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**Personal Digital Archives:  
Preservation of Documents, Preservation of Self**

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**Personal Digital Archives:  
Preservation of Documents, Preservation of Self**

**by**

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## **Dedication**

To my parents:

Yungmo Kim and Junghee Lee

부모님 감사합니다.

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**Personal Digital Archives:  
Preservation of Documents, Preservation of Self**

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This dissertation explores personal digital archiving practices, particularly in relation to the construction of self. Personal archiving is an everyday practice through which people manage and preserve documents that have particular meanings to them. This process involves a constant value assignment that is intertwined with the recollection of past events.

The pervasive use of digital technology in everyday life has changed the nature of documents and how people interact with them; thus, it has an influence on archiving practices. Due to the increasing quantity and diversification of genres of digital documents, as well as rapid changes in technology, however, long-term preservation of digital documents becomes a challenging task for individuals, families, communities, organizations, and societies.

Recognizing personal archiving as a self-reflective practice that involves psychological and social processes of understanding, this study explores and interprets

personal digital archiving practices in the context of how people make sense of their lives and construct their private and public selves.

In-depth case studies were used to gain a holistic understanding as close to research participants' perspectives as possible. Semi-structured narrative interviews were conducted with 23 individuals from various backgrounds, ranging in age from their early 20s to early 70s.

While participants share similar patterns of digital archiving in terms of management, each participant presents a wide variety of different thoughts and motivations behind their activities. While many participants tend to retain digital materials by default, the actions of selection and prioritization are embedded in their digital archiving practice. Data analysis results indicate that how people perceive and review their past and current life experiences, including relationships with others, how they see their roles in a social setting, and their personal philosophy of life, has an influence on the formation and continued retention of personal digital archives.

The results are discussed in relation to emotions and self-evaluation. Personal digital archiving as a process, directly or indirectly, involves a self-enhancement and self-verification which is an integral part of self-confirmation. This study contributes to the in-depth observation of everyday recordkeeping in a digital environment, particularly providing interpretive accounts of individual differences and why people do things in a certain way.

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## **Chapter 1: Problems of Personal Digital Documents**

Recordkeeping is one of the tasks that many people do on a routine basis. Although people may not think about it with much curiosity about the rationales behind their action, recordkeeping is an intriguing information behavior to explore. It is a highly personalized and at the same time socially-situated practice. With or without explicit awareness, when people perform recordkeeping they may encounter a series of decision-making moments which often involve value judgments: for example, which documents need to be destroyed or kept, why, for what purposes, and for whom; where the documents will be stored, in which order or categories, and for how long; and who will have access to particular documents, how, and for how long. Moreover, it is likely that people will revise their previous decisions and choices made over time. Records management rules or norms at work places may influence people's way of managing documents in their private lives. Also, personality or personal preferences play a role in records management at home and work (Galloway, 2008).

This mundane practice of managing documents is the broad phenomenon of interest in this study. In particular, I investigate people's digital archiving practices, which I define as a type of recordkeeping activity that aims for long-term preservation of digital documents that people accumulate either by creating, collecting, receiving, and purchasing (e.g., e-mails, digital pictures, audio and video recordings, text files, contents generated on Web sites), possibly beyond an owner's lifetime. The focus on the archiving

of digital documents in this dissertation responds to the fact that digital documents have become a primary form of records that people create and collect today; and such personal digital documents will be a documentary heritage for present and future generations.

In the first chapter, I will briefly examine changes in people's documentation practices with digital technology. Then, I will describe the motivation of the study, emphasizing the significance of personal digital documents for individuals and societies.

### **PERSONAL DIGITAL DOCUMENTS: FROM STATIC TO DYNAMIC**

People have generated and shared records throughout history. A substantial difference in the current digital information environment, however, is the great extent to which individuals are able to interact with documents. In digital form, documents become highly flexible in terms of their modifiability and transferability. Using digital tools equipped with increasing storage capabilities, people can create, alter, remix, and duplicate documents in a much more active way. The networked environment of the Internet makes it easier and faster than before to retrieve, access, exchange, and distribute digital documents. While many conventional forms of documents are replaced by digital forms, such as the shift from paper photos to digital pictures (Kirk, Sellen, Rother, and Wood, 2006), new genres of documents are emerging in parallel with the evolution of digital technology (e.g., websites, blogs, profiles and contents on social networking sites, e-mails, instant messages, text messages, tweets). Moreover, digital documents are generally more open for ready access by a broader audience than documents in analog media. Most documents created and disseminated by individuals over the Web are meant

to be “seen” by others to some degree (Garde-Hansen, Hoskins, and Reading, 2009, Onuf and Hyry, 2011). This dynamic nature of digital documents promotes an unprecedented vigorous participation in the producing and sharing of documents for a variety of purposes (Garde-Hansen et al., 2009; Beagrie, 2005). In sum, as a result of living in this increasingly digital-technology rich environment,

1. the quantity of personal documents that belong to one individual is growing rapidly,
2. people hold a variety of types/genres of personal documents, and
3. public visibility has become an important characteristic of many personal documents.

