



Death and the Internet

**Consumer issues for planning and
managing digital legacies**

2nd Edition



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Emily van der Nagel, Michael Arnold, Bjorn Nansen,
Martin Gibbs, Tamara Kohn, Craig Bellamy, and Narelle Clark
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Authored by **Emily van der Nagel, Michael Arnold, Bjorn Nansen, Martin Gibbs, Tamara Kohn, Craig Bellamy, and Narelle Clark**

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University of Melbourne Website: www.unimelb.edu.au
Email: mvarnold@unimelb.edu.au
Telephone: 03 8344 7020
Project website: digitalheritage.net.au

Australian Communications Consumer Action Network
Website: www.accan.org.au
Email: grants@accan.org.au
Telephone: 02 9288 4000
TTY: 02 9281 5322

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Executive summary

The creation of digital accounts, ownership of digital products, and use of digital services are now common and ordinary, yet they raise significant implications for the constitution of our personal property, its archiving, and its inheritance. With the use of all sorts of social media sites, cloud-based accounts, personal blogs and websites, email and messaging services, as well as the accumulation of online collections of photos, videos and music, unavoidable questions arise as to what happens to them when a person dies. In a study of 1,000 Australians, carried out by Charles Sturt University and The University of Adelaide, 82 per cent reported they had digital assets, or online accounts with associated data, of some kind. Of the 821 people who reported they had digital assets, 585 or 71 per cent were unaware of what would happen to them if they died (Steen et al 2017).

This report considers these issues with regard to a broad spectrum of digital media products and services, paying particular attention to questions of access, rights, and ownership for those wishing to bequeath them, or for those wanting to manage someone else's digital legacy. This research on digital legacies draws from a mixed-method approach that includes an overview of literature on death and memorialisation in a digital context; terms of service and policies of leading social media platforms and telecommunications companies; and interviews with key informants, including spokespeople for various religious groups, senior executives of telecommunications companies, estate planning lawyers, moderators of online memorial sites, Internet service providers, and sources from national and institutional archives.

Although physical products like books or CDs allow for relatively unproblematic lending, gifting, and bequeathing, digital products and services are subject to various kinds of proprietary limitations and consumer rights in the context of death. Many online files, especially music and ebooks, are licenced to someone for their personal use, making it difficult to pass them on. In addition, online platforms and cloud storage facilities are hosting increasing amounts of personal user-generated content including digital photos, videos, messages and documents of many kinds. Most terms of service agreements specifically forbid people from logging into someone else's account, and few Australians systematically download and store their online content in a format accessible to others after their death, meaning a great deal of this content may be lost to family and friends.

Ownership of digital files and their transfer to others, contractual and legal obligations, and the storage and maintenance of digital files over time are key issues in the wider landscape of digital assets, estates, and legacies. This report gives a background and context to the increasingly important practices associated with managing digital legacies, including issues to do with privacy and property and consumer rights, managing digital archives and legacies, and memorialisation online. It provides some practical advice on creating and managing a digital legacy, covering issues in bequeathing key digital media types, and points to future issues, implications, and resources in this area.

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Background and context

The death of a person who owns digital accounts and products raises questions about their digital legacy and how it should be managed. This digital legacy could include **social media profiles** on platforms like Facebook, Twitter, or LinkedIn; **email** on Outlook or Gmail; **gaming accounts** on Steam or Unity; **images** on Flickr or Google Photos; **videos** on YouTube; **music** on iTunes; **websites** on a personal domain; **blogs** on WordPress or Tumblr; **documents** on Google Drive or DropBox; and **ebooks** on Kindle.

As digital technologies now mediate, record, and archive traces of a life lived, these materials are valued by family and friends who wish to remember the deceased and his or her biography. Your digital content is a reflection of you, argue Evan Carroll and John Romano (2011). Whether this digital content represents financial or sentimental value, it is becoming increasingly important to manage these digital legacies.

Yet, questions of who has the rights to access, own and bequeath digital legacies is unclear, with questions of their management involving the people who own them prior to their death, the bereaved and executors of an estate who seek access after a death, the platforms and service providers who store this content in their databases, and the governments and regulatory bodies who create and enforce legislation about consumer rights to digital legacies. If individuals do not convey their wishes about their digital accounts and artefacts, and fail to provide a means to access them, or if platforms or online providers deny access, their digital legacy is placed at risk (Sofka, Gibson & Silberman 2017).

Although managing digital legacies is not yet a widespread practice, the issue regularly features in the news media. “We really need to talk about digital death”, ran a headline in *Motherboard* (Volpicelli 2014), pointing to companies like Legacy Locker that help people manage their digital legacies or shut down their accounts after they die. The article warns that these management sites, or even the social media platforms themselves, may not last: we cannot take for granted that Facebook will still exist 50 years from now. Articles and programs from *PBS Newshour* (Sreenivasan 2014), *BuzzFeed* (Nguyen 2017), *The New York Times* (Gustke 2015) and *Forbes* (Bradley 2015) encourage consumers to keep track of their online accounts, create a personal digital archive, and ensure executors have access to these digital accounts and assets after they have passed away.

Contemporary research on digital legacies often considers the way mourning practices have been extended to digital platforms and services (Moreman & Lewis 2014), and such research is conducted within a number of fields in the social sciences that examine death, grieving, and memorialisation (see Ariès 1983; Hockey, Komaromy and Woodthorpe 2010; Kellehear 2007; Robben 2004). Early studies of online memorialisation looked at websites set up for friends and family of the deceased to grieve, remember, and provide social support for one another (see Jones 2004; Roberts and Vidal 2000; Sofka 1997; Veale 2003, de Vries and Rutherford 2004).

Scholarly attention soon turned to bereavement practices on social media, with a particular focus on teenagers’ use of these platforms (Carroll and Landry 2010; Williams and Merten 2009). As social media grew in popularity, academic work began to explore tensions between public and private posts about (and to) deceased users on these platforms. Alice Marwick and Nicole Ellison (2012) studied how posting information about a death on social

media, like an obituary or funeral announcement, may reach a wider audience than intended, leading to potential conflict around the way that person is remembered; Martin Gibbs et al (2015) found that Instagram photos hashtagged #funeral draw on a cultural understanding that mourning is a public and communal affair; and Whitney Phillips (2011), as well as Tamara Kohn et al (2012) investigated the phenomenon of RIP trolls: online instigators who post abusive and malicious comments on memorial pages set up to remember the deceased. Preserving social media profiles after death is considered an important way to remember someone: Jessa Lingel (2013) argues that removing someone's Facebook page after they pass away can be seen as deleting a socially valuable part of their life, and according to Patrick Stokes (2015), social media profiles are significant instantiations of a person, which raise questions about obligations to preserve these profiles from being deleted in order to honour their memory.

Work that directly addresses digital legacies often raises issues of how best to manage them. Jed Brubaker et al (2014) argue that post-mortem data management practices should be reframed as a kind of stewardship, as stewards must take on the responsibility for crafting and caring for another's digital legacy. In addition to managing the digital archive of accounts and artefacts someone leaves behind, stewards may play an active role in managing the social media profiles of the dead, as they can remain sites of interaction long after the account holder has died. This challenges ideas about the locus of responsibility to digital legacies, which spreads across commercial platforms, family and loved ones, and close social media ties.

This stewardship role can be complicated by legal issues, and a further limitation of the steward is their own death – while plans can be made for a number of potential future scenarios, not every possible outcome can be allowed for. Managing digital legacies should take these complications and limitations into account. In order to manage a digital legacy, a steward must know in advance the wishes of the deceased, and they must be able to access their accounts. As James Lamm et al (2014) argue, obstacles to managing digital legacies include criminal laws that prohibit unauthorised access to computer accounts, privacy laws that forbid service providers from disclosing private information, and Terms of Service agreements that restrict people from logging into someone else's account. This can be complicated further by these laws and agreements varying between private companies and legal jurisdictions, and conflicting ideas of what actually constitutes digital property: for example Lilian Edwards and Edina Harbinja (2013) note that people cannot bequeath music from their Apple iTunes account, as they purchase a non-transferable licence to this content, and a recent UK case determined email messages aren't property.

In a context where public awareness of managing the digital archives of deceased persons is lacking, so too are recognised standards. Platforms and service providers offer widely varying and often unclear policies on data that belongs to those who have passed on, and although digital legacies are increasingly recognised as important to death, grieving, and remembering, legal complexities around accessing these legacies abound.

Property, privacy, and rights

There is a variety of different places where data may live and if someone passes away questions arise as to whose data it is (Chief Regulatory Officer, Major Australian Internet Service Provider).

The question of who owns what in digital environments is complex and is an important consideration in determining what may be bequeathed to others upon death. Ownership of digital media, and the conditions of posthumous access to it, will usually depend upon the particularities of the terms of service agreement that were entered into when the deceased signed up for an online service. Overarching contractual rights, intellectual property rights, and various forms of copyright law further complicate the situation. In addition, digital media may be held locally on a hard drive or remotely on a server, very often in another country and in another legal jurisdiction.

