6-25-2019

The challenges of digital legacy management on the value of digital objects to older Australians

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This thesis is presented in partial fulfilment of the degree of

Master of Science (Computer Science)

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Edith Cowan University

School of Science

2019

Abstract

People spend a considerable amount of time and money in collecting digital objects. Nine out of ten Australians have a social media account but 83% of them have not discussed with their family members what should happen to their social media accounts when they die (Steen, D'Alessandro, Graves, Perkins, Genders, Barbera, Shi, McGrath & Davis, 2017). Only 3% of Australians who had a Will included social media accounts in their Wills. People collect digital objects yet little attention is paid to their preservation. 71% of Australians are unaware of what happens to their digital assets when they die (Ibid, 2017). The challenge for future generations lies in the creation of tangible digital artefacts by older people that they leave as a legacy for others (Manchester & Facer, 2015)

The collection of digital objects and digital assets that are valuable, that later will be passed on to future generations, is called a Digital Legacy. Digital objects have a value in terms of money, history, sentiment, and law. Unlike physical objects, digital objects can be stored in multiple locations and preserved in multiple locations. In one sense, this means that digital objects can make one's legacy seem immortal. However, it is difficult to control this process, especially for those who are left to conclude a deceased person's affairs. Concerns such as transferability and accessibility are key issues for the executors of digital assets. Other issues pertaining to digital legacies included the gap in Australian digital asset legislation between legacy benefactors and different private companies who trade in social media, cloud storage, and digital device systems.

Despite these challenges, older Australians are often unaware that they leave a Digital Legacy behind. However, less attention has been paid and very little work has been done in relation to the Digital Legacy of older Australians. This research study looked at the factors that are associated with the management of digital legacies of older Australians. This study considered the different ways in which older Australians perceived the value of digital objects, and how their digital content held a value as digital assets beyond their lives.

This study took the form of a mixed methods approach. A total of 32 older Australians who were over 65 years of age formed the basis of the sample population. Data was collected in the form of open ended, semi structured interviews to get a wider understanding to the reasons why digital objects have a perceived lesser value than physical objects. This data was evaluated in comparison with online samples of legacy-related End User Licence Agreements (EULAs) and Terms of Service (ToS).

The study found that whilst older people easily saw the value of physical and tangible objects, they had differing views about the value of objects in the form of digital photos, social media content, digital music, virtual games and online financial services. The study showed that older Australians held differing perceptions of the value of digital objects. It found inconsistencies in the rules and regulations of platforms and services that catered for digital content. The study was able to determine that these inconsistencies had a significant impact upon the perceived value of digital objects. Older Australians found it difficult to value digital objects that (upon their death) were inaccessible. Private companies in control of social media platforms, cloud services, and digital operating systems were regarded as serious constraints to digital knowledge preservation.

The research revealed that older Australians are particularly likely to value digital photographs because they understand the convenience of using digital content in terms of access, storage, and file sharing. The research recognised that beyond the older Australians' legacies, their family members and heirs found difficulty in managing the ongoing survivability of valued digital assets. Digital Legacies are important because they allow the transfer of knowledge (in digital form) to survive beyond individual owners.

The impact of this research is that there is a growing need for older Australians to actively manage their valued digital objects. Digital assets deserve the same considerations as physical assets. Restrictive practices that prevent asset mobility reduce the perceived value of digital objects. Legislative reform may be the answer to correcting this imbalance. A significant part of this study used the findings to develop a model of comparative judgement to assist in the clearer understanding of perceived values of digital objects.

Digital objects and physical objects are treated differently in terms of legacy management. This study indicates the importance of a restored balance between the two classifications.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

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Acknowledgements

This thesis would not have been possible without the support from Edith Cowan University and the School of Science. Studies such these are difficult to develop because they explore new ground and rely on specific strategies so as to enable an outcome in the form of new knowledge and the opportunity to effect change.

To my understanding, loving and beautiful family:

My father, Sanjeewa Dissanayake, my mother, Shayamalie Dissanayake, my sister, Madara Dissanayake, and my lovely grandmother- while I have been studying, you all have been with me every step of the way providing unwavering support. You all have been my main motivation to keep going. Thank you for your unconditional love. I hope I have made you proud.

To my patient supervisors:

Dr David M. Cook and Associate Professor Paul Haskell-Dowland who have supported me in my endeavours to develop my understanding and knowledge in this important field of computer science. Thank you for your patience and for your guidance (both academically and personally).

To my wonderful best friends:

Pooja, Manjinder and Ash, and Kanishka who have always been there for me through thick and thin. I am eternally grateful for your friendship. I love you all.

To the most wonderful couple:

Uncle Pubudu and aunty Dhana for your gentle love and care for me in Perth. Thank you so much for everything.

Glossary of Terms

Accessibility	Ability to access systems, use software, and retrieve or exchange information on devices of various types.
Apps	Mobile-based Applications often found on tablets, smartphones, and portable computing devices.
Bitcoin	A non-sovereign method of payment using a crypto currency that allows for the exchange of money without divulging the identity of the sender or receiver. Often used in the payment of transactions such as cyber fraud and ransomware.
Blogs	Web-based platforms used for an author to write personal opinion-based information including life histories and family recollections.
CD	A digital optical disc data storage format. The abbreviation stands for Compact Disc.
Computer	A general term used to describe a device capable of executing a command, or allowing for the use of a function. Can include desktops, laptops, tablets and smartphones.
CWA	The largest women's organisation in Australia. The abbreviation stands for Country Women’s Association.
Deceased user	A user who has passed away.
Digital Asset	Any kind of data stored in binary form over which a person has ownership or rights.
Digital Camera	A digital devices used to capture digital photographs which lets the user to edit, delete the captured photographs.
Digital Legacy	The concern of what would happen to one’s digital assets upon his or her death. A collection of digital assets defines one’s Digital Legacy.
Digital Object	Digital content which consists of data, and key-metadata.
Digital Product	A digital device in the form of a hardware device.

Digital Service	A digital platform in the form software or apps.
Digital System	A system that combines digital objects, digital products, and digital services.
Dropbox	A file hosting service operated by the American company Dropbox, Inc. that offers cloud storage.
E-book	An electronic format for text-based information as an alternative to a printed book.
E-mail	An electronic format for a mail often sent over the Internet.
EULA	End User License Agreement
Executor	The person who has the power and the rights to execute a legal document.
Facebook	A social media platform which emerged in 2014.
Financial	A type of value associated with ones finances and money.
GB	A unit used for digital information storage. The abbreviation stands for Gigabyte.
Historical	A type of value associated with one's history or past.
HCI	Human Computer Interaction
iCloud	An independent storage facility for a person's digital information
iPad	A type of tablet manufactured by the Apple company
KL	The capital city of Malaysia. The abbreviation stands for Kuala Lampur.
Laptop	A portable computer, usually consisting of a keyboard and a separate screen that when folded forms the protective lid of the device.
Legal	A type of value associated with laws and regulations.
Older adults	People who are aged 65 years or above.
Patience game	Solitaire

PayPal	An online payment platform that allows users to make payments without disclosing their credit card number or personal financial details.
RO	A repository for the collection and archiving of online research, usually curated by an Institution such as University Library. The abbreviation RO stands for Research Online.
SD Card	A microprocessor chip used to store digital data (often in the form of digital photographs from digital cameras.
Senior Citizen	A person (usually of age 65 or above) and often viewed as older people who are either retired or in the latter stages of their working life.
Sentimental	A type of value associated with ones sentiments or emotions.
Shutting down	closing permanently.
Smartphone	A mobile device with advanced telecommunication features such as the ability to perform internet search tasks, web-based applications, and text and email messaging. Smartphones can store and share large amounts of data across multiple platforms (e.g. email, Facebook, Instagram, iCloud, Online Banking and a wide range of mobile applications.
Social Media	Any platform for the exchange of information and ideas where both the original author of text or comments can receive replies from other people. The “media” becomes social as more people reply or add additional narrative to the original text.
Software	A collection of code based computer programs often in the form of digital services or digital platforms and apps.
Tablet	Tablets are portable, handheld computers. They're smaller than a laptop but larger than a smartphone.
Thumb drive	A USB device used to store data and information (including back-ups) which is in the size of a thumb.
ToS	Terms of Service
Transferability	Ability to transfer digital legacies, digital systems, digital assets, and digital objects.

Twitter	A social media platform consisting of a maximum of 44 characters per
Tweet	A post published by a user in Twitter
SMS	Short Message Service
USB drive	A thumb drive. (See Thumb drive)

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Chapter 1: Introduction

This chapter introduces the core elements of this thesis in four sections. These four sections cover the following areas. The first is the underlying problem of Digital Legacies. The second area examines the significance of looking at Digital Legacies, whilst the third area provides an insight into the research questions that the researcher has examined. The final part explains the direction that this thesis will take, indicating the key areas of the entire thesis.

1.1 The Problem

People have many digital assets but have not planned what will happen to those assets after their death. Nine out of ten Australians have a social media account but 83% of them have not discussed with their family members what should happen to their accounts when they die (Steen, D'Alessandro, Graves, Perkins, Genders, Barbera, Shi, McGrath, & Davis 2017). Only 3% of Australians who had a Will included social media accounts in them (ibid, 2017). A recent survey found that 81.65% of the Australians own digital assets. Social media, e-mails, and web-based banking records were commonly owned digital assets among Australians (ibid, 2017). However, remarkably 71.25% of these Australians who owned digital assets were not aware of what would happen to these digital assets after their death. Inadequate Australian legislation pertaining to digital assets made this concern further provoking (Steen et al., 2017).

There are four challenges that present upon the demise of an owner of digital assets. The first comes in the form of the ability for another person (usually the executor) to transfer these digital assets (Adu, Dube, & Adjei, 2016; Beyer, 2015; Carroll & Romano, 2011; David, 2014; Ferrante, 2013; Ljungberg, 2005; McKinnon, 2011; Prangley, Haller, & Coventry, 2013; Toygar, Rohm, & Zhu, 2013) . The second challenge lies in the ability to gain access to these digital assets (McKinnon, 2011; Prangley et al., 2013; Steen et al., 2017). Many authorised people (spouse, partner, executor, and benefactor) may not have the appropriate access because of encryption, password protection, or simple username and password credentials (Abdallah, 2002; Barn, 2012; Elliott, 2015; Ferrante, 2013; Joshi, 2015; Maurer, 2004; McKinnon, 2011; Park & Abril, 2016; Pinnick, 2017; Prangley et al., 2013; Ray, 2012; Stokes, 2015; Willis & Ferrucci, 2017). The third issue is about the longevity of digital assets. The longevity of a digital asset refers to how long a stored digital asset is available after the death of a user (Pinnick, 2017). The fourth challenge is associated with the level of understanding, different

perceptions, and definitions regarding the terminology of digital objects, digital systems, digital assets and digital legacies (Cook, Szewczyk, & Sansurooah, 2011; Graham, 2013).

All of these challenges suggest that there is a need for better policy in terms of the transfer and access to the digital assets of a deceased person. Many firms and corporations impose their own internal policies that restrict the fair access and passage to digital assets for those who operate outside the specific business structure. Examples of this are often seen in the form of bank account maintenance, where the process of shutting down an online account of a deceased user is largely out of the control of family members and requires a burdensome amount of documentation and verification (Beyer, 2015; Carroll & Romano, 2011; McKinnon, 2011; Prangley et al., 2013; Steen et al., 2017).

Third party access to the digital assets of a deceased person are more complex than simply gaining access (Ferrante, 2013). Different digital systems and platforms operate under different rules and policies. What is used on one platform may be completely different in another system. In the cases such as Yahoo and LinkedIn, accounts will be terminated once either firm receives an official notification of the death of a user (Park & Abril, 2016; Steen et al., 2017). In contrast digital assets held in an iTunes account remain static, and the files are non-transferable (Reis, 2015; Steen et al., 2017).

Of even greater difference is the social media giant Facebook (Willis & Ferrucci, 2017). The case of Facebook is very different from other companies. A Facebook user can appoint a "legacy contact" to take care of a Facebook account upon their demise (Hutson, 2017; Park & Abril, 2016; Steen et al., 2017; Willis & Ferrucci, 2017). Additionally, the legacy contact can opt or memorialise the account, or they can choose to delete the account (Bell, Bailey, & Kennedy, 2015; McCallig, 2014). This method results in disputes and disagreements from family members regarding the lack of choice, and offers only limited access and control. Any legal disputes pertaining to digital assets are (in most cases) directed to these companies. In the case of Australian citizens, such actions can be prohibitive as most of these companies are operating geographically outside Australia (Johnston & Wilson, 2012; Steen et al., 2017). Further differences are also evident. In the case of Facebook and Google the complaints must be lodged to the Federal District Court of Northern California, whilst for any issues relating to Microsoft, they are referred to the Federal District Court in Washington State (Carroll & Romano, 2011; Steen et al., 2017).

1.2 Significance

Older people represent a significant portion of the population. 82% of all deaths in Australia come from the older cohort of people aged 65 or over (AIHW, 2018). A recent study into estate planning and digital assets (Steen et al., 2017) showed that more than 70% of Australians who had some form of legal Will did not know what would happen to their digital assets. The vast majority of these assets (digital assets) were not in existence before the 21st century. Whilst existing Wills and planning have been commonplace for centuries, the emergence of digital assets in the last two decades has highlighted the need to understand more about how the ongoing nature and value of digital assets. In some cases that value is seen in terms of the financial value, whilst in other instances the value is a measure of their sentimental, historical, or legal worth.

Digital objects, digital systems, and digital assets overlay a substantial part of people's day to day routines (Gammack, Hobbs & Pigott, 2011). Therefore, it is important to comprehend the overall process and the steps involved in maintaining one's own Digital Legacy. Digital Legacies have a growing level of importance for people whilst they are still alive, and require management by individuals long before they pass away. Human Computer Interaction (HCI) deals with these steps in establishing a robust base for a Digital Legacy. However, extensive work is required on this notion in terms of legacy inheritance, ownership and scale of accessibility (Bissett & Kauffman, 2014; Johnston & Wilson, 2012; Steen et al., 2017). For younger Australians their digital legacies have been taking shape since before they were born. For older Australians Digital Legacies may only represent a fraction of the overall life experiences.

The degree of interaction with digital systems and digital objects has raised challenging issues such as the types of digital content people choose to share, the duration of availability of the digital content shared, the degree of accessibility by external parties and how heirs and benefactors will exploit and value the inherited Digital Legacy. The existing guidelines are considered as inadequate in the current system, and are likely to become even more problematic as Digital Legacies make up a larger proportion of all components of a deceased person's estate (Steen et al., 2017).

Therefore there is a need for further research that will make a contribution to the field of HCI by usable guidelines that will aid in designing digital legacies. Changes in Digital Legacy policy will improve the existing practices, rules and guidelines centred on Digital Legacy and inheritance. Further, this research will contribute to the body of knowledge by means of (1)

suggesting recommendations and guidelines that will assist in developing digital legacies for users especially considering different age limits (older adults), and (2) exploring the significance of the notion of one's Digital Legacy, and (3) assisting society to understand the value of digital legacies in terms of not just financial, but also sentimental, historical and legal terms.

The contribution to the body of knowledge will support the field of HCI in the following ways:

1. Enabling older Australians to leave behind a Digital Legacy, which can help their family to recall memories of the deceased family member. Digital memories that last forever may help families to reduce anxieties and distress.
2. Making older Australians aware of the existence of the digital objects that they use in their day-to-day lives, and will provide steps that they can take into consideration for the level of access that they wish to impart over their digital afterlife.
3. Assisting meaningful change in the challenge of transferring digital objects upon death. Recommended guidelines that will assist in addressing issues related to transferring digital objects that have a perceived value.
4. Defining the value of digital objects according to their monetary, historical, sentimental, and legal value. This will be beneficial in digital asset planning and in consideration of a Digital Legacy.
5. Considering the impact of one's Digital Legacy on one's individuality. The amount of time and money invested in digital objects is significant. Photographs posted on Facebook, photographs stored on iCloud, e-books, tweets posted on Twitter, online banking, and all other digital objects that a person deals with on a daily basis are part of one's legacy. Therefore, it is important to consider the impact of Digital Legacy on one's personal characteristics.
6. Companies which deal with digital objects may be required to consider the impact of digital legacies when developing solutions. Digital systems and platforms are in one sense the machinery of business and progress. Yet in another sense, these digital systems and platforms are also part of the overarching body of information that represents an individual's contribution to life. Without Digital Legacy management, much of the information about who individuals are and what they value can be lost as digital content. Without Digital Legacy management access to data is either stopped, lost, or goes into decay.

1.3 Research Questions

Based upon the significance of the need to understand and change policies about digital legacies, it became clear that further research would assist in bringing about a contribution that could assist change and development in the relatively young area of digital legacies. Coupled with the need for change is the focus upon older Australians, since statistically they are the cohort in greatest need of Digital Legacy reform. This research addresses three overarching research questions. A series of sub-questions contribute to this process. The questions and sub-questions are as follows:

1. What are the inadequacies in the guidelines for managing a person's digital afterlife?
    a. How consistent are the rules of Digital Legacy?
    b. What factors are associated with different rules regarding digital objects and digital assets?
2. How can the ownership and/or longevity of digital objects be protected?
    a. How long should digital objects be expected to survive?
    b. What expectations do older people hold that their family members and executors will be able to take control of digital objects under legacy conditions?
    c. How can a system of classification be devised to show the different values of digital objects?
    d. How can older Australians make informed choices about digital objects?
    e. How can older Australians be protected from unknown and misunderstood rules about digital objects?
3. How can family members become better equipped to resolve the online social media accounts and digital platforms of deceased family members?
    a. How easily can family members influence whether a deceased person's Social Media account or platform is shut down or memorialised?
    b. What steps can be taken to protect data relating to /or pertained from digital objects?
    c. What factors influence the control of reputations from digital objects that are derived from a deceased person?

These questions were chosen in order to establish an increased level of contribution to the knowledge surrounding expectations in terms of Digital Legacy management, Digital Legacy ownership and transferability, and Digital Legacy control. The overarching direction of this study was created in order to better understand the changing perception that digital legacies are

valued in different ways, and that these different values contribute to the need of Digital Legacy reform.

1.4 Roadmap of the study

The study follows a straightforward sequential approach to research. A review of the known literature established a background for the study, pointing to areas of need, and assisting in determining the main areas for a thorough review of the literature. A searching review of the literature was undertaken. This research review revealed gaps in research and assisted to shape the likely direction of the research in order to meet the needs of the research as explained in the research questions. Following the literature review an approach to the research pathway was established. In this section the specific method of research was established, and other methods and approaches were evaluated and then put aside. Following the creation of an established method and research approach, the research interview questions were established, drawing upon the literature review and incorporating the research questions into a framework of investigation that was likely to discover new information that would inform the study and provide insight towards establishing knowledge that would answer key areas of the research. From this investigation the research results were compiled and presented. From these results an analysis was undertaken and key findings emerged. From the analysis areas of discussion became evident, and a set of findings established meaningful recommendations and conclusions (Figure 1.1).

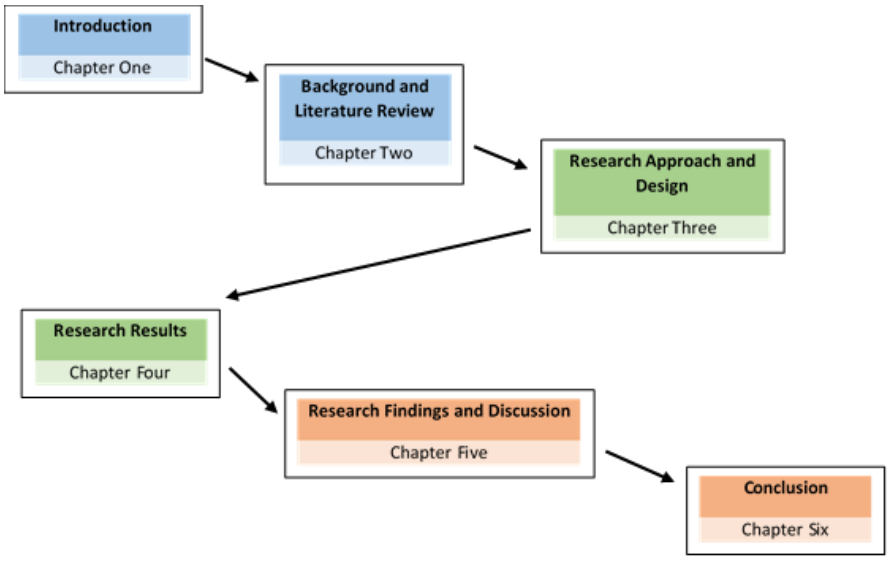


Figure 1.1 Roadmap of the study

Chapter 2: Background and Literature Review

2.1 Background

At first glance, a Digital Legacy can be regarded as a collection of the digital objects that are left behind for the next generation (Carroll & Romano, 2011). The concept of a Digital Legacy began to take hold after Facebook became popular with users (Ferrante, 2013; Willis & Ferrucci, 2017; Wright, 2014). Since then, digital objects as a part of identity preservation have become a significant feature of modern digital communication (Graham, 2013). With the ageing world population and the digital transformation of converting physical assets into digital formats, older adults face numerous challenges in engaging with digital technologies (Genders & Steen, 2017; Manchester & Facer, 2015). Some of these challenges include accessibility issues (Manchester & Facer, 2015). Other earlier digital transformational issues include minimal knowledge and inadequate understanding of digital content and the rules related to digital objects. They also extend to health issues such as dementia leading to memory loss, and visual or physical disabilities that will impede their use of digital technologies (Bergman & Rosenhall, 2001; Klee, Mordey, Phuare, & Russell, 2014). Further research revealed that there is a lack of flexibility in adapting to new technologies among the older Australians (Office of e-Safety, 2018).

Digital content such as photographs, videos, tweets, posts, blogs, electronic books, and social media accounts play a significant role in people's lives (Hopson & Hopson, 2012) and contribute to their historical record (Ferrante, 2013; Moon, 2007). The literature points to inadequate understanding, negligence, and in some cases a lack of attention paid to digital objects regarding the ownership or control of digital content (Bissett & Kauffman, 2014; Genders & Steen, 2017; Harvey & Harvey, 2011). This has led to data loss during system failures and is evident when the online services themselves cannot guarantee resilience (Odering, 2014; Wolverton & Davidson, 2013). In 2018, global access to YouTube (including Australia) was limited (Anderson, 2018).

Launched in 2004 (McGirt, 2007), Facebook was initially created for university students by Mark Zuckerberg (Jaffar, 2014). Since then, the social media platform has spread to over 1.5 billion users, providing an online community to its users. A recent report shows that users now spend an average of 55 minutes each day using Facebook (Brailovskaia & Margraf, 2016).

A variety of internet-based businesses operate without ethical rules, regulations, or predefined terms and conditions (Moustafa, 2016; Toygar et al., 2013). Social networks and online shopping sites often earn money by means of advertising while accessing the online accounts of users (Moustafa, 2016). Social media indirectly control and receive the ownership of the digital objects used by their users (Toygar et al., 2013). This issue is more common in situations when users do not provide Digital Legacy instructions, and families have to define their deceased loved one's digital afterlife. Therefore, these existing guidelines on Digital Legacy are monetarily-based rather than socially-based.

The widespread use of technology has made most people technology-based. However, less attention has been paid to managing the digital footprint left behind after death even though people are increasingly converting photographs and other physical assets into digital formats (Gulotta, Gerritsen, Kelliher, & Forlizzi, 2016). Many laws relating to digital assets are not governed by state legislation (Bissett & Kauffman, 2014; Hopson & Hopson, 2012; Toygar et al., 2013). Digital assets or digital objects include, but are not limited to digital photographs, videos, electronic mail, online blogs, electronic books, social media accounts, PayPal accounts, data stored on iCloud, Dropbox, etc. (Graham, 2013; Ljungberg, 2005; Moon, 2007). There is a lack of a unified, common understanding of what constitutes a digital asset. Different definitions indicate that the terms "digital assets", and "digital objects" have differing, and in some cases contested, understanding. Alternate research suggests that domain names, online businesses, Bitcoin, third-party hosting sites, passwords, usernames, software registration codes, and banking records are also digital assets (Steen et al., 2017).

However, businesses are transforming paper-based record systems into digital records as a step towards the management of digital assets. For example, Telstra charges $2.20 for a paper bill, which motivates its customers to have an electronic copy of their bill to be delivered as an email, which is cost free (Barker, 2015; "Charge unfair for paper bills," 2015). Life is uncertain and death could occur at any time. What if a Telstra customer who has opted in for an electronic bill dies? How long does the digital communication continue before a company reverts to a physical form of interaction to reclaim lost money? How many other digital transactions remain unresolved after a person has passed away? This is where the significance of managing digital objects plays an important role (Genders & Steen, 2017; Harvey & Harvey, 2011). Digital objects should be managed effectively, and this is called a Digital Legacy.

2.2 Principle areas of Literature Review

2.2.1 The emergence of a Digital Legacy

Early applications of Digital Legacy include applications and websites such as memorial pages, guest books and family blogs which share memories about the people who have passed away. In the early 1990s, online memorials were private and were linked with webrings: online contacts with people of common experience in death (Maddrell, 2012). Obituaries were digitally archived. Life experiences associated with illnesses were posted on websites. Cyber cemeteries, online memorials and PowerPoint presentations were created using digital photographs at funeral ceremonies. However, these digital systems could not offer longevity, and there was therefore a problem with the long-term preservation of these digital objects (Adu et al., 2016). Websites such as Geni.com and Ancestry.com allowed people to find about their ancestors online (Gulotta et al., 2016). Some memorial pages are charity-based. In general, memorial sites contain biographies and photographs of deceased people. (Maddrell, 2012).

Research conducted by Odom, Harper, Sellen, Kirk and Banks (2010) found that there were physical objects as well as digital objects amongst the cherished, sentimental and valuable artefacts of their research participants. Social media provides users with a space to grieve online and associated friends and family of the deceased person are able to participate in the grieving process (Brubaker, Hayes, & Dourish, 2013). The Andy Warhol Museum launched a live webcam feed of Andy Warhol's gravesite in 2013 with the objective of helping followers of Andy to stay connected with his pieces of art and Digital Legacy after his death (Begos, 2013). In 2015, Story Corps, a non-profit group, released an application that lets its users (soldiers) share the experiences of being a soldier and being imprisoned. The application was made available to the public through the Library of Congress. People were motivated to manage their digital objects via an application named Memory Lane (Kalnikaite & Whittaker, 2011).

Researchers in the Human Computer Interaction field have designed a number of systems that motivate people to share their life experiences and memories after death (Carroll & Romano, 2011; Thomas & Briggs, 2014). Amongst them are tilting picture frames, mourning stones, MemoryBox, BackUp Box, Digital Slide Viewer that let people archive and view emotional digital memories. The Family Archive (a subset of Ancestry.com) is considered as a well-established system developed in the aid of Digital Legacy (Carroll & Romano, 2011; Thomas & Briggs, 2014).

Using technology and virtual world for bereavement, remembrance and also for mourning practices to express one's sentimental values has become an important aspect of people's lives. A study that showed over 70% of people did not know how to handle their Digital Legacy assets concludes that digital legacies and the Internet are important tools for asset management in Australia (Steen et al., 2017). It has facilitated the creation of features for memorialisation and bereavement. The Way Foundation, networks for young widows and widowers and dedicated memorial websites such as gonetoosoon.com have become a platform for memorialisation (Maddrell, 2012). Websites like Forever Missed and virtual condolence books encourage people to share memories in the form of digital information about their loved deceased ones (Thomas & Briggs, 2014).

In 2000 the social media platform "Friends Reunited" took the initial step towards social media four years before the launch of Facebook. When it closed in 2016, users of the service had uncertainty and limited options in regards to access to their digital legacies. ("R.I.P. Friends Reunited" - BBC News online, 2016). The company announced intended access however the/ archive has not been made operational (Kleinman, 2016).

Some websites such as My Wonderful Life and Yahoo! Ending provide users with the option to plan their own funeral. Recent applications include LIVESON developed by a London-based advertising agency, Lean Mean Fighting Machine, which is being used by Twitter to leave a digital afterlife. Twitter uses an attention-grabbing tagline "When your heart stops beating, you'll keep tweeting" for promotional purposes. The website DeadSocial lets its users leave goodbye messages which can be delivered to specified recipients upon death (Thomas & Briggs, 2014).

Websites and Internet-based applications have provided people with numerous facilities that make their day to day lives easier. The legacy associated with death, mourning and remembrance has become an important aspect of these developments in the technology as legacy is centred on memories, relationships and identities (Gulotta et al., 2016). However, except for the Microsoft Memory Box system developed by Microsoft, there is neither an agreed method nor a model to manage post-mortem related digital information (Thomas & Briggs, 2014).

However, while examining the previous work related to Digital Legacy, it was noted that the population of older adults had not been taken into account except in a few cases (Manchester & Facer, 2015; Thomas & Briggs, 2014). Some researchers discovered that digital scrapbooks

could be used as a tool as a tool to help older adults to recollect past events. Research conducted by Lindley using eight older adults aged over 50 who were engaged in a series of activities with the objective of ‘‘recording their memories for posterity’’ based on inherited family archives. This research found that there were differences between personal and family (Lindley, 2012). Another piece of research studied how older adults manage their family-oriented archives and the significance of identity, which consists of a number of layers (Lindley, Marshall, Banks, Sellen, & Regan, 2013). Thomas and Briggs (2014) conducted a research project using QR-codes in order to investigate how older adults understand the concept of Digital Legacy, and to establish their preferences for their Digital Legacy. In other work it was found that Google has developed some systems to aid people to plan their digital afterlife specifically on social media and email accounts. The researchers examined the different motivations for preserving digital objects, the different strategies used in collecting and choosing the things that need to be preserved for a Digital Legacy and the ethical issues associated with the notion of a Digital Legacy (Manchester & Facer, 2015).

Some older adults have had minimal exposure to technology (Manchester & Facer, 2015). However, creating a digital inheritance is still valuable for them too. Inadequate research on Digital Legacy practices associated with older adults has left them marginalised. As a result, they do not have the resources to respond to the challenge to “dispose or preserve” digital assets (Thomas & Briggs, 2014; Toygar et al., 2013). Researchers also suggest the requirement for ‘assistive’ technologies to help older adults with physical issues that will impede their use of digital technologies (Manchester & Facer, 2015).

It was also noted that that there were very few articles pertaining to digital legacies in Australia. There are no broadly recognised Australian laws, rules and regulations about Digital Legacy. Any rules and regulations regarding such legacies in Australia are (for the most part) not highly visible, but rather they remain largely hidden from general and public view. The exception to this is with the 2018 My Health record legislation which provides specific rights in relation to digital records management and access (Bogle, 2018). The Digital Legacy literature is either US centric or Euro centric – and is a sign that Digital Legacy discussions are in their infancy. There are few significant research articles identified from Australia which discusses digital assets (Chowdhury, 2010; Cunningham, 2008; “Digital Assets on death and disability poses a problem,” 2017; Steen et al., 2017).