#### **ISSUES OF PRESERVATION OF PERSONAL DIGITAL DOCUMENTS**

The change in our interaction with documents with digital technology also has an influence on how people manage and preserve their documents in their everyday lives. Again, people managed and preserved records long before documents in digital form were introduced. There are, however, many differences between managing documents in digital form and documents in analog form. People can easily create backup copies of their entire personal digital document collection and store them in multiple locations. People can save individual files with a unique name and associated metadata. Digital tools can enable users to sort materials in many ways, typically by name, type, and date, which can be useful in organizing and retrieving documents. Beyond these technical differences, however, there are more profound changes to be noticed related to the

condition of document management: low sustainability of digital storage media, decreasing control, and keeping as a social default. People's ways of preserving their documents are likely to be challenged by these new conditions, especially over a long period of time.

### **Low sustainability of digital storage media**

Unlike documents in conventional form such as paper, digital bits and bytes must have a proper device and/or system in order to be displayed as documents. The necessary reliance of digital documents on their supporting technology makes the long-term preservation of digital documents difficult. Since digital technology, including hardware and software, changes constantly and quickly, digital media do not provide the same level of stability that conventional media have offered for several thousand years. Inaccessibility of old but still relatively recent digital objects due to obsolescence of format and equipment is a foreseeable problem for many people (Paradigm, 2007). In order to keep digital documents renderable in spite of technological change, the continued application of digital preservation actions such as timely migration and media refreshing is necessary. Digital preservation, however, has been a considerable challenge even for information preservation professionals.

### **Decreasing control**

More problems stem from individuals' lack of control over their documents in a digital environment. Design purposes, policies, and the political and economic intentions of digital tool developers and service providers play a significant role in how people

interact with their digital documents (Garde-Hansen, 2009). The choices made by the developers and service providers may circumscribe individuals' use of their products to some degree. For example, in the case of documents created and stored in the cloud computing environment (i.e., Internet and network server-based computing environments over which the user has no control), individuals are forced to rely on the technology and options employed by service providers. As a result, there are few ways for end-users to make the documents or content that they create independent from the service providers' systems and to keep them under their control. There is a good chance that people's digital contents will disappear due to system failure, cessation of a service, a service provider going out of business, or a change in terms and conditions of service. Losing access to a service, for example by missing a payment, can cause people a wholesale loss of personal digital belongings. In addition, ownership of content created and stored at service sites is not always made explicit. Even after owners have deleted content from the service site, materials may continue to remain in the service provider's server or data storage (i.e., "data lock-in"). The blurred line of ownership and who can have control over personal digital content created and saved on the Web can cause many problems and concerns: the risk of violation of privacy, the risk of infringement of individual intellectual property rights, and a breach and a misuse of personal information, to name a few.

### **Keeping as a social default**

Digital technology plays a role in a fast growing and often unintentional accumulation of personal digital documents. Readily available digital storage technology,

with ever-decreasing costs, makes it feasible to keep, literally, everything (Gemmell, Bell, and Lueder, 2006; Czerwinski et al., 2006). Observing the technological capability of keeping information as well as recording human activities, Internet Governance scholar Viktor Mayer-Schonberger (2007) argues, “in our analog past, the default was to discard rather than preserve; today the default is to retain” (p. 4). Even as early as 1991, Mark Weiser (1991), former head of the Computer Science Laboratory at the Xerox Palo Alto Research Center, said “a terabyte of space makes deleting old files virtually unnecessary” (p. 110). Keeping as a social default indicates rather a dramatic change regarding our approach to preserving our documentary heritage. That is, the physical space problem, which has been a major limiting factor for preserving records, is likely to be minimized. Consequently, the purpose of appraisal of records might shift from reducing the volume of records to focusing on other factors such as protection of the privacy of people related to the record and respect for the cultural norms of where the records originated.

Recent research on personal information management reveals that keeping becomes a convenient choice for people to deal with an overwhelming amount of digital information. They easily prefer to keep more of everything, which demands less effort than sorting and deleting files (Williams, Dean, Rowlands, and John, 2008). In fact, the keep-everything approach offers an attractive option. For individuals, it relieves anxiety about which documents to keep and which to discard, while reducing chances of regrettable deletions. For society, the abundant accumulation of documents means more resources for research and other uses, especially as more capable tools for processing

“big data” are developed. Keeping, however, is not the end but rather the beginning of the recordkeeping. More documents kept means more objects to manage and more decisions to make regarding organizing, retrieving, and reusing.