Conditions [terms of service] can change rapidly and often allow for retrospective re-writing of the conditions (Adjunct Professor of ICT, University of Melbourne).

While there are well-established procedures for locating, valuing, and transferring ownership of physical property, such as real estate, cars, and books, the task of locating, accessing and disbursing digital assets after death is often more difficult. For example, many platforms have terms of service agreements that don't allow accounts to be transferred to others. Many years of photos, videos, and documents uploaded to an online service may be lost forever if posthumous access to them is not arranged and local copies are unavailable.

In physical items it is the physical item that embodies the licence and effectively the physical item is the licence, whilst in a digital transaction, the digital transaction defines the terms of the ownership, if any (Adjunct Professor of ICT, University of Melbourne).

One solution to this problem involves people providing a list of their online accounts, with usernames, passwords, and instructions for their executors to follow upon their death. Common-sense though this solution may be, it is often against terms of service agreements that forbid people from accessing accounts that are not their own. But while platforms like Facebook and Google prohibit this, some service providers like iiNet, Optus, and Telstra do allow executors to sign into someone else's account, as long as they are authorised to do so by the account's owner. Of course, for all practical purposes, the identification of the person using the username and password cannot be verified by the service provider.

I can bequeath any physical item under my control before I die, but with non-physical items we usually only have a licence to use so it may not be possible to bequeath (Adjunct Professor of ICT, University of Melbourne).

Privacy is also a key determinant in terms of service agreements that guide the use of social media and other online accounts. Much online communication is private in nature, and terms of service agreements are designed to protect this privacy, even in death.

Case study: Facebook grants uneven access to the accounts of dead children

When their 15 year old son committed suicide, parents Ricky and Diane Rash turned to his Facebook page to find clues to explain his death. "We were just grieving parents reaching out for anything we could," Ricky Rash said (Kunkle 2013a). After being denied access to his account, they continued to pressure their local government until the Virginia General Assembly passed a bill in 2013 that gave parents, guardians, and legal representatives of a deceased child the right to log in to their online accounts (Kunkle 2013b).

But in Germany in 2017, the parents of a 15 year old girl who died in a train accident were not given the same access. A court ruled in favour of the teenager's privacy, claiming this was in line with telecommunications secrecy law that prohibits heirs from viewing communication of a dead relative (Connolly 2017). Although Facebook is based in California, its users are often subject to local laws, complicating issues of privacy and access.

Email is a good example of this privacy issue. Email is one of the oldest and still most common communication modes on the Internet and, like paper letters, emails are usually context-specific, personal in nature, and not meant for broader public consumption. Email services such as the US- based Gmail and Hotmail are conscious of this, and have strict rules that forbid access to the email associated with a deceased person's account. Thus, emails will be inaccessible and destroyed if provision for preservation has not been made for them before the death of the account holder. This being the case, if someone wishes to bequeath their emails they must take steps to archive and store the email messages locally, rather than relying on the email service provider to make them posthumously available.

It is also good practice to use a separate email address for non-work-related emails, as work-related email is usually subject to an employer's privacy and terms of use policies, and employees may have little or no control over their archive of emails stored on an email server supplied by the employer. If work-related email about specific projects, or private emails sent on a work server are to be kept, they may be downloaded and stored offline or on private cloud-storage in the same way as other digital objects. However, this may be subject to legal constraints, and taking particular care where employment contracts and property such as trademarks and patents are concerned, is advisable.

Consumer rights to digital property

Consumer rights to bequeath digital products or services is an important but still emerging area of policy discussion for digital legacies. In some jurisdictions people can own and sell digital goods they have purchased, including software, but it is more common that only personal digital files, such as family photos, can be passed on after death, rather than content purchased by and licenced to specific individuals through online accounts, such as iTunes music libraries or videos bought through YouTube. Ownership of online content is not legally homogenous, and often depends on what type of content is in question, which presents complications for who can access, use, and own digital assets after the original customer or account owner dies.

There are a number of reports that discuss, broadly, consumer rights in the digital economy, such as Robert Bradgate's Consumer Rights in Digital Products report prepared for the UK

Department of Business Innovation and Skills (2010). Bradgate discusses the issues of tangible and intangible goods and the contractual rights that are lost or transmuted in digital products, which have numerous implications for bequeathing digital products. The main contention in legal debates in this area appears to be the 'right of first sale' (or 'exhaustion of rights'): the rights that are lost when copyrighted material is sold in digital form and not physical form. It is legal to sell a copyrighted copy of a CD or book, but illegal to sell the same version that is in digital form because the licencing arrangements when it was purchased (or hired) are different. The 'first-sale' doctrine is limited to physical items and there are contrasting and still unresolved approaches between certain courts in the EU and the US on the sale (and transfer) of second-hand digital assets. Legal cases include Capitol Records LLC v ReDigi Inc, in the USA, where a US district court in New York ruled that ReDigi, the operator of an online marketplace for second-hand music downloads, was liable for copyright infringement. In the EU, the Court of Justice in the European Union is taking a divergent approach regarding allowing the right of first sale for software (UsedSoft v Oracle, C128/11).

In a submission to the Australian Law Reform Commission's Issues Paper, Copyright and the Digital Economy Issues Paper (IP 42), the Digital Policy Group of The Australian Interactive Media Industry Association – which counts eBay, Facebook, Google and Yahoo! among its members – proposed that:

...the ALRC introduce an exhaustion of rights doctrine in Australia in order to facilitate secondary markets for software, digital works and subject matter other than works and product that embody software material. The ability of a copyright owner to restrict the transfer of copyright interests as currently permitted under Australian law is a restriction on the ability of an individual or small business to legitimately trade in items of value (AIMIA 2012: 20).

In February 2014, the Australian Law Reform Commission released a report on Australian copyright and the digital economy that did not address secondary sale in a digital market, meaning secondary sales of digital content is almost certainly prohibited under current Australian laws. According to Jessica Stevens (2016), this means Australia's copyright law is in a stagnant position when compared with the US and Europe, and Australian consumers are prohibited from selling digital copies of content, which is to their disadvantage. Copyright law needs to recognise developments in digital content and effectively balance the rights of copyright holders with consumers by considering a marketplace for the resale of digital content, Stevens argues.

Although the selling of digital content is not facilitated by a secondary marketplace in Australia, sharing content for personal use is not prohibited by the Copyright Act. This means that burning files from a CD onto a computer makes both the CD and the files personal property, able to be bequeathed to the next of kin – but if those music files are associated with an iTunes account, they may only be available for personal use if the iTunes account is transferred to another person upon the original account holder's death.

It is unclear as to whether Google's inactive user policy (which gives pre-assigned people access to files from a Google account like photos and documents) also creates a right to those files as personal property, or gives the assigned person a licence to own these files as their digital assets.

Managing digital legacies

Wills and digital registers

One approach to managing digital legacies can be found in recent developments in digital registers: a record of accounts, usernames, passwords, and requests for these accounts. A digital register may accompany a will, and is a practice recommended by the State Trustees of Victoria.

A digital register can be prepared by an individual, or with the assistance of a legal specialist in wills and deceased estates. It is also possible within a digital register to request the closure of online accounts upon death so that sensitive or irrelevant material is deleted. However, the ability to include a digital register *within* a will is generally not recommended, as wills have the potential to become public information in some cases and would therefore expose digital accounts to the public. Although there is much information available online, such as templates and other guidance for creating a last will and testament, so far there is little in the way of guidance for the broader management of digital legacies as part of a digital register.

We need to know who their next of kin is or who is the executor of their estate or what their instructions are for that data stored in their account (Chief Regulatory Officer, Major Australian Internet Service Provider).

Creating and maintaining personal digital archives

Many leading archives, such as the US Library of Congress and the National Archives of Australia, recommend creating and maintaining a personal digital archive: a curated record of digital files that are accessible by an executor. Some of the major US technology platforms have options to download a record of personal data.

- **Facebook** allows individuals to download nearly all the information they have shared on their timeline including photos. There are also expanded options that allow individuals to view cookies, logins, logouts and many other ways of interacting with this platform: <https://www.facebook.com/help/131112897028467/>
- **Twitter** allows individuals to download their entire Twitter archive: <https://support.twitter.com/articles/20170160>
- **YouTube** allows users to download and archive their entire YouTube uploads in the original uploaded format: <https://support.google.com/youtube/answer/56100?hl=en>
- **Google** allows people to export and download their data from Google products including Gmail, Google Drive, and Google Photos: <https://support.google.com/accounts/answer/3024190?hl=en>
- Downloading and archiving an email account such as **Outlook** can be done with a software application like Thunderbird: <https://www.mozilla.org/en-US/thunderbird/>. Once emails have been downloaded, it is possible to export them in different formats and in folders.
- Downloading and archiving a **Hotmail** account can be done with a software application like Thunderbird: <https://www.mozilla.org/en-US/thunderbird/>. Once emails have been downloaded, it is possible to export them in different formats and in folders.