Australians adopt technology and interact with digital assets frequently. Results of a 2017 survey (Steen et al., 2017) state that only 18.35% of the survey participants did not own any digital assets whilst 71% who use digital assets were unaware of what would happen to their digital assets after their death. The study indicated that there is a greater need for legislation about digital assets, digital asset planning, and legacy management after death. This is because jurisdictions in Australia have so far demonstrated a low level of maturity in regards to Digital Legacy legislation. There is a paucity of information that informs the reform of legislative process required for digital legacies in Australia. The research of Steen et al, (2017) suggests that the requirement to educate the community regarding the impact of digital assets and digital assets planning after death is increasingly of great need. On the basis of the literature review Australia is in need of laws that provide estate executors with the control required to reduce the loss in value of the digital assets of friends or family who have passed away (Steen et al., 2017)

2.2.2 Digital Objects

Any kind of data that can be stored or transmitted using electronic or electromagnetic signals or as binary signals (ones and zeros) is called digital (Ljungberg, 2005). The term digital object had derived from with the introduction of object-oriented programming in the 1970s. Despite being pre-defined or user-defined, every instance of every class in object-oriented programming is called an object (Sebesta, 2012). Properties and methods form an object (Sebesta, 2012). An abstraction that can be any type of information is called a digital object. In technical sense, a digital object is more than a file or a database. A research project, defined a digital object as a data structure which is composed of data (digital content or digital material), and a unique identifier called a handle (Kahn & Wilensky, 2006). In general, a digital object is a combination of one or more files with data and metadata including digital object identifiers which can be stored or retrieved from a digital file system (Kahn & Wilensky, 2006; Lagoze, Payette, Shin, & Wilper, 2006; Fraser, 2010). Digital objects can be found in the form of Facebook profiles, Instagram accounts, iTunes accounts, online bank accounts, email accounts, and online shopping accounts.

Digital objects include, but are not limited to objects on the web such as YouTube clips, Facebook profiles, Instagram photos, Twitter posts, etc. (Hui, 2012). Another piece of research found that the terminology of ‘digital’ was found to be challenging (Graham, 2013). The lower

level of understanding, diverse perceptions among individuals, lack of awareness, and the inadequacies in the terminology are some factors that contribute to this challenge in the terminology. For example, another research project defines digital objects can be found in the form of a digital device (a smartphone, an iPad, a laptop), a digital platform (social media such as Facebook, Twitter, Tumblr, messaging services such as Blackberry Messenger) or digital media content (text, visual content such as photographs, images, and videos, animations). However, this research finding is in contrast with the definition of Hui for a digital object (Graham, 2013; Hui, 2012). Hui states that a digital object is a combination of data, and metadata whereas Graham defines digital devices, and digital platforms also as digital objects. As for Hui, a digital object is the digital content such as YouTube clips, Facebook profiles, Instagram photos, Twitter posts not the digital device or the digital platform (Hui, 2012). In conclusion, platforms such as YouTube, Facebook, Twitter, and Tumblr are not digital objects, and smartphones, tablets, laptops are also not digital objects but digital devices. Therefore, a digital object is digital content which can be in the form a piece of data, metadata, a digital object identifier, an app, a software.

A research project based on digital assets management encompassed text, photos, graphics, videos, streaming media, web content, and computer networks as some of the digital assets (McKinnon, 2011; Moon, 2007). Digital assets include but are not limited to, data of financial value such as domain names, online businesses, and Bitcoin, data of sentimental value such as photographs, and emails, data that are stored in cloud, and data such as passwords, usernames, images, audio, video, and documents which can be transferred in between various platforms with policies defined by each platform (Steen et al., 2017).

2.2.3 Digital Products

In computer science, hardware is defined as the tangible, physical components of a computer system (Englander, 2014; Gelenbe, Kahane, & World, 2009). Computers, laptops, smartphones, and tablets including iPads are some examples of digital devices that people use on a day to day basis (Graham, 2013).

2.2.4 Digital Services

New Information Systems (IS) are emerging every day. As a consequence, developers are developing digital platforms regularly to meet the industry needs (de Reuver, Sorensen, & Basole, 2017; Parker, Van Alstyne, & Choudary, 2017; Tiwana, 2014). Some of these platforms include, social media platforms such as Facebook for social interaction, operating systems platforms such as Android and Mac Apple operating system (iOS) for mobile based communication, and payment platforms such as PayPal and Apple Pay. Digital platforms or digital services are provided by digital platform providers or digital service providers. Some of these digital service providers are Google, Facebook, Amazon, and eBay (de Reuver et al., 2017). Researchers suggest that digital services can take the form of executable codes, software, and apps (de Reuver et al., 2017). Some digital services include items such as Facebook as a social media platform. Other services include iTunes as a digital music player or a digital media library, PayPal as an online payments service, eBay as an online shopping platform, and Gmail as an email service.

2.2.5 Digital Systems

A computer system is composed of hardware devices, software, data and information (Gammack, Hobbs & Pigott, 2011; Patt & Patel, 2001; Shelly, Freund, & Vermaat, 2011). From this definition, a definition for a digital system can be derived.

2.2.6 Digital Assets

The definition of a digital asset has evolved with the rapid development of the technology. In one sense, a reusable digital file becomes a digital asset (Moon, 2007). Another definition for a digital asset describes a digital asset as a valuable digital item that is owned (Ljungberg, 2005). Van Niekerk (2006) posits that a digital asset is comprised of text or media that has been configured into a binary foundation that contains the right to use it. In the early stages of digital asset management it included document management, content management, and enterprise content management but not knowledge management (Ljungberg, 2005). In a recent Australian study it was found that 81.65% of the Australians owned digital assets (Steen et al., 2017).

Digital assets can be identified within a broad scope of items, including digital documents, audible content, motion picture content, and other digital files as they occur in circulation (Zhang & Gourley, 2009). Digital assets can be described as being similar to tangible and intangible assets as things that people want to guard, defend, transfer, sell, acquire, or receive (Toygar, Rohm, & Zhu, 2013).

Digital Asset inclusions

Different types of Digital Asset inclusions
Electronically stored videos and photographs
Email
Financial information such as Trade Sharing
Online Bank Accounts
Blogs
Photos and Videos stored on social Media sites such as Facebook and Twitter
Domain names and Websites
Purchased content from providers such as Amazon and iTunes
Personal Financial and Health records
Transaction and personal details held on auction sites holding details
Financial online payment systems such as Paypal
Content on Government departmental systems including medical records and tax documents
Cryptocurrencies such as Blockchain and Bitcoin

Table 2.2.5: Digital Assets Inclusions adapted from (Cahn, 2011; The Elder Law Report, 2013)

2.2.7 Digital Legacy

A collection of digital assets defines one's Digital Legacy (Carroll & Romano, 2011; Maciel & Pereira, 2016). Statistics from a recent study show that 71.25% of the Australians stated that they were not aware of what would happen to their digital assets upon their death (Steen et al., 2017). Concerns such as transferability and accessibility by executors for digital assets after the death of a digital asset holder were the main causes that led to the challenges in Digital Legacy (Steen et al., 2017). Other issues pertaining to digital legacies included the gap in Australian legislation for digital assets and different policies used by different companies for bereaved user accounts and tradable digital assets (Steen et al., 2017).

2.3 Evolution of the terminology

The definition of Digital Legacy varies from context to context. However, the overall concept draws on a central idea. Hunter and Rowles (2004) describe the transmission of materials and non-material legacies as "passing on", and when passing on is associated with digital objects this is termed "Digital Legacy". The process behind Digital Legacy involves selecting what is

to be passed on and how someone wants to be remembered. Hunter and Rowles also presented a framework for legacy called the legacy typology. This framework was comprised of three legacies: biological legacy, material legacy, and values legacy (Hunter & Rowles, 2004) (Figure 2.1).

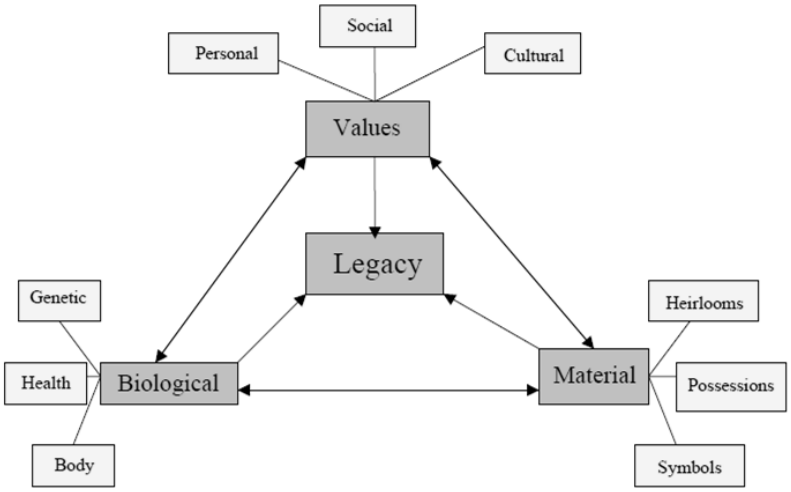


Figure 2.1 Legacy typology by Hunter and Rowles (2004)

Carroll and Romano (2011) describe Digital Legacy as a collection of digital assets left behind for others. They also comment that these digital assets are a part of one's overall legacy. The authors state that the notion of Digital Legacy has had an impact in a number of industries such as digital estate planning, posthumous messaging, online memorials, back up services, etc.

Some researchers define Digital Legacy as a meaningful but complicated method through which digital systems, digital information, digital values and digital possessions are passed on to others. These researchers also described how one's Digital Legacy depends on interactive technologies and digital systems. One's online information shapes one's Digital Legacy (Gulotta, Odom, Forlizzi, & Faste, 2013).

The research conducted by Thomas and Briggs (2014) related to an older adult perspective on Digital Legacy and describes Digital Legacy as a collection of valuable digital information which is hard to control and hard to pass on after death. The researchers note the significant challenge of helping people to manage the collection of digital information that will be available after their death.

The curation of meaningful records using digital information, vales and memories associated with one's personal legacy and passing them down to future generations is termed Digital Legacy. The researchers comment that the creator of a Digital Legacy can influence the way a person's digital artefacts and memories will be remembered. However the Digital Legacy is

constructed, it may be accessed by the next generation, and one's Digital Legacy may therefore be subject to change (Gulotta, Odom, Forlizzi, & Faste, 2014).

A Digital Legacy is also described by how digital media and caretakers of digital information deal with death and dying and how these digital objects can be integrated into digital systems, adding a value to future generations. One's life experiences and the significant digital records left behind can be transformed into a Digital Legacy (Gulotta, Forlizzi, Sciuto, & Kelliher, 2015). The concept of Digital Legacy was discussed as practices involved with legacy making, death, bereavement and remembrance regarding digital systems. It was also noted that popular platforms such as Facebook and Google have embedded a tool for Digital Legacy in their services, offering their users the opportunity to define what should happen to their information when they are deceased (Gulotta et al., 2016).

2.4 Digital Photographs

This section identifies the Digital Legacy policies adopted for digital photographs. The way information, values and properties are passed on to heirs is described as legacy. However, although this process is effective, it is complicated and slow (Gulotta et al., 2016). With the growth in the use of digital technology, interactive communication systems and digital information systems, digital objects and online relationships have become an important aspect of people's everyday lives (Gulotta et al., 2016; Gulotta et al., 2013). People share more information online, and digital data and artefacts have become an integral part of people's lives. Therefore, it is important to think carefully about Digital Legacy practices on Digital Legacy practices. A Digital Legacy provides an opportunity to pass ideas, possessions and values on to future generations (Gulotta et al., 2013).

Usually people prefer to be remembered by leaving a positive digital footprint that depicts a valuable aspect of their identity. The digital information left behind after death could be online or offline. However, issues such as format changes and damage to digital objects make the notion of Digital Legacy challenging. The decay and ageing associated with physical objects are also common to digital objects and this affects longevity and security (Gulotta et al., 2013). Research has found that people value the digital objects and practices associated with Digital Legacy technologies. Previous research has aimed to discover how existing practices in regard to physical legacies can be adapted in a way that suits digital legacies. Some research studied how people organise their digital artefacts in the form of family archives, whereas some research investigated how physical souvenirs in the home motivated people to adopt a system

supporting a meaningful Digital Legacy. Furthermore, recent research also discussed the devices that create meaningful online relationships associated with memorable digital memories (Gulotta et al., 2013).

The methodology implemented by Gulotta, Odom, Forlizzi and Faste (2013) created three systems: (1) Blackbox, a file-archiving website; (2) BitLogic, a website showing how Photographs decay from images to bits; and (3) DataFade, a website that simulates the decay of Photographs, taking into account physical phenomena such as climate and weather. These systems were designed to help people understand the process of aging using digital photographs. Research participants in this research were ten parents living in an urban region. The parents were aged 25 to 55 and were therefore old enough to understand the value of inheriting and preserving. Semi-structured interviews were conducted in the participants' homes. The researchers identified that there is a gap in assessing the value of digital objects, and that in general participants were sensitive about disclosing their online identity - especially emails and photographs with loved ones. However, the researchers stated that the findings and research results would have been more precise and less biased if the research would have been based on a population associated with a specific cultural background, as cultural significance motivates people to implement a Digital Legacy. In addition, researchers also suggested that a long-term study is required in the field of human computer interaction. This is based on the rationale that participants learn new concepts while taking part in research and this has an impact on the final results (Gulotta et al., 2013).

2.5 Different Platforms and Services

This section identifies the Digital Legacy policies adopted by popular digital platforms and services. Social media platforms such as Facebook and email service providers such as Google have implemented features to provide users with an effective Digital Legacy facility. Though this process was slow to address existing challenges associated with Digital Legacy practices, it provided a good start for social media platforms and established the notion that Digital Legacy must be taken into consideration as an embedded part of their services (Gulotta et al., 2016; Slaughter, 2015).

2.5.1 Facebook

As noted above, Facebook accounts can be memorialised (Facebook Terms of Service, 2018; Steen et al., 2017). An example is the Facebook page for the musician Prince (Prince Rogers Nelson). Facebook has been offering this feature, known as Legacy Contact (Nanos & Bray, 2015; Facebook Legacy Contact, 2019), since 2007. This feature lets the account holder nominate a contact who has the power to control the account upon your death. When Facebook is aware of someone's death, the profile stays on Facebook, but no one can access it or change it. If the account holder does not like the idea of memorialising, the digital executor must be informed in advance via a digital Will (Carroll & Romano, 2011).

Facebook prefers memorialising accounts over closing them down because there are a number of benefits associated with memorialising. Memorialising an account keeps you alive in the digital world where your loved ones can share your memories and the good times spent with them. It also acts as a platform for making valuable digital objects accessible after death. From Facebook's perspective, users are their products. Hence, Facebook and other social media platforms earn their revenue by advertising in memorialised accounts (Carroll & Romano, 2011).

In the case of Facebook, a user can request to be deleted from the system. However, whilst their outward facing profile is removed from access, their personal data remains the property of Facebook. This includes the access to known connections and friends, and the known integration with other issues and events.

2.5.2 Twitter

Twitter's deceased policy (Twitter, 2019) states that it will delete a person's account after it has been given proof of death. A copy of the ID of the person who is making the request and a copy of the deceased person's death certificate are required to be shown as proof.

2.5.3 LinkedIn

LinkedIn removes the profiles of deceased people, and they are then known as a Deceased LinkedIn Member (Carroll & Romano, 2011).

A similar challenge occurs with LinkedIn. User profiles can be removed from access, however core data about these individuals remains on the system (Carroll & Romano, 2011; LinkedIn, 2019).

2.5.4 Google and Gmail

Google's policy on deceased ones is known as the Inactive Account Manager. You can specify in advance that all the data should be deleted after three, six, twelve, or eighteen months of inactivity, or else you can pass your data to one or more persons (Google Privacy & Terms, 2019; Paul-Choudhury, 2011). These people were formerly called Google heirs and now called Inactive Account Mangers or Trusted Contacts.
In Gmail, the people who manage your Digital Legacy are called Inactive Account Managers (Google Privacy & Terms, 2019). This policy enables data to pass to the heirs, but they do not have real control of the account (Paul-Choudhury, 2011).

2.5.5 Yahoo

Yahoo wishes to maintain the privacy of its deceased members, hence at the time of creating the account all Yahoo account holders agree to a clause that account content is non-transferable and that Yahoo will terminate the account after the account holder has died (Steen et al., 2017; "Yahoo Terms of Service," 2017).

2.5.6 Microsoft

In the past Microsoft has employed a "Next of Kin" feature that provided for the sending of a DVD that contained all related data (Carroll & Romano, 2011). This feature no longer applies, and the current method of account closure does not allow for the transfer of data from any Microsoft-related platforms and systems (Microsoft Services Agreement, 2018). The 2018 term regarding closing a Microsoft account describes that upon a request to close the account, a suspension period of 60 days is applied. After this suspension period, the data and the content in the account is disassociated from a user except in the cases the companies are required legally to keep, return, or transfer to a third party identified by a user. Additionally, users are advised

to have a back-up plan for user content because Microsoft does not agree to retrieve any content or data from an account (Microsoft Services Agreement, 2018).

2.5.7 Apple and iCloud

The End User License Agreement (EULA) of Apple states that any Apple brand products including Apps in App Store, iTunes, and iCloud are licensed but not sold to the user. This further describe that any apple account is non-transferable including its license (Apple, 2019; Apple Media Services Terms and Conditions, 2018).

The EULA of iCloud states that iCloud accounts are non-transferable and users do not have a right of survivorship. Additionally, the EULA of iCloud states that any rights to one's Apple ID or content within an account will terminate upon one's death. A death certificate is required for the process of account termination. This will subsequently result in the deletion of content in one's iCloud account (Apple, 2019; Apple Media Services Terms and Conditions, 2018).

2.5.8 Different options offered by digital platforms and services for online account upon the death of a user

The literature suggests that there are four main elements that characterise the options for online accounts, and show the possible choices that can be used when a person passes away (see Table 2.5.8). Of these there are different options depending upon the intentions of the executor of a Will or the person responsible for closing or amending a person's Digital Legacy. In some cases this decision will affect the right to be forgotten. In other instances the key issue is about preserving an important memory. In other cases the decision is made in order to realise the transferable value of a digital asset, and in some instances the decision is designed to reflect the true status of a deceased person. For example, this would establish whether a person on a social media platform is alive or whether they had in face passed away (Table 2.5.8).

Options for Online Accounts when someone dies	
Close the Account	The concept of right to be forgotten is associated with this. The right to be forgotten states that individuals can say that their digital content will be deleted after their death – potentially without anyone knowing that it was ever there.
Memorialise the account	This could be done in remembrance of the deceased person if you still want to share their memories even after they are gone.
Pass on the account	If one's online accounts contain valuable digital objects, then you can specify to pass them on to an heir or to a group of your heirs after your death.

Ignore	The websites do not identify that the user has passed away and so leaves the account as it is ignoring the fact that the account of the deceased user still exists and remains active.

Table 2.5.8: Options for Online Accounts when someone dies as adapted from (Abdallah, 2002; Beyer, 2015; Ferrante, 2013; Park & Abril, 2016; Prangley, Haller, & Coventry, 2013; Ray, 2012; Willis & Ferrucci, 2017)

2.6 Gap: Defining the problem

2.6.1 A Simplified View of Digital Legacies

People are living in a world that relies on technology and digital information and systems (Green, 2010; Prangley et al., 2013). The literature suggests that digital assets are growing and that the value of digital assets is outstripping the value of physical assets (Beyer, 2015; Ferrante, 2013; Prangley et al., 2013). The following derived diagram (Carroll & Romano, 2011) will give a better understanding about a classification of digital assets or digital objects based on their value (Figure 2.2). In some instances a digital object can carry a value in one sense that is tied to a monetary value, but in another sense can carry a sentimental or historical value at the same time (Prangley et al., 2013). These distinctions are individual values that change from the perceptions of one person to those of another.

Figure 2.2 is useful in terms of distinguishing between monetary, historical, and sentimental segments of the digital object collective.

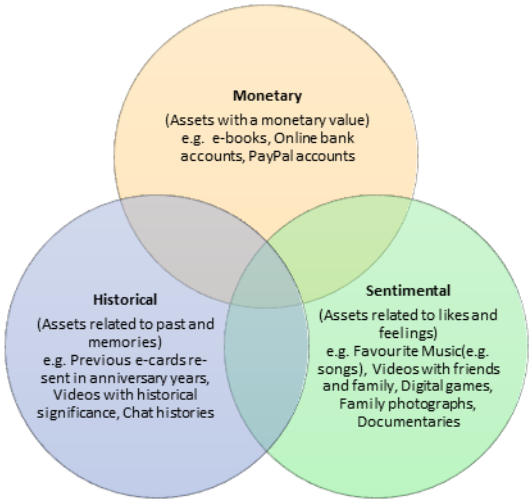


Figure 2.2 The re-classification of Digital Objects based on their value adapted from Carroll and Romano (2011)

There are, however, some issues of simplicity. Digital objects may start out in one form (for example a home movie), and may then be transferred to a different medium (e.g. Facebook or YouTube), whereupon a digital object might be both historical (as a past memory) and

monetary (as a video that generates click-through traffic). Thus digital objects can change their values as they transfer from one medium to another.

The following figure illustrates the three overarching concepts of the proposed research.

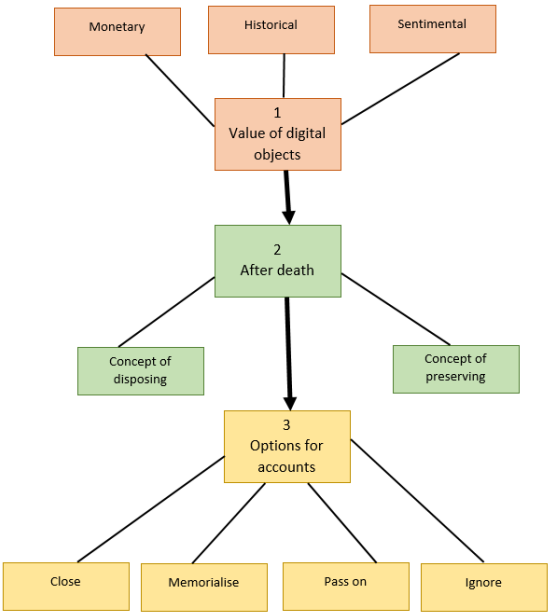


Figure 2.3 The conceptual framework of the proposed research

Figure 2.3 is beneficial in terms of identifying and studying the three concepts that the proposed research revolves around (Figure 2.3). This research is based on three concepts:

(1) the value of digital objects (in terms of monetary, historical, and sentimental)

(2) the significance of digital objects after death (the mechanisms of Digital Legacy associated with the concept of disposing: the right to be forgotten versus the concept of preserving: the privilege to be remembered)

(3) the essential four options for online accounts when someone dies (close the account, memorialise the account, pass on the account, and ignore the account).

2.6.2 The challenges of Digital Legacy

Though Digital Legacy is important in preserving and passing on valuable digital objects to the next generation, there are a number of challenges associated with this notion. The collection of digital objects is easy but managing and controlling them is more difficult, especially after someone has died. Researchers have also found that these inherited digital assets can

sometimes be a burden to friends and family (Thomas & Briggs, 2014). Previous studies state that people find it hard to dispose of mobile phones which are inherited from their loved ones upon death because although these digital objects cannot be used, they have personal content (Odom, Harper, Sellen, Kirk, & Banks, 2010). The research shows that the inadequacy of pre-defined rules on emails and homemade videos in terms of Digital Legacy was found to be challenging among research participants (Thomas & Briggs, 2014).

Recent research states that the companies working with digital assets have different policies for deceased users making it difficult to agree upon a common legislation for the digital asset planning of deceased users (McKinnon, 2011). The requirement to provide a range of documents for the shutdown of an account of a deceased family member makes the process of digital asset management planning of deceased family members a difficult process (Ferrante, 2013; Steen et al., 2017).

Online memorials can be a substitute for physical memorials. However, online memorials can be confronting, because friends and relatives suddenly see images of the loved ones who have died. Physically attending a funeral or visiting the family of deceased loved ones is quite different from logging in to an online cemetery and posting a message or physically attending a funeral. The lack of social contact in the digital world can cause social withdrawal (Maddrell, 2012).

The right to be forgotten, though important and selective, is violated by practices of technology. Digital memories least support forgetting. Forgetting is important in terms of life-logging and legacy. People prefer to forget especially if a memory is associated with something like a relationship breakup, emotional distress or a past mistake (Thomas & Briggs, 2014). Mobile applications such as Snapchat support the right to be forgotten up to a certain extent, but not completely (Piwek & Joinson, 2016).

The dispossession of digital remains and inaccessibility and lifespan issues of digital systems and services have also prevented people from addressing the issue of their Digital Legacy (Gulotta et al., 2014; Manchester & Facer, 2015). Furthermore, tradeable digital assets planning has many challenges associated with it. For example, records or files such as iTunes are non-transferable after the death of the account holder (Apple, 2019). However, a number of researchers in Australia are considering the public policy advocacy for improved government response (Johnston & Wilson, 2012; Steen et al., 2017).

2.6.3 The summary of this literature review

The purpose of this research was to understand the known literature in regards to the significance of one's Digital Legacy and to develop usable guidelines that will assist in developing legacy solutions specifically for older adults in Western Australia. Based upon this review of the literature, Digital Legacy can be defined as a process by which a person can keep track of or remember the digital objects which they have used during their lifetime. These digital objects highlight the significant life events of a person. Significant life events reflect one's identity. People may have difficulties in defining how these life events and their related digital objects should be remembered.

Digital Legacies can play a significant role following the death of an individual. A person's digital identity is important because it establishes a foundation for the ownership and transferability of digital objects (Bissett & Kauffman, 2014; McKinnon, 2011; Toygar et al., 2013). In particular, the value of these digital objects is considered as a legacy in terms of money, history and sentiment (Hunter & Rowles, 2004; Prangley et al., 2013).

2.6.4 Defining digital objects, digital products, digital services, digital systems, digital assets, and Digital Legacy

For the purpose of this thesis, a digital object is defined as digital content (including digital media content) that consists of data (source codes, Graphical User Interfaces (GUIs)) and key-metadata (metadata and identifiers). According to this definition, a digital object can be in the form of a digital account, a digital profile or processed data (information). The following diagram illustrates the definition of a digital object as covered in this thesis (Figure 2.4).

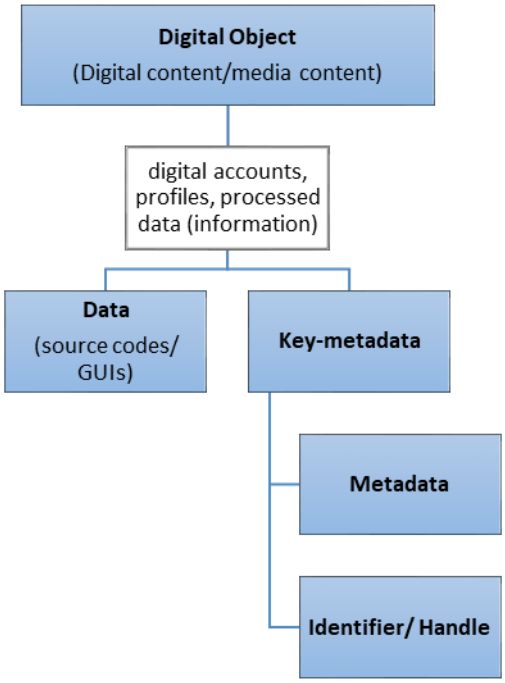


Figure 2.4 The Compositional elements of a Digital Object

For the purpose of this thesis, a digital product is defined as a digital device. According to this definition, a digital product can be in the form of a hardware device. The following diagram illustrates the definition of a digital product as covered in this thesis (Figure 2.5). This thesis discusses a number of digital products such as but not limited to computers, laptops, tablets, iPads, smartphones, digital cameras, USB/thumb drives, SD cards.

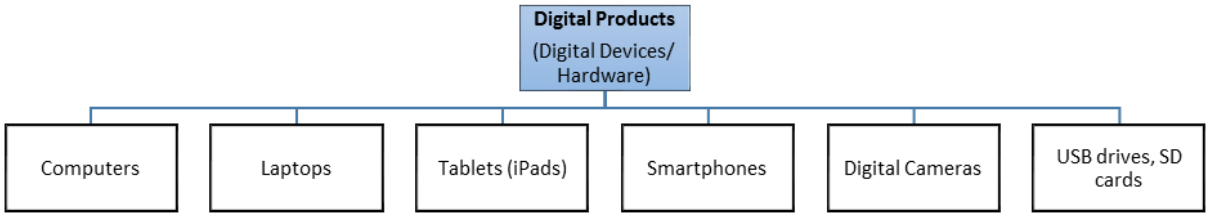


Figure 2.5 Digital Products in the form of Hardware

For the purpose of this thesis, a digital service is defined as a digital platform. According to this definition, a digital service can be in the form of software or apps. The following diagram illustrates the definition of a digital product as covered in this thesis (Figure 2.6).

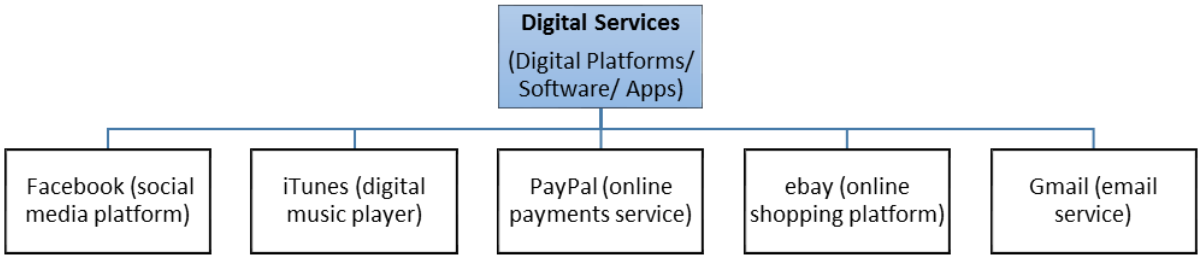


Figure 2.6 Digital Services in the form of Software and Applications

For the purpose of this thesis, a digital system is defined as a system that combines digital objects, digital products, and digital services. Some digital systems include but not limited to Facebook system, iTunes System, PayPal system, eBay system, Gmail system, etc. The following diagram illustrates the definition of a digital product as covered in this thesis (Figure 2.7).

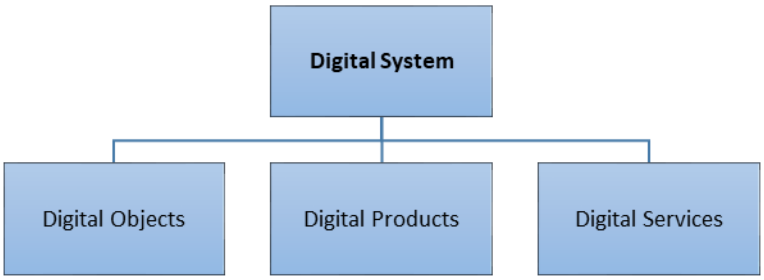
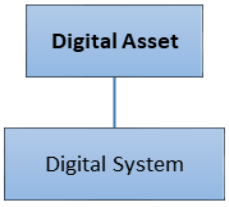


Figure 2.7 The three main elements of a Digital System

For the purpose of this thesis, a digital asset is defined as a digital system which is valued by the owner of the system (Steen et al., 2017), or by others such as the users of a particular digital system (Ljungberg, 2005). It extends to any type of data that is stored or managed in binary form under conditions where a person can demonstrate the right of ownership (Genders & Steen, 2017).