### **MOTIVATION OF THE STUDY**

The scholarly and social interests in personal recordkeeping or information management in general have dramatically increased with the pervasive use of digital documents. The large volume of digital documents that even a single individual can accumulate in her everyday life is one of the factors that stir interests among people. Many people consider managing digital materials as a burdensome task and want solutions or help. People desire “an intelligent automated helper that would magically solve the challenges they face with the management of a personal information collection” (Bruce, Wenning, Jones, Vinson, and Jones, 2011, p. 1). Microsoft researcher Catherine Marshall (2007 and 2008) argues that the lack of time and patience to manage large amounts of digital materials as well as difficulties in making value judgments about documents promotes a “benign neglect” attitude.

Paying particular attention to various functions or uses of personal digital documents in the context of individuals’ lives and in society, however, the challenging picture of long-term preservation of personal digital documents raises concerns beyond problems of effective management of records. Personal (digital) documents are more than mere containers of information that people simply create, use, and discard. Records are products of social conduct and evidences of how people live their lives in various kinds

of social and private environments where they dwell (e.g., home, work, the Web). Therefore the long-term keeping of personal digital documents is closely related to the preservation of our past as human beings, both individually and collectively.

### **Roles of personal documents**

As time passes, personal (digital) documents gain different functions regardless of their continuing usefulness for the purposes for which they were created. Many people select and keep certain documents throughout their lives. These personally preserved documents assume a special prominence in an individual's mental and physical environments. As evocative objects, "goods-to-think-with" (Turkle, 2007, p. 4), these documents help people to recall their memories about past events and experiences and envision the lives of previous generations. They not only stimulate memories but also assist people to make their memories and life narratives tellable. Some of these documents are displayed in a public space for various purposes, ranging from simple decoration to symbolic memorials (e.g., diplomas at the office, family pictures on a refrigerator) while others are kept in private places and treated as personal treasures (Cox, 2006b; Kirk and Sellen, 2008). People develop emotional attachment to these documents (Hobbs, 2001). Some of the documents are passed down to succeeding generations and preserved beyond one's lifetime.

Besides meanings of documents to their owners, the significance of records lies in nurturing our understanding and (re)discovery of the political, economic, and cultural life of a society. Personal documents that have survived as a result of preservation efforts by

individuals provide primary resources for researchers to study our collective past and to conduct historical inquiries. The social and cultural utility of records establishes the missions of memory institutions, such as collecting archives, to acquire, preserve, and provide access to personal papers or manuscripts. Such institutions thus serve as repositories of cultural heritage materials that contain memories of individuals, communities, and society. As Australian archivist Sue McKemmish (2005) has asserted, individual archives are transformed “from ‘evidence of me’ into ‘evidence of us’—components of our collective memory” when they are gathered into public archives (p. 13).

### **Significance of personal digital documents**

Digital technology aggressively penetrates and changes the condition of our everyday lives. With the assistance of digital technology, contemporary individuals live in a highly networked environment where they act as information “prosumers” (i.e., producers and consumers at the same time) (Ketelaar, 2011, p. 29). People are capable of building their own communities beyond geographical limitations. They can educate themselves and produce information objects while blurring boundaries between professionals and amateurs. They can mix what they consider to be their private and public lives and form multiple identities in the digital arena. People have more choices to explore and interact with different groups of people, different cultures, and even different societies. With digital tools, people have more opportunities not only to record events around them, but also to express themselves and actively share their opinions, feelings,

and life stories with others (Arthur, 2009). People seem to unleash their “creative instincts” using online digital tools (Williams, John, and Rowland, 2009). The popular use of social networking services (e.g., Facebook and Twitter), Web publishing services (e.g., Blogger and WordPress), and the explosion of document sharing sites (e.g., Instagram, Tumblr, and Flickr for photos and YouTube for videos) provide glimpses of these documentation, expression, and sharing activities in the digital realm.

Personal digital documents or contents are byproducts of individual actions and engagement with others. Some people would argue that digital content, especially created and disseminated on the Web, is of low quality. Beyond the problem of what low quality means, this has become an outdated viewpoint. We have not yet seen the scale of what people can do with digital documentation technology as well as how the accumulated digital documents can be utilized in the future.

Beyond the boundaries of private lives, digital document creation and sharing activities stimulate scholars and practitioners in cultural heritage institutions to see the personal digital documents of ordinary individuals as important bits and bytes that will allow more diverse voices—especially socially marginalized or suppressed voices—to be reflected in the constitution of our collective memory and history (e.g., Beagrie, 2005; Cox, 2008; Flinn, 2008; Williams, 2008). In general, the cultural value of documents of ordinary individuals either in analog or digital form will become more apparent, especially as the appreciation of “history from the bottom up” and microhistory grows. For example, in her book *An Archive of Feelings*, humanities scholar Ann Cvetkovich (2003) explores archives as “repositories of feelings” (p. 244) focusing on memory and

trauma, specifically experienced by gays and lesbians. She discusses the power of grassroots, community-based archives such as Lesbian Herstory Archives (LHA) to challenge “what counts as national history and how that history is told” (p. 251).