- **Instagram** does not offer a direct way of downloading all images and videos uploaded to the app, but third-party sites such as Instaport (<https://vibbi.com/instaport/>) use Instagram's application programming interface to make them available.

Another consideration in terms of creating local archives is making sure that local copies are in a format that can be used at a later date, and are in the best possible quality. Generally it is important that the files saved are in popular formats that are in general use, such as JPEG or TIFF for images, or MP4 for video. However, if a Microsoft Word document can be saved as a plain text file without losing too much of its structure, then it should be saved as a plain text file. Unlike proprietary methods of coding, plain text files use the standard ASCII code, which is readable across many platforms and applications, and is likely to remain so for some time into the future. There are many organisations involved in digital preservation that have published useful tip sheets on creating and maintaining digital archives. The National Archives of the UK offer useful guidance on selecting file types (<http://www.nationalarchives.gov.uk/documents/selecting-file-formats.pdf>).

As many of the practices and products associated with managing digital legacies are new and in flux, the digital archivists we contacted recommended that consumers be proactive and largely take responsibility for their own digital legacy. Best practice involves periodically downloading and archiving all the digital files that someone wants preserved, including photos, videos, tweets, emails, and documents, and storing them on an external hard drive. Sensitive or irrelevant information need not be included in the archive, and may be deleted with the requested closure of online accounts upon death.

Once all these files are gathered in one place, they should be put into a simple folder structure. Generally, the simpler and more straightforward the better (such as 'photos', 'music', 'emails' or 'Project X'). Metadata or contextual information about the items should also be included on this hard drive, such as a text file that describes what is in the folder, where it was created and why, dates, and any other important information considered relevant for use in a family archive or online memorial. This should be a selective process:

The stuff we create is often just the record of what we do and how we live our life and was never meant to be published and there are ethical questions about who should see what upon our death (Associate Professor, Digital Archives, The University of Melbourne).

The digital archivists we contacted in the study also recommended considering issues of significance when consumers plan their digital heritage. Important events such as weddings, vacations, graduations, and other life achievements should be deliberated upon in the selection process.

If it is important to you, you need to have a copy outside of that (online) system because in the future it may fail (Associate Professor, Digital Archives, The University of Melbourne).

With all the data arranged in folders and in one place, it may be then placed on a removable storage disk. Archivists advise that storage devices such as DVDs, CD ROMS, and flash drives should not be used because they are fast-changing formats and may not be accessible in the future. Also, online cloud services and other digital repositories should be treated with caution as they also may not last. It is better to use two external hard drives, one to be kept in a safe location and one to be given to a trusted friend. The hard drives must be updated regularly to make sure they contain relevant information, and replaced every three to five years.

If you want to pull the data out of a system like Google and Facebook it is better to keep it in the standardised form in which it comes (in terms of file structures) as it will make more sense to people in the future, especially if new tools are developed to use it. Also describe where the data came from and what date it was downloaded (Associate Professor, Digital Archives, The University of Melbourne).

Digital preservation is an active and ongoing process and it is important to intervene in the process and manage digital legacies over time. Another tried and trusted method is to print out important documents and images and store them in a filing cabinet: acid-free paper remains one of the most proven long-term preservation formats.

Although personal digital archives are a practical response to the management of digital legacies and are one of the more promising solutions to the preservation of digital files over time, they are also highly reliant upon consumers taking the initiative and responsibility for their own digital heritage and the number of people who are actually doing this or plan to do this in the future is not yet known. In addition, how individuals will repurpose the digital artefacts of the deceased in the future is also not clear. It's important to recognise what kind of digital asset management makes most sense to the individual consumer within the context of what value they personally ascribe to their digital accounts and artefacts, and the time and resources they have available to manage them.

There is an opportunity for an institutional or commercial response to this problem in the Australian context; to create archival cloud-based preservation services that can guarantee to store and repurpose digital artefacts in the long-term with appropriate access, sharing rights, metadata, and preservation formats to ensure their survival. Services in this area are emerging, such as Australian data storage company Your Digital File, which has an option to create a Data Legacy, giving nominated people access to files assigned to them in the case of a 'trigger event' (<https://www.yourdigitalfile.com/data-legacy/>), and eClosure (<https://eclosure.com.au/>) helps discover and close online accounts, as well as providing an option to search Australian financial institutions for lost funds, superannuation, and shares.

Digital commemoration and online memorialisation

Apart from challenging issues associated with the preservation and bequeathing of digital artefacts, a related consideration for digital legacies are the possibilities enabled by the internet for communicating news of a death or commemorating the life of the deceased. The death of a person can easily be announced or discovered through an online service such as Facebook, LinkedIn, or Twitter; while the life of a person can be commemorated through a growing range of digital mediation of funeral services or online memorial services.

Case study: Commemorating pseudonymous users

Online memorials usually show names and photographs of the people featured, in order to make them accessible to friends and family, but people don't always use real names on social media platforms. A thread on bulletin board Reddit, DeadRedditors, commemorates users who have died by posting links to their Reddit profile and often the circumstances of their death. The rules on the subreddit's sidebar read: "We are living the effects of the actions of those who have come before us. It therefore behooves us to remember the dead, and by remembering, we become more aware of how precious and precarious life really is". DeadRedditors is at <https://www.reddit.com/r/DeadRedditors/>.

These possibilities raise questions about the rights or responsibilities of bereaved family, friends, or even acquaintances to play a role in the communication and management of digital legacies.

Digital content of and about the deceased is increasingly being incorporated into funeral services. Many people now opt for a biographical and celebratory funeral slideshow. These digital presentations, typically comprise photo stills and a music soundtrack on a PowerPoint loop, usually put together by a family member and displayed on a temporary pull-down screen. Such practices raise issues for digital legacies in terms of gaining access to relevant digital content about the deceased, as discussed above around personal digital archives; and they raise issues for the digital literacy requirements of the bereaved to create and present a digital funeral memorial. Such challenges are addressed by online resources for the public offered by organisations such as DeadSocial (see resources section below). Alternatively, professional funeral service providers are increasingly offering such digital content management and presentation services alongside a suite of other digital memorial products and services, including things like real-time streaming of funeral services. The growing use of digital materials and services in funeral services is, however, challenging some traditional ideas, norms, and customs associated with funeral services.

...technology must not take over the character of the (funeral) occasion and this is not a problem of the technology, but how is how it is applied. (Senior representative, Church of England, Melbourne).

There has been a substantial shift in funeral services towards the celebration of one's life away from fear and judgement. More symbols of one's life are used in a service; photographs, videos etc. and at least half or more funerals have an audio /visual aspect to them now (Catholic Priest, Melbourne).

In addition to the use of digital media and content within funeral ceremonies, there is a growing use of mobile social media devices and applications in and around funerals. Research has shown the increasingly vernacular use of digital photography and sharing of digital images from funerals and wakes on social media sites like Instagram (Gibbs et al 2015). Sharing images of funerals using mobile social media brings into collision expected and ritualised mourning behaviours with the norms and practices of sharing on social media networks – see for example, recent controversies related to selfies@funerals (Gibbs et al 2015). The appropriateness of these practices is still in doubt, and raise questions about the rights, responsibilities, and relationships of those bereaving the deceased in the context of the affordances of social media used for communicating with wider social networks.

As with image sharing of funerals on social media, we can probably expect that recording and streaming practices will be extended through the adoption and use of live-streaming applications, such as Periscope or Facebook Live, to broadcast funeral or memorial services to a social network as part of a vernacular practice that operates alongside or even circumvents commercial funeral streaming services. Such personal practices of digital memorialising remain fluid and uncertain, though present a range of challenges to institutions, rituals, and the bereaved in thinking about the digital memorialisation of the deceased.

In addition to the digitisation of funerals, the online memorial services that commercial companies provide may form part of a funeral package or be offered as a separate service.

The first dedicated online memorials appeared in the 1990s, were not usually associated with funeral directors, and were primarily stand-alone web pages built by technically savvy individuals for their own family members or friends. A number of companies subsequently offered memorial services to individuals, again usually as part of a funeral service, but also as standalone systems that were not always tied into the funeral service.

Online memorials are an extension to previous memorial services and for a small cost allow a broader public reach (General Manager, An Australian and New Zealand online memorial service).

Online memorials are about how people cope once someone dies (Chair, An online memorial charitable Trust, UK).

Be aware, however, that online memorials open to the public may become a target for online vandalism or “trolling” (Marwick & Ellison 2012; Phillips 2011), some of which can be very hurtful, whilst memorials with appropriate privacy settings may become a site for family disputes to be played out. This means that moderation (that is, editorial control) of comments on the site is required to ensure the appropriate tone and content is used, and someone should be delegated to perform this task (again, perhaps noted within a digital register).

