poor recommendations from telecommunications service providers, can lead to the choice of unsuitable products or services. One recommendation to solve such an issue is to assess small business capability and then identify business requirements before selecting advanced digital services.

As small businesses digitalise their business model and accelerate the adoption of digital services, their exposure to cybersecurity threats and vulnerabilities increase. The impact of a cybersecurity incident (such as denial of service) for small retail businesses, especially those either fully or mostly online, could be devastating. Small business owners and managers need to develop their capability to protect their business by adopting relevant cybersecurity guidelines that cater to the specific needs of small businesses, such as the Australian Cyber Security Centre's small business cybersecurity guide (ACSC, 2021). They need to make cyber resilience a key pillar of their digitalisation decision making when choosing advanced digital services vendors and products.

Recommendations for Small Business Associations

Digital adaptation is not easy to achieve. It requires an enduring commitment, knowledge, skills, and financial resources. For some small retailers, and small businesses in general, orchestrating digital adaptation can be difficult. Small business associations, as trusted small business voices, can play key orchestration roles for small businesses' digital adaptability journey. In addition to their advocacy role, small business associations should organise frequent forums between small business owners and digital service providers to facilitate information sharing on providing advanced digital services. They can forge partnerships with the vocational education training sector and dual sector universities, to develop skills and training programs that enhance small businesses' digital capability. These programs need to be dynamic and respond to the emerging realities of the small business operating environment.

Recommendations for Telecommunications Service Providers

Telecommunications service providers can assist small retail businesses to increase their awareness of the advanced digital services telecommunications service providers offer by providing them with tailored information and tools in a language that is clear and easy to understand. They should also: develop better strategies to bundle basic and advanced digital services to improve affordability for small businesses; ensure that advanced digital services are supported by specialist business teams; and ensure their front office staff are adequately informed about small business plans so that they can accurately deal with small business customers, or alternatively direct small business customers to dedicated specialist teams. More importantly, small retail businesses' experience with poor quality of customer service from telecommunications service providers significantly affects their trust and service provider choice. For telecommunications service providers to emerge as trustworthy service providers for advanced digital services, they need to continue to improve their track record in resolving problems and issues small businesses face in accessing basic digital services.

Recommendations for TIO

The TIO has been dealing with small businesses' complaints in the landline, mobile, White and Yellow pages, and internet services. Given the diversity of products and services that telecommunications service providers are now offering and some small businesses are using, there is a case for expanding the scope of the TIO to cover issues that small businesses face in using advanced digital services from telecommunications service providers.

Recommendations for Government

Small retail businesses and small businesses in general play a significant role to the Australian economy. Australian Government has been providing support programs to enhance the digital capability of small businesses pre-, during and post-COVID 19 pandemics. These programs appear to have a piecemeal approach and separately target, for example, adoption of cloud services, cybersecurity, online storefront, e-commerce platform development and skills development. Navigating the eligibility criteria to benefit from these programs is a challenge to small businesses. There is a need for an evaluation of past and existing small business digital capability support programs to understand what is working and what has not, and devise integrated program packages that balance the business, technology, cybersecurity, and skills needs of small businesses.

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Appendix Survey

Section A: Demographics

Please respond to the question by ticking the choice that best describes you and your business.

1. **How many full-time (equivalent) employees do you have in your business?**
    - None
    - 1-4
    - 5-19
    - More than 20 (not eligible)

2. **What is the annual turnover of your business?**
    - Less than $2 million
    - More than $2 million (not eligible)

3. **Is your business in the retail industry?**
    - Yes
    - No (not eligible)

4. **What is your role in your business?**
    - Managing Director / Owner Manager
    - Store Manager
    - Staff (not eligible)

5. **Which category of retail trade is your business in?**
    - Motor Vehicle and Motor Vehicle Parts Retailing
    - Fuel Retailing
    - Food Retailing
    - Other Store-Based Retailing (Electrical, Clothing, Pharmaceutical, etc)
    - Non-Store Retailing and Retail Commission Based Buying and/or Selling
    - Others

6. **Which state is your business located?**
    - New South Wales
    - Victoria
    - Queensland
    - South Australia
    - Western Australia
    - Tasmania
    - Northern Territory
    - Australian Capital Territory
    - More than one state

7. **How long have you been running your business?**
    - < 1 year
    - 1 – 3 years
    - 3 – 7 years
    - 7 – 10 years
    - > 10 years

8. **What is your gender?**
    - Male
    - Female
    - Other/Prefer not to say

9. **What is your highest educational qualification?**
    - Primary education
    - Secondary education
    - Certificate/Diploma
    - Undergraduate degree
    - Postgraduate degree

10. **What was your business model before COVID-19?**
    - Fully online
    - Fully store-based
    - Mainly online + some store-based

- Mainly store-based + some online

11. What is your business model now?

- Fully online
- Fully store-based
- Mainly online + some store-based
- Mainly store-based + some online

Section B: Telco experience

12. Which of the following basic digital service(s) is your business currently using and who is the providers?

- Landline
- Mobile phone
- Fixed broadband (ADSL, cable, NBN etc)
- Mobile broadband (3G/4G)
- Wi-Fi
- EFTPOS

13. Is your business currently using advanced digital service(s) (i.e., e-commerce solution, social media marketing, productivity software, digital accounting solutions, business planning tools, cybersecurity, IT/tech support, etc)?