### **Starting point of the study**

This investigation is rooted in the understanding of personal digital documents as essential building blocks for constructing life narratives of individuals, communities, and society. Personal digital documents are vital resources that allow us to learn more about our past and to plan the future. They are a personal and social heritage that people have received from previous generations and that people will leave behind for succeeding generations. Grounded on these ideas, in this study I aim to look closely at the process of long-term preservation of personal digital documents in individuals’ lives.

### **STRUCTURE OF THE DISSERTATION**

This dissertation consists of six chapters. Chapter 1 has examined changes in our documentation practices with digital technology, the challenges of managing digital documents, and the cultural significance of personal digital documents, which as a whole serves as the motivation for this study. Chapter 2 explains the purposes of this study in the context of related research on long-term preservation of digital documents and provides definitions of “personal digital archives” and “personal digital archiving.” Chapter 3 explores “personal archives” in conjunction with “self-reflectivity” while reviewing literature on the concept of the self in social psychology and sociology. Chapter 4 frames research questions and describes the in-depth case study using semi-

structured interviews as a research method and explains the data collection and analysis procedures applied in this study. Chapter 5 reports and discusses the research results and themes that emerged from data analysis. The last chapter, Chapter 6, concludes with broader implications and limitations of the study and directions of future personal digital archives research.

## **Chapter 2: Purpose of the Study**

Digital recordkeeping is a practice dispersed throughout the realm of everyday life. From a research point of view, it is a broad area of inquiry that can be investigated around many different foci. For a few examples among numerous studies published, there are genre-specific studies: photographs (e.g., Kirk, Sellen, Rother, and Wood, 2006; Spurgin, 2011), videos (e.g., Kirk, Sellen, Harper, and Wood, 2007), and e-mails (e.g., Whittaker and Sidner, 1996; Ducheneaut and Bellotti, 2001; Whittaker, Bellotti, and Gwizdka, 2006); task or goal specific studies: finding, re-use, and reminding (e.g., Barreau and Nardi, 1995; Bruce, Jones, and Dumais, 2004) and project management (e.g., Jones et al., 2005; Bruce, et al. 2011); and information management tool development related studies (e.g., Stevens, Abowd, Truong, and Vollmer, 2003; Boardman and Sasse, 2004). Amid the panorama of everyday recordkeeping, I explore individuals' digital archiving practices in this study.

In this chapter, I will specify the objectives of the dissertation in the context of research trends relevant to the long-term preservation of personal digital documents. Later, I will provide definitions of what personal digital archiving and archives mean in this study.

### **RESEARCH TRENDS: LONG-TERM PRESERVATION OF PERSONAL DIGITAL DOCUMENTS**

The long-term preservation of personal digital documents or the phenomenon that

can be loosely categorized as personal digital archiving has drawn attention from people in various fields. Three areas of study are particularly relevant to personal digital archiving:

1. Researchers in Information Science (IS) and Human Computer Interaction (HCI), from academia and industry, have led an area called *Personal Information Management* (PIM).
2. Scholars and practitioners in archives and digital preservation have advocated the preservation needs of *personal digital collections*.
3. Researchers from media studies, communication studies, and cultural studies have also produced literature that connects the proliferation of digital media and digital content creation with *digital memories*, a term that appears increasingly also in HCI and Science and Technology Studies (STS) research.

### **Personal Information Management (PIM)**

Stimulated by the problem of information overload (i.e., excessive volume of information and the difficulty of managing it, which is accelerated by digital technologies), a number of research efforts have been aimed at finding alternative or new ways for individuals to manage their digital information more efficiently. This area of research has come to be called personal information management (PIM) studies, the phrase first used in the 1980s (Jones and Teevan, 2007, p. 1), apparently in Lansdale's 1988 article "The Psychology of Personal Information Management."

### ***PIM Studies Overview***

While information is the central subject of interest in PIM, PIM studies actually began when personal computers (PCs) were introduced in the 1980s. Malone's research about how office workers organized records on their desks and in their offices (1983) can be considered as one of the early PIM studies that defined PIM behavior (e.g., filing and piling) and discussed implications for designing computer-based information systems to support these behaviors. PIM research has lately expanded its area of inquiry along with the ubiquitous use of personal computers and other digital devices. People who work for companies producing personal software such as Microsoft as well as researchers in academia are participating in PIM studies.

Earlier PIM studies typically focused on the technological aspects of PIM, proposing the models and tools for personal information management as a major goal, commercially driven in many cases. The psychological and social issues involved in individuals' recordkeeping activities, however, have also been explored. Significantly, Lansdale's pioneering research (1988) discussed psychological aspects of PIM, focusing on the processes of recall, recognition, and categorization. More recently, the necessity of a naturalistic and longitudinal investigation of PIM behavior and PIM tool evaluation has gained attention in PIM studies (e.g., Kelly, 2006; Barreau, 2008; Naumer and Fisher, 2007). Although the retrieval of personal information is the most frequently investigated topic, various recordkeeping activities are subjects of PIM studies, including how people collect, keep, organize, classify, find and re-find, and archive personal information and how they use information items as reminders. Overall, PIM studies have produced "a

significant body of research that suggests definite patterns of behavior in personal creation, management, and use of information” (Lee, 2011, p. 13).