Family conflict, based around second marriage and children from various marriages may cause conflict if the site is not moderated carefully (General Manager, an Australian and New Zealand online memorial service).

Sometimes people don't have someone to talk to and online memorials are a way of communicating with others. But some online memorials are used to vent family issues so moderation is important (General Manager, Australian online memorial company).

The use of online memorials is still fairly new, and not yet as easily recognised as traditional memorial practices. As a result, online memorialisation has been subject to public debate and controversies around issues such as appropriate conduct and interaction and responsibility for administration and moderation (Kohn et al. 2012). Again, managing a digital legacy means that due consideration to all of these issues should take place before death.

From our discussions with individuals within the online memorial industry we discovered that typically, the sorts of features that are offered include a profile page of the deceased person; photos and videos of their life; an obituary; comments that are open to the public (but usually moderated by the service provider); pre-set interactions with the memorial page like lighting a virtual candle or watering a virtual tree; a link to a donation page to a charity, especially one associated with the deceased's case of death, or one they were involved in while alive; and share buttons to link the memorial page to social media.

There are several considerations consumers must take into account when deciding upon an appropriate online memorial service, one of which is the sustainability of the memorial profile itself. Although many services may claim that they will host the memorial page ‘forever’, often for a once-off fee, this is very unlikely in practice. Technical factors may well limit the life of the site as web-serving technologies are fast evolving and neither hardware nor software have a useful life extending to decades. Companies must be trusted to continually migrate the content of memorial sites to contemporary software and hardware platforms – which can be a costly business. For a memorial to be guaranteed into perpetuity, it requires the guarantor to survive into perpetuity, and already a number of online memorial companies have gone out of business. Consumers should check the health of the company through assessing how many memorial pages are hosted and check that protocols are in place to

migrate sites to new technologies when required. As always, it is good practice to keep local copies of text, images and other media types that are submitted to a memorial (or any other site) within a personal digital archive so that they may be bequeathed to others family members or friends.

Place, community, and embodied relationships shouldn't be discounted by the abstract, disconnected nature of the online memorial (Senior representative, Church of England, Melbourne).

We have a 10 year end point on our memorials because we thought this was ample time for bereavement but at the end of ten years people can keep it if they want (Chair, An online memorial charitable Trust (UK)).

Memorialised Facebook pages

Another kind of online memorial is the conversion of an existing social media profile into a memorialised state, which is currently offered by Facebook. "Memorialising" is a way of preserving someone's Facebook page after they die in a form that doesn't appear active: the text 'Remembering' appears before the deceased's name, automated prompts to interact with and public links to the profile are deactivated, existing content remains available to existing friends (subject to existing privacy settings) but cannot be modified, friends can post private messages to the deceased and can post to the deceased's Timeline, the profile cannot be accessed through a search, and new friendships are not able to be made.

Memorialising a Facebook page is one of four options for a person's account after they die; other options include deleting the profile upon the owner's death, designating a "legacy contact" who will manage the profile after death, or simply letting a profile remain active. Profiles can only be removed at the request of an immediate family member, who will need to provide the deceased person's full name, email address, date of death and the URL of their Timeline. Good data on the number of people choosing these options is very difficult to obtain, but most estimates are that more than 30 million Facebook profiles are of dead people, and only about 10% of these are memorialised (Meese et al 2015). If this is so, it seems that most deaths are not reported to Facebook, the profiles simply remain open, either in a dormant form, or as places loved ones visit to remember and mourn. People also log in to accounts belonging to dead friends or relatives to post updates on their behalf (Meese et al 2015).

Case study: Mourning on Renren

On Renren, a Chinese social media platform like Facebook, one mourner has posted on her dead boyfriend's page every day for four years. The daily ritual involves Zhang Xi leaving messages about their time together and how much she misses him, and continues despite some commentators suggesting her inability to let go represents a mental health issue. Others call it an expression of true love, and see keeping in touch with the dead in this way a kind of "spiritual sustenance" (Global Times 2014; Shanghaiist 2014).

So far, Facebook is the only high-profile social media platform to memorialise profiles. On Instagram (now owned by Facebook), memorialising a profile involves locking it permanently and removing it from public spaces, like the Explore section of the app. Memorialised profiles

on Instagram do not appear differently to active accounts. On other platforms, including Twitter, LinkedIn, or Snapchat, the only option for an account following the death of the user is to leave it active or delete it entirely.

In addition to its memorialisation pages, since early 2015 Facebook has allowed users to nominate a legacy contact, who can share a final message on behalf of a deceased user, provide information about a funeral service, respond to new friend requests, update their profile and cover pictures, or request the removal of their account. Legacy contacts cannot login to Facebook accounts, remove or edit past posts, read messages, or remove friends. (More information about legacy contacts is available at <https://www.facebook.com/help/1568013990080948>).

Facebook memorialisation options and the ability to nominate a legacy contact could be considered industry best-practice. It is hoped that other companies provide similar services to sensitively manage processes associated with the death of their users.

Creating and managing a digital legacy

To summarise this section, we propose the following steps in creating and managing a digital legacy:



- **Identify digital accounts and assets:** An audit needs to be done of financially and socially important digital assets, including social media profiles, domain names, blogs, websites, email accounts, application software, gaming accounts, dating accounts, phone apps, and documents.
- **Create personal digital archive:** Create local archives (back-ups) of online personal files. This is increasingly easy to do and most of the larger social media and software companies now offer an option to download content. Thoughtful categorisation of files into archives is a useful thing to do for everyday purposes and will also make the job of deletion or disbursement of a digital estate easier. However, once the data is downloaded and stored locally it is also important to consider its safety in terms of privacy. If stored on an external hard drive, for example, consider password

protecting or encrypting the disk and keeping it in a secure place, or giving a second copy to a trusted friend or relative for safekeeping.

- **Nominate a digital executor:** A decision needs to be made about who is going to manage the digital assets upon the death of the individual concerned. This is often the executor nominated in any will. This person should have the technical skills to locate and access accounts, to identify the files associated with these accounts, and to carry out instructions in respect of these files. Alternatively, a friend or family member may be nominated to assist in this regard. A digital register and associated instructions may be included as an appendix to a will, and like the will, should be kept in a safe place known to the executor. Commercial service providers, like Security Safe or PasswordBox, offer specialist services that can store data and passwords and allow nominated individuals to access accounts and files in the event of death.
- **List locations, access methods, and wishes for digital accounts and assets:** Details need to be provided on where to find digital property or assets, and clear instructions need to be given on how to access files and groups of files, and what to do with them upon death. It is important that information about locations, usernames and passwords are up-to-date and retained securely. Finding and gaining access to accounts after death can be extraordinarily difficult, if not impossible, without this information. Enabling a digital legacy to be disbursed or deleted as appropriate also reduces the possibility of identity theft and the possibility of reputational damage and distress brought to friends and relatives should privacy be violated upon death. Decisions need to be made as to whether an individual social media profile will be deleted or memorialised, or if a memorial site will be established, and in most circumstances it is best for an individual to make these decisions before their death. If converting or creating a memorial profile, it is important to consider what content will be on display, who will be able to view it, and who will be curating or moderating any posts or comments made on the site.
- **Prepare paperwork:** If accounts are to be closed upon death, most service providers require a formal process in which proof of death, such as a death certificate or published obituary, is provided by a person authorised to act on behalf of the deceased (usually the executor of the will). They may also require proof that this person is authorised to act on behalf of the deceased person.

Service provider policies for managing someone else's digital legacy

For executors, an important task following a death is managing the digital estate. Ideally, the individual will have discussed their wishes for how their digital accounts, artefacts, and legacies are to be managed after death. After receiving the will, and perhaps the digital register as part of the will, the following major platforms can be contacted about a deceased user:

- **Google:** The Inactive Account Manager lets people add up to 10 trusted contacts who will receive an email if their account is left unattended for between three and 18 months. This email may contain instructions on what they'd like done with their Google account, and links to download data from Google accounts including Gmail, Google Drive, Blogger, and YouTube (<https://support.google.com/accounts/answer/3036546?hl=en>).

If no instructions have been left on the management of Google accounts, immediate family members or representatives of the deceased can close the account by contacting Google, but cannot access the files associated with that account. Google's

policy on deceased users is not to provide passwords or other login details even to the next of kin, as “our primary responsibility is to keep people's information secure, safe, and private”. The Inactive Account Manager is the better option for those who want to bequeath files stored on a Google service.