A digital asset defines a part of one's Digital Legacy (Steen et al., 2017). The following diagram illustrates the definition of a digital asset as covered in this thesis (Figure 2.8).



A digital asset if valued by the owner or by other(s) then it becomes a Digital System

Figure 2.8 The concept of ownership and the importance of a Digital System

The following diagram illustrates the definition of a Digital Legacy as covered in this thesis (Figure 2.9).

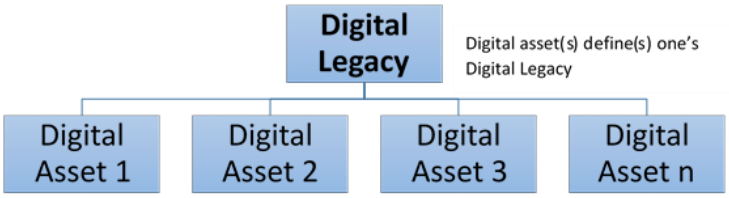


Figure 2.9 The concept of Digital Legacy in the form of Digital Assets

2.6.5 Research areas of significance

The literature review shows the principal areas of focus in terms of digital legacies, digital systems, digital objects, and digital assets. This thesis explores ten digital objects that the literature suggests may hold a value (Figure 2.10). Whilst there are more than ten types of digital objects, the literature repeatedly refers to ten main categories (de Reuver et al., 2017; Graham, 2013; Moon, 2007). The value of a digital asset can be seen through four different lenses (Figure 2.10). These values include historical, sentimental, monetary, and legal (Carroll & Romano, 2011; Hunter & Rowles, 2004; Prangley et al., 2013). The usage of digital systems, digital objects, and digital assets are compared with the preference to use them (Steen et al., 2017). Issues pertaining to managing one's own Digital Legacy are discussed (Toygar et al., 2013) under the four main areas of transferability, accessibility, longevity, and awareness (Figure 2.10).

This literature describes legacy management options for digital accounts after the death of an individual. In particular it shows two areas of legacy management. The first, based on an "after death" scenario, discusses the two concepts known as "the privilege to be remembered" and "the right to be forgotten" (Slaughter, 2015; Thomas & Briggs, 2014). The second area of legacy management discusses a "whilst still living" scenario. This looks at the five options for dealing with digital legacies by either closing accounts, memorialise accounts, ignore accounts, pass on/transfer, and remain agnostic (Carroll & Romano, 2011). In combination, the areas discussed here form a clear picture of the research areas of significance that influence Digital Legacies (Figure 2.10).

Figure 2.10 Areas that inform and influence the study

Chapter 3: Research Approach and Design

3.1 Methodology

The Choice of a Mixed Methods Approach to the Research

In forming the conceptual framework for this research, a number of research pathways were considered as part of the research design. A mixed methods approach has been chosen, with the emphasis being upon a mostly qualitative approach, to obtain a set of rich descriptions that would reveal important distinctions in what is a relatively new area of research. The approach also includes some quantitative data, which will assist in clarifying the comparisons in value assessments of digital legacies in their three identified categories of monetary, sentimental, and historical legacies. Whilst there is a paucity of literature in the area of digital legacies, several important contributions by Brubaker (2014) have also use a mixed methods approach.

In choosing a mixed methods approach, this researcher has also considered other pathways such as a singularly quantitative approach. This was excluded as the best option for several reasons. In the first instance the study deliberately had a lower sample size, based on previous studies that determined that the data set needed to include rich descriptive data rather than relying on quantity-based data from a small number of participants (Gulotta et al., 2016; Thomas & Briggs, 2014). The quantitative approach was also dismissed based upon the understanding that many of the terms involved were not uniformly understood in a common vocabulary (Bell et al., 2015; Beyer, 2015; Cook et al., 2011; Ferrante, 2013; Graham, 2013). Some people would understand phrases such as “digital objects” whilst others would have a more rudimentary understanding of terminology, and might confuse items such as an iPad as something different to a smartphone. A large sample could conceivably ask questions to an audience, some of whom would not understand the terminology yet might have important answers if they were able to describe their meaning rather than to state it.

The researcher also excluded an approach that was solely qualitative because the study was both multifaceted and drew from cross-disciplinary areas of the literature. In order to establish some categorisation of different values and different components, the use of a mostly qualitative (yet partially quantitative) study allows the researcher to assess some trends in a numerical sense, so as to allow some qualitative and descriptive parts to carry a greater weighting than others (O'Leary, 2005).

The research also needed to recognise the transition from hypothetical to authentic-based data. Research found in the literature before 2005 is mostly of a hypothetical nature, where the study of digital legacies was considered in a general sense. This occurred well before the ubiquity of social media legacies, cloud-based and mobile derived photographical legacies, and before the well documented acceptance of electronic publications in the form of e-books, and Kindle platforms (Hunter & Rowles, 2004).

In particular, this research project used Exploratory Sequential Mixed methods approach. The research first began with interviews that had qualitative questions. These qualitative questions explored the different views and perceptions of older Australians. The data collected were analysed to find themes and to further explore a quantitative statistical analysis. Themes were found by grouping quotes from each respondent that had a similar perception. The count of each respondent group formed the statistical analysis and were interpreted as percentages (Creswell, 2014 & Creswell, 2015). An Exploratory Sequential Mixed Methods Approach (ESMMA) is of particular benefit because this sequence of research exploration allows for layers of perceived understandings to aggregate in the form of an interpretable and explainable form of data. This research used information gathered within a largely qualitative framework, which was nonetheless dependent upon perceptions, observations, and sensitivities. By using an ESMMA the research was structured so as to gather highly individualised experiences and perceptions and was able to sequence their value across a range of emerging research questions. This is predominantly used as an appropriate pathway where the field of research is new and emerging (Kumar, 2011).

To collect a set of rich qualitative data about digital legacies it is necessary to use semi-structured interviews so that participants respond to a consistent set of criteria where participant knowledge may range from low-level understandings to higher understandings of key elements (Creswell, 2014). This allows for an extension to questions, using open-ended questions where individual descriptions and perceptions add to the richness of the data collected. Studies with a similar direction have shown outcomes based on the use of semi-structured interview questions (Brubaker, 2014; Gulotta et al., 2013; Pfister, 2017).

3.2 Research Method

3.2.1 Interview Design

This research used semi-structured interviews in order to collect the perceived understanding of older Australians on Digital Legacies. These interviews were designed to collect information about their usage of digital objects, digital services, digital devices and digital platforms. The interviews were also carefully scripted to determine whether in some cases the participants had an accurate understanding of the known terminology, including their understanding of digital objects, digital services, and digital platforms. The interviews were also designed to examine user preferences, including daily routines that incorporated technology. This included user preferences for online and digital banking, online shopping, online communication, as well as other usages such as news, games, and reading.

Part of the interview design was to use ten specifically chosen digital objects to provide a common set of reference points for this research. These ten objects were identified in the review of the literature, and whilst not an exhaustive categorisation of the possible types of objects, were chosen on the basis of their repeated appearance across many of the researchers used in the review. They are, e-books, online bank accounts, online shopping accounts, online payment accounts, social media accounts, email accounts, digital photographs, digital videos, digital music, and digital games. Interview questions specifically asked participants to offer knowledge and opinion about these digital objects and services in order to qualify the known information by older Australians, whilst keeping to a widely accepted set of objects that were deemed by the literature to be in common usage. Had the researcher attempted to include immediately contemporary objects and services (such as crypto-currencies), participants may have become overwhelmed by the over-abundance of unfamiliar terminology and jargon (Cook et al., 2011).

The interviews took the format of five main areas. The first area comprised a range of qualifying questions. These established each participant's personal details in terms of their age, their usage of digital systems, and their general preferences. The second part of the interviews examined their familiarity with social media platforms, and asked participants to reveal what types of social media they used, their frequency of usage, and their reasons for usage. The third part of the interview design examined participant usage of photographs. It aimed to differentiate between digital photograph usage and printed tangible photographic images. The

questions asked how photos were captured, how they were stored, and what medium they were stored on. Additional questions asked participants to explain their actions in the event that a photographic image was lost and needed to be restored. The interviews also asked participants to explain how they felt if a photographic image was lost, or unable to be restored from back-up. Some questions were asked directly, whilst other questions used choices that were spread across a Likert scale so that participants could explain preferences and choices that could be compared to those of others, but would also reveal nuances between one participant and another (Creswell, 2014). From these five areas the research was planned to expose new emerging themes that would form part of the thematic analysis. As data was gathered through interviews, the research design began to look for emergent themes that could be harnessed as part of a thematic analysis of the data (Saldana, 2015).

In the fourth part of the interviews, participants were asked about whether they understood what a digital object was. This part of the interview asked participants to give a more in-depth set of answers on the subject of their usage of digital systems and the value of those systems. This included asking what types of digital objects they used. This question allowed the researcher to ascertain whether the participants had a reasonably accurate understanding of digital objects, or whether their knowledge was misplaced or inaccurate. Participants were further invited to respond about their online purchases, their email accounts, and whether they trusted companies who provided digital objects that were accessible for free. This question was then extended to establish whether participants trusted companies to store these objects in a safe and secure manner. The interview questions asked participants to rank their usage of digital objects on the basis of frequency of use. This was followed by asking participants to explain which objects were of value to them by means of categorising them into four areas: Historical, Monetary, Sentimental, and Legal.

Participants were asked to state their views about other people being able to see and access their digital objects, and then asked them to specifically comment about using internet banking and digitally stored music. Following questions asked them to explain any difficulties that they had in the usage of digital objects and their systems.

In the final section of the interviews participants were asked specific questions about digital legacies. These questions included questions relating to their Will, and whether they included digital assets amongst their other (physical and tangible) assets. The participants were asked about whether they trusted another person or persons to have access to their passwords.

Participants were asked to explain how they chose to store those digital items that they valued, and whether they had concerns over the ongoing management of those items after they had passed away. Specific questions were directed at popular usage items such as the access, and management, of photos left behind on a computer or a smartphone.

Participants were asked whether they held concerns about what happened to their social media accounts after they passed away. This question extended into whether they were concerned about other people having unauthorised access to their photographic assets, as well as whether they had issues with the ongoing (post-death) exploitation of their information. The research looked at issues of regret, asking participants to explain usages of digital systems that they would have preferred not to have undertaken.

The last part of the interview asked participants to rank their digital assets in terms of value, by nominating what they would like to happen in the event of their passing. This ranking provided an insight into the choices of individuals based on a wide range of criteria for which values could be determined and then compared.

3.2.2 Interpretation of Data

In regard to contributions to the body of knowledge, it was also important to design a set of interview questions for the purpose of data collection and analysis. The proposed research followed a mixed methods approach in terms of analysing and interpreting data. A mixed methods approach was adopted that was predominantly qualitative in terms of the interviews, but also included a quantitative system of ordering for the purpose of analysis and interpretation. The research technique used semi-structured interviews that employed a qualitative method allowing for rich, descriptive responses that captured individual concepts and perceptions (Ashton, 2014; Dearnley, 2005; Doody & Noonan, 2013). Some of these semi-structured interview questions used Likert-type scales where individual responses were more clearly defined in the form of a range of possible answers. (Salkind & Rasmussen, 2007). For example, for a question such as “If you lose your recent photographs how would you feel?”, Likert-type scales were used to present options such as “Nothing, Little bit sad, Normal sad, Very sad, Devastated”. Another example asked participants to select an option in regards to the value of e-books. It asked for responses that indicated a range from “No value, Less value, Some value, More value, High value”. The same procedure was applied to measure the value

of each digital object based on its monetary, historical, and sentimental values. Participants were asked a set of semi-structured and open-ended questions with the intention of providing an opportunity for them to express their views and opinions openly. Additionally in some sections, the questions were designed (using Likert-type scales) in a way that these views and opinions from the participants were quantified and described using categorical trees (Newell, Aitchison, & Grant, 2014).

From the data gathered in semi-structured interviews, a second quantitative method sought to organise (Salkind & Rasmussen, 2007) the value of digital objects using an ordinal ranking system based upon the three stated classifications of monetary, historical, and sentimental values. This step task involved the use of a non-parametric statistical ordering of values which is useful where different segments of data have a ranking, but do not have a clear numerical interpretation (Hollander & Wolfe, 2014). This task allowed the need to compare ranked data from different classifications (e.g. historical, monetary, and sentimental data).

The data was analysed in two ways. In the first instance, the interviews were recorded, de-identified, and transcribed. This was done so that a qualitative analysis can be undertaken. The interviews were examined to look for commonalities within the text, as well as anything that is of a surprising nature, especially those things that might differ from the literature review. These similarities and dissimilarities in data were entered in a table numerically in the form of percentages. This task assisted to establish the emergent themes of the analysis. These themes enabled the researcher to obtain their responses to obtain minimal bias in the research results (Creswell, 2014).

In the second instance, the transcribed interview data was categorised and indexed as part of a quantitative analysis. Comments and observations were used wherever applicable throughout the thesis for greater clarity (Gulotta et al., 2016; Gulotta et al., 2013; Manchester & Facer, 2015; Thomas & Briggs, 2014). A descriptive analysis was conducted to identify different categories (Coombs & Algina, 2016). This analysis enabled the categorisation of attributes affecting the inadequacies in the guidelines to manage digital afterlife of older people. These categories were developed based on two main inputs. The first input came from a review of the literature, whilst the second input used the questions which were asked and the data which was gathered during interviews (Hollander & Wolfe, 2014; Newell et al., 2014).

3.2.3 Ethics Approval and Risk Analysis

Before undertaking the data collection for this research, the researcher sought an Ethics Approval from the university. This was essential because the research involved interaction with human subjects. As part of the approval, a list of draft research questions was supplied to an ethics committee and the study was explained in terms of its likely effects, including any possible harm that might occur to either the researcher or the interview participants. The ethics approval also included the approval of a Risk Assessment Management Plan (RAMP). As part of the ethics assessment the researcher considered the possible effects upon older participants, taking into consideration the duration of each interview, as well as topics that might be sensitive. In particular the researcher needed to understand that discussion of one's own passing could be a sensitive area of discussion for an older person who might become inclined to dwell upon the issue of one's mortality. Subsequently, the specific interview questions were carefully scripted to reduce the likelihood of over-emphasising personal matters relating to a participant's death, or that of another person. Upon review of these issues this research study was confirmed by the ethics committee and the researcher was granted candidature to proceed with the study.

3.2.4 Pilot Study

A pilot study was undertaken in order to determine the suitability of the interview questions, and also to establish the length of a typical interview. Interviewing older people has a number of risks, and the use of a pilot study was deemed appropriate in order to better understand these risks. Early risks showed the chance of discomfort from the discussion of past loved ones and deceased family members. Other risks included the possibility that an interview went for too long. In this case, it was likely to bring about some deterioration or fade in responses if older people felt that the time taken was too long.

The responses from pilot interviews also assisted the researcher in determining the correct order of questions. This was seen as a possible mitigation in terms of the interview direction and the chance of participants going "off topic". After the pilot study concluded, the interview structure was adjusted to account for issues in terms of discomfort and duration. A major adjustment had to be made after it became clear that some participants might not recognise an item of technology from a verbal description alone, and that there was a need for a visual prompt to

help describe some components in terms of technology. As a result, the main interview design was revised to incorporate the need for picture cards as part of the interviews.

3.2.5 Research Materials and Equipment

To structure the interviews that took place in an efficient manner, the researcher chose to use a number of tools in conjunction with standard face-to-face interview methods. Some people have difficulty in making choices or in giving descriptions about the differences between some things and others. To assist a cohort of older people, the researcher chose to deploy a range of Likert scales within the interview process, thus allowing participants who were not necessarily familiar with some terminology to make choices that allowed different levels of knowledge. The Likert scales also allowed participants to respond in terms of a neutral position, or a position where they had no experience, or understanding, or simply did not know.

To reduce the duration of each interview, the researcher deployed an audio recorder whenever required in recording voice data. Key facts were noted alongside the audio recording, to assist the researcher to make observations and to note hand gestures, facial expressions, and any other characteristics that would not have been clearly distinguished as part of an audio recording. The researcher also made notes to record moments where items of importance seemed apparent as part of each interview.

During the pilot study, it was noted that some participants had a limited understanding of some of the technology involved. The researcher decided to include (where appropriate) a range of picture cards to assist the older cohort to understand items such as a smartphone, or a tablet or hardware such as USB thumb drives and memory storage cards (SD cards). This inclusion of picture cards was intended to reduce the duration of each interview in terms of the time taken to explain certain technologies. The picture cards also assisted participants to more quickly understand the meaning behind some questions where the jargon and terminology may have de-motivated some respondents to answer, because they may have been uncertain, and did not want to appear foolish or ignorant.

3.2.6 Interviews and Participant Selection

Older Australians formed the sample population for this research. From a statistical life expectancy perspective they are a cohort that is significantly affected by the understanding and management of digital legacies. These research participants were aged 65 and above who were drawn from the Perth Metropolitan area of Western Australia. This research engaged 32 participants. The sample size (N = 32) was decided based on the rationale to provide a largely qualitative approach that allowed for close attention to detail with each participant (Baroudi & Orlikowski, 1989; Devane, Begley, & Clarke, 2004). Within this discipline, small sample sizes have been regarded as useful in valid qualitative research by providing a rich source of highly descriptive results (Creswell, 2014). There are a number of studies that are focussed in this area that demonstrate the value of using small sample sizes in order to get rich data (Brubaker, 2014; Brubaker et al., 2013; Gulotta et al., 2015; Gulotta et al., 2014; Gulotta et al., 2013; Thomas & Briggs, 2014). This is in preference to quantitative studies where key distinctions have not been sufficiently described to the extent that the studies provide meaningful knowledge.

The sample population was determined by drawing from members and associates of known associations of older people within Western Australia. These associations included the Council on the Aging (COTA), PROBUS, Self-Funded Retirees, the Glyde-In Centre, Aegis Aged Care, and the University of the Aged (U3A). These organisations were contacted by telephone, and followed by an email requesting participation. Participants were invited to take part in an interview after they had attended some other activity that related to their association. Potential respondents were provided with an information letter and then after agreement signed a consent form to take part in the study.

All respondents were chosen based on their age and their ability to complete an interview using English language. Each interview was started with the expectation that the time taken for each participant would be approximately 20 to 30 minutes.

An information letter was provided so that the research participants were familiar with the research topic, research procedure and the intent of the research. The information was explained in such a way that the participants would feel interested in participating in the research actively and effectively. Participants were provided with interview consent forms which they were required to sign, in order to partake in the research interviews. At the end of each interview participants were asked if they had additional information that they wanted to add.

The results from the interviews were stored securely by means of a locked cupboard within a locked office. Digital information was stored upon an external hard-drive that was encrypted. Interviews that were recorded were transcribed into a printed form to assist with analysis and investigation. All identifiers were removed from the research transcripts so that individual participants could not be identified by name. Data was then collated in terms of comparative responses.

3.3 Limitations

This research acknowledges that any study that considers digital legacies must, by definition, accept that some users would have some capability in terms of the use of technology. One of the limitations therefore, is that this study did not attempt to compare people with limited or no access to technology. Instead it took responses from a cohort based upon different communities of involvement, all of who were over 65 years of age (O'Leary, 2005).

The chief investigator for this study recognises that they themselves may have provided a limitation to the interview process because English was not their first language. It is possible that some common references, colloquial language, and slang terms may have been open to erroneous interpretation in the process of interviewing and collating the data (Alvesson & Karreman, 2000; Polkinghorne, 2005; Temple & Young, 2004).

There is the possibility of a bias in the results generated due to the demographic of the chosen sample population (Landy, Guay, & Marghetis, 2018). This study drew participants who were associated with different groups. No attempt was made to interview individuals or people with no association or group membership. The risk here was that the interviewing of people without active participation in some sort of group might have provided responses of a different (less informed) nature.

The research may have introduced personal bias because in researching digital versus face to face experiences her own experiences may have been coloured by her own expectations of digital object and service usage (Smith & Noble, 2014). If the researcher is significantly younger than the respondents being interviewed, then assumptions made by the researcher may hold a different expectation to that of an older cohort of respondents who have a lifetime of physical experiences compared to a relatively small length of time using digital objects and assets.

This research was not ideally suited for people with severe disabilities that may impede the interview process or the access to the study. Therefore, in choosing the sample population, people in good general health were taken into account. It is possible that people with disabilities were unintentionally restricted from providing participation (Mertens, 2015).

The terminology “Digital Objects” and “Digital Legacy” are recently added descriptors and some participants may not understand their meaning (Beyer, 2015; Cook et al., 2011; Ferrante, 2013; Graham, 2013). Therefore, there may be a bias when using the term “digital objects” in the thesis. This limitation is addressed by using plain English words and by describing different kinds of digital objects by means of plain terminology. This can be assisted by identifying and introducing the commonly used digital objects amongst older adults of Western Australia.

This research used a relatively small sample size (N = 32) that was taken from older people within the Perth Metropolitan area in Western Australia. It is possible that had the participants been recruited from other parts of Australia the results may have shown different levels of technology usage and acceptance in areas such as Facebook usage, Online Banking and other forms of digital interaction. Nevertheless, this research focussed principally on qualitative research that found richly described answers about technology usage and the way in which different types of digital interaction was valued. It is possible that had the number of participants been much higher that a point of saturation would have quickly been reached.

Chapter 4: Research Results

The research presented in this chapter explains a range of thematic directions. These themes are seen as emergent based upon the question formation that was initially derived from literature review and background secondary data. Once asked through interviews, a set of strong emergent themes became apparent within the research results. The five sections allow for an understanding of an emergent set of themes. This thematic analysis showed specific significance on the following areas.

In section one there an emphasis on preferred use of face to face interaction over and above digital interaction. The research indicated that there was an overall lack of understanding about what constituted a digital device, and showed the emergent theme surrounding the imposed and obligated emphasis on the usage of some digital systems.

In the second section the emerging theme was the disconnection between older users and social media. This was also expressed through un-subscriptions by users to social media platforms and services. Other parts of the theme showed older users who were unsure of the process of disconnecting from social media platforms.

In the third section the overarching emergent theme was in relation to uncertainties about digital storage. These uncertainties included issued relating to ambiguity, capability, and privacy challenges. An emerging area of focus introduced the challenges of understanding cloud storage in relation to photographs.

The fourth section indicated themes about the perceived usage of digital devices and services and gave an indication to the ordering of usage in terms of items of necessity, followed by areas of convenience, followed by items that gave rise to pleasure. This section drew out the emergent theme of how digital assets and system were valued in terms of four key areas of value; Monetary, Sentimental, Historical and Legal.

The fifth section gave further indications about how people recognise different value in digital assets. This section also explored the theme of Digital Legacy management and its misunderstandings, as well as a general theme of misunderstanding Cloud systems and platforms.

4.1 Results Section A: Introductory and Qualifying Questions

The questions used in this section were designed to assist in establishing a set of baseline-data about each participant. The questions were very general in nature, however they also served to settle each participant in terms of the interview questions. Some older respondents were nervous at the beginning of the interview process and these questions assisted to make each participant feel more comfortable.

4.1.1 The usage of Digital Devices

In this section the important question regarding the inadequacies of Digital Legacy management are addressed. In the first instance, the results of the interviews with participants assisted in the formation of a clear understanding of what factors are required to form the correct environment for the existence of a Digital Legacy. These factors were critical in showing instances and examples where a participant would be unable to access, use, or take interest in their own digital legacy or that of someone else. Other factors showed that some participants had little or no understanding of the knowledge areas that gave rise to a Digital Legacy. In this sense awareness of device content management is also a key factor in the ability to manage a person's digital afterlife.

The first research question examined people's usage of digital objects, digital products, and digital services in order to determine possible guidelines for managing a person's digital afterlife. The results were used to determine what factors contributed to the unevenness of Digital Legacy rules. The first part of these results showed differences in terms of perceptions and lack of awareness.

Digital products (digital devices or hardware) as a component of a Digital System (as defined in this thesis) contribute to one's Digital Legacy (which is made out of valuable digital assets). A number of factors contribute to the challenge of terminology- 'digital device'. These factors are illustrated in the diagram below (Figure 4.1.1).

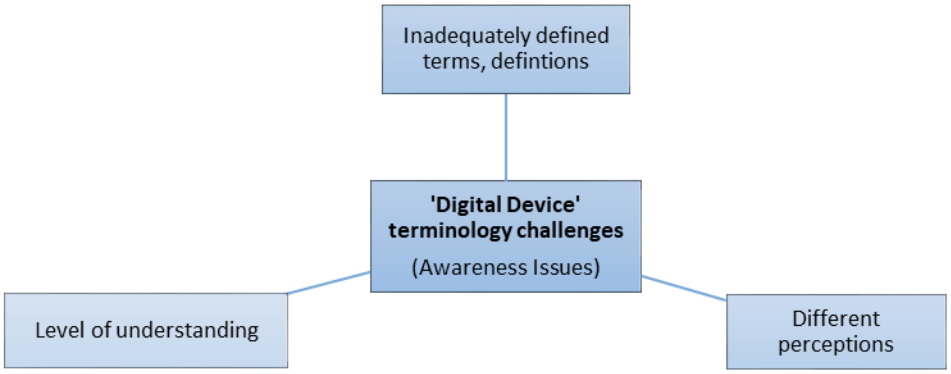


Figure 4.1.1 Uncertainties in the consistency of terms and jargon relating to Digital Legacy descriptors

There are three factors relating to the uncertainty of older technology users. They consist of inadequately defined terms and definitions, different perceptions, and level of understanding. These factors contribute to the unevenness of digital legacy rules as an inadequacy in the guidelines for managing a person's digital afterlife (Figure 4.1.1).

Do you use an iPad?	
Yes	38%
No	56%

Table 4.1.1: Demonstrated confusion between technologies naming a brand over a type of technology

Although participants explained that they either did or did not use an iPad, the results showed that some users may not have understood that an iPad is a form of tablet. Furthermore, some users of tablets may not have understood that the specific device that they use was in fact an iPad. This cross-contamination of results indicates that lack of device and brand awareness is one of the significant themes of older adults in the use of digital devices (and therefore the management of digital objects).

The results indicated that 25% of the research participants stated that they were users of tablets. However, 38% of the participants stated that they were users of iPads (Table 4.1.1). There were 11 participants who stated that they were not using a tablet mentioned they were using an iPad. Out of the eight participants who used a tablet, seven participants were able to distinctly identify that the brand of the tablet they were using was not an iPad. This indicates that there is a lack of awareness in understanding the two distinct questions '*what is a digital device?*' and '*what is the brand of the digital device?*'. This indicates that a significant number of participants do not understand the terminology of the devices and equipment used in the digital environment in which they participate.

"Well, I have only got a one. I don't know whether that's a tablet or an iPad." (Respondent 01)

"I have got an iPad, but I don't use it much, I use the phone more. It's not as you know, it's a Samsung." (Respondent 04)

However, once the research participants were shown with a picture card of an iPad, they managed to identify they were using an iPad.

"Well, I use a tiny little thing like this, that's an iPad." (Respondent 01)

The participants who stated that they were using an iPad were not aware of the fact that iPad is a tablet which is produced by Apple Inc. Most of the participants did not consider iPad as a brand name but held the perception that it is not a tablet. This concludes that different misunderstood perceptions, the lack of awareness and understanding about digital devices are due to inadequately defined terms and definitions. These factors in whole contribute to the unevenness of digital legacy rules causing inadequacies in the guidelines for managing a person's digital afterlife.

Do you use a smartphone?	
Yes	84%
No	16%

Table 4.1.2: The perception of smartphone as an ordinary phone

84% of the research participants stated that they were users of smartphones. The research study found that some of the research participants were not aware that they were using a smartphone (Table 4.1.2).

"I got a mobile phone. I don't know whether it is smart. It is just an ordinary phone. I don't think it is a smart phone, it is a really cheap mobile phone." (Respondent 01)

"I have a one but I don't tend to use as smartphones. Just, I have it. It has data available on it but I don't tend to use it. I would rather use the iPad." (Respondent 06)

"No I don't use a smartphone, I have got an Android" (Respondent 21)

However, once the research participants were shown with a picture card of a smartphone, they managed to identify they were using a smartphone.

"Yeah, that kind of a one." (Respondent 01)

This concludes that there is a lack of level in the understanding of the terminology '*what is a smartphone?*'.

The research study found that, it was common that research participants owned or inherited a digital device which they were not using.

> *"I have a one but I don't tend to use as smartphones. Just, I have it, it has data available on it but I don't tend to use it, I would rather use the iPad."* (Respondent 06)
> *"I do have a CareAlert but I have got a new phone and I haven't even got an answering machine at the moment. It has to be set up again."* (Respondent 12)

> *"Yes, I use a smartphone but is on prepaid, so I am not using it properly. I am going to, but I need to learn more and get a good prepaid deal as well."* (Respondent 15)
> *"We have got an iPod which I use because my smartphone is turned off Internet and I can't use it much and I can't be bothered with it."* (Respondent 18)
> *"No except for Alan's phone- he has it got connected and I play games on it. Because my phone was screwing up and I was really ignorant about these screwing up and I had a little bit of money that I had on it- I was using it and I didn't know so I have turned it off and I will be thinking about it."* (Respondent 18)
> *"I have an iPad but it was given to my late husband, and I don't really use it, I use my mobile. I will use it but I need to spend more time in understanding it and yes I will be using it and yes I have a one."* (Respondent 21)

4.1.2 The usage of Digital Services

In this section, different usages of digital services are discussed based on the information that were gathered from the interview questions.

Do you use social media?	
Yes	56%
No	41%
Not anymore	3%

Table 4.1.3: Usage of social media of the research participants

The research study found that 56% of research participants were users of social media (Table 4.1.3).

The active usage of social media	
Yes	44%
No	56%

Table 4.1.4: Active usage of social media of the research participants

Statistics show that only 44% of these social media users were active users (Table 4.1.4). However, 56% of the social media users had a social media account but did not use social media actively (Table 4.1.4).

> *"I am on Facebook, for my name, it has absolutely no other information on it."* (Respondent 02)
>
> *"I am on it, but I don't use it much, but I am on it. Not a lot."* (Respondent 03)
>
> *"Facebook but haven't been there on for ages so I am giving it up, because of the security"* (Respondent 15)
>
> *"Very marginal, I am bit very of Facebook."* (Respondent 19)
>
> *"Not really, I don't, I go in an out occasionally but I don't use it properly as other younger people do."* (Respondent 24)

Preferences to use social media	
Yes	5%
No	28%
Unable to offer a preference	67%

Table 4.1.5: Preference to use social media

It was found that, only 5% of the social media users preferred to use social media (Tale 4.1.5). These statistical figures along with the following opinions by research participants help better understand that research participants felt imposed to use social media because of a number of reasons.