While many PIM studies target relatively short-term information management (i.e., managing information in current use), long-term retention of personal information or personal archiving has been one of the PIM research topics. Lifestreams is an example of the early projects to develop a virtual long-term storage model for personal electronic documents emphasizing “on-demand” organization (Freeman, 1997, p. 16). As software architecture, Lifestreams uses time-based ordering as its key mechanism to archive/store and organize documents created and received. In the Lifestreams model, a newly created or incoming document appears up-front of the user interface, as a “present stream.” An older document is automatically pushed back into “past” streams (Freeman and Gelernter, 1996). While by default the Lifestreams interface displays streams from the present moment receding into the past, when a user temporarily resets the time into the future using the clock menu, it presents reminders or rescheduled to-do-items as a “future stream.” In Figure 1. the black arrow with “now” indicates the “present stream” (Fri 11/01/96) and the light gray streams (from Sat 11/02/96 to Thu 11/28/96) at the right bottom corner of the interface are displayed as future streams.

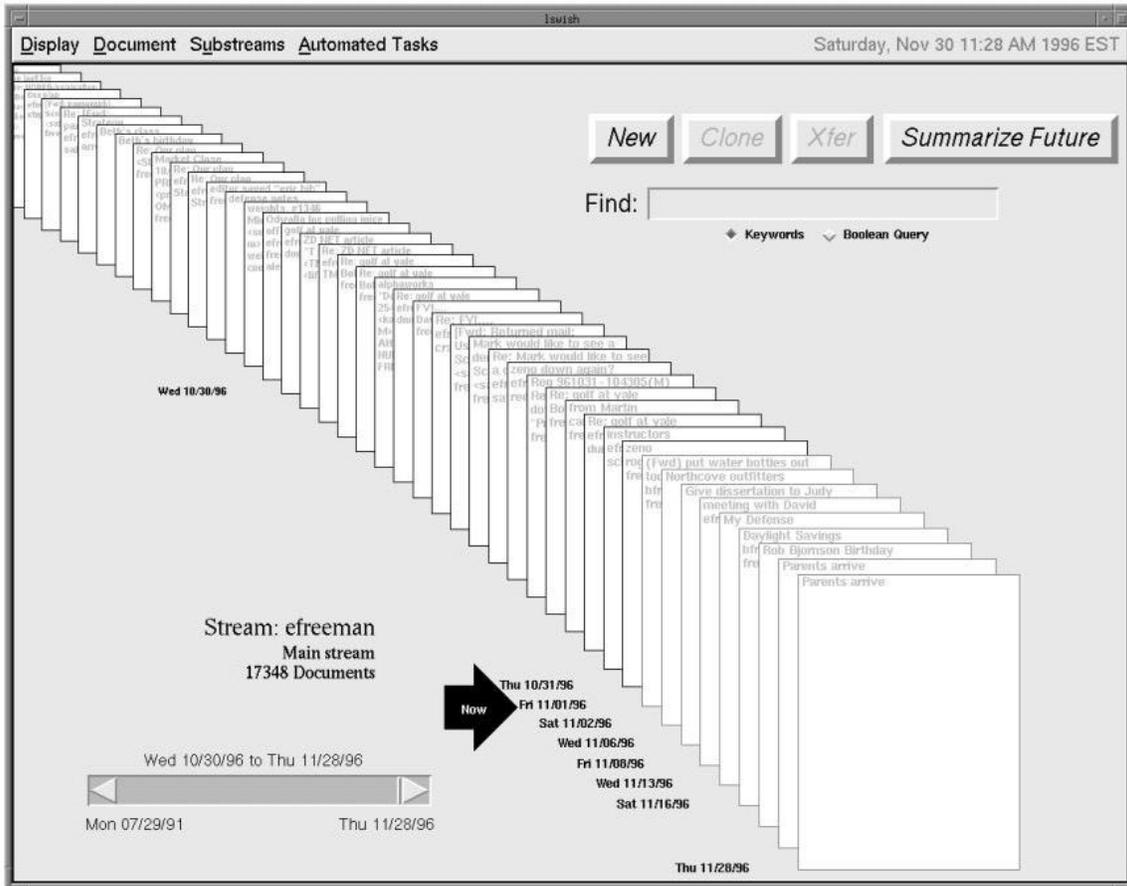


Figure 1: Image of future documents in the Lifestreams X Windows interface from Eric Thomas Freeman’s PhD dissertation, *The Lifestreams Software Architecture* (1997, p. 74).