- **Facebook:** As described above, Facebook account holders may nominate a legacy contact to manage their profile after death. Alternatively, a family member or friend can submit a request for their profile to be memorialised. The form to memorialise a Facebook account is available at <https://www.facebook.com/help/contact/234739086860192>. Alternatively, a close family member may request that the profile is removed. The form to remove a Facebook account is available at <https://www.facebook.com/help/contact/228813257197480>
- **Instagram:** As Instagram is owned by Facebook, it also provides a memorialisation option for deceased Instagram users. This means nobody can login to the account, it can't be changed in any way, and posts remain visible to the audience they were shared with. Memorialised accounts on Instagram don't appear in public feeds, such as the Explore section of the site. To memorialise an account, anyone can provide a link to an obituary or a news article reporting the death. To remove the account, an immediate family member must contact Instagram and provide the deceased person's birth and death certificates, and proof of authority under local law that the executor is the lawful representative of the deceased. Instructions for memorialising and removing Instagram accounts can be found at <https://help.instagram.com/264154560391256/>.
- **Twitter:** Executors can't access the account of a deceased person, but they can submit a form with information on the deceased, including the death certificate, to have their Twitter account deactivated. The form is available at Twitter's Privacy Form page under the option, “I want to request the deactivation of a deceased or incapacitated user's account” at <https://support.twitter.com/forms/privacy>. The same form can be used by executors to request that Twitter remove imagery of deceased individuals, although Twitter claims it “considers public interest factors such as the newsworthiness of the content and may not be able to honour every request”.
- **Microsoft, including Outlook and Hotmail:** To request content from, and close, Microsoft accounts, executors must contact the Microsoft Custodian of Records at msrecord@microsoft.com. A Microsoft representative cites privacy issues on an information page about accessing a Microsoft account after death: “The right to privacy and the security of our customers' data is a fundamental concern to Microsoft. Our users expect Microsoft to keep their information private and secure even in the event of death or incapacitation. Our primary responsibility is to honour this expectation”
- **Dropbox:** Documentation that the person is deceased and the executor has a legal right to access the person's files must be provided by postal mail, and Dropbox will follow up by email. Details of this process are available at <https://www.dropbox.com/en/help/security/access-account-of-someone-who-passed-away>.
- **iTunes:** Music files are licenced, rather than owned, so they cannot be bequeathed. To transfer an Apple account to a different user, executors can contact Apple Support with the deceased person's Apple ID, email address, password, and death certificate at iTunesStoreSupport@apple.com.
- **LinkedIn:** Executors, colleagues, or friends of the deceased can notify LinkedIn they have passed away so their account can be closed and profile removed. To initiate the

process, LinkedIn requires the deceased's name, LinkedIn profile URL, email address, the date they passed away, link to their obituary, and company where they most recently worked. The form is at <https://www.linkedin.com/help/linkedin/ask/ts-rdmlp>

- Although we recognise that Chinese social media platforms such as Renren, WeChat, and Weibo are also used in Australia, there is a dearth of research on these platforms and their policies.

Other digital services and marketplaces

So far, we have focused on social media and personally valuable or significant digital legacy management. It is important to also consider a range of other platforms and digital services that may contain digital assets, profile information, or financial value, which can be included within digital legacy management.

Case study: Death at an Airbnb

Zak Stone's father died after a rope swing broke at their holiday house in Texas, rented through holiday accommodation sharing site Airbnb. The incident prompted discussion around online sharing economies and liability: Stone reflected that the incident was only a matter of time, as sharing economy startups aren't standardised for safety or regulated in any meaningful way, leading to legal quandaries around who should take responsibility for injuries and deaths that occur as part of the renting process (Stone 2015). If the death occurred in Australia, both the host and Airbnb could be sued, as the hosts had not taken reasonable steps to reduce foreseeable dangers (Ross 2015).

Although Airbnb doesn't appear to have a policy for transferring or cancelling host accounts in the event of their death, it does list the unexpected death or serious illness of a host, guest, or immediate family member in its list of extenuating circumstances, which can lead to the company waiving the usual cancellation penalties (<https://www.airbnb.com/help/article/1320/what-is-airbnb-s-extenuating-circumstances-policy>). Beyond this provision, the platform does not yet have a clear way to deal with the deaths of hosts or guests.

These platforms and services include digital wallets and PayPal, peer economy platforms like Airbnb and Airtasker, and marketplaces such as eBay or Etsy, in which there might be money held within digital platforms. PayPal's policy states that only an account owner can close their account, unless the owner is dead, in which case a representative can fax legal documentation to PayPal and have a cheque posted to them with any remaining balance of the PayPal account (<https://www.paypal.com/us/selfhelp/article/How-do-I-close-the-PayPal-account-of-a-relative-FAQ1694>). On eBay, there's no official policy about closing the account of a deceased account owner, just a line on their information page about closing accounts that reads: "contact us for help closing or transferring the account of a deceased eBay buyer or seller" (<https://ocsnnext.ebay.com/ocs/sr?topicName=Closing+your+account&query=166>). Etsy, an online marketplace for handmade and vintage goods, asks executors and next of kin to contact membercare@etsy.com if an Etsy member has passed away, and claims that privacy concerns mean it is unable to offer access to deceased members' accounts, although in some cases (which the policy does not detail) they can provide access to some content (<https://www.etsy.com/help/article/24695828180>).

Other online platforms include those used by government to provide services. In Australia, the myGov system is an online portal to a range of government services including taxation, health, and welfare payments (through Centrelink). The My Health Record is emerging as another key online service for Australians. My Health Record provides an online summary of Australians' health information so general practices, hospitals, and specialists can access the same records. Within this system, no clear information exists on how to access the health records of someone else after they have died. Individuals can give a nominated representative access to their My Health Record account by generating an access code, but there is no information on how to access someone else's record if they are not present to generate this code themselves. The My Health Record privacy policy (<https://myhealthrecord.gov.au/internet/mhr/publishing.nsf/Content/privacy-statement>) states the system keeps all documents for 30 years following someone's death, and representatives of a deceased person are only able to access their record by making a request directly to My Health Record. The page does not indicate what the criteria are for granting or denying this access or what access will be made available to health practitioners and why.

Issues in bequeathing key digital media types

There are many limitations on the bequeathal of digital media to others and, as previously noted, these limitations are associated with some defining issues of the digital economy: property and privacy. There are numerous misconceptions circulating about the assumed property rights that consumers have over digital media, especially music and ‘the right of first sale’: giving or selling copyrighted material to someone else (Bradgate 2010). But the general rule is that unless the music was written by the individual consumer, it is not owned by the consumer, and cannot be bequeathed to others. This rule may be applied to other media types as well, although with some media types it is not issues of property that are key, but issues of the protection of individual privacy.

In the following we list some of the important issues in key media types as they relate to death, bequeathing and privacy. This is by no means an exhaustive list; nor are the issues we flag stable or resolved. The digital economy is contested and in flux, and many of the processes that deal with digital media in the context of death do not have a developed legal framework, business processes, or social norms to guide practice. From our research into the terms of service of the key players associated with each media type, coupled with discussions with the key informants who contributed to the study, we outline the issues relating to the bequeathing of key digital media types.

Music

Digital music on platforms like iTunes or Spotify is often licensed for individual use and thus cannot be bequeathed upon the death of an individual. The copyright of the digital music is held by the person who created the music and the licence allows consumers to listen to the music. Companies such as Apple have complex consumer software licences that once clicked are arguably binding, although according to research done by Kayleen Manwaring (2011), certain unfair contract terms, such as causing a significant imbalance in the parties’ rights and obligations, may make contracts void under the new Australian consumer law. In effect, when using a service such as iTunes, the individual is entering a contract with Apple. These licences are in place to protect the producers of the music.

It is important to note that under Apple’s Terms of Agreement Apple will not replace digital files and files can only be downloaded once, thus any transfer of files is potentially illegal under US copyright law. If a file is lost, Apple will not replace it, thus personal backups are important. Indeed, when an item is ‘purchased’ from iTunes, it is not actually ‘owned’ by the individual who purchased it. The individual is paying for a licence to listen to the music, not to own its content, as the content is owned by the artist, or company, who owns the copyright.

Other companies have different consumer software licences that vary according to what can be done with a digital file (such as Creative Commons licences). It may be the case that a digital audio file is in the public domain and thus has few or no intellectual property rights upon it. This means, in effect, that the music can be used by the public in certain ways, but cannot be owned by an individual and thus cannot be bequeathed in a will.

Ebooks

As with digital music, ebook files are usually licensed for individual use and cannot be bequeathed. The terms of service provide the right to use the file, that is, read the book, but these rights may expire on a certain date, and the ebook can often only be read with proprietary combinations of hardware and software, such as Kindle. In some cases, licences may be extended to friends or family, but the ownership of the file still remains with the publisher. An important exception to this are books that are out of copyright and have been digitised and made available under a Creative Commons licence by organisations such as Project Gutenberg and Google Books. These copies may be bequeathed as in effect they are not owned by anyone.

There are many advantages to ebooks, but bequeathing is not one of them. If an individual is concerned about the inter-generational longevity of their library, it is best to buy physical copies of the book in the first instance. The physical copy can then be bequeathed in a straightforward fashion. Books are an important component of intellectual development and again form an important component of family history. The seminal and important books that one reads and wishes to pass to others should be in physical form.