> *"I have it. I have to get photos of my grandchildren. I read it every day but I don't post anything on it."* (Respondent 02)
>
> *"I don't like it actually"* (Respondent 03)
>
> *"I did, but I think it is awful. Someone hijacked my identity and apparently did something fairly torture. And were trying to get my driver's license details and… I am*

no longer on Facebook. And I don't miss that all much really. It is mildly irritating." (Respondent 04)

"Yes Facebook, only because I have got family overseas, it's really you know that for interaction and when I use it, I don't post, I just respond." (Respondent 21)

"I have a Facebook account but trying to avoid it." (Respondent 25)

"I don't like Facebook. I have been forced in to using it recently because of a group that I am involved in which is, it is protest group in eats Fremantle, I am pretty active in that group and that Facebook page. But I have no other contacts with it." (Respondent 28)

"Yes but I don't like it much, I am bit ambivalent about Facebook." (Respondent 29)

"No, I have a constant subjection to social media, my husband has a one but we never put anything on it, it's just sometimes we get the photos of people and something like that. (Respondent 31)

Do you use online shopping?	
Yes	66%
No	34%

Table 4.1.6: Usage of online shopping of the research participants

The research study found that 66% of research participants were users of online shopping (Table 4.1.6).

Preferences to use online shopping	
Yes	10%
No	14%
Unable to offer a preference	76%

Table 4.1.7: Preference to use social media

However, only 10% of the research participants who used online shopping preferred buying or selling products and services online (Table 4.1.7). These statistical figures can be further demonstrated by the opinions of research participants. These comments help better understand that older Australians felt imposed to use online shopping.

"Not a lot no, I look at Coles and Woollies things online, well I don't do it much online these days, I go to the shop because it is more interesting." (Respondent 06)

"I have but I don't like to really. I like to see things and touch them and know what I am getting." (Respondent 29)

Digital service	Percentage of the users
Email	94%
Web browsing using a search engine	91%
Online/ E-payment services	88%
Online/ E-banking	84%
Online/ E-news	72%
Online/ Digital videos	69%
Online/ E-shopping	66%
Audio/Video chatting	63%
Social media	56%
Online/ Digital games	34%

Table 4.1.8: Commonly Used Digital Services

The statistics of this study revealed that email was the most commonly used digital service among older adults in Australia (94%), followed by web browsing (91%), and online or electronic payment services (88%). The least used digital service was online or digital games (34%). Social media was found to be the second least used digital service (56%).

The results show that productivity-related objects and services are far more frequently used than entertainment-related objects and services. Email, information, and financial objects and services are found at the top of the usage numbers, whilst videos, social media, and games-based objects and services have less frequent usage (Table 4.1.8).

4.1.3 Preferences to use Digital Services

In this section, different preferences of digital services are discussed based on the information that were gathered from the interview questions.

Do you use e-books?	
Yes	50%
No	50%

Table 4.1.9: Research participants'' usage of e-books

All participants were asked whether they used e-books. The results indicated that half of all the respondents used e-books whilst the same number of respondents did not use e-books (Table 4.1.9).

Preferred mode for reading a book	Percentage of the users
Paper books	88%
E-books	9%
Both Paper books and e-books	3%

Table 4.1.10: Preferred modes of book reading

The research results indicate that 88% of the users preferred using paper books to e-books and 3% of the users preferred reading both paper books and e-books. Although 50% of the research participants used e-books only 9% of the participants preferred to use an e-book over a paper book. The results and comments from participants indicate a strong preference for printed (paper) books irrespective of higher usage of online books. In these results, the usage of digital books in the form or e-books is not an indicator of user preference (Table 4.1.10).

> *"I read more difficult but I prefer a book in my hand."* (Respondent 05)

> *"I do download the e- type ones often from the library and but often I like the paper books because I can carry it around with me. But I didn't realise when the books came when you download them because my iPad is only on the flight, with my Wi-Fi at home, oh my god she said, download it, but the trouble is you have to have it charged and you got to. I mean I put it back before it goes but the books- I have got a one in my bag, I like to take them. I don't tend to buy e-books, I just use them from the library and then return them."* (Respondent 06)

> *"I prefer the paper one definitely."* (Respondent 10)

> *"I never had an e-book. It doesn't seem much fun watching a screen."* (Respondent 12)

> *"Paper books, because when you fall asleep with the paper book it does not hurt your face when it falls on there. If you are doing an e-book and you fall asleep while you are reading you got this thing. And the feel of a book as well."* (Respondent 15)

> *"I have tried both I like paper book. I have started to use them and then I found I didn't retain their information that I read online, I couldn't remember the content of a book. My brain didn't, I can read a hard book and remember it with an e book it's not much, I do use if I am going away, on a plane travel or something I will use it but not for preference."* (Respondent 24)

"I still prefer a paper book, I think it's the habit but I do use e-books of course particularly when I go overseas for travel because I don't have to carry e-books. Well only because of ease of transport but of course I do carry ordinary books as well." (Respondent 28)

"No I haven't had, I actually don't like reading on a screen. I will read the information that comes up, documents like things but I don't like to read a book on the screen." (Respondent 31)

"I love turning the pages and I like the whole dignity of it." (Respondent 32)

Preferred service used for banking	Percentage of the users
Online banking	75%
Not online banking	16%
Not engaged in banking	9%

Table 4.1.11: Older Australians' online banking preferences

In the case of online banking preferences the results of the research study found that, although 84% of the research participants are users of online banking, only 75% of the research participants preferred to use online banking while 16% preferred not doing online banking. Views from the participants help better understand that online banking was found to be common among older Australian adults. In this instance respondents showed that there is a strong number of users who preferred online banking over the alternatives (Table 4.1.11).

"No mainly do it on net bank, occasionally I go to the bank, but I can do it all on the net bank." (Respondent 01)

"It's more convenient to do it online than going down and I prefer online." (Respondent 18)

Preferred service used for shopping	Percentage of the users
Online shopping	3%
Physical forms of shopping	94%
Unable to offer a preference	3%

Table 4.1.12: Older Australian adults did not prefer online shopping

From the responses, 94% of the research participants did not prefer to engage in online shopping. This demonstrates that the majority of the older Australian adults were not predisposed to embrace shopping online. Comments from respondents indicate that older Australians preferred physical forms of shopping over online shopping (Table 4.1.12).

"I never buy online, I won't buy online." (Respondent 02)

"I like to go and see exactly what I like myself." (Respondent 13)

"I have, but I don't like to really. I like to see things and touch them and know what I am getting." (Respondent 29)

Online shopping results indicate that whilst 94% of shoppers preferred physical shopping over online shopping (Table 4.9). Only 66% of the respondents had actually used a form of online shopping (Table 4.5). This indicates that over a third of respondents have made judgement calls about the value of online shopping without the experience of using online shopping.

Preferred method used for communication	Percentage of the users
Face to face	78%
Email	10%
Email or postal	3%
Text	3%
FaceTime	3%
Face to face or phone	3%

Table 4.1.13: Older Australians' communication preferences

The research results revealed that 78% of the research participants preferred face to face communication only in comparison to other kinds of electronic or digital ways of communication (Table 4.1.13).

"No communication by mouth - not getting any exercise because of everyone is messaging for they are on Facebook connects." (Respondent 15)

It was clear that, despite these statistics the users of electronic or digital ways of communication used electronic or digital ways of communication because of a specific reason. The different views from each participants support this statement.

"I know when we talk on the Skype, it looks very funny. I sent a picture of myself with my iPad the other day to my daughter in France, she hasn't seen it for quite a few years. And she said you look much the same to me. I love to send emails because you can write to the point but if you make a phone call it could be three quarters an hour. But if is an email it is straight, it is quick and easy." (Respondent 12)

"We have a daughter who lives and works in London, we constantly in touch with her via wife's computer, what's that called, FaceTime. I have never used a telephone after I have started FaceTime. I FaceTime. We are in touch with the daughter in London at least twice a week." (Respondent 22)

"I prefer to email rather face to face, it's just easier, you don't have to physically catch someone. But in general I will bang off an email and get an answer when it comes in." (Respondent 25)

Preferred service used for sending a message	Percentage of the users
Email	44%
Text messages	25%
Email or text messages	13%
SMS	3%
FaceTime or phone	3%
Postal	9%
Preferred not to use a form of messaging	3%

Table 4.1.14: Older Australians' preferences for sending messages

Out of the multiple ways of sending a message, 44% of the older Australian adults preferred to use emails. Text messages was the second most preferred way of sending a message among older adults. Respondents indicated that their choices between email and text messaging was dependent on the response time and the purpose of the message. Different views from research participants show that respondents who required rapid response times preferred to use text messages rather than emails (Table 4.1.14).

"I use email, more than text messages." (Respondent 01)

"Out of text and email, depends on what the purpose is, if it is a short message, it is a text, if I want to say more emails." (Respondent 03)

"More emails than text messages, I find texts irritating rather than talking." (Respondent 04)

"I prefer to text I suppose because it gets to my attention quicker than email." (Respondent 06)

"Yes, I use email, especially to my sister who is overseas in Scotland."
(Respondent 10)

"Mainly to my two daughters. Well I have a granddaughter with severe Autism. And my daughter- I paid for her to go to America three times and she runs a business, she works with children with Autism and children with learning delays. And she is very busy, she has back to back appointments. So emails are best with her. And she lives in a secure building and I have to have my phone to ring her to let me in to go and see her or to tell my granddaughter that I am at the front." (Respondent 12)

"I use Internet all the time, I mean emails all the time to send messages. Depends on how important is, if it is a birthday I might send a message or I might send them a card." (Respondent 14)

"It depends on what it is. Probably I think messaging is taking more than email. I used to use more emails but I think gradually it is moving to messaging for closed contacts." (Respondent 19)

"I write very few letters, at times like a thank you after a visit someone in the country will send them a photograph with a post card, but that's rare. But most of the time it could be email or a message, if that's quick it will be a message." (Respondent 25)

"No not really. I can still use emails, I like that, and I am not quite good at text messages." (Respondent 32)

Preferred way of playing games	Percentage of the users
Non-digital games	44%
Digital games	31%
Digital and non-digital games	19%
Not playing any games	6%

Table 4.1.15: Digital and non-digital gaming preferences in Older Australians

Respondents were evenly distributed in terms of digital and non-digital gaming preferences. The research found that 44% of the research participants preferred to play non-digital games only. It was revealed that, 31% of the participants indicated that they preferred to play digital games. In particular, Solitaire and Crosswords were the most popular digital games among older Australian adults (Table 4.1.15).

"I play Solitaire. There are two different Solitaire games that I use. Also I have got a game on here, it's not really a game. Because I am told that I had a stroke, a few years ago I use brain-well which costs me $14.99 a month which I find it to be used nevertheless it is useful. If I happened to be without my iPad then I will use the phone to play games. But if I don't- I usually have the iPad with me." (Respondent 02)

"I used to play computer games quite a lot- we do solitaire also and also a series of Poker." (Respondent 20)

"I found a crossword one that I like but the ones when they give you letters you have to find how many words are in that letter and it gives you the gaps but it's American and American words mainly. So but it still keeps you thinking. I play mostly on the iPad and

there are jigsaw ones that I do in my, I do a lot of card games and I prefer the ones that don't have a timer that I can relax, I don't like too much pressure. What else I have got? I have got patience game. I play them mainly on the laptop." (Respondent 06)

"I keep my mind active. I try to do digital crosswords, I am able to get that accessed daily, so I am trying to have daily if I have time. It's usually with the tablet." (Respondent 23)

"If I ever did, it was twice a year, Solitaire and apart from it nothing- no computer games." (Respondent 26)

Respondents to the study stated that those who used websites held a preference for news, educational, and research based themes when surfing on the web. These preferences were in comparison to games-related, entertainment-related, and hobby-related web browsing. Google, news websites, educational and research websites were the most preferred websites among older Australian adults.

"I will Google what I want to find out and then go in to the website." (Respondent 03)

"Google, I just be looking to something that I am interested and I type into what it is, where it is. It varies very widely." (Respondent 18)

"I use Google a lot. Words that I knew wrongly, people who come up in the conversations or either in news." (Respondent 20)

"More educational stuff probably- for example I am in a book club so I would look up reviews for the books that I am reading before the book club meeting."

(Respondent 29)

"Google things that I am interested in at that moment, I don't go in, I use it for a specific purpose." (Respondent 24)

4.1.4 Summary of Introductory and Qualifying Responses

This section reveals several significant elements. Firstly, when aggregated, the results in part A illustrate one key area of difference in terms of the preferences of older adults. In the first instance, older people retain strong preferences for face to face communications, reading paper and in print books. They also prefer the physical act of shopping or driving to shopping, and social media. However in contrast to these usages, older Australians have embraced a strong connection with online banking and the use of online EFTPOS card for purchases.

Secondly, there is a significant number of examples that demonstrate ongoing confusion regarding the ability to define various brands and devices of technology. Additionally there is confusion over whether users have a smart phone or not. Older adults do not appreciate a sense of the dynamic change of items in terms of smartphone technology.

Thirdly, more than a third of all participants indicated that they had a preference for face to face shopping experiences despite admitting that they had never used online shopping.

4.2 Results Section B: Social Media Participation- Segmentation, Frequency of Usage, and Purpose

In this section different types of social media used by older Australian adults, the frequency and the purpose of usage are discussed. In the section A of interview questions, research participants were asked whether they were users of social media. If the participant answered "yes", questions in section B which are related to social media participation were asked. It was identified that 62% of the research participants were users of social media.

4.2.1 Most commonly used social media platform used by older Australian adults

The first area of inquiry in section B compared different kinds of social media used by older Australian adults. Responses showed that 55% of the research participants who were users of social media, used only one social media platform whilst 45% of the research participants used multiple social media platforms. The responses indicated a wide variety of individual uses of differing versions of social media platforms (Table 4.2.1).

Social media platform used	Percentage of the social media users
Facebook	53%
YouTube	20%
Pinterest	6%
Twitter	6%
Instagram	3%
LinkedIn	3%
Messenger	3%
Whirlpool	3%
Telegram	3%

Table 4.2.1: Commonly used social media platforms by older Australian adults

The results of the interviews indicate that Facebook (53%), followed by YouTube (20%) were the most commonly used social media platforms among older Australian adults. The results also indicate that although some older Australians are users of social media, they prefer not to initiate on social media. Different views from some participants better describe this.

> *"I use Facebook but Facebook I really don't initiate on that."* (Respondent 17)

> *"I just look at some Twitter things but I don't initiate any."* (Respondent 17)

4.2.2 The frequency of usage of social media

Frequency of usage	Percentage of the social media users
Ad hoc basis	40%
Daily	25%
Multiple times a day	20%
Twice a week	5%
Monthly	5%
Not using now	5%

Table 4.2.2: Frequency of the usage of social media of older Australians

The research study found that 40% of the users used social media on an ad hoc basis while 25% of the users used on a daily basis and 20% of the users used social media multiple times a day. This indicates that at least 45% of the users used social media once or more in a given day (Table 4.2.2).

4.2.3 The reasons for using social media

Reasons for using social media	Percentage of the social media users
To communicate with family and old friends	34%
Photos and Tagged photos	17%
To find new friends	16%
News	9%
Watching Videos, Sitcoms , Documentaries	6%
Direct Action movements - Animal Welfare Campaigns & Political Movements	4%
Research	2%
Chatting	2%
Blogs	2%
Product reviews	2%
Gymnasium member communication	2%
Uploading and Sharing music	2%
Games	2%

Table 4.2.3: Reasons for using social media by older Australians

The interview responses on social media usage demonstrate that 34% of the older Australian adults used social media to communicate with family and old friends. A further 17% make use

of photos and to check tagged photos. Another 16% of the participants used social media to find new friends or connections and only 9% used social media for news (Table 4.2.3).

The results of table 4.2.3 show three main areas of division. In the first instance, 67% (two thirds) of the responses indicate a large usage in family and friend categories that indicate the value of the digital services and objects (especially photographs). The next strongest division shows the combined usages of news, documentaries, political campaigns and general research. This represents 21% of the usage. The third division supports a range of disparate usages including chatting, blogs, music sharing, gaming, and reviewing and members communication.

The participant responses suggested that some research participants used social media to access information including photographs but had no desire to post photographs in social media.

> *"Photographs, Yes I access photos, but I never post photos."* (Respondent 02)

> *"I do my photographs but I don't keep them on there."* (Respondent 15)

Some research participants articulated very specific reasons for using social media platforms.

> *"Facebook can be useful because once I went to a conference in Hong Kong and one of my former students were living in Malaysia and so I could contact him on Facebook and I told him that I have eight hours in KL with nothing to do, so he came and picked me and took me for a little drive around and dinner. It was nice."* (Respondent 29)

> *"Sometimes, for example I have relatives in US, when Trump elections went on there was a lot of inside information from people who were in America- that was interesting."* (Respondent 29)

Some research participants stated that they felt that the usage of some social media platforms was imposed.

> *"Yeah I mean, I joined Facebook when it first started, and I used it a lot more when especially with some of the games and then but I found that it was a bit of a trap because they made it, the games that you have to go back every day. So now I use it mainly for the communication with a few friends, I don't have a lot."* (Respondent 06)

"I started a Pinterest account a while ago because I was in the lip reading staff but they forced (me) to log in all the time, they got popping up windows, got rid of it because it is boring. I object to the overblown ones, Facebook seems to be gone too far but they have a place." (Respondent 25)

Some research participants mentioned that they felt obligated to use social media by other users or businesses.

"And often the gym I go to, only communication by Facebook, which I find stupid which I will use for that purpose." (Respondent 03)

"I have friends who told me to check travelling photos." (Respondent 04)

"Main reason is because I have a granddaughter in England. Her mother said she would put the photographs of her, so I did join so that I can see." (Respondent 10)

The participant responses also found that there were some research participants who unsubscribed or discontinued from the social media platforms they were using.

"I have just deleted Instagram." (Respondent 02)

"I just unsubscribed from Twitter." (Respondent 25)

"Pinterest I got rid of, I don't do it anymore because I just get, if you look at anything you end up getting all these stupid emails from people that I don't want and I don't know how to get rid of them. So I stopped doing it." (Respondent 29)

Additional responses suggested that some research participants had a social media account that was either not being used, or not actively being used.

"Hang on, what's the other one, what's the business one, LinkedIn, I am registered on LinkedIn, why I don't know, I keep in touch with some of my colleagues- ex colleagues." (Respondent 02)

"I did enrol in Twitter but I haven't been using it since." (Respondent 18)

"Because I was on a holiday with a group and they were taking group photos and I was in them, so I wanted to see what they put on the site. But it was for a specific holiday, other than that I don't use it. Just for looking at pictures. I think I once looked at my son's site and he was in holiday and but it's much the same reason." (Respondent 24)

Some opinions from the research participants revealed that they had concerns related to the security aspects of social media. The comments below can be used to better under this case.

> *"I get a bit worried about the security of Facebook so I have stopped commenting."* (Respondent 19)
>
> *"I don't, I am in it, Facebook really occasionally."* (Respondent 03)
>
> *"Otherwise I don't bother with that because I think I saw a program on ABC TV about disturbing things on Facebook and how they are accessed and how they might rate them as disturbing but still leave them there and I found that absolutely shocking. It really put me off. And I am a little bit ambivalent about Facebook anyway, I think it has this element for abide. There's something about it - I don't feel comfortable, I feel exposed, I don't want it."* (Respondent 29)

4.2.4 Summary of Section B

The responses in this section went beyond confirming that Facebook and YouTube were the most used platforms of social media for older Australians. A strong trend in these results is that Facebook and YouTube are important platforms for the storage and access of digital objects for older Australians. This is particularly evident in the case of photographs and images, which are more prominently remarked upon across the responses by participants. In most of the cases social media was used to access information including photographs however some of the older Australians stated a preference not to post photographs themselves.

The responses from participants suggest that some people felt either an imposition or an obligation to use one or more social media platforms because of the suggestions of others. Some respondents felt partly obligated to use social media because they were directly prompted by the social media platform itself. Other responses indicated some people felt influenced and pressured from other users or businesses who voiced security related concerns on social media. These factors were mentioned as reasons why some older social media users unsubscribed or discontinued usage. The same factors also suggest that some respondents might remain inactive users of certain social media services.

4.3 Results Section C: Photographs- Storage, Access, Back-ups, and Value

In this section, a number of questions were asked about photographs belonging to participants. The questions focussed on five main areas relating to the handling of photographs. These areas considered how participants captured a photograph and what devices used to do this; what participants did after taking a photograph; how participants stored a photograph; and how participants stored back-ups for the photographs. The interview questions also sought responses about how older participants felt if they lost a recent photograph, as well as how they felt if they lost an old photograph.

4.3.1 Different ways of capturing a photograph

How photographs are captured	
Digital device	91%
Non-digital device	3%
Does not know how to take a photo	3%
Does not want to take a photograph	3%

Table 4.3.1: Different ways used by older Australians to capture a photograph

Research results found that 91% of the respondents capture photographs using a digital device whereas only 3% used non digital devices such as a non-digital camera. This shows that the majority of the research participants used a digital device to capture photographs (Table 4.3.1).

4.3.2 Digital Devices used to capture photographs

Digital Devices used to capture photographs	
Smartphone	55%
Digital (traditional style) camera	31%
Tablet/ iPad	14%

Table 4.3.2: Different digital devices used by older Australians to capture a photograph

Research results show that the smartphone was the most commonly used digital device among research participants to capture a photograph (Table 4.3.2).

> *"I can do it on my phone. I can do it on my tablet. And I got a camera as well. Yeah, a digital camera."* (Respondent 01)

> *"These days I take photos on the phone."* (Respondent 02)

"I have got two devices, I have got my smart phone, and the digital camera." (Respondent 23)

"On my phone, I don't use cameras anymore." (Respondent 25)

"By smart phone." (Respondent 31)

I forgot to take the camera one time, so I got that trip on the phone. (Respondent 01)

Some of the participants stated that they used a traditional styled digital camera to capture photographs (Table 4.3.2).

"I got a camera. Yeah, a digital camera." (Respondent 01)

"With a camera, digital." (Respondent 03)

"Camera, yes a digital camera. I found the photos from my phone are not very good anyway." (Respondent 04)

"Digital SLR- single lens reflex camera." (Respondent 05)

4.3.3 Different processes after capturing a photograph

What happens to digital photos after capture	
Store the captured photos on some other device	40%
Kept the image stored on the same device used to capture the photos	31%
Other (view, edit-crop, share or send links using emails, text messages, and Facebook, process, and back-up)	14%
Print onto photographic paper (non-digital)	10%
Deleted from storage	5%

Table 4.3.3: Different processes done by older Australians to after capturing a photograph

It was found that 40% of the research participants who captured photographs were likely to store a photograph on a different device after capture. However, 31% of the research participants who captured photographs preferred not to do anything upon capturing a photograph. Instead, they allowed the captured photograph to remain on the camera that took the photo in the first place. In contrast to the digital storage of photographs, 10% of the research participants printed photographs onto some form of photographic paper (Table 4.3.3). Comments from some respondents indicate that printing a photograph was not the most preferred choice among older Australians.

"Haven't printed in recent time."(Respondent 14)

"Printed photos in photo albums wastes time." (Respondent 16)

"The others I have got when we go on a trip, I keep the better ones. I store all of them. I don't print often." (Respondent 01)

"No, I don't print." (Respondent 04)

"I don't print, I rarely print, I edit them and use them constructively and of course I use family pictures and all. I don't print them, I am not into printing." (Respondent 23)

Some comments from the research participants demonstrate that digital photographs also carried a sentimental value for older Australian adults.

"But I look at them (digitally). Well my son shares (with me) his photos of my granddaughters, I probably look at them and enjoy. Mostly I do them morning and the night. I already looked at them today." (Respondent 06)

"I have tried to dispose a lot of photos. I do find it very difficult to throw away photos. I have got photos of City Beach when it has a single one fence to hold back the bush and a wooden bench seat and very little sand. It goes back to early 1930s. I have got them." (Respondent 02)

"When my father died he left all these slides. What do you do with them? You just throw them away and he valued them." (Respondent 12)

These results indicate that the storage of photographs is an important feature. Many older people have some agreement indicating that there is value in storing photographs in a digital format. The responses suggest that the storage of photographs in a digital format is something that is valued.

4.3.4 Different locations used to store photographs

Where photographs are stored	
Computers (including laptops)	23%
Phone	20%
USB drive	14%
Photo albums (printed)	12%
Cloud Storage	9%
SD cards, SIM cards and Memory cards	7%
Social media	5%
iPad	2%
External Hard Drive	2%
Text to Someone	2%
Do not store	2%

Table 4.3.4: Different locations used by older Australians to store photographs

Computers followed by smartphones were the most commonly identified locations for the storage of photographs among older Australians. The results indicate the summed view of locations used by older people for the storage of photographs (Table 4.3.4). The responses from participants are described by the respondents in terms of a physical (or at least imagined physical) location. Some locations are deemed as "imagined" by respondents because they may not understand that the terminology of "cloud". Instead respondents may form a view that imagines the cloud as an intangible location whereas the photographs that they see on the phone is a tangible destination.

Some research participants have made comments and statements that indicate two things. In the first instance they indicate that they do not understand the concept of what cloud storage is. Secondly many respondents comment that they do not understand cloud storage or they feel suspicious or uncertain about the cloud. Responses from participants point to widespread insecurity and ambiguity regarding cloud storage (Table 4.3.4).

> *"I don't like the cloud, I must be honest about it, and every now and then it comes up view-on -store."* (Respondent 07)
>
> *"I know I have got iCloud but I don't use it."* (Respondent 09)
>
> *"I have a great suspicion about iCloud. I am still trying to clear it away. I still can't get all the idea of cloud."* (Respondent 23)
>
> *"I don't like iCloud, I don't understand it completely, and once again it's like Facebook. I am a bit old fashioned may be."* (Respondent 28)

"I don't usually put photos in the Dropbox. I have used. I know some of them that are on the iPad, they are on the iCloud." (Respondent 06)

"iCloud, I use a little bit at the moment. I have a new phone. Once that 5GB is gone, I won't be buying extra iCloud. I mean I don't like iCloud at all. Then I lost my phone and thought of I should now." (Respondent 31)

Some participants did not understand that storage on Facebook also implied cloud storage. Some participants favoured Facebook because they thought that it was not a form of cloud storage. Other respondents preferred other storage to Facebook because they were concerned about the privacy of storing photographs where everyone could see the photographs. The comments indicate that many respondents do not understand the relationship between photos stored on social media platforms, and the means by which those platforms store photos themselves.

"Oh I wouldn't post in Facebook, good heavens!!! Facebook everybody can see. I value my privacy, I would not use Facebook for that." (Respondent 02)

"Yeah we have got heaps of them from past. Nothing in Facebook. I got some in my phone." (Respondent 01)

Alternatively, other participants who used social media to store their photographs, used it due to a specific requirement to contribute their permission for a specific purpose.

"I am a member of the CWA. And I run their Facebook page from mine. So I take photos when I go to these things and have to ask everybody if they are happy to be on here before I put them on those photos in Facebook." (Respondent 06)

Digital devices such as computers and smartphones were the preferred choices for respondents to locate photographs, while a lesser number of participants preferred to use social media as a way to store their photographs. Fewer research participants expressed that they preferred to use cloud storage to store their photographs. Some respondents were concerned with the ambiguous nature of the cloud. However, some respondents did not want to store photographs (Table 4.3.4).

4.3.5 Different locations used to store back-ups for photographs

How do you store back-ups for photographs?	
Do not keep back-ups	24%
External hard drive	21%
Stored somewhere on a Computer	17%
USB drive	11%
Online storage	11%
Phone	6%
Tablets	2%
CDs	2%
SD card	4%
In Print Photo albums	2%

Table 4.3.5: Different locations used by older Australians to store back-ups for photographs

The majority of the participants kept some form of back-up storage for photographs (76%). However, 24% of the research participants stated that they did not keep back-ups for photographs (Table 4.3.5).

> *"We don't, so after storing that we don't do anything else like back-ups."* (Respondent 03)
>
> *"No, I am not very good at back-ups."* (Respondent 12)
>
> *"No, I haven't done back-ups. They are all still there. We didn't have those things in those days. I took the film and I took the developer and got a back of slides in boxes and then I put them into big better storage boxes, where they still remain."* (Respondent 22)

Some of the participants were aware that their photographs were backed up by online cloud storage methods by default (Table 4.3.5).

> *"Some of them are sending things to iCloud because there are lots of space on there."* (Respondent 12)
>
> *"Yeah they may be there on cloud, but I don't put them."* (Respondent 20)
>
> *"Cloud, I have a Google account first which does back-ups and I have an Apple account- iCloud occasionally- automatic back up. It's called apple time machine."* (Respondent 25)

Of the different locations for storing back-ups, external hard drive (21%) and computer (21%) were the most prominently used locations. Printed Photo albums were the least popular method to store back-ups for photographs (Table 4.3.5).

"I have recently finished digitising all the family photos from 1930 onwards." (Respondent 02)

4.3.6 Feelings about the loss of photographs

Feelings after the Loss of a Photograph	When the Photograph is an Recent Photograph	When the Photograph is an Old Photograph
Feel Nothing	34%	13%
Feel a Little bit Sad	19%	13%
Feel Sad	19%	7%
Feel Very Sad	13%	34%
Feel Devastated	12%	30%
Gave no answer	3%	3%

Table 4.3.6: Different feelings on losing either a recent photograph or an old photograph

The research results indicate some of the participants felt nothing if they lost a recent photograph belonging to them, whereas only 13% of respondents felt nothing about the loss of an old photograph.

"Because I have got several back-ups they are never lost. Because I back up daily. If I take photos and copy photos, the ones that are here from this weekend, I wouldn't have backed up at this stage. If I happened to had the time. It does not happen but if I did lose some photos, usually I can re-gain access, I can re-gain copies." (Respondent 02)

"I wouldn't be sad with all the phots that I have seen recently." (Respondent 15)

"Probably I wouldn't. At this point in time, I can get another one." (Respondent 21)

"A lot of them don't exist anymore anyway. You know we have spectacular photographs of the world trade centre where we took kids many years later- that doesn't exist anymore. The World trade centre got blown up by the planes, so if I lose them, it wouldn't matter. I have a very good memory and they are all in my memory. They mean a lot to me." (Respondent 22)

"Well we don't have much electronic stuff it's mainly hard photos and we used old film cameras, not in digital cameras, if I lost them I am losing the actual hard copy, so we don't really have the digital photos of our younger children." (Respondent 31)

In contrast, 25% of participants felt either very sad or devastated at the loss of a recent photograph, whilst 64% of participants indicated that they felt either very sad or devastated at the loss of an older photograph (Table 4.3.6).