### *Archives in PIM studies*

The terms “archive(s),” “archiving,” and “archived” increasingly appear in many PIM studies. In information technology and services literature, archive (without ‘s’ or as a verb, or even more strangely, as “archival” used as a noun) is often used without any definition being provided and without clear distinction from mere back-up of data or data warehousing. As leading researchers in the Information Technology (IT) industry,

Elizabeth Churchill and Jeff Ubois (2008) emphasize “good design for archival services” to “guide users between backups, archives, and collections,” which, in fact, needs to be preceded by an explanation of the differences among them.

Overall, in the context of earlier PIM studies, these terms seem to represent the activity of continuing retention of what archivists would call “inactive” items in separated locations in consideration of possible re-use. Deborah Barreau and Bonnie Nardi (1995) characterize “archived information” as “information that has long-term value, but is unrelated to current work at hand” (p. 42). Barreau (2008) adds further detail, saying “[archived information] may be carefully labeled and placed in a folder or subdirectory. As such it becomes part of a person’s or an organization’s historical record” (p. 308). Steve Whittaker and Candace Sidner (1996) consider archives as information that is “not of immediate relevance to current tasks, but is constructed for reference or anticipated future use” (p. 276). Richard Boardman and Angela Sasse (2004) mention that the term “archived” used in Barreau and Nardi’s 1995 study is “misleading” since none of their participants archive explicitly. They instead suggest “dormant” as a term for “inactive, but potentially useful information” (p. 590).

The fact that these earlier PIM studies were conducted in a work environment would explain where the idea of an inactive record came from. For example, Barreau and Nardi (1995) recruited managers in a research department at a government agency and Apple employees for their studies and also observed their offices or cubicles. Whittaker and Sidner (1996) studied researchers, managers, and secretaries in an organization and each person’s new office spaces. Boardman and Sasse (2004) interviewed “users” and

observed their file, email, and bookmark collections on their main work computers. In traditional archival thinking, developed based largely on organizational and business records, having a status of “inactive” seems to be the precondition for documents categorized as archives. For example, in the concept of the life cycle of institutional records developed by the U.S. National Archives and Records Administration (NARA), as records age, they “become less heavily referenced and finally become inactive” (Gilliland-Swetland, 2000, p. 14). They are maintained apart from the site of creation (by record managers) until they are transferred to the archival institution for permanent preservation (by archivists).

Asserting that an “archives” is based on the idea of inactivity, however, is problematic. An archived document may seem “inactive” in terms of its original purpose of use (i.e., primary use for a record creator); yet it may still be “active” depending on how it functions in a different context and by whom it is used. As American archivist and archival educator David Gracy (1989) emphasized, “archives are very current records—current, that is, from the perspective of their user, and since use is the purpose for which archives are kept, this is the perspective that matters” (p.74). For example, the Australian model of the records continuum offers a contrasting view of the linear time- and stage-based life cycle of records. Archival scholars of the records continuum model emphasize records as something “always in a process of becoming” (McKemmish, 2011, p. 122). This model is grounded on the ideas of the continuity of 1) the evidential qualities of records, 2) transactions documented in records of any kind, 3) the identity of a record creator as long as records exist, and 4) recordkeeping practice (McKemmish, 2011, p.

120). Under this model, recordkeeping is a process of contextualization of records. The records continuum theorists stress that archivists and records managers as recordkeeping professionals need to establish integrated and dynamic understandings of records throughout different time and space, from creation, to accumulation, to management, and to use; they oppose the idea of making a “distracting” division between records managers and archivists (McKemmish, 2011, p. 118). Furthermore, associating inactivity with archives is especially troublesome for understanding characteristics of documents generated and maintained outside of organizational or business settings. For example, when and how do digital family photos taken during the family vacation and posted in Flickr become inactive or “unrelated to current work” even though people may not look at them every day? There would be no straight answer for this since the intention of creating a family picture and the context of its use are different from those of a project report written at work.

The lack of in-depth discussion about what archives means in PIM studies reveals the limited understanding of the nature of personally “archived” documents, in specific their possible “long-term” functionalities and use in various contexts. Bringing in their archival perspective, archives and preservation experts Peter Williams, Jeremy Leighton John, and Ian Rowland (2009) address the necessity of “archivally-oriented PIM” studies and PIM technology design. They urge the incorporation of the objectives of professional archivists or manuscript curators into PIM research, which will make information “be interpretable and maximally useful for future as well as current generations” (p. 343). The demand for an archivally-oriented PIM is a timely request since PIM researchers

seem to be less active in investigating and implementing knowledge and practices from the archival profession. For example, as a well-known researcher in the IT industry, Catherine Marshall at Microsoft has widely explored personal digital archiving and personal archives from the PIM perspective. When she claims that “personal archiving revolves around the same basic technological issues as other types of digital archiving” in memory institutions (Marshall, 2007, p. 61), however, her view of the universe of the archival profession is rather passive (see Cushing, 2010). The technological aspect of the problem is a bare minimum of what is shared or should be shared among researchers and practitioners from these different fields. Rather, the overlapping concerns need to be stretched to a series of questions about the delicate relationship between people and their digital documents and the meaning of “archiving” as a practice at the individual and collective levels: Why have people as individuals, as communities, and as societies tried to keep and organize documents? What kinds of functions and values do personal documents have in different settings, from one’s private life to relatively public environments such as the Web or a memory institution’s reading room? How do people perceive and experience digital archiving that is personal as well as social?