Gaming and streaming accounts

Like music and ebooks, gaming and streaming services licence content for use instead of selling it to consumers, so accounts cannot be transferred or bequeathed. These services include gaming platforms like Steam, a digital distribution platform developed by Valve Corporation, and streaming services like Netflix, Stan, Amazon Prime Video, and Foxtel Now. In the modern world, such artefacts can assume significant value and understandably consumers may assume they have rights corresponding to the labour they have contributed. When considering bequeathing games, it is worth considering what value they have, both monetary and sentimental.

First, there is the value of the games, themselves, or the game library. Many people associate strong financial value in the games they have collected. Some games are bought as physical media, and this media, often but not always, is subject to first use doctrine. The game cartridges, discs, and boxes can be left to others. This is a simple matter for games without an online component. However, many games are licenced rather than bought. This is particularly true for games with an online component and games purchased and digital downloads on services such as Steam and iTunes. As with other digital media, games are licenced to an individual, and cannot legally be transfer. This has been challenged in courts of the European Union, but currently in Australia games that are licensed rather than bought may not be legally transferred to other people. However, it has been reported that a person's Steam account can be bequeathed if proof of death and a valid will specifying who the account is being left can be provided. However, unlike a library of physical books, the Steam account and associated library of games cannot be split up between recipients.

Second, there is value in the game accounts associated with online games. Many games, even those bought on physical media, often have an online component and associated user account. The Terms of Service for most games disallow the sharing of accounts and the sharing of account user names and login details. The game account is a record of the time and financial investments a person has made in a game. Depending on achievements and the shared experience of playing these games, these accounts can have both financial and sentimental value.

Third, there is value in assets a person may own in a game. Again, these are usually tied to accounts, although many games have market places where items can be legitimately bought and sold. Rare and desirable items can be valued in the hundreds if not thousands of dollars (Gibson 2014). As these items are often associated with non-transferable accounts it can be difficult to bequeath them to others.

Fourth, many games have forms of in-game currencies and often these in-game currencies can be bought and sold with other currencies such as US dollars. Again, these currencies are tied to accounts and can be of significant value, but difficult to bequeath due to the terms of service of the game. For example, many players of the game, EVE Online, amass in-game currency worth thousands of dollars.

Finally, it is worth considering the sentimental value games can have for the bereaved. Playing games can often be a shared experience and the preserved state of a game, or the characters played by the departed, can be important keepsakes or mementos for some people.

Images

Copyright of a photograph is owned by the individual who took the photograph, unless the rights are specifically passed to another. Uploading a photo to the web does not change this and copyright is retained by the photographer. Thus, photos can be bequeathed to another person in a will and many professional photographers, who earn a living from their photos, do this as a matter of course. When uploading photos to services such as Flickr, people can choose a Creative Commons licence that allows flexibility with how the photo can be used (see <http://creativecommons.org.au/> for more about Creative Commons).

In the case of other platforms for publishing photos, such as Facebook, the copyright is still owned by the photographer. The terms of service agreement grants Facebook the right to reuse photographs in certain scenarios, but this is primarily determined by the user's privacy settings. Other platforms may have differing copyright provisions and it is always prudent to check the terms of service before uploading images.

Photos play a significant part in the documentation of family history, and considering how they will be maintained and bequeathed is important. Although social media platforms are convenient places to share photos, they are often published in a compressed and low-quality format. It is best practice to retain copies, in the best quality possible, along with the important information about where they were taken, dates, and people in the photo.

Video

Snapchat has been criticised for its terms and conditions, as it appeared with one privacy policy update that it was storing and using images and video sent through the app, which self-destructs content after it has been seen by the recipient. The company assured people it doesn't keep their images and videos on their servers after they have been received (ABC News 2015).

As with photos, the copyright of videos uploaded to platforms such as YouTube is usually owned by the person who recorded the video, so videos may be bequeathed. However, once uploaded, many of the exclusive rights that the individual has over the video are granted to YouTube, so that YouTube may republish videos in other parts of the platform, or use uploaded videos to raise revenue through adding advertisements to them. However, the licence that YouTube uses to stream uploaded videos is terminated once the videos are deleted.

Along with photos, videos are an important part of family history, so it is important to consider their long-term maintenance. As with photos, it is best practice to keep the copies of the digital files using popular formats such as MP4, ensuring that additional contextual information accompanies the videos to enable future generations to appreciate their content.

Email

Email is one of the more complicated communications applications on the internet in terms of privacy, bequeathing, copyright, ownership, and archiving. It is also one of the oldest and most popular uses of the internet, with many personal archives dating more than 20 years.

There are many issues in the preservation of emails in large companies and many of them are technical (Associate Professor, Digital Archives, The University of Melbourne).

Most people maintain a company email account and at least one other separate, private email account. People may wish to think carefully about archiving and bequeathing emails. Personal correspondence between siblings, partners and friends may well constitute a valuable archive to pass to loved ones, but some email should be considered private, even in the context of death.

There may be mechanisms in place for intergenerational transfer of materials but there also needs to be a respect for the record and the personal stories that they represent (Associate Professor, Digital Archives, The University of Melbourne).

Organising personal and professional correspondence in a thoughtful way is necessary if it is to be effectively archived and bequeathed. Most email programs let emails to be stored in nested folders, and the structure of these folders could clearly separate out different categories that represent the context in which the emails were produced and lay out a coherent history of correspondence. In this way, the archived email will be comprehensible in the future not just to the author, but to the beneficiary.

Email needs to be separated between a business environment and a personal environment. The data in an email account usually belongs to the account holder but in a business there is an argument that the email belongs to the company and it may be very difficult to gain access to company email if someone has left that company (Chief Regulatory Officer, Major Australian Internet Service Provider).

As we advised in the section on managing digital legacies, saving individual emails that people want to preserve in a format and location accessible to executors is the best way to make them available to friends and family after death.

Mobile accounts and texts

The procedure for dealing with mobile phones and the text messages and data that they contain differs between service providers, but in general, larger service providers like Optus and Telstra have established policies to deal with the death of a client. Procedures usually require the next of kin to contact the service provider on their customer support line, notify them of the death with the appropriate documents (a death certificate, published obituary, funeral notice, or statutory declaration confirming authority to act on behalf of the deceased), and submit a form detailing what is to happen to their accounts.

There are usually two options for dealing with a deceased person's account; the account may be closed, final bills paid and all data (text messages, favourites, contacts, recent calls etc) are then deleted. However, accounts may also be transferrable to the next of kin so that

the services are continued, meaning the phone number is retained, and call records and text messages remain available.

Telecommunications providers do not provide a service for a client to request that their phone account is deleted upon their death, which does raise some privacy concerns. However, even if this were the case, there is still the possibility that the next of kin and an authorised representative can have access to the phone handset itself, and if unlocked, will be able to access texts, recent calls, contacts and so on, regardless of the telecommunication company's policies.

Telstra doesn't require a death certificate but the customer must have the appropriate authority such as Executor or be the Next of Kin. The account can be either closed or transferred to another individual after filling in a form or through 'voice signature'. A password holder is an authorised user and can change details on an account and it is transferable (Senior Executive, Major Australian Telecommunications Service Provider).

Websites and domain names

Websites and domain names may be bequeathed to another person with instructions given in a will and accompanying digital register. The regulator of domain names in Australia, auDA, has a policy for transferring ownership of domain names to a deceased person's estate that applies to the particular registrar with which the domain is located (such as Melbourne IT or Netregistry). In the event of an individual's death, the domain registrar should be contacted and appropriate evidence of death supplied. It is then a matter of transferring the domain name and the account associated with it to another person (there may be a fee for this service).

Another important consideration here is that the domain registrar and the website host may be two different companies. If this is the case, the website host will also need to be contacted. Access to the website files can be granted to next of kin or nominated person, and the account's name and files transferred to the nominated person. Again, each organisation will need to be contacted in turn and may have differing policies and procedures. To further complicate things, it is also possible that domain name records may be held independently of both the registrar and the website host, and in that all records may need to be updated and reassigned.

If a website is run through a blogging platform such as WordPress or Blogger, these accounts need to be managed through the platforms. WordPress allows executors or next of kin to deactivate, make private, or transfer a blog to another owner when the relevant documentation is provided (<https://en.support.wordpress.com/deceased-user/>). Since Blogger was bought by Google in 2003, blogs run through this platform can become part of the data pre-organised to be transferred to another person through Google's Inactive Account Manager.

Ongoing issues and implications

Given the size of the digital economy and the plethora of services and products now available to the public, it is difficult to prescribe a simple fix to the fact that every single user of these services will die at some point. However, developers and providers of software products and services could do more to consider the issues that will only become more pressing in the future.

There have been many promising responses to digital inheritance and memorialisation, with products such as Google's Inactive Account Manager recently becoming available, Facebook initiating a legacy contact feature, and platforms such as Facebook, YouTube, and Twitter providing first-rate facilities for users to readily download and store data locally. It is uncertain whether individuals are indeed using these services and taking proactive responsibility to store their important digital items locally or consider the privacy implication of their data in the context of death. More research needs to be done in this regard before we, as a society, come to realise that a great deal of our collective, family and personal histories that have migrated to the Internet have become lost or inaccessible.