"I would be sad if it was something that only in that particular time, well it only comes then." (Respondent 13)

"It depends on the photo, I would be sad if I want to. Disappointed. We were looking the other day for a video I made and I am sure we finished the video of my son's wedding and it was very humorous it was 2-3 minutes long video and the final version we put sub titles on and I was looking for it yesterday and I couldn't find the sub titles. So I am now trying to think where I go next to go looking. And my grandson, there was a cute photo of him with long hair and I have seen the photo and where it should be and I can't find it. Very sad, I was to print it and out it on the fridge. That's the only place that I print photos these days. Post cards we send to friends or out on the fridge. I print occasionally the common ones or print CDs labelled." (Respondent 25)

"Very sad. Well, if it was a family photo I would be very sad." (Respondent 01)

"My family photos- I would hate to lose them." (Respondent 05)

"Yeah very sad too. It's the same. I have got a lot of very old photographs with my great, great, great grandparents like things, I have got the original." (Respondent 06)

"We had our camera taken during a burglary. And the sad part about that was our second daughter's graduation from university was on it, the photos, so that was a real. Very sad about that. I mean it was quite an even for her. The camera was stolen out of the drawer in my husband's study." (Respondent 13)

"But earlier ones and I wouldn't be happy to lose. There's a so few nice ones of me. I have a lot of old ones that I found of family of the old people from 1800s, I would be devastated if I lost them." (Respondent 15)

"I would feel sad some of them yeah. I will some of them really sad of my grandparents like things that are not replaceable. Or usually either they are all be of places, they wouldn't have been places." (Respondent 18)

"Because I do have family photo albums, I wouldn't unless- I am a widow and I have got my husband's photos near me all the time, I wouldn't like to lose them. I would feel very sad if I lose them." (Respondent 27)

"Terribly, terribly attached to these photographs. Goodness gracious, those are about my ex-husband, those are about my children, and my son." (Respondent 32)

4.3.7 Summary of Section C

This section reveals that the majority of participants used a smartphone to capture photographs. The research study found that the majority of older Australian participants stored photographs upon capturing a photograph. Digital devices such as computers and smartphones were the mostly used locations for the storage of a photograph. Several participants declined to use social media or online cloud storage methods to store their photographs due to uncertainties, doubts, ambiguity, and in some cases privacy. The results show that older Australians feel it is important to back-up their photographs on some form of storage. In many cases participants did not value the loss of recent photographs compared to their older photographs.

4.4 Results Section D: Digital Objects- Known Usage, Segmentation, and Preferences

In this section, a number of questions were asked to the research participants about their digital objects. These questions included four main areas relating to the knowledge, usage, value, and concerns of digital objects.

4.4.1 Perceived understanding about digital objects

Do you know what a digital object is?	
Yes	66%
No	34%

Table 4.4.1: Understanding about what a digital object is

The data from the research results show that 66% of the research participants stated that they were aware of what a digital object was (Table 4.4.1). Examples of respondent perceptions were varied in nature. Some respondents gave examples to show an understanding, mentioning ones and zeros, or talking about JPEG files. The responses suggested that rather than one single understanding shared by many older people, the knowledge about digital objects was highly subjective, and based on individual experience and example rather than by a shared collective understanding of digital objects.

> *"Yes, something that works through electronic. I have scanned all my photos and then I thought - hang on that's digitising. Okay so I digitised my photos, sounds very up might."* (Respondent 02)
>
> *"I am assuming that it is that you can't touch like a photograph."* (Respondent 06)
>
> *"Well something, hard to explain it, its information stored on a chip or digitally."* (Respondent 08)
>
> *"Recording in ones and zeros which can be turned in to photographs or words."* (Respondent 14)
>
> *"Jpeg you mean. A file or a folder."* (Respondent 16)
>
> *"I haven't heard of that before. Probably it's a product or an e-book."* (Respondent 17)
>
> *"A digital object is like a photograph or that sort of a thing."* (Respondent 21)
>
> *"Any object that can be stored digitally."* (Respondent 25)

"Well it's just something that uses a binary system and things that are not electric but electronic." (Respondent 31)

In some cases, the respondents gave comments and examples to indicate their understanding. However, some comments revealed that some of the participants held the perception that they knew what a digital object was, but might have held an understanding about digital objects that was incorrect. Some participants did not understand the definition of a digital object in terms of its intangible and virtual representations.

This data indicates a difference in consistency of respondent views about the underpinning knowledge about the difference between digital objects and objects that have a physical or literal appearance. Some participants could describe objects of technology, whether hardware or software, whilst others correctly identified digital objects in an intangible sense. Other participants described digital objects as products of a modern world or a technological world. Some participants incorrectly saw digital objects as products or devices.

"It is hard to describe, like a phone or an iPad." (Respondent 03)

"A digital objects is a thing on the computer, the screen on the computer." (Respondent 09)

"My way of thinking is something that is portable that you can do stuff on." (Respondent 15)

"Can be hardware or software." (Respondent 19)

"It's something that is being created with modern technology." (Respondent 22)

"It could be anything, it could be a smartphone and those type of things." (Respondent 23)

"Something that's on the computer." (Respondent 24)

"Something to do without a pen, it's the opposite of a pen." (Respondent 32)

4.4.2 Digital objects used by research participants

Digital objects	Percentage of participants who chose this digital object
Digital photos	94%
Digital videos	69%
Digital music	56%
E-books	50%

Table 4.4.2: Different digital objects of convenience used by older Australians

This research area gave participants a choice of four digital objects of convenience, and asked them to explain which of these they used. This section examined objects of convenience as separate from other objects that respondents might find to be used for necessity (such as emails, banking, and paying bills). Participants were free to choose more than one category relating to their digital object usage, as long as they were one of the four given categories of digital photos, digital videos, digital music, and e-books.

Research results indicate that digital photos are the most commonly used digital object of convenience among research participants (Table 4.4.2). The comments below along with the numerical figures from the above table indicate that e-books are used by older people but are not the most preferred digital object among research participants.

> *"E-books- I don't tend to buy e-books, I just use them from the library and then return them."* (Respondent 06)
>
> *"E-books, not really but I have from time to time but not really my thing."*
> (Respondent 16)
> *"I have actually got an e-book I have put some on it but I don't think I will use it. There's also a physical reason about it. I find it increasingly I am uncomfortable with reading because of my age. I don't use it."* (Respondent 23)
>
> *"E-books, I have started to use them and then I found I didn't retain their information that I read online, I couldn't remember the content of a book. My brain didn't, I can read a hard book and remember it with an e book it's not much, I do use if I am going away, on a plane travel or something I will use it but not for preference."*
> (Respondent 24)
> *"I use Kindle very occasionally."* (Respondent 26)
>
> *"e-books- no I haven't had, I actually don't like reading on a screen. I will read the information that comes up, documents like things but I don't like to read a book on the screen."* (Respondent 31)

4.4.3 Trust in digital objects with free access

Trust in companies that give free access to digital objects	
Yes	44%
No	56%

Table 4.4.3: Trust about the companies which let older Australians access them for free

Research results show that 56% of the research participants did not trust those companies which gave users free access to digital objects (Table 4.4.3). Respondents commented on their lack of trust based upon company behaviours that included the sharing of information and data with other third parties. Other respondents indicated that in instances where the access to digital objects and services was free, the perception was that something about the company was distrustful because the access should have some kind of value (i.e. not for free). Most respondents expressed their distrust with specific reference to their lack of trust in social media company Facebook.

> *"That's why I don't use (Facebook), because you know the information you give is used by other groups."* (Respondent 03)

> *"I don't tend to use a lot of free things, I am not into giving outsiders my details or my photos."* (Respondent 04)

> *"I think they store it, but I don't believe it's 100% safe. Not 100%. Because I think the hackers can hack everything."* (Respondent 11)

> *"Not 100%. There are some bad things done by Facebook and those sort of people recently."* (Respondent 14)

> *"I trust (Facebook) in that they are for free but I am not using it very much because I don't trust the scammers or what Facebook is doing with my information and so that's why I haven't been using it very much actually. And one of the reasons that I did go on there was people from my past. I can see and catch up and I am too frightened to."* (Respondent 15)

> *"No, because I think nothing is free for a start and being all that scam scandal Cambridge or whatever it was called and anyway no I don't trust anything on the Internet for whatever."* (Respondent 18)

"I have seen too much evidence of the profiles or the property being accessed by others" (Respondent 19)

"No, I had reservations and those reservations have increased because of the scandal of Cambridge. Facebook has given all the information." (Respondent 23)

"Not really, because you always hear about our data being accessed as in Cambridge Analytica or other means." (Respondent 26)

"And they can share that with whomever they like for money usually." (Respondent 28)

4.4.4 Trust in companies to store one's digital objects safely

Do older people trust companies to store digital objects safely?	
Yes	38%
No	56%
Uncertain	6%

Table 4.4.4: Trust in companies which let older Australians to store their digital objects safely

It was found that 56% of the research participants did not trust the companies to store their digital objects safely (Table 4.4.4). The responses suggest that participants are aware of public media concerns over the safe storage of digital objects. The majority of comments indicate a lack of trust in social media-based objects that reside in cloud storage formats. Some respondents are prepared to use some social media platforms because they have applied their own strategy for storing digital objects on their own devices.

"No, I have got the copies if I upload things, because I got the copies."
(Respondent 06)

"Probably no, because so much in the media news. Then I must not trust."
(Respondent 10)

"I think they mean that they will probably store them safely but on the other hand they use it as well if they can sell it for money…our photos and other information."
(Respondent 11)

"No, iTunes actually you pay to download it and you have paid for that but it's still their property. I don't get that. You still can't do whatever you want with that music you bought." (Respondent 15)

"I don't think so. I only put there what I am happy for the world to see and I am prepared to lose. Because I have got a copy in the computer but there's nothing there." (Respondent 16)

"I cross my fingers and hope for the best, I don't trust them but at the same time I do use them." (Respondent 18)

"No, just concerned that they are selling information to others for their own gain." (Respondent 19)

"No I wouldn't trust them to do that. Technology is moving I think so fast so that you can't be sure of anyone to trust anyone. You might get a rogue employee in and years of trust have gone out of the window." (Respondent 22)

"No, because of all the scandals that have come out of these things and the leaks in the people hacking into. Bit worried about that." (Respondent 23)

"I think we have no idea how everything can be accessed. I live a very ordinary life so to be quite honest my emails etc. are probably of no value to anybody, I would probably be concerned if I was a person of note." (Respondent 26)

4.4.5 Concerns about how other people can see and access one's digital objects

Types of concern	Number of respondents
Privacy	16
Security	9
Financial, identity, and information theft	9
No Concerns	7
Data Interference	1

Table 4.4.5: Concerns about how other people can see and access Older Australians' digital objects

Research results revealed that the majority of the research participants had concerns associated with one's privacy. This was followed by security concerns and concerns about theft. Seven participants did not have any concerns about how other people can see and access their digital objects (Table 4.4.5). Some of these concerns are described by the comments from the research

participants. Respondents described their concern at the prospect of being subject to either hacking, or to loss of privacy.

> *"Yes, concerned about privacy. There's no personal security guaranteed."* (Respondent 02)

> *"I have concerns about access in general, not just photos, bank accounts or anything. In case hacking goes on, I mean - I had an experience with credit card."* (Respondent 03)

> *"I don't let my grandkids use my computer. Well, mostly (my digital objects) are business related, and I don't want to take the risk of losing them. I have very little personal stuff on my computer."* (Respondent 08)

> *"Yes, I don't really understand the Internet properly. I find it's scary, I set my security as high as I can. My concern is about being hacked and privacy too."* (Respondent 18)

> *"I am quite concerned. I am worried obviously getting into my accounts and my money, security becomes increasingly important, scams, worried about your money stored in banks."* (Respondent 23)

> *"I don't know whether strangers can see my emails or banking. Photographs don't worry me. That doesn't worry me. I don't have any personal (objects). I do have identity concerns, somebody getting hold of my banking details does concern me, but I have to trust the bank and what they are doing. I am concerned for hacking into my banking account."* (Respondent 24)

> *"Yes. I hate the idea that I could be in public somewhere, and someone takes a photo of me, tags me, and puts it on Facebook. And if the photo was publicly available they could say a story about me. They could take a photo and add a whole lot of text to it. And I've got no control over it. My privacy would be undermined by stupid things like that. I don't like it to happen but it is very easy to do. And people getting hold of my medical data, my health records and stuff like that are concerns for me."* (Respondent 25)

> *"Yes, I am actually I am one of the people to look at, I don't post. Privacy."* (Respondent 27)

> *"Yes I do (have a concern), privacy, and sharing that information with others."* (Respondent 28)

4.4.6 What older people think about their own usage of internet banking

Thought	Number of research participants (out of 32)
Convenience	10
Insecure	9
No thoughts	5
Secure	5
Valuable / Useful	3
No other alternative	2
Confident	1

Table 4.4.6: Thoughts about the own usage of internet banking

The results from the interviews found that the most prominent theme was that participants thought that their usage of internet banking was convenient (Table 4.4.6). The next most prominent area of thought indicated that insecurity was a concern. Many responses cited a positive benefit from their use of internet banking. These responses included convenience, security, value, usefulness, and confidence were the main factors.

> *"It saves me travelling around and it is of good value."* (Respondent 01)

> *"I find it very convenient. And I love using the credit card."* (Respondent 12)

> *"Very convenient, it has got some technical security if used but I think they are probably controlled, Identity theft seems to be one of the biggest issues."* (Respondent 25)

In contrast, other responses showed negative thoughts around issues of insecurity, and the perception that there was no alternative but to make use of the online banking format. (Table 4.4.6).

> *"Well up until this time until I thought I had a secure number. Now I feel probably use a VPN. I am concerned but I check my bank records, possibly daily and therefore, you know, I know when my money is coming out. I have had a false account fraud and I recovered the money. We had a credit card that was accessed illegally. I had a phone call a couple of months ago, someone was trying to access money from Albania, but they wanted to use Western Union, but I hung up. They had me on the line for 2.5 hours on the phone."* (Respondent 02)

> *"This happened when American Express went to a digital card, and in the first week that I received it, it must have been an internal thing in American Express because it*

was used in America. Then our house was broken in to. I think pay pass is very dangerous, if you stole (a card)" (Respondent 03)

"Well I don't think they are secure, I had compromised several times in the past and I don't like pay wave, I don't trust that all because I know that's so simple for people to scam." (Respondent 31)

Some respondents stated that they used internet banking because there was no other alternative (Table 4.4.6).

"It does worry me but not enough for me to be doing it. My alternative is to go down to the bank. I am concerned but I feel like there's no solution, the choice is to go down to the bank. There is a choice but not a good one." (Respondent 18)

"Well I come across cyber-attacks at work so I am aware that if there is a robot up there and they find your weakness in the system - they are in. I feel vulnerable but still continue to use it. There's no choice, your salary is put in your bank account." (Respondent 26)

4.4.7 Difficulties faced when using digital objects

Difficulty	Number of research participants
Operating System related	16
Networking related	7
Password Related	5
No specific issue	4

Table 4.4.7: Difficulties faced by older Australians when using digital objects

Research results show that some participants found difficulty with three areas of digital object usage (Table 4.4.7). There were 16 responses relating to operating system concerns, 7 responses that identified networking-related issues, and 5 responses that were password related. Research participants had difficulties with software updates that related to varying devices, platforms, and systems (Table 4.4.7).

"When I updated the whole software, things went to the wrong area of the cloud, I am still trying to retrieve it all. Oh god, not helpful at all." (Respondent 04)

"Laptop there, I rarely use it now, of course I find it more complicated, the latest version of Windows I have I am not familiar with it, just Windows 10 and I can't be

bothered to learn it. So I find that annoying because the problem is with the smartphones and the iPads and other tablets they make it so easy within minutes you don't have to log in to your email." (Respondent 31)

"I have troubles, problems occasionally, my computer goes wrong so I have to ring someone how to get it fixed, I have never actually been told how to use the iPad, was never any instructions given. So I have lot of missing information, missing knowledge which I am inquiring from time to time not forever." (Respondent 28)

Participants commented on their frustrations in terms of password changes, multiple passwords, and the difficulties with systems that repeatedly ask for passwords (Table 4.4.7).

"I have a few things that work now and then which irritates me. My greatest irritation is in direct payments. I don't have any direct payments from my bank account. I don't trust anyone else to get fingers in my bank account. So actually cancelling one through apple id, apple id is the pain of my life, because they want new passwords all the time. It grossly irritates me." (Respondent 02)

"Irritation of passwords, too many passwords. And not just the passwords, often the usernames as well, that really irritates me. I mean I do what I shouldn't do- type them all and keep all these. I just can't remember them all." (Respondent 03)

"Passwords, always passwords. Absolutely hard to remember them." (Respondent 10)

"Not really but the thing is if everyone booking tickets mainly booking tickets, they ask for a password, so what's the password- three quarters of the way oh I can't bothered with this anymore. Sometimes I think is it me or is it their website, then I do it on the phone, it's so much simpler. That's the only one that even knowing what they are really wanting. If I want to book through Ticketek or try booking or I don't know the festival of Perth- they all have their different little accounts. And then after a while I have got so far, I have ordered the ticket and I am going and then it says put in this. I often end up doing in the phone and think why I didn't do it in the phone." (Respondent 30)

4.4.8 Digital Objects that are most used

A table was constructed to show the ranked preferences of the usage of digital objects by each participants. The results can be observed in Table 4.4.8.

Digital Objects that are most used – Ranked ordinally		
1	Category A **Necessity**	Email
2		Online Banking
3		Digital Photos
4	Category B **Convenience**	Online Payments
5		Social Media
6		Music
7		Online Shopping
8		E-books
9	Category C **Pleasure**	Online Games
10		Video

Table 4.4.8: Mostly used digital objects amongst older Australians

The research results found that 'email accounts' was the mostly used digital object by research participants. It was also found that 'online bank accounts' is the second mostly used digital object by research participants (Table 4.4.8).

> *"Someone got hold of my details, even from the bank account, I lost some money, someone got my details and money went off, I mean it got recovered, then I change the card, but the fact is it did happen. I still use the bank most."* (Respondent 04)

> *"I do all my bills by online banking. I did some yesterday. I set it up, you know I have got some, plan the future. So, I do all my banking online."* (Respondent 06)

> *"Online bank accounts because I help my daughter quite a bit, I go in there and transfer money to her. It is very useful to get in checked everything."* (Respondent 12)

The ranked order of preferences suggest three broad categories of digital object usage based upon participant choice and preferences. The first category shows a strong connection with digital object usage of necessity. There are three object classifiers in this category: Emails, Online Banking, and Digital Photographs. The results of the participant interviews indicated that these three areas had the strongest preference for usage, and aligned with a usage that related to digital objects that were used on the basis of need (Table 4.4.8).

The second category showed a connection with digital object usage that was related to convenience. In this category the classifiers identified included: Online payments, Social Media Usage, Music, Online Shopping, and E- Books. This category aligned closely with digital object usage that was of high convenience. Participants could get by using other means (e.g. non-digital versions) but would prefer to use digital objects for their usage in this category.

The third category showed a connection with digital object usage connected with pleasure. Digital object usage classified in this category consisted of pleasure-related activities such as online games and videos (Table 4.4.8).

4.4.9 Perceived Value preferences on Different Digital Objects

Each of the 32 participants were individually asked to rank each segment of the identified different digital objects to show their perceived preferences in terms of the value of each type of digital object. They were asked to rank each type of object in terms of its sentimental, historical, legal, and monetary value. The Likert tables indicate the summed preferences based on these choices for each type of object (e.g. photographs, social media). Participants were asked to rank these preferences on the Likert scale according to the values of No Value, Less Value, some Value, More Value, and High Value. The results are shown in Figures 4.4.1 to Figures 4.4.10.

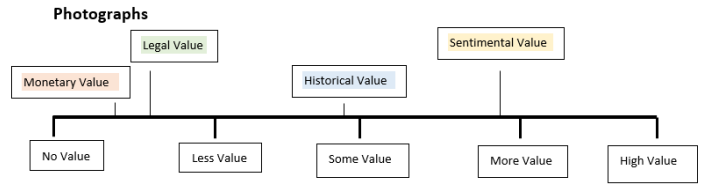


Figure 4.4.1 Value preferences of Older Australians for digital photographs

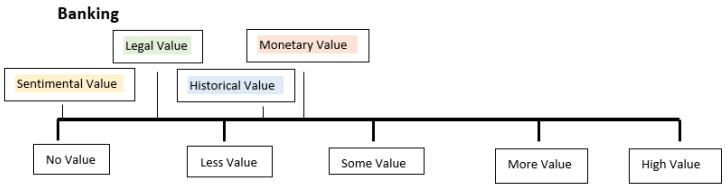


Figure 4.4.2 Value preferences of Older Australians for online bank accounts

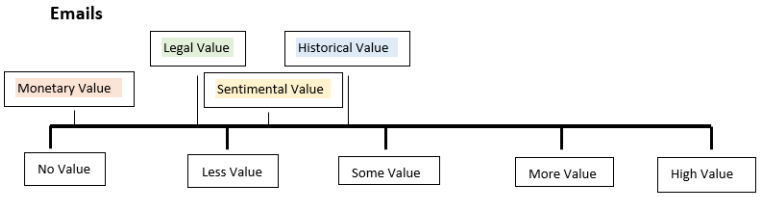


Figure 4.4.3 Value preferences of Older Australians for e-mail accounts

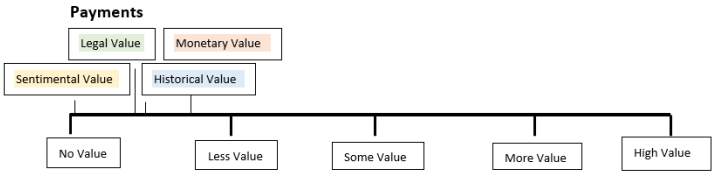


Figure 4.4.4 Value preferences of Older Australians for online payment accounts

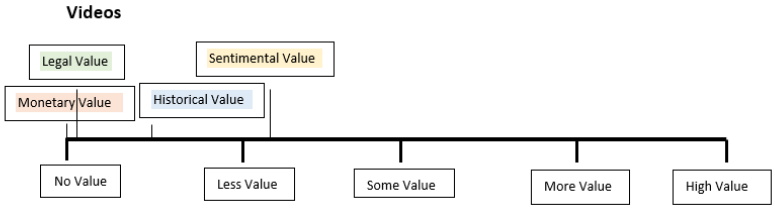


Figure 4.4.5 Value preferences of Older Australians for digital videos

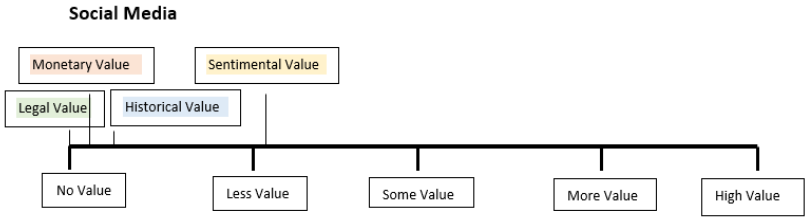


Figure 4.4.6 Value preferences of Older Australians for social media accounts

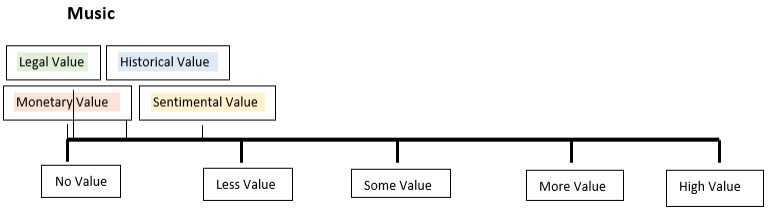


Figure 4.4.7 Value preferences of Older Australians for digital music

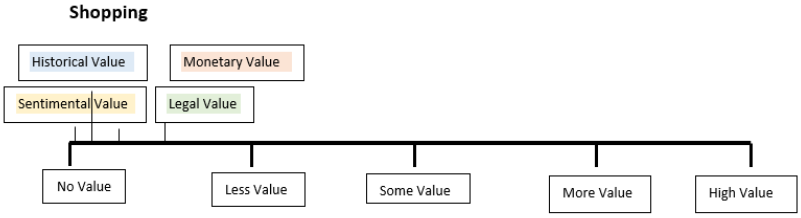


Figure 4.4.8 Value preferences of Older Australians for online shopping accounts

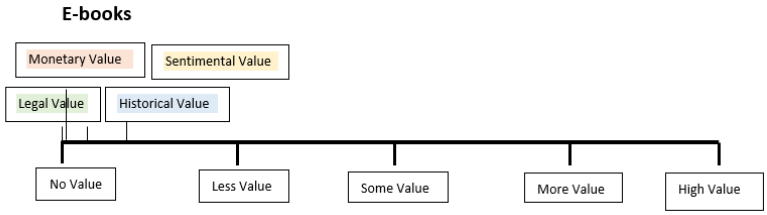


Figure 4.4.9 Value preferences of Older Australians for e-books

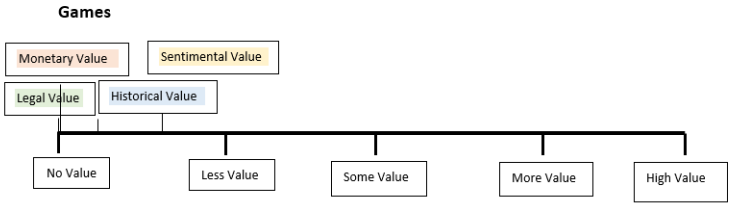


Figure 4.4.10 Value preferences of Older Australians for digital games

The research results show that the category of *digital photos* was the digital object where individual preferences indicated a higher sentimental value than other values (Figure 4.4.1).

> *"There will be some, some photos have been sentimental from emails I think."* (Respondent 15)
>
> *"I recall my memories."* (Respondent 03)
>
> *"I would say they do actually, because they go back quite a few years, so they could have some historical value."* (Respondent 07)
>
> *"I use that all the time for keeping a record of."* (Respondent 24)
>
> *"Not sure but of course historical because they are photographs of childhood or something. That's why they are of great value, if anything happens to them nothing can conversant you in lose photographs, like family tree"* (Respondent 16)

Less than half of the participants saw a historical value in their online bank accounts. Some participants stated that they saw a value in being able to revisit these records (Figure 4.4.2).

> *"I keep the folders of important emails. Historically what I want to keep."* (Respondent 01)
>
> *"I have got about 700 something emails on my record. They go back to about 2003. So you can see that I have a large number of historical records."* (Respondent 02)

"You can go back and look at things." (Respondent 16)

"I do keep things to confirm. Might forgot dates, I thought this date." (Respondent 17)

Some participants, (less than half), identified emails in terms of historical and sentimental value (Figure 4.4.3). Participants stated that emails provided a level of connection to family and were a reference point for past events.

"Because I live alone here, I don't have family who are live over here anymore. All my family is over east and my friends are all not where I am. Email is really important to me for keeping in touch." (Respondent 05)

"Some of the stuff I store in emails might have a bit of a sentimental value." (Respondent 07)

Online bank accounts were seen as valuable to a small proportion of research participants in terms of monetary and historical values (Figure 4.4.2). In some instances, participants indicated a preference for non-digital object usage in the form of the paper-based bank statements that were previously sent by mail.

"Yes very much monetarily valuable, well you can get rid of the bank charging $3 over the counter fee." (Respondent 16)

"It's financial, I have an English pension that goes into an English bank." (Respondent 20)

"Historically, I keep a record I suppose." (Respondent 01)

"I think they do have a historical value, because you want to go back through your accounts." (Respondent 05)

"Obviously it is historical because I can see, I usually go and check the things. That's quite important." (Respondent 06)

"Because you can find anything done before." (Respondent 11)

"I stopped getting paper statements but I want my paper statements, I don't want you know- it's just an aged thing I think, so I can I put them away and then I can go back and check them, rather than depend on going into a document file, I like a hard copy. So that I can check that and it helps me prepare my income tax and all of that. Because I get it by paper no historical value." (Respondent 21)

"Because I want to know how much money in the bank, what I have paid of basically it is a reconciliation account" (Respondent 28)

It was found that online payments was the third most valuable digital object carrying a higher value in terms of its monetary and historical values (Figure 4.4.4).

"I think there's a slight reduction in certain things when you pay online."
(Respondent 31)

"So I can check up on it. I have a system where by, I save every receipt and it is saved on to my hard drive. And it is already filed to the accountant. So it is not really historically for the online payments service because I use my records."
(Respondent 02)

Digital games were the least valuable digital object to the research participants (Figure 4.4.10).

"I wouldn't worry too much, I would just find some new games." (Respondent 06)

"Games are just entertainment, I would find something else if I lose them." (Respondent 18)

E-books were the second least valuable digital object to the research participants (Figure 4.4.9).

"No value, just a way of doing something." (Respondent 03)

"I suppose when you buy a book, you keep the book if it is a book and it has got a historical significance, but online you would not keep for any of those reasons, I mean I wouldn't." (Respondent 14)

"They are useful because you have so many books accessible at a particular time. I mean not terribly valuable because I prefer to read a paper book. Because you can find books online possibly you haven't thought about it. They are nice to refer to. I look up historical kind of e books on the kindle. I occasionally look at them often that you can't find them anywhere, sitting at your computer." (Respondent 26)

4.4.10 The perceived value of digital objects to older Australians

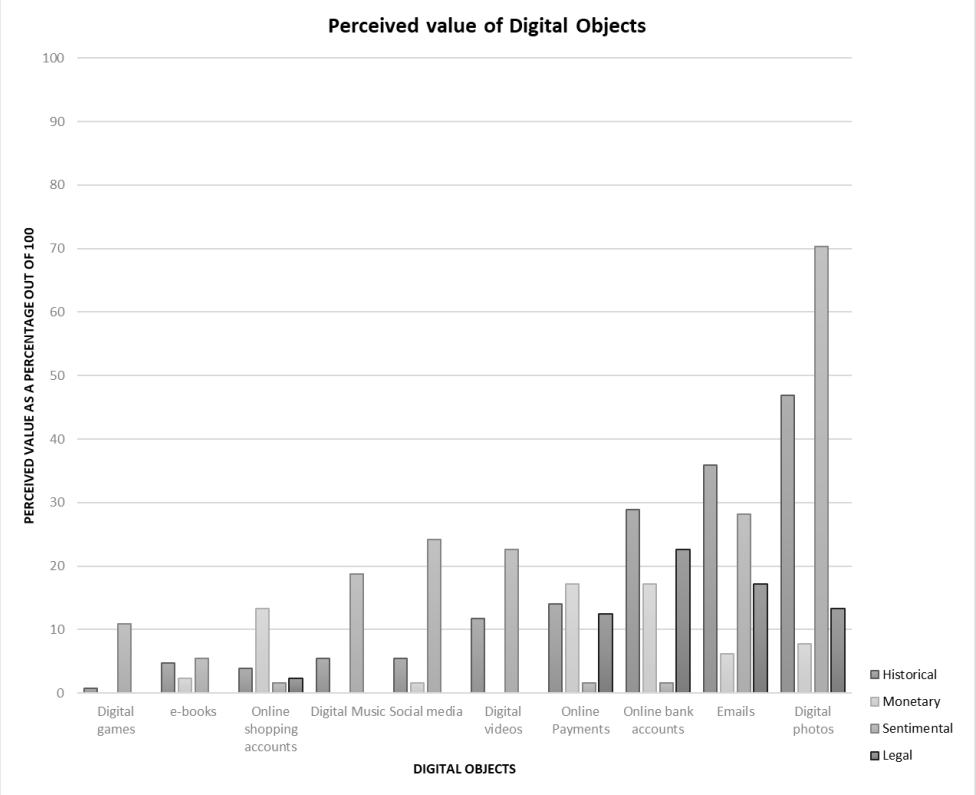


Figure 4.4.11 The perceived values of digital objects to older Australians

Responses to different values regarding digital objects were collected showing perceptions around the four main areas of historical, monetary, sentimental and legal values (Figure 4.4.11). The responses show a range of differing perceptions. Sentimental and historical values rated higher than other perceived values with digital photos and emails, whilst monetary and legal perceived values were most prominent in online shopping, banking and online payments.