### **Archival studies**

In brief, archives as memory institutions have a long tradition of acquiring and preserving various kinds of documentary heritage including institutional (e.g., government and corporate) records as well as personal papers (e.g., non-organizational records and manuscripts that belong to individuals).

### *Personal papers in archives*

Many archival theories and practices have been built around institutional records serving “the needs of ongoing corporate accountability and administrative efficiency” (Cunningham, 1996, p. 22). The acquisition and preservation of personal papers has been relatively marginalized within archival discourse, especially in the U.S. and Europe. Personal papers have often been “identified as ‘manuscripts’ rather than archives,” materials managed by librarians or manuscript curators (Williams, 2008, p. 57).

Regardless of continuing debates and tensions around the collecting scope of personal papers in memory institutions, many archival scholars and practitioners have acknowledged and defended the value of personal papers, in particular as constituting an important part of our collective identity and memory (McDonald, 1994; Cunningham, 1996; Hobbs, 2001; Pollard, 2001; Cox, 2008; Williams, 2008).

The increasing appreciation of documents generated by individuals, including digital contents, attests to the continuing challenge within the archival community to extend the traditional boundaries of what archives are, what archives are for, and what archivists do. For example, the concept of “total archives” that emerged in Canada around the 1970s is rooted in the idea that “anything historical was ‘archival’” (Millar, 1998, p. 110). Criticizing both record creator-centered (addressed by Hilary Jenkinson) and use-driven (influenced by Theodore Schellenberg) approaches to the appraisal of ‘archival’ records, German archivist Hans Booms (1987) stressed that “the purpose and goal of the archival formation of the documentary heritage can only be to document the totality of public life as manifested in communities formed by common interests or other

ties” (p. 106). American archivist Helen Samuels’s “documentation strategy” (1986) is another example of the movement to broaden the vision and scope of archival holdings. While documentation strategy emerged to respond to the needs of social historians for personal papers after the 1960’s, it was based on making a connection of “official government and other institutional records with personal manuscripts and visual media, as well as published information and even oral history” (Cook, 1997, p. 32). Archival educator and researcher Richard Cox (2009) expressed the shared doubt on the sufficiency of a Western-oriented archival approach to manage and preserve human heritage, especially heritages from different cultures or places. A postmodern perspective requires a shift in archival thinking from top-down to bottom-up, from exclusive to inclusive, and from singular to plural. Injecting postmodern thinking into archival discourse, many archival scholars, especially archival educators across different countries, discuss the importance of international, local, indigenous, and ethnic community engagement in the formation of archives, history, and social memories. For example, Sue McKemmish, Anne Gilliland-Swetland and Eric Ketelaar (2005) argue for broadening notions of records and archives from textual material to “orality, literature, art, artifacts, the built environment, landscape, dance, ceremonies and rituals as archival forms” (p. 152). Exploring the history of survival of orally transmitted culture, Patricia Galloway (2009) suggests the idea of “archivist-as-apprentice,” (p. 81) who might play the role of a tradition-bearer by apprenticing, learning, and performing intangible cultural heritage. Andrew Flinn and his colleagues shed light on the endeavor of independent, non-professionalized community archives, versus mainstream archives, to document

social movements, which inherently involves issues of identity, power, and struggle (e.g., Flinn and Stevens, 2009; Flinn, Stevens, and Shepherd, 2009; Flinn, 2011).

### *Preservation of personal digital collections*

As the number of personal records created in digital form is increasing, some archivists pay particular attention to and advocate the preservation requirements for personal digital collections in archives (e.g., Hyry and Onuf, 1997; Onuf and Hyry, 2011; Beagrie, 2005; Burrow, 2006; Thomas, 2007). The uncertainty of the digital information environment seems to threaten the long-term survival of personal digital materials more seriously than it does the survival of institutional electronic records (e.g., Paquet, 2000). It is increasingly likely that the technical longevity of digital records produced in institutions may be monitored through a professional records management program equipped with institutional IT support. In cases of private digital records donated by individuals to archives, however, it is hard to establish any general expectation of their technical stability. Individuals have different levels of skills, knowledge, and preferences relating to their digital technology use. Technical vulnerabilities of personal digital collections increase the chance that the materials will already be inaccessible or unrecoverable when archivists acquire them. Traditionally, archives receive personal papers either at the very final stage of an individual's life or following the death of the individual. This acquisition point, however, can add complexity to preservation of personal digital documents. For example, password-protected digital files and personal computers donated after a record creator passes away increase difficulties for the

processing of those materials for archival preservation (Kim, Dong, and Durden, 2007). Moreover, private digital records are likely to be highly heterogeneous in terms of their purpose of creation and use, genre, format, storage media, computing systems and creating software. Building a workable archival processing and preservation strategy for private digital collections is a major challenge for digital archivists.