Some emerging issues for digital legacies are outlined in the sections below:

Online platforms and service providers have inadequate procedures for managing digital legacies

Many online systems and service providers do not have procedures in place to cater for the death of a user.

The ability to designate an inheritor of personal data files or to request their deletion, according to the user's preferences is missing in many systems and services. Google appears to be one of the only innovators in this regard, through its Inactive Account Manager, and Facebook now allows people to appoint a legacy contact to manage a profile after someone dies. The lack of these services creates privacy concerns for the deceased and unnecessary complications for the next of kin.

There are significant internal inconsistencies and recourse to ad-hoc arrangements in how some companies deal with the death of a client, especially relating to personal data.

The general public is not sufficiently aware of the need to take responsibility for their digital assets

A lack of clear or consistent options from service providers means that individuals need to take responsibility for their digital assets. Most importantly, this includes creating and maintaining a local archive of important digital assets, making decisions regarding the disbursement of them, and leaving clear and accessible instructions to enable them to be accessed, deleted, or passed on as appropriate.

Despite the issue occasionally being raised in the news media, the importance of creating personal digital archives is not well-established in the popular imagination, and there are inadequate products and services available to facilitate this process. Digital service providers could offer much more leadership in this respect. There are also neither established mechanisms nor customs for re-repurposing the digital artefacts of the deceased.

Furthermore, concepts of digital property and the rights consumers have over digital files are not always clear and consumers need be aware of what can and cannot be bequeathed. Protocols and practices for bequeathing digital assets alongside material and financial assets in the context of a legal will and 'digital register' needs to be further developed and more widely communicated.

Policy and regulatory bodies have a role to play in legislating personal data rights

In addition to policy issues around secondary markets discussed above, broader policy discussions concerning personal data rights are emerging, which may have implications for the treatment of data of the deceased. These are framed around people's rights to their own data, and have been canvassed in Australia, with the Productivity Commission recently releasing a report titled 'Data Availability and Use' (Australian Government Productivity Commission 2017). This report aims to build on existing governance of personal data, which is currently captured in the Privacy Act (1988), including Schedule 1 of the Act are the 13 Australian Privacy Principles, legally-binding principles which seek to promote best practice in the handling, management, and use of personal information amongst entities which are exposed to, and/or engage with, personal information. Whilst the Data Availability and Use report mostly argues for increased availability and use of data to boost innovation and competition in Australia, it also argues for the creation of a so-called "comprehensive right" for individuals to access, correct and transfer data about themselves held by product or service providers. This report does not extend the discussion of data rights to bequeathing data or to executors managing digital estates, but this could be considered an important addition to these discussions.

More comprehensive approaches to personal data rights can be found in other jurisdictions, especially Europe, where the EU's General Data Protection Regulation (GDPR) (<http://www.eugdpr.org/>), which was adopted on 27 April 2016, and will become legally binding across all member states of the EU from 25 May 2018. The GDPR Regulation identifies the 'protection of natural persons in relation to the processing of personal data' as a 'fundamental right,' (Council Regulation (EC) 2016/679), which is a more expansive approach than the Australian context to personal data rights. The GDPR also includes within these rights, an individual's 'right to erasure' (Article 17), which empowers individuals to have their personal data removed from databases and sets. But, again, such regulations are yet to extend to the rights of next of kin to erase the data of the deceased. Managing someone else's digital legacy is complicated at a time when consumer rights over personal data are not yet fixed. The example of this complexity found in the GDPR 'right to erasure' or 'right to be forgotten', which currently operates in Europe and enables people to ask search engines to remove links with personal information about them if it is inaccurate, inadequate, or irrelevant. This means that in practice, search engines will receive requests for link deletion from the person affected. It is unclear as to whether people can request information to be deleted on behalf of another person, even if they have died.

The United States has moved to harmonise, in each of the states, the rights and roles of those empowered to act on another's behalf such as executors. Under the Fiduciary Access to Digital Assets Act (Revised 2015), such rights are extended to manage digital files digital currency and domain names for example. It also restricts access to social media, texts and email messages unless specifically granted, bringing significant clarity and control back into those planning estates or facing periods of lessened ability. This information and legislation can be tracked via the Uniform Law Commission.

Memorial sites must be carefully managed

Online memorial sites are an important place for many people, and are a service offered by independent service providers and by many funeral directors. An extensive biography or autobiography of the deceased may be posted, along with images, videos, poems and music, and family and friends may visit the site to exchange remembrances and to share grief (see, for example, HeavenAddress, Online Memorials, and Eternime). Managing memorial sites (sometimes called ‘moderating’ the site) is an important responsibility which is generally shared by the managers of the memorial site and the friends and family of the deceased. There is potential for vandalism and for conflict on publicly accessible memorial websites, as ‘grief tourists’ (Marwick & Ellison 2012) or ‘RIP trolls’ (Phillips 2011) can post hurtful and inflammatory messages in an effort to provoke a response and harass grieving family and friends, or as family members use the site to pursue ongoing conflicts. The visibility of memorial sites and the social media profiles of the deceased need to be considered by executors in the light of this phenomena.

Most memorial sites have automated systems to moderate posts to sites. These systems will for example, prohibit posts that contain swear words. However, they will not be able to trap all posts that may offend or be inappropriate, and manual systems are also required. This commonly involves sending all posts to a moderator for approval prior to public posting. The moderator may be an employee of the site, or may be a family member. There may be considerable emotional labour in moderating posts, and family members may prefer a site employee to moderate the memorial, but in this case they should be aware that the employee will not be cognizant of family history and sensibilities, and may allow troubling posts to go through. Alternatively, moderation may be retrospective: all post can go through, to be taken down by site management on request. Different memorial sites will have different exposure to these risks, but the moderation of the site is an important factor to consider when deciding which site to use. Another important consideration is the time and potential cost of these add on services. Commercial services are within their rights to charge for such services, however the potential for unreasonable costs to be incurred must be considered.

Simulating the deceased remains a technological aspiration

An emerging use of digital media and memorialisation was depicted in a 2013 episode of British science fiction television show *Black Mirror* called ‘Be Right Back’, in which a grieving woman uploads all her dead partner’s digital content to a service that uses it to simulate conversations and interactions with him.

Case study: Dadbot

“If even a hint of a digital afterlife is possible, then of course the person I want to make immortal is my father”, says James Vlahos (2017), who created a digital archive and database of recordings of his father talking after he was diagnosed with cancer, then programmed them into a chatbot application, in order to simulate conversations with him after he dies: he calls it the ‘Dadbot’.

Vlahos isn’t optimistic that the end result will be entirely convincing: “Given the limits of current technology and my own inexperience as a programmer, the bot will never be more than a shadow of my real dad”, he says. But experiments like the Dadbot represent future endeavours in preserving memories in an interactive way.

Though this class of software is in its infancy, those prepared to pay for social immortality have a number of companies and services to choose from. Perhaps the most basic are those which pass on pre-recorded communications posthumously. EmailfromDeath for example, sends a client a regular prompt. Upon failure to respond to repeated prompts and communication to nominated recipients, the person's death is assumed and the pre-arranged communications are activated, perhaps notifying loved ones or executors of the location of assets, perhaps passing on last messages of affection and comfort or last words of advice, or perhaps harassing and trolling the living from the safety of the grave (<http://emailfromdeath.com/index.php>).

Services like LivesOn rely on algorithmically generated communications rather than pre-recorded communications. Restricting itself to Twitter, LivesOn analyses a Twitter feed and generates new Tweets, boasting "When your heart stops beating, you'll keep tweeting". The software is clearly an ambitious attempt to "Be Back Soon", but is far from successful at this point of development (<https://twitter.com/liveson?lang=en>)

The work of Eterni.me represents a still more recent instantiation of this ambition to create an adaptive posthumous online presence similar to that imaginatively predicted in *Black Mirror*. Utilising the algorithmic methods, data mining and pattern matching techniques described earlier, together with solicited images, fit-bit data, autobiographical data, diaries and the like, it builds an avatar which performs in a person's communicative style, and is further trained by the user in the course of daily interactions (prior to death), to improve its vocabulary and conversational skills (Parker, 2014). The product is some years from public launch but at time of writing has attracted nearly 40,000 expressions of interest (eterni.me/).

An intrinsic danger in the automated generation of ongoing communications with the dead is a universalising of sentiments and associations and expectations around death and dying. Detailed social and cultural knowledge must be obtained and factored into how post-death relations are produced and maintained through these services. Such sensitivity to diversity in terms of cultural background, age, ethnicity, socio-economic class, ritual practice and belief will be critical to the success of such aspirational services.

The use of digital materials in cemetery spaces is still emerging

There are a range of speculative designs and innovations that are seeking to digitally enhance cemeteries. A number of start-ups are developing services that, although in patent or infancy stage, are seeking to use technologies such as augmented reality, QR codes, or holographic projections to mediate gravesites with representations of the deceased.