Research results show that digital photos occurred to carry the most historically valuable digital object followed by emails, and online bank accounts. Digital games was the least historically valuable digital object (Figure 4.4.11). The results indicate that online bank accounts were the most monetarily valuable digital object followed by online payments, and online shopping accounts. According to the research results digital games, digital music, and digital videos occurred to have no value for the research participants in terms of their monetary value (Figure 4.4.11). The results show that digital photos were the most sentimentally valuable digital object followed by emails, and social media. Online shopping accounts, online payments, and online bank accounts were the least sentimentally valuable digital objects (Figure 4.4.11). The

results indicate that online bank accounts was the most legally valuable digital object followed by emails, and digital photos. According to the research results digital games, e-books, digital music, social media, and digital videos occurred to have no value for the research participants in terms of their legal value (Figure 4.4.11).

4.4.11 Summary of Section D

Results from interviews provided information about how different respondents viewed various types of digital objects. The section covered four main areas relating to their knowledge, usage, perceived value, and challenges relating to digital objects. The results indicated that knowledge about digital objects was highly idiosyncratic and related to discrete familiarities rather than following any common combined understanding of digital objects.

The responses discovered that some respondents believed that they could discern what a digital object was, but conceivably maintained thinking and awareness about digital objects that was inaccurate and in some cases erroneous. Some participants did not comprehend the delineation of a digital object in terms of its intangible and virtual exemplifications.

The respondent data points toward a divergence of respondent views about digital objects. Some respondents lacked a fundamental understanding of the difference between digital objects and objects that have a physical or tangible form. In some cases respondents could explain differences about objects used in technology by describing usage in terms of hardware and software. In other cases responses showed an awareness of modern versus older technologies. At the same time, some respondents incorrectly identified digital objects as pieces of hardware such as products and devices.

The results showed differences in terms of the usage of digital objects of convenience. Digital photos had the greatest level of usage amongst this type of digital object. The majority of responses pointed to a perceived lack of trust in the usage of social media platforms, and in particular the responses indicated a distrust for the media-company Facebook. Most responses specified trust issues in relation to social media objects that were held in cloud storage systems. Additional responses showed concerns associated with privacy, security and theft.

Responses to the usage of digital objects pointed to the convenience of using online and internet banking. These responses were partially offset by other responses indicating concerns with

insecurity. Overall, however, responses placed a higher alignment with characteristics such as convenience, security, value, usefulness, and confidence.

The results categorised three main areas of difficulty in the everyday usage of digital objects. Most responses pointed to challenges with operating systems, whilst there were also responses about networking issues as well as password concerns. Many concerns focused on the challenges related to software updates. The usage responses also revealed that email accounts were regarded as the most used (although not necessarily preferred). This was followed by the necessity associated with using online banking.

The data exposed three wide-ranging groupings of digital object usage based upon participant choice and preferences. The first category demonstrated a strong linkage with digital object usage of necessity. The second category showed a linkage with digital object usage that was related to convenience, and the third category showed a linkage with digital object usage connected with pleasure.

The respondent data revealed different values regarding digital objects in the four main areas of historical, monetary, sentimental and legal values. There was a range of divergent opinions. Sentimental and historical values ranked greater than other perceived values with digital photos and emails, whilst monetary and legal perceived values were most noticeable in online shopping, banking and online payments. The single most conspicuous category was digital photos, where individual preferences showed a significantly high level of sentimental value by comparison to other objects and other perceived values.

4.5 Results Section E: Digital Legacy – The Value of Digital Objects and Options after Death

Chapter Four looks specifically at the way in which digital objects are valued as assets or otherwise once a person has passed away. This section considers the use of legal instruments such as a last Will and testament, as well as considerations about digital objects (in the context of one's overall assets) that might be left to a person, group or purpose upon someone's death.

The results derived examine passwords, and the challenges of the transfer of access and authority alongside a digital asset / object. Additionally this section considers issues of curation and archiving of digital objects such as photographs and other objects that have a semi-tangible quality. The results indicate what types of digital objects have strong association with the need to manage and curate their storage and access over time.

Responses provided information about digital objects in relation to social media accounts. In this section the study considers the ways in which a person can be remembered (or forgotten) and what parties might have control or influence over the determination of how a person's social media account of themselves remains as is, or changes in accordance with a person's wishes, as well as the curator's decisions about individual digital object management.

4.5.1 Research participants who have prepared a Will

Participants that indicated that they held a Will?	
Yes	87%
No	13%

Table 4.5.1 Participants with or without a Will.

Responses from participants indicated that 87% of the research respondents had a Will. These people recorded high numbers of participants who have prepared a Will in advance. The majority of participants indicate a value in having prepared in advance a legal instrument that directs others in how to manage and resolve the ownership, transfer, and destruction of assets (Table 4.5.1).

4.5.2 Consideration given to Digital objects as assets that one could leave to someone

Had the participants thought about their digital objects as assets that could be left to someone?	
Yes	16%
No	84%

Table 4.5.2 Participants thoughts about digital objects left to someone

The research results showed that 84% of the research participants had not considered whether their digital objects constituted assets that could be left to someone. Comments from participants suggested reasons as to why some research participants had not thought about their digital objects as assets that they could leave to someone (Table 4.5.2).

Categories of Digital Object Value Awareness

There are six categories that explain the type of awareness that respondents hold about the value of digital objects as seen by themselves and to the others who may inherit or receive the objects after a person has passed away. In some cases, a digital object can be in more than one category. For example, a person might see that an object has a value to them, but not to someone else, and yet at the same time, they may be aware that in general (and over time) others may come to understand that a digital object has value.

Categories of Digital Object Awareness	
1	Respondent has not thought about what will happen to their digital objects or their value
2	Other people already have access to these digital objects – therefore the respondent does not see a value in them
3	The digital objects are valuable to the respondent, but the respondent assumes that the digital object is not valuable to others
4	The respondent assumes that the digital objects will be passed down automatically (digitally)
5	Respondent is uncertain what would happen, but has given some consideration to their digital objects
6	Respondent is aware that they have digital objects (that are assets) and are aware that they have some form of value.

Table 4.5.3 Categories of Digital Object Awareness

In some cases the respondents indicated that they had not given much thought to what would happen to their digital objects after their passing (Category 1). Respondents in this category demonstrated a lack of awareness about digital objects as assets. In most cases they may have considered physical tangible objects, but had not extended that same thinking to include digital objects (Table 4.5.3).

"I haven't thought about it, no, a good question. Just haven't thought about it. I have to think about it, yes." (Respondent 03)

"I don't honestly know. Not a subject that I would think about." (Respondent 09)

"No. Well I wasn't aware of it." (Respondent 10)

"No haven't thought about it- hadn't really put it in together, it's very obvious when you think about it, isn't it? Very obvious." (Respondent 25)

"No never thought, just wasn't aware really." (Respondent 27)

"No, never really occurred to me and nothing there was that important." (Respondent 31)

"No I don't think. I haven't really thought about it, none at all." (Respondent 32)

In other cases the respondents indicated that they believed that because others already had the same or similar access to the same digital objects, that their lack of response suggested that the others saw no value in them (Category 2). An example of this might be the digital access to a digital photo, where the respondent saw a value, but that digital object did not appear to hold the same value to others (Table 4.5.3).

"No because, the people who want the photos already have them. Bank records are all in a hard copy and with the accountant. Nothing else is really of value. They don't have a monetary value." (Respondent 02)

"And they need to get into monetary investments, I understand that, but then I will already make access available to them by giving them my password." (Respondent 24)

"No, I think they are too old. My family has got all up to date things, in fact the first couple of computers that I have got was my daughter's old ones." (Respondent 12)

In some cases respondents indicated that they realised a value in their digital objects, yet felt that other people would not share the sense of value (Category 3). Respondents here indicated that other people might have different ways of valuing things and that they would hold a different understanding of digital usage and access (Table 4.5.3).

"I am still trying to clear up with my mother's photos and she is gone into a nursing home and trying to get rid of the trap that people don't want to you know, people just

don't want the stuff. It's mildly important to me and it is not important to anyone else. I mean the money in the bank account might be important, that's not in."
(Respondent 04)

"No, my kids are all into computers. My stuff is probably so old fashioned for them because they have always got the latest stuff, you know the new watches, and we are so far behind them. To them, we're worth nothing. That's why I said, even do you want to look at the photos, no not interested. Because they are in the business, they are into computer business. The thing is we don't keep up to date as long as the computer works, they get new stuff all the time, and they have got all the gadgets, watches and all the digital stuff. For them it's nothing. They are not interested." (Respondent 07)

"No. Well I don't think anyone will be interested about having them digitally." (Respondent 08)

"No, because my son in law teaches photography, digital and whatever. So I don't think anything what I have got is not what he wants." (Respondent 13)

"No not that way but I have wondered about what should be done about that. They are only valuable to me." (Respondent 14)

"No I haven't, I thought it would be forgotten, I have no value to anybody." (Respondent 17)

"No they are totally valueless. Because they are only valuable to me. But I must admit I don't use fake accounts and I only put up online what I want. It does worry me about if one goes wrong, what happens to one's fake account. You know there has been a fear in the papers that there has been a bit about that what you do with them, how your Executor can get rid of them. The hard copy ones; yeah may be, but too many digital photographs in the world." (Respondent 18)

"No, kids will throw them. It was only what I chose not what my children chose. For my two daughters that would be the first thing to go in the bin." (Respondent 22)

"No - I think they are wasted assets and they are wasted quickly because of new technology and I don't think my heirs would be incredibly interested in some of the old machinery stuff." (Respondent 23)

> *"No I have never thought, I have thought about what will happen to my digital history, I have thought about what would if that device suddenly drops dead, how they would destroy it, not about the value. I wouldn't leave to my son and daughter because they would have no interest in what I have. They wouldn't want any of my photos because they have so many of their own."* (Respondent 24)

Some respondents assumed that the digital objects would be passed down automatically others after their death (Category 4). These respondents took the view that they did not need to take much into consideration because any transfer or re-organising of digital objects would take place without them doing anything themselves. These respondents saw their digital object and digital asset management as an automatic exercise, and one that did not require them to take any action (Table 4.5.3).

> *"Not until today. Because I thought that they were part of my estate and they would automatically go to my children. I mean I have got lot of ancestry stuff, I have got lots of family history and so thought that's my states and goes to them automatically."* (Respondent 06)

> *"Well what I thought was, when I die, my Executor will have access to my computer, my iPad and my iPhone and anything else which is digital."* (Respondent 28)

> *"No, I don't know I probably expect my children to take responsibility for that. I haven't put that in my Will."* (Respondent 29)

> *"Not really, I mean the banking one is very straightforward. And I don't know what happens to your banking account when you die, but I mean somebody or the executor will probably take over that. And all the photos that are stored- most of the other people in the family have got them. Look, I have been to so many things, so I chuck and chuck them. I haven't thought about it."* (Respondent 30)

In other cases respondents had given consideration to their digital objects and although they had given thought to these objects, still remained unsure about what would happen when they passed away (Category 5). In these cases, respondents saw a value, but held no understanding of a process by which others would receive their digital objects (Table 4.5.3).

> *"No, it never occurred to me either that you can do something but I suppose my daughter would like to go through my photographs and see what I have been doing all*

of these years. I think she may like it, it's like finding a photograph would be interesting." (Respondent 20)

"You know I have got the enduring power of guardianship during the power of attorney. And that sort of things, they don't include digital objects. What I have given to my family is the information to the lawyer, the accountant, the financial adviser. So they have all those contacts, but as far as being able to access my computer if something happens to me, they wouldn't know how to. They can turn it on, but they wouldn't have all passwords. Passwords I keep, if I go away I put in a safe. I didn't give it a thought." (Respondent 21)

All the research participants who had given consideration to their digital objects as assets that could be left to someone had digital assets included in their wills and their executors were aware of the fact that they had digital assets (Category 6). This category of respondents indicates that some respondents had an overarching awareness that they had some form of digital asset that could in some form or other hold a value (Table 4.5.3).

"Yes, I would like to do that although some of them have probably got a lot of new songs that I have got. I just thought I will give my daughter the passwords so that she can cut it off. I do that with my all other things, passwords with anything. If something happens to me she can cancel." (Respondent 15)

"I have already passed on a lot and whether they consider or not. They are only sentimentally valuable, they know that there are digital assets." (Respondent 26)

"Well what I thought was, when I die, my Executor will have access to my computer, my iPad and my iPhone and anything else which is digital. Yes, I have put that in my safe and she knows how to access my safe. And I have told important people how to access this." (Respondent 28)

4.5.3 Password access shared with others

Are passwords shared with other people?	
Yes	44%
No	56%

Table 4.5.4 Password access shared with others

Research results show that 44% of the research participants chose to share their passwords with others (Table 4.5.4). The table below shows the distribution of people who were given access to shared passwords.

Passwords shared with others	
Close Family eg: wife, daughter, son, grandson, son in law, family	73%
Friends	13%
Heirs - unspecified	7%
Share with others - unspecified	7%

Table 4.5.5 Distribution of access to shared passwords

The large majority of participants who chose to share passwords, did so with their family members. The comments below indicate the trend towards research participants who trusted family members to share their passwords with. Additionally 21% of participants indicated a known method or place (e.g. book or computer) where the passwords could be found and used by their nominated person to access (Table 4.5.5).

"Only with my wife." (Respondent 01)

"Oh yes, with my wife, we have got a password book." (Respondent 07)

"My wife knows." (Respondent 08)

"Yes, my daughter and grandson" (Respondent 10)

"Francis knows where they are, I usually got them written in a book, so she knows where they are. But if she dies before I do then nobody else knows but my daughter doesn't know, she would probably figure it out." (Respondent 20)

"Yes, with my wife and daughters." (Respondent 22)

"Yes, I have a password table and my wife knows my algorithms for making them convoluted for protecting." (Respondent 25)

"Family members certainly know where to access them." (Respondent 26)

"I think my girls, my daughters do know. They actually do help me with my financial side and also my son in law." (Respondent 27)

"Yes, mostly my son in law who is my IT consultant" (Respondent 30)

4.5.4 Multiple storage

Are digital objects stored in multiple locations / ways?	
Yes	69%
No	28%
Did not respond	3%

Table 4.5.6 Participants intentions to store digital object by multiple means

Research results show that 28% of the participants did not store valued digital objects in more than one way or more than one location. In some cases participants indicated that there was an "understanding" between themselves and others who would know where or how to access digital objects. In other cases, there was an expectation that there was no need to make arrangements to share such digital objects because when a person passes away, their digital objects would also cease to have a meaningful existence (Table 4.5.6).

Some participants indicate that they should take responsibility for an organised means by which others can access their digital objects, while other participants indicated a less organised approach. At least one participant indicated that the issue of digital object access would not be their responsibility, but would pass to the Executor of their will upon their passing.

> *"No, it's no point of getting too excited about these things."* (Respondent 07)
>
> *"No, I don't. My son would. He would have yes, I am quite sure he backs up."* (Respondent 10)
>
> *"I haven't yet, I don't think there's anything on my computer that I need to keep back-ups for them for those who come after me."* (Respondent 24)
>
> *"No. My three daughters are quite computer literate and they know how to access them and all the records have got hard copies and materials I have written over the years and things like that. That doesn't worry me, the main thing is get your will done."* (Respondent 23)
>
> *"No I am not concerned because I know that they are not interested in them, they die naturally when I die. The only thing they could possibly be interested are the photos of my ancestors. Some of my ancestors, my great grandmother, digitally there's' nothing I have."* (Respondent 24)
>
> *"Haven't thought about too much I presume that's the executor's problem. Certainly the idea of minimising the chance of identity theft could be the first issue. I have some*

responsibility, I should be doing something if I've got to lessen the problem." (Respondent 25)

"Not that concerned because family knows where to access everything. Haven't included the wording digital photographs in the will but have included them. It's just an understanding between two of us, that they can look online. Not worded in the will as digital assets. " (Respondent 26)

"Not really, they are personal photos anyway, everybody takes someone's photos, and you know all my family take photos and so. The photos that I have taken I don't think they get to be good if they get to be really good I will give them a copy, I will email and attach." (Respondent 31)

4.5.5 Concerns about the digital photos after death

Participant concern for digital photos left on a platform, system, device or computer after their death?	
Yes	13%
No	87%

Table 4.5.7 Participants' concerns about access to digital photos after passing

Research results reveal that 87% of the research participants were not concerned about what happen to their digital photographs after they pass away. In several cases participants suggest the expectation that access to digital photos (after their passing) will be similar to their own previous experience when they were given access to old (physical) photographs. Comments from participants suggest that in some cases participants see digital photos and physical photos as having the same rights of access after death. There is little discussion about access from systems and platforms by means of password access. A significant number of participants state that they have nothing to worry about (Table 4.5.7).

Some participants express the view that it may not be necessary to be concerned about digital objects such as photographs because many photos have already been shared with others, or that there are backup procedures in place so that access to digital photographs is not problematic.

"All go to my wife. So I don't worry about it. I think they will be cancelled. She will look after them." (Respondent 01)

"Yeah they will be fine, not a problem. I have several lots of back-ups." (Respondent 02)

"No, once I have gone I won't know. Not much to worry about." (Respondent 03)

"Not particularly. I won't be here to worry about it." (Respondent 28)

"I won't worry when I am dead. That will be in the least of my problems." (Respondent 08)

"No, because I think they are only valuable to me." (Respondent 10)

"Not concerned, because I am still friends with my ex-wife and I have got a daughter so they will look after them." (Respondent 11)

"I am not concerned about anything after I am gone." (Respondent 12)

"No, probably my son in law will take them." (Respondent 13)

"No, you never know after you die. I don't give a damn thing after that, everything else is finished. If they want to fiddle over them then they can but I haven't made any arrangements of my banking things, to stop doing it." (Respondent 14)

"No, what I would like to do is press the delete button." (Respondent 18)

"No, not my problem." (Respondent 19)

"Probably no. And the reason I say this was because whatever I store most of them are copies of what family has already got. They would have copies because most of the photographs that have been sent to me yeah. Because it is interesting because most of my photographs with my late husband are in hard copies, in boxes and boxes. So they are not digital." (Respondent 21)

"No the kids will probably take them of the ones of me, and my childhood. Children and grandchildren would grab them. Because I think, we all do that. I did when my mum and father passed away. A couple of photographs would be enough for me, the rest are very old anyway." (Respondent 22)

Is there any concern by participants of who will look after digital photos after their passing?	
Yes	13%
No	87%

Table 4.5.8 Participants' concern over the custody of digital photos after passing away.

The overwhelming response by participants regarding the custody/ management of digital photos after their passing was that most participants had no concerns about who would look after their digital photographs. These concerns are expressed variously in Table 4.5.8.

Who will look after the digital photos after passing?	
No concerns after death	44%
Close family eg: wife, brother, ex-wife, daughter, son-in-law, children and grandchildren,	28%
No concerns, only valuable for me	10%
No one	6%
Documented instructions (to an Executor or directly to another)	6%
Rely on back-ups rather than a specified person	3%
did not respond	3%

Table 4.5.9 Distribution of expected custody of digital photos after passing

Of the participants, 63% did not indicate a specific person, or instruction regarding the management and custody of digital photos after their passing. Of the remaining 37%, the most popular arrangement for digital photo management was with a close member of family (Table 4.5.9).

4.5.6 Concerns about what happen to social media accounts after one passes away

What concerns do participants have about what happens to their social media accounts after they pass away?	
Neutral	80%
Slightly worried and concerned	15%
Very disappointed, concerned, frustrated	5%
Slightly relieved	0%
Very relieved and a feeling of safety, security	0%

Table 4.5.10 Concern about social media accounts after death

Research results demonstrate that out of the social media users, most participants were not highly concerned about what happen to their social media accounts after they pass away. 80% were neutral about their social media accounts after their passing, whilst the remaining 20% of participants were either slightly concerned or very concerned about their social media accounts (Table 4.5.10).

"There's nothing on it, it really doesn't matter. No interest. People say hello how are you, I was thinking how wonderful it is, and then all rubbish goes with it. I can't do enough of them." (Respondent 02)

"I don't care." (Respondent 03)

"Well, I have got only one that is frozen out, so not an issue. Well, that's not true. I am on LinkedIn as well actually- all of my experiences. Well it doesn't worry me." (Respondent 04)

"Never gave that even a thought, not really just nothing there." (Respondent 27)

"Haven't given it a thought actually." (Respondent 30)

Some participants indicated an assumption that their social media accounts would be easy to take care of, or would take care of themselves over time. Several respondents suggested that their accounts would "fade" over time. Other responses suggested that it would be a simple matter for someone (e.g. a daughter) to simply shut down a social media account.

"I won't be worried but I hope someone would delete it." (Respondent 10)

"Another thing I will just tell my daughter to shut it down." (Respondent 15)

"It doesn't bother me, it will fade away with me I suppose." (Respondent 16)

"I am not concerned about it, I think it will just die away." (Respondent 23)

Of the participants who were concerned about what happen to their social media accounts after they pass away several stated the comments indicating different levels of concern. For some respondents the concern is that it is difficult to erase or remove details from a social media platform. In other cases a respondent suggests the need to allow Executors of Wills to delete social media information, but acknowledges that this is not currently allowed across all platforms. Other responses state a concern that other family members can become distressed when they receive a notification to celebrate the deceased's milestones (e.g. a 92nd birthday even though the person died at 91).

"I am concerned because both my parents have had them. My father died and then I thought how do we get rid of it? It still sits there. And when my father died my mother stopped using hers. So she hasn't used hers. I was always in these questions, if

something was inactive because you often got messages on there, or for a period of time it would be removed. And apparently that's not what happens." (Respondent 06)

"Only minor ones, I think I would really like some system that an Executor can delete these, because I believe they don't allow them at the moment. I would like an Executor to go in and delete all these things. It's just quite enough and valuable to nobody too, but only to me." (Respondent 18)

"Not really, I just think it might be uncomfortable for my family if I pass on and they are still sending things on Facebook, they don't know when I died, same with my emails, I will still be getting crap stuff. I don't feel uncomfortable, I worry about how my family may feel about it. They might be like Facebook contacts, and say 'its Alan's 92nd birthday' but I actually die at 91. They already show when it's someone's birthday." (Respondent 20)

"Haven't thought about it - I should delete them I imagine. I am concerned now you make me think it, yes I probably should." (Respondent 25)

4.5.7 Feelings if unauthorised people get one's photographic memories after one passes away

How would someone feel if unauthorised people got their photographic memories when they passed away?	
Neutral	44%
Slightly worried and concerned	28%
Very disappointed, concerned, frustrated	19%
Other(depends on the photograph, irritating)	6%
Slightly relieved	0%
Very relieved and a feeling of safety, security	0%
Did not respond	3%

Table 4.5.11 Unauthorised access to digital photographic images after a person passes away

Research results indicate that some participants were concerned if unauthorised people get their photographic memories when they pass away. The comments below better explain the concerns of these research participants. Participants showed concern and frustration towards the prospect of unauthorised access to their digital photos after their passing. The results indicated that none of the respondents felt relieved or safe about their digital photos. All of the responses were either neutral, concerned or very concerned. In particular 19% of respondents indicated they

felt very disappointed, concerned, or frustrated at the prospect of others (unauthorised persons) having access to their digital objects after their passing.

Comments from respondents suggested a high level of concern regarding the protection of digital photographic memories regarding their children and grandchildren. Responses indicated that some people were concerned that younger family members could be taken advantage of through the unauthorised access to digital photographic objects by others (Table 4.5.11).

> *"I would not be happy, I actually have set my settings for 'friends only' not for 'friend's friends' in Facebook."* (Respondent 06)
>
> *"That would bother me."* (Respondent 10)
>
> *"They might think there are some gorgeous girls on them. I wouldn't like them to be, and that's the only way they would get stolen."* (Respondent 13)
>
> *"The older photos, I know I found some on just going on the computer and I have been looking after someone else's family. They have a photo. So I don't think that would worry me because it is going to be people like me who are looking for the family history and be happy to find a photo. I suppose people have passed away long time ago."* (Respondent 15)
>
> *"Not happy of course. More than disappointed, It's a thing that I never thought about that anyone else getting them I mean it's just family things and but after you die you don't want the photos to go to wrong hands. I would be pretty upset about it."* (Respondent 16)
>
> *"Not nice, there are some sensitive photos on at one level, I wouldn't like any unauthorised person getting them."* (Respondent 17)
>
> *"You would hope that they would not use kids to do, all what they do with photographs, we were sitting down in the Forrest Square with our two grandsons and two Chinese people came up and asked whether they can have photographs of our two little grandsons. And I did not see a problem, but the wife said no, they might do this and this, and said no. That's when I realised that they can be used for some other purpose, I don't want my grandkids photos to be bought from the cloud and upset them when their grandfather said yeah you can do that."* (Respondent 22)
>
> *"I think I will be quite concerned."* (Respondent 23)

"Obviously I would be worried, when you worry you wonder what the other members of the family like their photos being exposed to someone else." (Respondent 26)

"I wouldn't like that, because it's my grandchildren's and my photographs." (Respondent 27)

"Yes, I would not be happy and concerned because there's nothing I have taken that would be affects to anybody or anything - it's not like, I put things online like some people, you know like younger people. It wouldn't upset anybody but I will be just concerned because I don't belong to anybody else." (Respondent 31)

"I think they will be bastards, it's more than disappointed, and you can't replace somehow what I look like 12 years ago or something." (Respondent 32)

4.5.8 Different ways of remembering after passing away

In what ways would a respondent prefer to be remembered after they pass away?	
None	53%
Digital	25%
Non-digital	22%

Table 4.5.12 Ways someone would like to be remembered after they pass away.

Research results show that 53% of the research participants did not prefer to be remembered after they pass away.

"Oh I haven't even thought about it. I have enough trouble dealing with my husbands' gravestone, so not anymore." (Respondent 02)

"I don't want Facebook to memorialise my Facebook account." (Respondent 05)

"No, I am not even having even a funeral." (Respondent 12)

"Not really, Facebook does not interest me at all." (Respondent 13)

"I don't want to be remembered." (Respondent 16)

"As long as my family appreciates what I have done so that's okay, so I don't want to be remembered." (Respondent 23)

"I don't think I want to be remembered by a thing. I don't have any desire for a specific way." (Respondent 24)

It was found that 25% of the research participants wanted to be remembered digitally. Respondents indicated through their comments that different ways of remembering included online obituaries, blogs, digital documents, digital life stories, online publications, digital photographs, and online diaries (Table 4.5.12).

> *"I suppose I would do the obituary one because I like that online, like I had, I access that especially when it's being 10 years ago when someone died, it's online. You can go on and have a look and people can upload and so I have used that."*
> (Respondent 06)
> *"I like the idea of doing a blog of my life to remember me. But I haven't done that yet. A digital blog."* (Respondent 14)
>
> *"I found some wonderful things about past histories the family with an obituary, mine would be very interesting. I have been doing one, well I have been typing it out and I have made it into a book but it is also on the computer. I wouldn't put that on a website that is open because of scammers."* (Respondent 15)
>
> *"Something in hard copy I don't think it's going to be legitimate. I think it will be more like digital. Probably a document."* (Respondent 17)
>
> *"Well I am currently writing my life story just doing it on Word and I store it on a memory stick, a thumb drive with the idea of passing it on to my daughter to find, it's in my computer I just type. It has only a sentimental value, once again there's nothing in there that could be exploited or used to cause my family embarrassment."* (Respondent 20)
>
> *"Good question. I would be very happy if university keeps my publications up. And research online on whatever they use. Edith Cowan has a RO. And also on Research Gate. Photos I would like to stay in the family, so they are available for the family to do whatever they want. Family keeping photographs."* (Respondent 25)
>
> *"I have got a story in my computer called "My Jonah's" story. Basically from the time that I arrived to the world until about now. It's quite a big typed one, I can't get it in to a thumb drive, and it's in my pages, in my mac computer."* (Respondent 28)
>
> *"It's something that I have got to think about it. In a diary may be, I think I will type it, I will do it on the computer."* (Respondent 32)

22% of the research participants wanted to be remembered non-digitally. Respondents indicated through their comments that non-digital ways of remembering ways included obituaries, planted trees, memorial seats and diaries (Table 4.5.12).

> *"I'd like a tree planted in my memory and possibly a tiny mini plant… and a nice seat under it to sit for people to see the nice view."* (Respondent 18)

> *"I am attending the course, the one about writing your own obituary. It is interesting because there's such a family spread out all over and the second marriage and so it is to develop that's why I am going to go to this obituary one. Let's just say a family history maybe. That's probably my agenda for next year."* (Respondent 21)

> *"Just by things that I do with people I know. I have done diaries over the years."* (Respondent 30)

4.5.9 Regrets about an action being done with a digital object

Have you ever done something with a digital object that you regret now?	
Yes	22%
No	75%
Did not respond	3%

Table 4.5.13 Concern about social media accounts after death

Research results show that 22% of the research participants stated that they had done something with a digital object that they regretted later. Some of the participants stated their remorse in their handling of digital objects. Many of these regrets were associated with their personal medical digital photographs, sending inappropriate emails or messages, and sending messages to the wrong person.

Some respondents made comments indicating that they did not have enough skill or capability to ensure that certain digital objects could be safely retained, and stored without the ability of someone else accessing them under unauthorised conditions. Other responses indicated a preference for a non-digital object on the basis that it might be easier to retain control of the security and privacy of the content of that digital object (Table 4.5.13).

Other respondents expressed regret that they had sent messages using digital technology that they wish they had not sent. In many of the cases each respondent expresses the concern that the messaging sent has caused a breakdown in ongoing communication with the other party.