- Yes
- No

Branch 1: NOT using advanced digital services

14. On the scale of 1-5 (1=Strongly Disagree to 5=Strongly Agree), please indicate why your business is not using advanced digital service(s) from Australian Telcos:

- Too much information to consider
- Too many digital service providers to choose from

- Lack of information on what Australian Telcos are providing
- Lack of trust in Australian Telcos on the services
- Uncertain return on investment
- Poor use experience of other products from Australian Telcos
- Poor customer service satisfaction from Australian Telcos
- Others, please specify _____

15. On the scale of 1-5 (1=Strongly Disagree to 5=Strongly Agree), please indicate why your business is not using advanced digital service(s) from non-Telco IT companies:

- Too much information to consider
- Too many digital service providers to choose from
- Lack of information on what are providing
- Lack of trust in the services
- Uncertain return on investment
- Poor use experience of other products from the provider(s)
- Poor customer service satisfaction from the provider(s)
- Others, please specify _____

Branch 2: Using advanced digital services

16. Which of the following advanced digital service(s) is your business currently using and who is the provider?

- E-commerce solutions (e.g., e-commerce website)
- Social media marketing (e.g., Facebook, Instagram marketing)
- Productivity software and cloud computing (e.g., word processing, presentation)
- Cloud storage
- Digital accounting solutions (e.g., MYOB)
- Business planning tools
- Cybersecurity (e.g., security assessments, security education)
- IT/tech support (e.g., support for the hardware, software or networks)
- Others, please specify _____

17. **How important are the following sources of information in choosing a digital service provider (1=Not at all important to 5=Very important)?**
    - Website information (e.g., google search)
    - Service providers' advertisement or offer
    - Recommendation from family/friend/colleague
    - Recommendation from community organisation (e.g., financial counsellor)
    - Social media recommendation (e.g., Facebook, Instagram)
    - Industry associations
    - Australian Small Business Advisory Services program for Digital Solutions
    - Others, please specify _____

18. **Have you switched to another digital service provider in the past three years? (Yes/No/N/A)**
    - E-commerce solutions (e.g., e-commerce website)
    - Social media marketing (e.g., Facebook, Instagram marketing)
    - Productivity software and cloud computing (e.g., word processing, presentation)
    - Cloud storage
    - Digital accounting solutions (e.g., MYOB)
    - Business planning tools
    - Cybersecurity (e.g., security assessments, security education)
    - IT/tech support (e.g., support for the hardware, software or networks)
    - Others, please specify _____

19. **On the scale of 1-5 (1=Not at all to 5=Extreme extent), please indicate to what extent you face the following issues you face when using advanced digital service(s):**
    - Unsuitable product(s)/service(s)
    - High cost
    - Poor customer service experience
    - Unsatisfactory complaint resolution
    - Payment problems and errors
    - Difficulty with installation/set-up
    - Hidden costs
    - Difficulty renewing/cancellation
    - Unreliable service
    - Breach of transaction security

- Untrustworthy service provider
- Others, please specify _____

Section C: Capability

On the scale of 1-5 (1=Strongly Disagree to 5=Strongly Agree), please indicate your degree of agreement for each of the following items:

20. Digital literacy:

- I can deal with software problems (e.g., troubleshooting EFTPOS issues) by searching online
- I know how to synthesise and choose reliable online information (e.g., advice for selecting digital service providers)
- I have awareness of using copyrighted online information in an appropriate way

21. Technology capability:

In my business,

- The existing Internet connectivity is adequate for my business
- Small business software is used within and across the firm (e.g., accounting, sales, payment processing, storage, project management, customer relationship management, office management)
- An online store is up and running
- Website is optimized to support mobile browsers
- Website is optimized for search engines
- Social media and digital marketing are effectively used
- Cybersecurity is adequately protected data privacy is effectively maintained

22. Innovation capability:

- Risk taking is encouraged in my business
- Creativity is encouraged in my business
- The business owner (I) is actively seeking innovative ideas
- The business owner (I) is tolerant to mistakes when taking risks

- My business is often the first to market with new products and services

23. Please indicate the performance of your business in the past three years in the following areas:

- The customer retention/base in my business has improved
- Sales has growth
- The profitability has improved
- The turnover has increased
- The cost of operations has reduced
- Positive customer reviews have increased
- Product(s)/service(s) has been diversified
- New customers have been attracted
- The revenue share of new product(s)/service(s) has increased
- New product(s)/service(s) has been introduced

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