Here, graves may connect to digital content on mobile devices, directly overlay information or images onto the grave using technology such as augmented reality software, visible on a smartphone or tablet; or alternatively a holographic projector displaying 3-D visual images on or near to a grave.

As we have already seen with some cemetery technologies, such as QR codes falling out of favour before ever really taking off, digital technologies and services are themselves prone to entropy and redundancy. In a practical sense the legacy of digital technologies or content depends as much upon remaining technically interoperable and durable as it does in remaining socially significant. However, this fact hasn't stopped entrepreneurs from attempts that will continue to work with emerging forms of digital media to invent ever more ambitious versions of digitising cemetery spaces and memorial materials.

Aboriginal Australians face complications as to how best to manage online memorials in a culturally respectful way

When an Aboriginal person dies, it is a major event and people will travel from all over the region to attend. If someone cannot attend, then they will send a fax to apologise. The funeral is a very social event and at the event a Memorial Booklet of their life story is often produced. The Memorial booklet may contain several pictures of the deceased and this is one way in which the practice of forbidding the public display of images of deceased Aboriginal people is changing. Another way is that family members may keep one or more photos of the deceased for viewing privately, but the main issue is most remote Aboriginal groups do not allow the photographic representation of Aboriginals who are deceased, but this may differ from region to region (General Manager, Indigenous association in remote Australia).

As this manager suggests, there are specific issues for Aboriginal Australians regarding online memorials. For example, news reporting on the death of prominent Aboriginal Australians must balance cultural sensitivities with paying tribute to these public figures, writes Matthew Knott (2013). The death of singer Dr G. Yunupingu was reported on without including his full name or photos of him in order to respect tradition: a note in one article read: "While the naming taboo differs across different indigenous communities, there's a general belief that doing so would jeopardise the spirit on its journey to the afterlife. Speaking the name of a dead person is thought by indigenous people to potentially undermine that journey, calling the departed spirit back to world of the living" (BBC News 2017).

These issues must also be considered in online memorials and on social media pages announcing the death of an Aboriginal person or memorialising them. Memorial pages are becoming more common within Indigenous mourning practices, with "Sorry Pages" providing a way for people to announce deaths, grieve, and remember the dead, especially when they cannot physically attend a funeral service (Carlson 2014; 2016). These Sorry Pages can be sites of conflict, as ceremonies around death and the deceased vary between Indigenous communities: some cultural protocols using photos to honour the deceased, and some forbid any photos (Carlson 2014). Despite this, Sorry Pages are productive, as they can give people time to offer condolences to the grieving family, organise funeral ceremonies, or make travel arrangements if they belong to a geographically dispersed community (Carlson & Frazer 2015).

Conclusion

In giving an overview of the current social and legal landscape of digital legacies, this report has stressed the importance of consumers proactively managing their digital accounts and assets. Nominating a digital executor and organising local copies of files is the best way to ensure these files are not lost, and online accounts are either deleted or memorialised according to the wishes of the deceased.

In addition, issues around owning and transferring digital assets have been raised, with an eye to future policymakers, regulators and platform owners making provisions for accessing and owning digital accounts and content after someone dies. Currently, Google's Inactive Account Manager and Facebook's legacy contact represent best practice in this area, and other platforms are encouraged to consider similar options.

Further resources

Guides on creating and managing a digital legacy

- Digital Heritage, the companion website to this report: <http://digitalheritage.net.au/>
- DeadSocial: <http://deadsocial.org/>
- Digital Death: <http://www.digitaldeath.com/>
- The Digital Legacy Association: <https://digitallegacyassociation.org/>
- The Digital Beyond: <http://www.thedigitalbeyond.com/online-services-list/>
- Away for a Bit: <https://awayforabit.com/>
- Choice consumer advocacy group: <https://www.choice.com.au/electronics-and-technology/internet/using-online-services/articles/digital-estate-planning>
- Carroll, E. and Romano, J. (2011) *Your Digital Afterlife: When Facebook, Flickr and Twitter Are Your Estate, What's Your Legacy?*, Berkeley, New Riders.

Services for creating and maintaining personal digital archives

- Everplans is an online storage service that archives content, documents, health and financial information, and post-mortem wishes: <http://www.everplans.com>
- AfterVault centralises and organises documents so they can be easily transferred to designated people after death: <https://aftervault.com/>
- National and State Libraries Australasia has a toolkit to help create a digital archive: <http://www.nsla.org.au/publication/digital-archive-toolkit>

Online memorials

- Online Memorials is an Australian website that displays obituaries, which after 30 days become part of a genealogy section. Family and friends can leave tributes in the form of comments: <http://www.onlinememorials.com.au>
- Heavenaddress allows people to create a public memorial website: <http://heavenaddress.com/>
- Eternime provides personal pages that feature photos, stories, and memories for current and future generations to browse: <http://www.eterni.me/>. Eterni.me also offers a service that builds an automated avatar of a dead person that others can interact with drawing on their personal data.

Posthumous message services

- Email from Death automatically delivers time-delayed messages after someone dies: <http://emailfromdeath.com/>
- GhostMemo automatically delivers pre-prepared messages if someone doesn't respond to an email request within a designated time frame: <http://www.ghostmemo.com/>

Hypothetical Sessions

- International version at the UN Internet Governance Forum (Brazil 2015)
<http://www.youtube.com/watch?v=U83KCXMWwrk>
- New Zealand version hosted by InternetNZ (2016)
<http://livestream.com/i-filmservices/DeathAndTheInternet>
- Australian version during session 9 at ACCANect (2016)
<http://accan.org.au/accanevents/1226-accanect-2016>

Authors

Emily van der Nagel holds a PhD from Swinburne University of Technology and is a research assistant at the University of Melbourne. Her research focuses on social media identities and cultures, and her PhD thesis investigated affordances for, and practices of, social media pseudonymity.

Michael Arnold is Associate Professor and Head of Discipline in the History and Philosophy of Science Program at the University of Melbourne. His research is at the intersection of contemporary technologies and daily life. Michael has conducted a three year study of online memorials and other technologies associated with death and disposal, and ethical assessments of these technologies is part of this work. Michael is a co-author of *Death and Digital Media* (Routledge, in press), and has published dozens of peer reviewed papers on this topic. For details see <http://shaps.unimelb.edu.au/about/staff/dr-michael-arnold>.

Bjorn Nansen is a Senior Lecturer in Media and Communications at The University of Melbourne. He holds an ARC early career researcher award, is a Digital Media Fellow in the Melbourne Networked Society Institute, and an executive member of the Research Unit in Public Cultures. His research focuses on emerging and evolving forms of media use in everyday life, with current projects exploring changing home media infrastructures and environments, children's mobile media and digital play practices, and the digital mediation of death and remembrance. He is a co-author of *Death and Digital Media* (Routledge, in press).

Martin Gibbs is an Associate Professor in the Department of Computing and Information Systems at the University of Melbourne. He is a member of the University's Interaction Design Lab. His expertise lies at the intersection between the disciplines of Science, Technology Studies (STS) and Human-Computer Interaction (HCI). He is a co-author of the book, *Death and Digital Media*, to be published by Routledge in 2018. He has also written extensively on topics associated, death, commemoration and digital technologies.

Tamara Kohn is an Associate Professor in Anthropology and Coordinator of Gender Studies at the University of Melbourne. Her research and teaching interests include the anthropologies of the body, leisured practice, and the senses; mobility and identity; personhood, memorialisation and death; and methods and ethics in ethnography. She publishes widely in these areas, drawing on extensive fieldwork experiences in the UK, Nepal, Japan, and the US. She is a co-author of *Death and Digital Media* (Routledge, in press), a volume that has emerged along with many other publications on death, commemoration and technology through interdisciplinary collaborations with Arnold, Nansen and Gibbs over several years.

Craig Bellamy was previously a Research Fellow in the Department of Computing and Information Systems at the University of Melbourne and is now a Senior Educational Designer at CSU. His work primarily focusses on the intersection of computing and the

humanities, especially in terms of the application of digital technologies to assist in the teaching and research process. He is founding Secretary of the Australasian Association for Digital Humanities and has worked in the field at King's College London and the University of Virginia in the USA. He serves on a number of Digital Humanities program committees for major conferences and the editorial boards of key journals in the field.

Narelle Clark is the Deputy CEO of the Australian Communications Consumer Action Network where she is responsible for the research and grants programs. A telecommunications engineer by profession, in previous roles she was Research Director of Networking Technologies at CSIRO, led architecture and network research at SingTel Optus and has been involved with internet architecture, technology and policy for much of her career. Her recent 'Hypothetical' style workshops on Death and the Internet have kept audiences amazed and entertained whilst canvassing the many issues in an intelligent and entertaining fashion.

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Death and the Internet

Consumer issues for planning and managing digital legacies

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