> *"In taking a photo, I have never posted the photo. How much I delete. The photo it's still on the hard drive. So, there have been just two or three photos, mainly medical issues. Because they are medical photos I really don't need anybody else to see them. There's no way of getting rid of them unfortunately. The only thing you get is you can't access in future, thing is when you actually want to keep and you mistakenly take them. I think what I should do is access them again and then copy over. That's going to be the solution but it's going to take time."* (Respondent 02)

> *"The only thing I did was I photographed my boobs before I had a breast reduction and I am worried and how that's in the Cloud, you know I don't know how to get rid of them, I want to keep it and print it. They are pre-reduction and post-reduction photographs. It is for medical purposes."* (Respondent 05)

> *"I went to something in the Internet, which I probably wouldn't have emailed to that friend. That's all. I told a friend (that they were) selfish and all sorts of other things. Broke the friendship but anyway, I still think I was right. I am pleased that friendship is broken in one sense."* (Respondent 04)

> *"I have sent some rude emails. And I have looked at a few bad sites."* (Respondent 09)

> *"Yeah probably have. Actually what I did was, I sent an email to the wrong person, and then that was not a good message. This shouldn't have gone to him but I accidentally sent it to the wrong person. That was not very good. We don't talk to each other anymore."* (Respondent 07)

> *"Sending the wrong message to the wrong person. I think I have done that. I have done a lot of typing and lose them. It's horrible doing it for the second time."*
> (Respondent 12)
> *"I read a paper last year as a draft and I have read this and thought everyone would be happy with that. No, I wish I haven't sent that. I regret the whole life. It was a draft."*
> (Respondent 17)

4.5.10 Preferred option for digital objects when one passes away

Digital preferences	e-books	Online banking	Online shopping	Online payments	Social media	Emails	Digital photos	Digital videos	Digital music	Digital games
Close	0	44	41	59	31	63	9	9	6	9
Memorialise	0	0	0	0	6	0	0	0	0	0
Pass on	9	34	0	3	0	6	69	25	22	0
Do not know	6	0	0	0	0	0	6	0	0	0
Ignore or No preference	85	22	46	35	63	31	16	66	72	91

Table 4.5.14 Digital legacy preferences (by %) after passing away

The responses show that there is significant preference towards closing the financial instruments (Online banking, Online shopping, and online payments) as well as emails and social media accounts. Non-financial digital objects and platforms (such as games, videos, music and e-books) show little preference in terms of closing by respondents (Table 4.5.14).

The responses show that there is a preference to passing on digital photos, digital music, digital videos as well as the assets from digital online banking. There is little preference shown for passing on online shopping, online payments, e-books, social media and digital games (Table 4.5.14).

In terms of individual value preferences the responses indicate that Online banking, Emails and Digital Photos have value in terms of some form of action required after passing. In some cases that was framed in terms of account closure, yet equally in other cases it related to the desire for the digital object or asset to be passed on to another person. The responses also showed that digital games, e-books and digital music held a very low value in terms of any necessary action after one's passing. Respondents gave little indication of the need for these digital objects and assets to be either closed or passed on to another person (Table 4.5.14).

4.5.11 Summary of Section E

The section has considered passwords, and the tasks relating of the transfer of access and permission that accompanies digital assets and objects. The section examined concerns with the storage and management of digital objects such as photographs and other objects that have a dual physical and virtual quality. The responses show that there are issues that relate to the storage and access of these assets over time.

Respondents indicated a range of preferences as well a range of expectations relating to how a person can either be remembered or forgotten. The responses showed issues about the various firms and organisations that have control or who can exert influence over how a person's social media account can be changed, or remain unchanged. The responses also indicated issues relating to whether those changes or non-changes would or could be in accordance with an individual's wishes (upon their passing). These issues extended into areas of storage, management and curation.

The responses gave specific insight into the use of Wills for the transfer of assets and whether those assets included digital assets. The results showed that 87% of respondents had a legal Will, whilst 84% of respondents had no consideration of the inclusion of digital assets as part of their Will.

This section demonstrated six main areas that inform this study about how aware respondents are towards recognising, valuing, and making plans for digital objects and assets. This is especially clear in terms of their awareness towards the capability and capacity by which others could inherit or receive digital objects after a person has passed away.

The six areas of awareness from responses can be ordered as follows:

- Some respondents indicated that they had not given much thought to what would happen to their digital objects after their passing (Category 1).
- Some respondents indicated that they believed that because others already had the same or similar access to the same digital objects, that their lack of response suggested that the others saw no value in them (Category 2).
- Some respondents indicated that they realised a value in their digital objects, yet felt that other people would not share the sense of value (Category 3).
- Some respondents assumed that the digital objects would be passed down automatically o others after their death (Category 4).

- Some respondents had given consideration to their digital objects and although they had given thought to these objects, still remained unsure about what would happen when they passed away (Category 5).
- All research participants who saw digital objects as assets that could be left to someone had digital assets included in their Wills and their executors were aware of the fact that they had digital assets (Category 6).

The responses indicated that the majority of participants who chose to share passwords, did so with their family members. This was further extended by results showing that there was an "understanding" between respondents and others who would know where or how to access digital objects. In some cases, there was the probability that there was no need to make formal arrangements to share such digital objects because when a person passes away.

The responses showed that 84% of the research participants were not worried about what will happen to their digital photographs after they pass away. The overwhelming answer by respondents regarding the handling of digital photos after their passing was that most respondents had no apprehensions. Similarly the majority of respondents were not worried about what happen to their social media accounts after they pass away. 80% held no specific desires about their social media accounts after their passing.

Results from some participants suggested that some participants were concerned if unauthorised people gained access to their photographic remembrances when they passed away. This was coupled with the results showing that respondents held concerns and frustration towards the possibility of unauthorised access to their digital photos after their passing. This was in concert with responses showing that half of the research participants held no desire to be remembered after they passed away.

The study responses showed that there was a significant partiality towards closing the financial instruments (online banking, online shopping, and online payments) as well as emails and social media accounts. Non-financial digital objects and platforms (such as games, videos, music and e-books) held little concern in terms of closing by respondents.

The responses indicated that there was a preference to the choice in passing on digital photos, digital music, digital videos as well as the assets from digital online banking. There was little preference shown for passing on online shopping, online payments, e-books, social media and digital games.

In terms of individual value preferences the study showed that Online banking, Emails and Digital Photos held a value in terms of some need to take action after a person had passed away. In some cases that took the form of account closure, whilst in other cases it related to the need for a digital object or asset to be passed on to another person. The responses also indicated that digital games, e-books and digital music retained a very low value in terms of any necessary action after one's passing. Respondents showed little desire for the need for these digital objects and assets to be either closed or passed on to another person.

Chapter 5: Research Findings and Discussion

This chapter outlines the research findings that were revealed as a result of this study. The findings are drawn from various sources. They are derived from answers to the research questions, the analysis of those answers with regards to the existing literature, and a developed understanding of the way in which digital objects become digital assets of value. The key findings of this study relate to the different ways in which digital assets are perceived to hold different levels of value.

This chapter presents information in three main areas of consideration. The first area looks at **Digital Afterlife Management.** In this section results have been analysed to provide answers to the research inquiry that examines "What are the inadequacies in the guidelines for managing a person's digital afterlife?". This area discusses two initial research questions:

a. How consistent are the rules of digital legacy? And
b. What factors contribute to the different rules regarding digital objects and assets?

The second area considers **the value of digital objects and digital object ownership and protection.** The findings explain the circumstances under which a digital object can be "owned", protected, and expected to last for long periods of time. The key questions in this section relate to the length of time which a digital object can be expected to survive, how families can take reasonable control of digital objects under legacy, and whether digital objects can be valued from a single point of reference. This area provides further insight into how older Australians can (or cannot) make informed choices about the value of digital objects. The findings also suggest that Australians remain largely unprotected and limited in their knowledge of the rules about digital legacies.

The third area looks at the rights of others. The findings inform this research by explaining the difficulties in resolving the online social media accounts of deceased family members. Specifically, these findings indicate the difficulties in resolving social media account decisions relating to their shut down, retention, or memorialisation.

5.1 Research Question 1. Digital Afterlife Management Guidelines

5.1.1 Consistency in the rules of digital legacies

Answer to the Research Question 1 a

The findings of this research determined that the rules relating to Digital Legacies are not consistent. The literature drawn from company websites and social media firms determined that unlike the rules for the legacy management of physical objects such as a car or a house, digital objects are governed by the separate rules of individual companies.

There is no single consistent method for ensuring that a person's social media account is managed after their death. The findings show that older people are aware of instances where social media accounts remain alive after a person's passing. Responses showed that older people did not have the knowledge or skill to begin the process of shutting down a social media account. Other responses showed that older people were concerned when social media platform's such as Facebook issued birthday greetings to older people even though other older people knew them to already be dead.

5.1.2 Factors that are associated with different rules regarding digital objects and digital assets

Answer to the Research Question 1 b

People use digital objects and digital assets without a sufficient level of awareness to understand what happens to these objects and assets upon their passing. The findings of this research show that awareness issues are responsible for usages that are not well informed by older people as a result of six main factors.

Factors affecting digital legacies in terms of different rules, objects and assets	
1	Different companies make their own rules
2	Misunderstandings about how cloud storage works
3	Different Social Media Platforms
4	Different terminologies
5	Different End User Licence Agreements (EULAs)
6	Limited skills, capabilities and experience on the part of older people

Table 5.1.1 Factors affecting digital legacies in terms of different rules, objects and assets.

The following findings explain what factors are associated with different rules regarding digital objects and digital assets. This research finds that the key factors relate to different companies making their own rules, misunderstanding about cloud and virtual storage, social media platforms, terminologies, End User Licence Agreements, and limited skills and capabilities.

1. Different Companies make their own individual rules

In the case of Facebook, the rules governing the digital legacy management relate to a specific method for transferring access to digital objects such as photographs. In addition, the company Facebook has rules regarding options to memorialise the digital presence of a person after their death. These rules are additionally more complicated because there are circumstances where the memorialisation of an account can be driven by an authorised person acting on behalf of a deceased estate, yet can also be driven by the actions of a close friend (without the authorisation of an official from a deceased estate). This finding runs parallel to the work of Genders and Steen (2017) who describe financial planning as a clash between companies and the rights of digitally defenceless people: “There is a collision between the rights and needs of vulnerable people in modern society, and the increasingly global electronic register of our critical information and assets” (Genders & Steen, p78, 2017).

In the case of other digital platforms such as Apple and iCloud, the rules governing the digital legacy management are different to those of Facebook. For example, the rules relating to any access of photos or other objects is expressly forbidden under their End User License Agreement. Facebook openly promotes a Digital Contact system for the ability to access objects such as photographs. Apple and iCloud expressly forbid the access to photographs.

The findings show that unlike the rules pertaining to the physical assets of an estate, Digital objects are restricted and controlled by a range of individual company rules that are vastly different from each other, and make no provision for the wishes of the deceased, irrespective of their written Will or last testament.

2. Misunderstandings about Cloud storage and devices

Responses showed that older people do not understand storage and management systems for digital objects, in particular those systems that relate to Cloud storage. Older people making decisions about the value of digital objects do so on the basis of an assumed ability to access those objects. Responses showed that older people in many instances do not grasp the concept of digital photographs, digital music, and e-books being stored in a cloud environment, but instead believe that the items remain stored on their device. This is further extended by responses that show that older people assume that their device (e.g. phone or tablet) holds all of their data, rather than that their device provides a means of accessing it. Some older people believe that by passing their smart phone to someone else after their death, that the other person will automatically have the same access and right of access as the deceased.

3. Misunderstandings about Cloud storage and social media platforms

A similar misunderstanding occurs for digital platforms rather than devices. Responses showed that older people do not understand that Facebook is a platform that gives access to photographs. This research determined that many older people mistakenly believe that they could successfully bequeath their digital photographs to a nominated other by letting them gain access to the deceased person's Facebook account. The rules of Facebook clearly state that a Facebook account cannot be transferred to another person.

4. Difficulties with Terminologies and Virtual Constructs

This research found that older people lack awareness in the use of terminology and jargon in relation to the components that relate to their digital objects. Some older people regard computers, iPads, and iPhones as digital objects, rather than as devices than can store or access digital objects. In making informed choices about the legacy of certain objects (e.g. digital

photographs) older people may choose to bequeath devices or platforms, rather than password access and platform permissions. For some older people phrases such as “in the Cloud” imply a different meaning to that of storage on machines located in another location. Older people’s responses indicated that many older users did not trust cloud storage, and believed that by storing photographs in the cloud it would imply that their photographs could be viewed by everybody.

The research findings also showed that older people had difficulty in understanding the physical versus virtual constructions of various terms. Many older people saw the Cloud as an intangible object (rather than physical storage) and yet saw their own phone or tablet as the physical (and therefore tangible) storage device for their photographs.

These findings indicate that an understanding of the different rules of various storage mediums and media platforms are further compounded when older people do not adequately understand physical and virtual storage systems. Older people make decisions about the legacy of digital objects that relate more closely to what they understand in the form of physical objects (e.g. a house or a car) than they do about the virtual world where digital objects have inconsistent access, transfer and ownership rules as created by individual companies.

5. Different Rules in end User Licence Agreements (EULAs)

The legacy management of different email and social media accounts faces challenges in terms of the timeliness with which digital information can be resolved. The literature review showed that individual firms supplied EULAs regarding the account management after the death of a user. Each firm supplied different EULAs with different rules and arrangements. In the case of Microsoft, their legacy policy allows the appointed “next of kin” to receive a DVD containing all data. Google have a “Digital Heir” policy that allows for data deletion after up to 12 months of inactivity, and also allows data to pass to all nominated “heirs”. In contrast, Twitter deletes all data after 30 days. If a person wished to synchronise the management of their legacy data from multiple email and social media accounts, under the current rules and company regulations this would be impossible. The rules of individual and different firms do not align to a single consistent law or government policy.

6. Ability to use their own digital objects: limited skills, limited capability, limited digital experience

The findings of this research indicate that older technology users in many instances do not possess the necessary capability to use and operate digital objects to the same level of skill as physical objects. In some cases older people are unable to correctly identify digital objects. The result of this limited capability is that older people regard some digital objects as valueless to others as an object of transfer.

In some instances older people recognise that there is a digital object with sufficient value that it is worth transferring, however they lack the skillset and/or the confidence to be involved in the movement of their digital objects. For example a participant recalled their experience of typing a very large story, but were unable to conceptualise the transfer from an Apple document format into a digital object located on a portable thumb drive. Older people in some cases believe that digital objects can be manipulated, but also know that they themselves lack the requisite skillset to undertake the mobility of the digital objects in question.

Some older people believe that by transferring an iPhone to another person, that all of the digital photographs come with it. If a person passed away, the assumption from the deceased person might have been that they were bequeathing their digital photos to another person, rather than simply a phone. These findings show that many older people are unable to distinguish the difference between the cloud storage of their photographs and the physical capability to view those photographs on a device (e.g. an iPhone).

Many older people treat their digital assets in a way that makes them "hidden" assets. Some older people make an assumption that when they pass away their family members will be able to find those digital objects of value. Older people are unaware that without the personal experience of the original custodian of the digital object (themselves) others (family members) will be unable to access digital objects that may be stored in a variety of formats, storage systems, platforms and physical locations. The literature (Thomas & Briggs, 2014) pointed to the expectation that some family members would find the task of locating digital objects (after a passing) to be burdensome. Similarly, whilst the task of managing a collection of digital objects might be relatively easy for a family member, the ability to recognise, locate, and access these digital objects would be more difficult. Findings indicated that older people would assume that their family members would be able to access content in documents because they would already know passwords and other access features. Other findings suggest that older

people assume that younger family members will somehow be able to work out the access or discover a way to overcome an access or encryption issue (Odom et al; 2010). Further to these findings, older people had limited understanding about the security of and access to their digital objects, and made different assumptions to digital content that was stored on a computer to digital content stored in other formats and locations (e.g. on a website).

The results clearly showed widespread misunderstanding and low levels of understanding about digital legacies. The results examined how older Australians use, trust, and perceive digital objects, digital devices and digital systems. The results identified that older Australians are, in most cases, unable to form a working perception of a digital object in its non-tangible, virtual state. Instead, most responses at the interview level pointed towards understandings about devices, and systems of usage.

These findings show that perception and awareness plays a strong role in understanding digital legacy management. The findings suggest that misunderstood differentiation between digital objects, and the digital services and devices that they are seen on, is a major factor in establishing accurate digital legacy value.

5.2 Research Question 2. The Value, Protection, Ownership, and Longevity of Digital Objects

In this section, five main areas were considered. The first examined how long a digital object (in comparison to a physical tangible object) might be expected to survive. The second consideration was in terms of what measures could be taken so as to reasonably expect to control or acquire digital objects under legacy conditions. The third area looked at how a system of classification could be devised that would show digital objects from a single point of reference. This is important because amidst the misconceptions of older people about digital objects, this study found that people were collectively unable to have a common point of reference that allowed everyone to understand a digital object in the same way.

The fourth area relating to this research question considered how older Australians might be able to make informed choices about digital objects, and subsequently how they could make informed choices about the management of digital legacies. The fifth area of this question asked how older Australians could be protected from unknown and misunderstood rules about digital objects.

5.2.1 The expected survival of digital objects

Answer to the Research Question 2 a

The findings from this research indicated that there were three distinct sets of expectations. On one hand, some participants held a firm view that they either did not expect their digital objects to survive or that they were not concerned. In some instances they cited an expectation that a family member might be capable of finding and using digital objects, whilst other responses held no specific expectation that their digital objects would be used after their passing (Table 5.2.1). On the other hand, many older people held the view that their personal photographs would be easily transferable (and therefore likely to survive into perpetuity). A third expectation was held by some research participants who felt that digital objects would automatically be passed to a living person upon their death. Of this group, none were able to give specific descriptions about how such a transfer could take place, yet as a group they held the conviction that any transfer and survival of digital objects and assets would be automatic.

Expected survival of digital objects	
1	No expectation that their digital objects would survive after their passing.
2	Full expectation that items (such as photographs) would easily be transferable after passing.
3	An expectation that somehow their digital objects and assets would automatically become available to others.

Table 5.2.1 The Expected survival of digital objects

The findings of this section show the significant differences between those older participants who were interviewed for this research and the large-scale platforms who house and store certain digital objects in such a way as to provide access. In contrast to the expectations of the participants who were interviewed for this research, major companies such as Facebook publicly state their intention to retain access to digital objects (in the form of digital photos and images) even though the originators of those images may hold no expectation about their ongoing storage and accessibility. At the same time, many older people hold an expectation that their digital music (as stored on a smart phone such as an iPhone) could be easily transferred to another after their death. Many older people do not have an understanding that their music is stored under a licence to use and access, rather than a position of ownership. A similar set of findings relates to iTunes and iCloud. Older people may not fully understand the large scale storage of photographs stored in iCloud (for a fee) and assume that their payment of storage each month guarantees transfer and ownership to another after their passing rather than access under a licence.

5.2.2 The expectations that older people hold regarding the control of digital objects under legacy conditions

Answer to the Research Question 2 b

The findings of this research indicate the widespread expectations that after death, a person's digital objects can be controlled, transferred, and accessed by authorised family members (and executors). Responses from interviews indicated that large numbers of older people expected that their digital music, digital photos, and other data would be immediately and easily accessible to authorised family members. The findings showed that very few older people had an understandings of the way in which photographs, videos, music and other data was held under licence and access arrangements through platforms and could – based storage facilities.

In many cases older people had no current understanding that their existing access to music (and photos in the case of Facebook) was under licence rather than as pure data storage. In most instances older people assigned an expectation of access and ownership that was aligned to the transfer and ownership of physical objects such as the family photo album, musical records, and other physical and tangible data.

In contrast to the expectations of older people, companies such as Facebook and Apple have in place specific platforms and systems that grant access rather than ownership to data (Apple Media Services Terms and Conditions, 2018; Facebook Terms of Service, 2018) The emphasis of the contrast is not specifically in the digital object and data, but is instead a factor of their dependency upon a platform or system by which the digital objects are managed and accessed. One company, Gmail, offered the returned access of digital objects from an email account to the authorised legacy contacts of a deceased estate in the form of data (Google Privacy & Terms, 2019; Paul-Choudhury, 2011). Email accounts have a different approach to the access and mobility of digital objects as retained in the form of digital data. Thus the access to digital objects as stored in email accounts is seemingly more freely transferrable than those digital objects that are stored as images and music data in cloud storage through specific and bespoke access platforms (e.g. iTunes, iCloud, Facebook).

5.2.3 A system of classification devised to show the different values of digital objects Answer to the Research Question 2 c

The findings for this research question indicate a variety of different ways in which digital objects can be valued. The findings show that there is no single agreed point of reference from which all digital objects can be valued. Notwithstanding this conclusion, there are several important classifiers that assist in demonstrating the perceived value of digital objects by older people and the people that they bequeath them to. Digital objects are described in three different formats (Figure 5.2.1).

The first is in comparative terms, where objects are regarded as having a monetary value, a historical value, a sentimental value and a legal value. In this classification digital objects might only have one value (e.g. monetary) or they might have several values (e.g. sentimental, historical, and monetary). Different objects retain a perceived value by the owner (e.g. an old

photograph) , and that object may or may not hold the same perceived value after it has passed to another person under legacy conditions.

The second is in positive, negative and valueless terms. For example, a collection of digital objects might be placed under an ongoing display as part of a memorialised Facebook account, but which is held to be inappropriate by close family members. This takes into consideration the right to be forgotten, or the right of living family members to ignore or downplay the memory of a relative that they no longer wish to promote (e.g. a known criminal). Such values operate on a range between positive and negative attributes, but which also include conditions where no assignable value is used. Some digital objects can have a positive value, for example the last remaining digital image of a long lost relative.

The third descriptor for the value of digital objects considers them in terms of varying states between fully tangible and fully digital. For example, some digital objects may have a high value when watched on a large screen television, whereas other digital objects may be less appreciated in small format as a thumbnail or as a Jpeg file. The findings of this research indicate that older people often retain a close sense of tangible classification of objects (including digital objects). In such instances older people remain unlikely to separate the digital object from the tangible or partially tangible platform or framework under which the digital object can be evaluated.

When viewed in a single diagram (Figure 5.2.1) the three different classifications of digital object values are overlapping and cross-fertile. This set of classifications indicates the different perceptions that people hold in relation to assigning values to digital objects. They also serve to recognise that older people have varying experiences that are considered differently to other experiences. A digital object may have a perceived value in accordance with more than one system of classification.

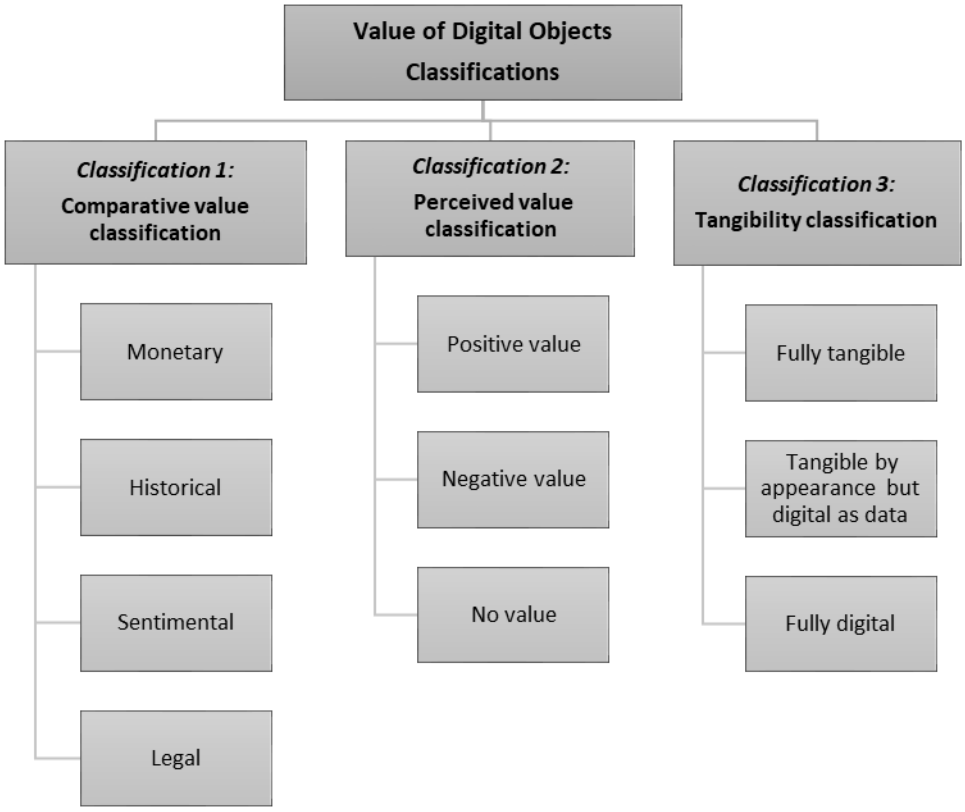


Figure 5.2.1 The classification of Digital Objects based on comparative, perceived, and tangible values to older people

The comparative classification has the flexibility of allowing a single digital object to hold multiple perceived values at the same time. For example, a digital copy of an old photograph can hold an historical value (for accurate historical record), whilst also holding a sentimental value (to the memory of a love one) and can also hold a financial value (as the last remaining copy). Additionally, a copy of an older wedding photograph may establish a legal claim to on artefact of value (for example the existence of a family heirloom such as a ring), or as a proof to indicate an occasion (e.g. a Wedding photo).

Unlike the classification systems 2 and 3, the comparative system draws on the differences and similarities of the different perceived values of goods. They extend to digital copies of photographs, emails, blogs, e-statements, videos, and music.

Can a system be devised for the classification of digital object values? The findings of this research indicate that there are multiple methods of classifying digital object values. In some instances they can retain multiple types of perceived values. For example a photo can be both monetary and financial. The findings indicate that although a single classifier of a value may indicate the existence of a perceived value, it can also retain the different perceived values as expressed in the comparative model of perceived values (Figure 5.2.2).

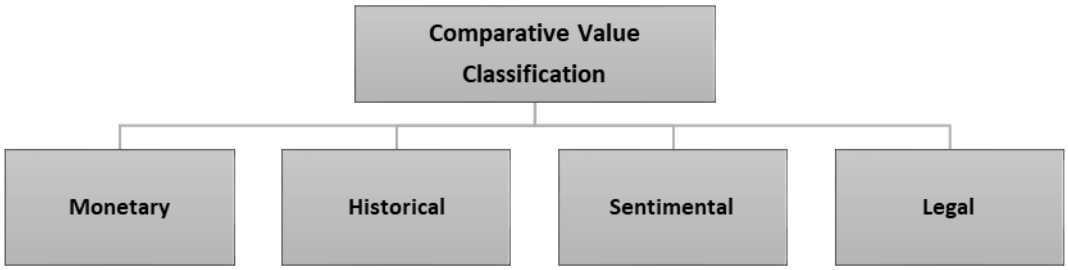


Figure 5.2.2 The classification of Digital Objects based on comparative values to older people

The comparative model uses the four comparators of monetary, historical, sentimental and legal values. Based on the research from interviewing older people, this study indicates that any individual digital object can retain a perceived value that can apply to any (or all) of the four comparators. However, the value assigned to a digital photograph may have one perceived value that relates to its sentimental value, and a different perceived value that relates to its historical value. Thus a key finding of the research is that digital objects not only retain individual perceived values by people that won them, but that individual digital objects can hold different values according to their monetary, historical, sentimental and legal attributes.

The implications of this finding are important in terms of understanding the value of digital legacies and the value of digital assets after a person has passed away. In some cases, participants have indicated that certain digital objects have no assignable value. In other parts of this research, this study shows that some digital objects have no assignable value.

The differing values have implications in the following ways:

Different implications of Comparative value digital objects	
1	The value of a digital object changes over time.
2	The value of digital objects varies from person to person.
3	A digital object may have no value to one person, yet the same object may retain great value to someone else.
4	Contemporary photos (taken in the last few years) have a much greater value when stored as digital objects, than those stored by means of being printed onto photographic paper.
5	After the capture of a photo, older people prefer to keep it as a digital object than to transfer it into a physical object.
6	Of all the different things stored as digital objects, digital photographs were recognised in the study as the most valued objects.
7	Of all of the different things stored as digital objects, digital games were recognised in the study as the least valued objects.
8	Social media was less valued (as a platform in its own right) for its digital properties, however in cases where it held value, that value related to the appreciation of a sentimentally valued digital object (for example a digital photograph).
9	Popular usage of Facebook and YouTube indicate that these two platforms serve as valued access platforms but not as platforms for the storage of digital objects. Their value is connected with the "on-demand" convenience of the platform rather than the capability to store and retain images, videos, and music.
10	Digital objects demonstrate their value by means of what cannot be owned or transferred to another person. If an older person cannot manage their digital objects (because they are prevented by the rules of a platform or storage service) then the expression of their frustration indicates that their digital objects do hold actual value, yet that value cannot be realised.
11	Older people demonstrate their perceived value of digital objects in circumstances where an unauthorised person (or a non-preferred person) has access to their digital objects. In the case of platforms such as Facebook or iCloud, older people in many cases did not realise that the storage of their digital objects (e.g. photos) would be under the management of the platform provider to a greater extent than their own family or preferred person.
12	Older people who come to realise that their digital objects are subject to restricted ownership and transfer rules for their digital objects become very upset at the realisation that the control of these objects is outside of their direct control once they become subject to the rules of a digital legacy. Older people feel deceived that they did not read or understand what they consider to be the "fine print:" that relates to their digital objects.
13	Older Australians are concerned about photos taken by others of their grandchildren. This study showed that they not only value the digital images as photographs, but that they place a high value on the ability to preclude others (eg: strangers) from accessing and manipulating those same photos for a different purpose.
14	Older people place a higher perceived value that is a monetary value on digital objects stored in terms of online banking, online shopping systems, and online payment platforms.
15	Older people perceived a higher historical value in things such as emails and digital music.

Table 5.2.2 The different implications of Comparative value digital objects

Using a Comparative value of classification, digital objects can be valued according to more than one classifier. For example, one person's value of a digital photograph can be sentimental to them, but can also retain a very negative legal value if (after their passing) the digital object becomes the managed or transferred property of someone else. This system of classification also allows person to assign a monetary value (that might be of a lowly perceived value) and at the same time also retain a much higher historical value.

In most cases, the literature has placed digital objects only within a single frame of reference in terms of its value. Using this system of comparative classification, it becomes possible to understand a much more integrated set of values for a single digital object. This more integrated understanding applies not only to the person who might originate a digital object, but also to any others who might have an interest in that same digital object.

Using this more nuanced understanding of the perceived values of digital objects, it is possible to assign other concerns/aspects such as those connected with security, protection, privacy and reputation.

5.2.4 How older Australians can make informed choices about digital objects
Answer to the Research Question 2 d

Older Australians make uninformed choices about digital objects. This finding comes from interview data showing incorrect assumptions about the transfer, ownership and management of digital objects in stored form (e.g. iCloud, Facebook) after a person's passing.

This study revealed large numbers of older people who made assumptions that their children or grandchildren would automatically know what to do to handle the digital object affairs after their passing. Many older people made the assumption that their photographs would instantly be available to their family upon their passing. Many did not realise that accounts that stored their photos such as iCloud are not transferable to others. Other older people incorrectly assumed that photos stored on Facebook would be instantly recoverable by family members, but did not realise that Facebook have a specific method using a procedure known as choosing a Legacy Contact.

Facebook is a social media platform used by people to show and store photographs, (and other digital content), however there may be other digital services and platforms that offer a different method of digital object management. Some older Australians assume that objects (such as photographs) are reliably stored on email platforms such as Gmail, but are unaware that Gmail have an inactive account procedure termed the Inactive Account Manager.

In general, older Australians remain unaware (and therefore uninformed) that most mainstream cloud and email systems provide very limited access to family members for the access, transfer and management of digital objects after a person's passing. Older people assume that their digital objects will retain the same level of access after their passing.

Older Australians also make uninformed choices about who they want to act as the executor for them after they pass away. The research in this study showed many older people making decisions on the basis that their digital objects were easily obtainable because they had chosen a close family member as the executor of their Will. In fact, the various terms of service and licence agreements for most cloud storage, social media and email platforms do not provide access to people on the basis of their close family relationship. Many older Australians gave commentary to suggest that because they were capable of sharing objects with close family whilst they were alive, that this would continue after they had passed away.

The study also revealed that older people assumed that executors were capable and aware of how to handle digital objects. Interview remarks showed that whilst older people might have confidence in an executor to understand digital objects, they were unable to talk about key Digital Object responsibilities such as a digital legacy contact.

Many older people made comments in regards to having close family members with computer skills. In these instances, older people were rationalising their personal lack of IT capability by recognising that a close family member would have the skill to access digital objects after their passing. In these instances, older people did not make the connection between the legal constraints of cloud, social media and email platforms. Instead, they equated a family member's IT skills as a sufficient action to safeguard the ongoing access to their digital legacies in the form of photographs and other digital data.

5.2.5 How older Australians can be protected from unknown and misunderstood rules about digital objects

Answer to the Research Question 2 e

Some older people acknowledged the challenge with iTunes and the issues relating to digital content access. Older people have an awareness regarding the way iTunes restrict and control the management of digital objects in the form of digital music. Older people using iTunes cards are unaware that the cards provide access to listen to music but not own or transfer ownership to that digital content. It is a finding of this research that older Australians will benefit from increased awareness through public programs that explain the limited ownership, restricted accessibility and diminished rights of people making purchases of digital content.

This research finds that many people (upon the passing of a loved one) do not immediately want online platforms and accounts to be shut down, but rather would prefer to be granted access to collect, transfer, and assign digital assets as they may be found. The rules stating who has rights are unclear because in most cases private companies revert to a simplified option to shut the account down. This implies the immediate cessation of access to digital assets and objects by immediate family members who may have enjoyed access rights, as and when, the deceased person was still alive. There is a need to create legislation that prevents private companies from deleting content and/or content access without the express permission of the designated heir of the digital assets of a loved one. Private companies dominate the decision-

process for the destruction of post mortem digital access, whilst users are largely unaware (at the time of sign-up) of the expectation that their grown, collected and developed assets are unlikely to retain any access, transfer, or ownership rights to their loved ones.

This research finds that private companies who make their own rules are responsible for the difficulty in agreeing on common legislation for the opportunity to recognise digital objects that have value in the event of a person's passing. Private firms have unreasonably overbearing access to assets that they control by virtue of the initial rule-making in the form of a terms of service or end user licence agreement. This research finds that the practice is exploitative and should make provision for a more open form of access on the part of a digital user, and his heirs upon his passing. Private firms that run social media or cloud storage platforms with digital assets have rules that vary from firm to firm. This makes it problematic to reach agreement upon a common legislation for the digital legacy planning of deceased users (McKinnon, 2011). At the very least, older people should be able to make informed decisions in regards to using digital content, so that if they hold an intention to bequeath content as assets, it should be clearly known to them those instances where a digital collection only confers the right to use rather than the right to transfer (Genders & Steen, 2017).

The research finds that older Australians do not fully understand the meaning of cloud storage. The use of the term 'cloud" does not make it clear that the storage is in a facility (often not in Australia) that may have been chosen as an inexpensive alternative to data and digital content stored on Australian soil. The research found that older Australians are confused about the terminology "cloud" and they assign an erroneous understanding in regards to where their digital content is stored and under what access and ownership conditions it remains stored. There is a need to inform older Australians so that when they make decisions about digital objects that they perceive to have a value, they do not inadvertently chose a cloud storage format that automatically restricts their ability to access, transfer and manage the digital content (or allow others to manage the content) after their passing.

5.3 Research Question 3. Resolving the online social media accounts and digital platforms of deceased family members

This section of the findings considers how family members can become better equipped to resolve the online social media accounts and device access of deceased family members.

5.3.1 The ease with which family members can influence a decision to shut down or memorialise a deceased person's Social Media account or platform access

Answer to the Research Question 3 a

This research finds that the access to content by family members after a person's death is in most cases very restrictive. The findings of this research suggest that there is a gap between the intentions of social media account providers (e.g. Facebook) and social media account users (e.g. older Australians). This gap is most clearly realised upon the death of a user, who has (at all times) held the expectation that their photographs, videos and other digital content would be accessible by their immediate family. This study identified the user expectation clearly through interviews where older Australians identified family members such as their sons, daughters or grandchildren as having the skills and expertise to make sense of the digital content and to extend the sentimental and historical value of digital content in the form of digital photos, digital video and digital music.

Family members find themselves excluded from an inheritance of digital content because at the very moment at which they wish to access and manage a loved one's digital content they are almost always confronted with a decision regarding the announcement of the person's death. In many cases the act of showing a death certificate may trigger the immediate shut down of an account and the deletion of access to the content. Whilst there are some instances where a choice can be made to delete or to memorialise a social media account, the expectations of the inheriting party (as well as the previous expectation of the now deceased person) was that the digital content could in some way be accessed or used as part of a deceased person's estate.

Older people make the assumption that their immediate family will have access to digital content on social media because they recognise that capability in their family's digital interactions with their own digital content whilst they are alive. The research indicates that

understandings and expectations are based on the ease of access rather than any written or specifically agreed determination between the user and their family. Once a person has passed away, there is no longer an opportunity to rewrite the agreement with the social media platform, or to negotiate an agreement by the persons who have an expectation of receiving digital content as left for them as part of a deceased estate.

5.3.2 The steps that can be taken to protect data connected through digital objects Answer to the Research Question 3 b

This research finds that family members are often precluded from gaining post mortem access to digital content that is delivered through a living person's social media and digital device platforms. There are some options that allow users to set up a digital legacy contact, however this arrangement (mostly known through Facebook) is not applicable to all social media accounts or to digital devices such as smartphones and tablets.

In the case of a person wishing to bequeath his or her device as well as the content on it, that person can make an arrangement to share the access passwords. However when the same arrangement is presented as a formal "changeover" between one user and another, digital platform companies (e.g. Apple) will revert to their existing Terms of Service in deleting the content from the digital device.

This brings about two important findings. The first is that an older person would need to know in advance that he or she must share access passwords with the expected inheritor of a device before his own death. In the case of a device that might have passwords changed every six months for example, the requirement would be that the user would need to keep the inheritor informed of any new password or access changes as they occurred.

The second finding is that both the user and the inheritor would need to understand that it was important not to present a device in any formal sense to a company for changeover because the company (e.g. Apple) would follow their own policy rather than following the intent of the deceased person. Thus this research exposes the dilemma that family members endure. When an older person has the expectation of passing on digital content, but where the platform and account arrangements that facilitate that content are under the control of a private company rather than the user. People erroneously assume that others can work out and get the

accessibility to their digital content (e.g. passwords), which may be stored in a device. Here the expectations of older users do not match or appreciate the digital environments in which their content exists, but instead make decisions based on a more experienced understanding of their physical environment.

5.3.3 The factors that influence the control of reputations from digital objects that derived from a deceased person

Answer to the Research Question 3 c

This research identified challenges in terms of third party access to digital content that is uploaded by others but accessible by many on social media platforms. Interview results indicated instances where older people (acting in their capacity as volunteers), can use their personal social media platform accounts to acquire, create and control digital objects (e.g. digital photos or videos). In cases such as these, the platform sharing mechanisms allow for access and change whilst the creator of the digital content is alive, but it causes restrictions (and can influence the reputation of others) in cases where the originator of the content passes away. This research finds that social media platform sharing policies are problematic in post mortem cases where individuals may become aware of a third party posting over which they wish to exercise some control, but over which they have limited access.

5.4 Summary of Key Findings

In the literature, older people are characterised as people who are hesitant to engage in digital interactions by comparison to other age groups. They are slower than others to realise the value of digital objects. The findings of this research came about from an examination of how older people value (or in some cases do not value) digital objects. This research finds that older people are either unable, unaware, or unwilling to plan for the management of their digital legacy assets after their passing. The rules and regulations that pertain to the majority of digital assets are prohibitive towards the planning intentions of older people.

The findings of this research indicate that digital legacies and the value of digital objects is restricted by the practices of large-scale firms such as Facebook (social media platforms) and

Apple (cloud storage), who apply repressive constraints upon the transfer and access of digital objects when a person passes away. The result of these actions impacts on digital legacies by lowering the value of digital objects, and limiting the ongoing survivability of digital assets that would otherwise continue to be used in society.

The findings of this research determined that the rules relating to Digital Legacies are not consistent. This research found that there were six key factors that are associated with different rules regarding digital objects and digital assets. These six factors can be described as different companies making their own rules, misunderstanding about cloud and virtual storage, social media platforms, terminologies, End User Licence Agreements, and limited skills and capabilities (Table 5.1.1).

The findings from this research indicate that there are three distinct sets of expectations in relation to the expected survival of digital objects. Older people believed that the post-mortem existence of their digital assets would fall into one of these three categories. The first expectation was that some older Australians did not expect their digital objects to survive after their passing. In contrast, the second expectation was that for other older Australians their digital objects were expected to survive after their passing and these digital objects would easily be transferable. As a further distinction, the third expectation was that for other older Australians their digital objects and assets would automatically become available to others.

This research also revealed that a large number of older Australians held the expectation that their family members and executors will be able to take control of digital objects under legacy conditions. However, their expectations did not match with the different terms and conditions of most mainstream social media platforms and digital services.

The findings of this study indicate a variety of different ways in which digital objects can be valued. They show that there is no single agreed point of reference from which all digital objects can be valued. Digital objects are described in three different formats based on their value. These three formats are comparative value (monetary, historical, sentimental, and legal), perceived value (positive, negative, and no value), and based on tangibility (fully tangible, tangible by appearance but digital as data, and fully digital) (see Figure 5.2.1).

This research study found that many older Australians make uninformed choices about digital objects. Many older Australians make incorrect assumptions about the transfer, ownership and management of digital objects in stored form after a person's passing. It is a finding of this research that older Australians are likely to benefit from increased awareness through public

programs that explain the limited ownership, restricted accessibility and diminished rights of people making purchases of digital content.

This research found that the access to content by family members after a person's death is in most cases very restrictive. The findings of this research suggest that there is a gap between the intentions of social media account providers and the expectations of older Australians. This study discovered that older Australians are largely unaware of their inheritor's access rights to data upon their death. They would need to know in advance that they must share access passwords with the expected inheritor of a device before their own death.

Furthermore, it is essential that both the user and the inheritor would need to understand that it remains important not to present a platform specific device in any formal sense to a company for re-assigned ownership, because such an action might also include the erasure of the digital legacy assets belonging to the original user (and intended for access and usage by their nominated inheritor). This action is required because the device company will follow their own policy of data exclusion as a standard procedure rather than following the (explained) legacy wishes of the deceased person.

The research found that in some cases the well-meaning intent of older people who shared digital content on their own social media on behalf of others can present a challenge in terms of digital legacy access and right of access. This challenge is demonstrated through desire for permanent and ongoing access to digital objects by others using social media platforms. In the case where a person shares digital content on behalf of a group, that content can become inaccessible upon the death of that person, and can by consequence cause concern and distress to others. The current practices by older people, in combination with the current policies of most social media platforms, prevent the just and fair access to digital content by third-party content users who become excluded from content to which they might otherwise have expected to have reasonable access. In cases where a well-meaning user has gained explicit permission to share that content, social medial platforms remain uncooperative towards their rights.

In all these findings the right of access to digital objects and assets is clearly found to rely upon the terms and conditions of private firms who make great use of this content, but who in most cases, obstruct the passage of the digital legacy wishes of older Australians.

Chapter 6: Conclusion

This research concludes that Older Australians are significantly challenged in terms of managing their digital legacies. These challenges are underpinned by a lack of appreciation and understanding of the value of digital objects, which (when valued) become true digital assets. The challenges to these valuations are further augmented by private firms who offer platforms and systems that allow the use of digital objects, but which also control the access, transfer and usability of digital objects. Older people have a technical disadvantage compared to other people because they may have a lifetime of experiences that are more predominantly physical than digital, and which provide a meaningful, but disappointing view of the benefits and limitations of using digital objects.

The value of digital objects relies on their ability to be used, accessed, transferred and owned at the times when people choose to demonstrate their rights over those objects. In cases where the access, transfer, and control of digital assets is restricted, there is an accompanying devaluation of digital objects. This is the case with digital legacies, where the restrictive practices of firms are applied. Similar to the physical objects of value in the real world, the perceived value of digital objects is reliant on the ability to pass them on to others under the conditions of transfer that we would normally assign to physical objects. Thus the more accessible, transferable, and ‘own-able’ each digital object is, the greater the propensity for older people to assign value to their digital objects as legacies that apply upon their passing.

6.1 The Impact of this Research

6.1.1 Impact 1- Older Australians and the importance of valuing digital objects

When older Australians are unable to value their digital objects, the assets of a person upon their death has less value.

The value of digital objects relies on the ability to access them and to transfer them from one person or one group to another. Systems that restrict or limit the access, control, ownership and transferability of digital objects by default devalue the value of digital objects. Despite multiple digital objects being used on a daily basis, the value of digital objects relies on the ability to control, transfer, access, and manage them. In addition, this may impact on the digital legacies of older people which may leave no visible footprint of their legacy.

6.1.2 Impact 2 - The importance of convincing Older Australians of the need to believe in the value of digital objects

When older Australians realise that their intended desire to pass digital objects onto others is restricted, they may revert to a reliance on physical assets

As digital access in all things increases, older people will increasingly begin to value digital objects. In contrast, when their expectations about the value of digital objects do not match those of social media and digital services, their desire to use digital environments shrinks. In such cases, older people may drift away from using digital objects, digital products, digital services (platforms), and digital systems. Older Australians may revert back to using physical objects and non-electronic communications. Otherwise they will seek alternatives to existing private digital platforms and services.

6.1.3 Impact 3 - The importance of valuing digital objects as digital knowledge assets

When digital objects are seen as digital knowledge assets, they retain value in terms of their historical, financial, sentimental, and legal characteristics.

Digital objects are important because (if widely accepted) they allow for widespread efficiency in a range of data management that extends to financial, legal, sentimental and historical value. In the event of restricted control, transfer, access, and management these values will diminish or may disappear from the public sphere in favour of private firms. Digital objects that are restricted from view, transfer, or access are responsible for a loss of knowledge and information in a global sense.

6.1.4 Impact 4- Corporations and Private firms must recognise the will of older people who wish for their digital content to live beyond their grave

When corporations take control of digital content through the imposed limitation of access to digital legacy content, they prevent the legacy wishes of older Australians.

When a person dies, the access to their digital objects on many social media platforms, cloud services, and digital devices is restricted. This often leads to the inheritors of digital objects being prevented from accessing their rightful inheritance. This is because of the inflexibility of corporations to allow the flow of digital content beyond the assigned identity management of their products. The restrictive practices of social media platforms and digital storage services are responsible for older Australians taking a diminished view of digital content. When an older person realises that an e-book cannot be transferred to an inheritor upon their death, then the e-book loses value. Older people desire to bequeath their libraries (including digital libraries) as a way of being remembered to others. When an older person realises that their photos, videos and comments on social media can no longer be shared with others, then their social media content loses its value. When an older person bequeaths a digital device such as a phone or tablet to an heir, they fully expect that the device includes their valuable digital content in the form of images, words, and memories. These realisations by older people are the result of understanding that their digital objects are unfairly removed from their control when they die. These restrictive practices are included in the terms of service and licence agreements of private firms, but are not understood in terms of their digital legacy implications until it is too late.

6.2 Recommendations

6.2.1 Recommendation 1. Digital legacy Awareness Programs

Based on the findings of this study, the researcher recommends that the government creates a heightened awareness of the implications of digital content losses by enacting a series of awareness programs.

These programs should initially be directed towards older Australians for the purposes of assisting older people to make informed choices that allow for the increased benefit of digital engagement and digital content access.

The research findings reveal that the lack of awareness amongst older Australians was one of the key factors that are associated with different rules regarding digital objects and digital assets for managing a person's digital afterlife. There is need for awareness programs for older Australians which will educate them on different aspects of managing their digital legacies. These aspects include different options of transferability, accessibility, and longevity of different digital objects, accounts, and digital content upon one's demise. These programs can also educate older Australians on what accounts should be shut down, what accounts can be memorialised, and what accounts can be managed by family members, inheritors, heirs, next of kin, and executors.

Awareness programs can also be used to educate the family members or executors of older people on the control and management of the digital content and accounts of older people. Followed by these guidelines older Australians can also be made aware of different terms, services, and restrictions of different privately controlled online platforms and services. These platforms and services include social media platforms, cloud storage services, and digital device platforms and operating systems.

6.2.2 Recommendation 2. Digital Legacy Legislation and Reform

Based on the findings of this study, the researcher recommends that the government creates new legislation that provides for the transfer and access to the digital content of a deceased person's estate by a nominated heir.

The research findings of this study underpin that there is an inadequacy in the existing laws, policies, rules, and guidelines for managing a person's digital afterlife. This finding suggests the need for a change to legislation allowing greater ownership and transfer of digital objects, digital content and online accounts after death. New legislation should incorporate laws associated with digital legacies pertaining to different digital objects, digital content, and online accounts. Where an Australian user of digital objects nominates an heir to have access to objects in the form of images, videos, and words belonging to the deceased, that access should be enforced to all providers of digital media platforms, cloud services and device systems that otherwise deliberately prevent the intended transfer of those digital objects.

These new changes to legislation can be updated in End User Licence Agreements (EULAs) and Terms of Service (ToS). Licence agreements should clearly and boldly explain the implications of digital content loss as part of digital legacy rules. Any user of such a private system should be making an informed consent decision and not an implied consent through a one-click acceptance of a lengthy, wordy and technically complicated explanation of rules.

6.2.3 Recommendation 3. Adoption of the Comparative Value Classification (CVC) Model

Based on the findings of this study, the researcher recommends a model that shows the perceived comparative values of digital objects be used to ensure that digital object management (including Digital Legacy management) prevents unnecessary loss of digital content and digital asset knowledge.

The findings of this research demonstrate the lack of understanding by older Australians of the different values that digital objects are capable of holding. Early research on the value of digital objects has focused on the monetary value of such objects (Genders & Steen, 2017). However, in realising the wishes of older Australians in their rights to use digital objects, it is important to recognise the need for a more nuanced understanding of perceived values.

By re-working the understanding of the perceived value of digital objects the opportunity arises to assign greater value to digital objects by elevating the system to include Sentimental, Historical, Legal and Monetary attributes. A digital object can easily be assigned a *monetary value* because an agreement on the value can be assigned through normal market forces. The monetary value is simply whatever amount someone is willing to pay to secure such a digital object. Other classifications, however, reflect an acknowledgement of different categorisations. Some digital objects (such as last known digital images of lost photos) have a *historical value* that makes them objects of value to the knowledge management systems that are deemed important to the Australian population. Such organisations include libraries, museums and art galleries. Some digital objects retain a *legal value* because their existence can provide the necessary proof to ensure some form of legal outcome. A digital object in the form of an image, sound file, or a forensic piece of metadata, can have enormous value in the context of defending the legal and democratic justice of Australia. A digital object can also hold a *sentimental value.* This accounts for the perceived and individual values of all Australians. Digital objects are an important part of the Australian way of life. Digital content provides people with access to information across a broad range of activities that holds a value (of some form or other) to each and every individual. When digital objects are lost, destroyed, or decayed, the Australian info sphere loses important content that holds value to all people (See figure 6.2.1).

The CVC Model allows for a greater understanding of the true value of digital objects through four different lenses. Digital objects that are deleted or removed at the time of death are responsible for an enormous collective loss in terms of the knowledge and assets of the world.

The CVC Model demonstrates differing values by means of comparison (see figure 6.2.1). The model also allows for the consideration of negative and positive values through each classification. For example, there may be a digital image which is of legal and historical positive value, but which to the perpetrator of a vicious crime may have a negative and (preferred to be forgotten) value.

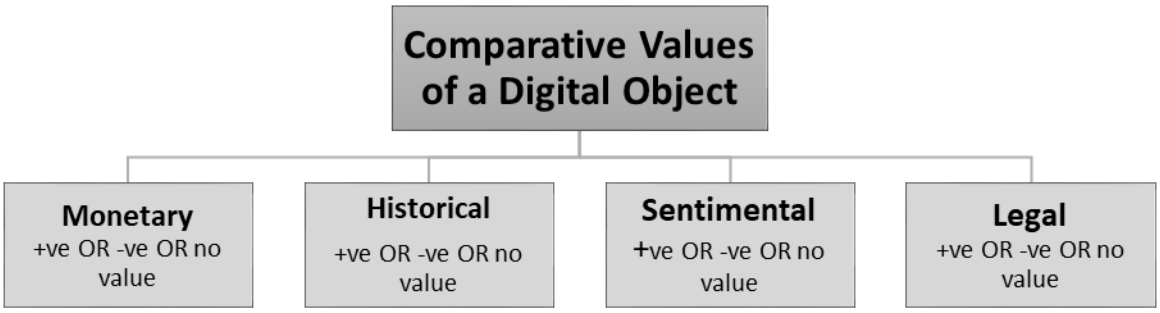


Figure 6.2.1 Comparative Value Classification Model (CVC model)

Note – Digital objects can have more than one perceived value. They may have a positive monetary value, whilst at the same time having a negative legal value, or no perceived sentimental value.

Users of the CVC model should include a broad application to include Government, Policy-makers, Schools, Libraries, Family and Ancestry Archives, Museums, Art Galleries, Radio Stations, Music and Video Archives.

6.3 Final remarks

This study looked at the way in which Older Australians perceived the value of digital objects, and how their digital content held value as content that could exist after their death. The study found that whilst older people easily saw the value of physical and tangible objects, they had differing views about the value of digital objects in the form of digital photos, social media, music, games and online financial services.

The study showed that older Australians had different ways of valuing digital objects. The study examined why older Australians viewed digital objects with lesser regard to physical

objects. It found inconsistencies in the rules and regulations of platforms and services that catered for digital content. The study was able to determine that these inconsistencies had a significant impact upon the perceived value of digital objects. Older Australians found it difficult to value digital objects that (upon their death) were prevented from being accessed by private companies in control of social media platforms, cloud services, and digital operating systems.

The aim of this study was to find out why older people did not see a great value or importance in digital legacies. The study sought to solve the puzzle of why older Australians had difficulty in passing their digital objects as assets to others after their death. The study focused on why older people did (and did not) value some digital objects in an ongoing sense. The study also aimed to assist older Australians to better understand how to make informed choices. Digital Legacies are important because they allow the transfer of knowledge (in digital form) to survive beyond individual owners. This is significant because knowledge that disappears when a person passes away is lost forever. The increasing acquisition of knowledge in the world is underscored by humanity's desire to know more about ourselves.

This study found that Older Australians will use digital content as part of their digital legacies, however they are less likely to do so whilst that content can be controlled and restricted by the actions of private firms who provide social media platforms, cloud storage, and device systems. Older Australians are particularly likely to value digital photographs because they can understand the convenience of using digital content in terms of access, storage, and file sharing. These attributes are valuable, but restricted by the rules of private companies that only provide access to people whilst alive. This study found that companies with regulations that prevented the mobility of digital objects as assets were associated with the widespread perceptions that digital objects did not retain much value after a person had passed away. Older people found it difficult to manage their digital legacies because the value of the digital objects was diminished by the absence of control over issue of inheritance, transfer, longevity, and management.

Digital Legacies (like physical legacies) define a person's identity.

Chapter 7: References

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Chapter 8: Appendix

8.1 Interview Questions

A. Introduction Questions:

1. Are you 65 or over the age of 65?

Yes	No

2. Are you retired?

Yes	No	Semi- retired

3.

1) Do you use a computer? (Y/N/ I used but not anymore)
2) Do you use a laptop? (Y/N/ I used but not anymore)
3) Do you use an iPad? (Y/N/ I used but not anymore)
4) Do you use a tablet? (Y/N/ I used but not anymore)
5) Do you use this kind of a phone? (Y/N/ I used but not anymore)
6) Do you use a fitbit? (Y/N/ I used but not anymore)
7) Do you use a CareAlert? (Y/N/ I used but not anymore)
8) Do you use or did you use any other digital devices? If yes, what are/ were they?

4.

Do you use	Tick all that apply
Browse Internet using a search engine? (e.g. Google)	
Social media? (e.g. Facebook)	
Email? (e.g. iiNet web mail, Telstra BigPond, TPG)	
Watch online videos? (e.g. YouTube)	
Online banking	
Online payment services? (e.g. BPAY, Credit card, PayPal)	
Online games?	
Online shopping?	
Online news?	
Video/audio chatting? (e.g. Skype, FaceTime)	

5. What are your preferences?

1) Do you like reading?
   If so, do you like reading e-books than paper books?

2) Tell me the different ways that you do banking? E.g. walking, driving, online

3) How do you shop normally? E.g. walking, driving, Coles online, eBay, Amazon, gumtree

4) How do you often pay after buying something? E.g. cash, PayPal, bank cards, bank transfers

5) What ways do you use for communication? E.g. face to face, social media chats

6) Do you often send messages to others?
If so, do you prefer sending an email or a text message or an SMS over a postal letter?

7) How do you normally find about news?
Do you get newspapers or do you read news online?

8) What kind of games do you play? E.g. Crossword puzzles, Sudoku, Bingo, Chess, Candy Crush, Treasure hunt, outdoor games such as golf, badminton, tennis
How do you play games? E.g. In newspaper, in phone, Outdoor

9) What kind of websites do you browse in the Internet? E.g. Facebook, eBay, YouTube, gumtree, TripAdvisor

B. Social Media Questions:

1. What kind of social media do you use?

Social media	Tick all that apply
Facebook	
Twitter	
YouTube	
Instagram	
Pinterest	
Other (specify)	

2. How often do you use social media?

Frequency of usage	Tick all that apply
Multiple times a day	
Daily	
Weekly	
Monthly	
Ad hoc basis	

3. Why do you use social media?

Purpose of using social media	Tick all that apply
Photographs	
News	
Videos	
Chatting	
To communicate with family and old friends	
To find new friends	
Blogs	
Product reviews	
Other (specify)	

C. Photographs Questions:

1. How do you normally take photos?

   What do you do after taking a photo? E.g. Print, Delete, Store

   How do you store them?

Storage method	Tick all that apply
Printed photos in Photo albums	
Social media e.g. Facebook	
Phone	
Computer	
Online storage e.g. iCloud, Dropbox	
USB/Thumb drive	
SD card	
Other (specify)	
I do not store them	

2. How do you store back-ups for photographs? What are the other different methods for restoring lost images?

Back-up storage method	Tick all that apply
Photo albums	
Negatives	
Social media e.g. Facebook	
Phone	
Computer	
Online storage e.g. iCloud, Dropbox	
USB/Thumb drive	
SD card	
Other (specify)	
I do not keep back-ups	

3. If you lose your recent photographs how would you feel? Describe.

   Tick one.

Nothing	Little bit sad	Normal sad	Very sad	Devastated

4. If you lose your old photographs how would you feel? Describe.

   Tick one.

Nothing	Little bit sad	Normal sad	Very sad	Devastated

D. Digital Objects Questions:

1. Do you know what a digital object is? If yes, Describe.

   If no, interviewer will explain what a digital object is.

2. What kind of digital objects do you use?

Digital object	Tick all that apply
e-books	
Digital photos	
Videos	
music	

3.

   1) What do you normally buy online?
   2) What type of email accounts do you use?

4.

   1) Do you trust the companies which have your digital objects when they let you access them for free?
   If not, why?

   2) Do you trust them to store them safely?
   If not, why?

5. Which of these digital objects do you use the most? Rank.

Digital object	Rank
e-books	
online bank accounts	
Online shopping accounts	
Online payment services	
Social media accounts	
Email accounts	
Digital photos	
Videos	
music	
Online games	

6. How valuable are these digital objects to you in terms of historical (H), monetary (M), sentimental (S), and legal (L)?

   How valuable are these digital objects to you based on the aspect you mentioned? Tick one.

   - Not valuable (NV) -0
   - Less valuable (LV) - 1
   - Neutral (N)-2
   - Valuable (V) - 3
   - Highly valuable (HV) - 4

Rank them as per how valuable are they to you.

Digital object	Tick all that apply	Value (H/M/S/L)																				Rank
		H					**M**					**S**					**L**					
		0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	
e-books																						
online bank accounts																						
Online shopping accounts																						
Online payment services																						
Social media accounts																						
Email accounts																						
Digital photos																						
Videos																						
music																						
Online games																						

7. Do you have any concerns about how people can see and access your digital objects that you use?
   What are they?

8. What are your thoughts about your usage of internet banking?

9. What are your thoughts about your music stored on a tablet or a phone?

10. What are the difficulties faced by you in using the digital objects that you use?

E. Digital Legacy Questions:

1. Do you have a Will?
   If yes, have you appointed an executor for your Will?

2. Have you ever thought about your digital objects as assets that you could leave to someone? If yes go to 2.1. If no go to 2.2.

   2.1 If yes, do you have any digital assets? If yes, do your executors know that you have digital assets?

   2.2 If no, why not?

3. Have you left any passwords with someone? (e.g. son, daughter)
   If yes, with whom?

4. Out of the things that you value, do you store them more than one way?
5. If you die, are you concerned about what happen to the photos in your computer and in your phone? Are you concerned about who will look after them?

   Describe.

6. What concerns do you have about what happens to your social media accounts after you pass away?

Very relieved and a feeling of safety, security	Slightly relieved	Neutral	Slightly worried and concerned	Very disappointed, concerned, frustrated

7. How would you feel if unauthorised people get your photographic memories when you pass away?

Very relieved and a feeling of safety, security	Slightly relieved	Neutral	Slightly worried and concerned	Very disappointed, concerned, frustrated

8. In what ways would you like to be remembered after you pass away?

Digital- e.g. Facebook memorialised accounts Non-digital- e.g. gravestones, obituaries, foundation stones, statues

9. Have you ever done something with a digital object that you regret now? Describe.

   e.g.

   Posting a photograph that you regret

   Posting something awkward but important to say

10. What do you want to happen to your digital objects when you die? Rank the option for each row as per your preference in a scale of 1-5.

Digital object	Close	Memorialise	Pass on	Ignore	Do not know
e-books					
online bank accounts					
Online shopping accounts					
Online payment services					
Social media accounts					
Email accounts					
Digital photos					
Videos					
music					
Online games					

End of Interview

Chapter 9: Table of Figures