As a result, personal digital archives has become a growing area of interest for the archival profession. The Personal Archives Accessible in Digital Media (Paradigm) project in the U.K. is well known as one of a few examples of a personal digital archiving research effort in the archival profession, completed in 2007. Archivists and researchers at the University of Oxford Bodleian Library and University Library of Manchester aimed to seek out solutions for preserving digital private papers. Through hands-on work with six living politicians as record creators, the Paradigm team examined characteristics of research subjects' personal record collections, preservation policies, and preservation tools such as digital repository software and metadata extraction tools. Digital Lives Research is another example of a recent project led by researchers in the British Library in partnership with the School of Library, Archives and Information Studies at University College London and the Centre for Information Technology and Law at the University of Bristol. In recognition of the growing number of personal digital collections as well as their research value, this project focuses on individuals' personal digital archives and their impacts on librarianship and archival practice in research institutions such as the British Library. Through interviews, questionnaires, workshops and focus groups, and literature reviews, the project team conducted in-depth investigation on how their

research participants—academics and members of the “digital public” (John, Rowlands, Williams, and Dean, 2010, p. 14)—build their personal digital collections in daily life and the related legal and ethical issues (Williams et al., 2008; John, 2009; Williams et al., 2009; John et al., 2010).

### ***Record creators in archives and digital preservation***

One point that stands out from digital preservation projects and electronic records initiatives, not only projects that focus on personal collections, but also on electronic records in general, is the recognition of the role of record creators in safeguarding the survival of digital documents. As mentioned in Chapter 1, electronic records require timely care in order to fight technological obsolescence and incompatibilities and ensure their continued accessibility. It is highly likely that the preservation action needs to take place when a record creator is still managing or retaining his documents for continuing use. Therefore, an active involvement of record creators in continuing preservation as well as a proactive engagement of archivists and record managers in a record creator’s daily recordkeeping (Cunningham, 1999) seem necessary—i.e., “an early intervention approach” (Onuf and Hyry, 2011, p. 252). Archives and digital preservation professionals have accordingly offered digital record management best practices for record creators. For example, among the outcomes of the Paradigm project mentioned above is the publication *Guidelines for Creators of Personal Archives*. It covers how people can manage and maintain their personal digital materials for a long-term preservation purpose (Thomas, 2006 and 2007). Another project, International Research on Permanent

Authentic Records in Electronic Systems (InterPARES, n.d.) has also distributed its *Creator Guidelines Booklet - Making and Maintaining Digital Materials: Guidelines for Individuals*.

Archives and digital preservation professionals' interests in preserving and managing personal digital collections, however, are still mostly centered on how archivists and manuscript curators may acquire and preserve personal digital collections under institutional management. The action of transferring the custodianship of records to the archival institution seems to remain as a key element in archival practices. Moreover, most memory institutions have also traditionally focused on acquiring collections from well-known individuals or public figures. Therefore, the institution-centered view has failed to promote a more inclusive collecting and preservation plan for documents from local communities and ordinary individuals.

With the massive influx of electronic records, archival scholars have challenged this archival institution-driven custodianship. For example, the postcustodial theory has been a meta-theme running through postmodern archival discourse. According to Galloway (2009), postcustodialism refers to “the practice of an archives’ advising and/or supervising records creators in carrying out the preservation of their records themselves” (p. 78). Furthermore, Galloway (2010) suggests that digital archiving will become everyone’s concern: “as living on the Internet becomes less of a second life and more of a first one for more people, individuals will increasingly take on these issues as their own concerns and perhaps their own responsibility” (p. 1526). Archivist Adrian Cunningham (2011) also cautiously points out the mixed reality of digital recordkeeping across public

and private realms of life: “the boundaries between work and private life and between work and private information spaces are becoming increasingly blurred. In the future perhaps all recordkeeping, both organizational and personal, will be personal recordkeeping (p. 81).”

Applying postcustodial thinking to personal digital documents of ordinary people or simply everyone who has held onto their personal digital materials opens up the possibility of grass-roots level preservation. For example, Cox (2008) points out that with digital technology individuals have more ways to administer and manage their own personal documents and emphasizes the importance of individuals who function as their own archivists in preserving our digital documentary heritage, referring to them as “citizen archivists” (vii). Cox strongly suggests that a new role for professional archivists and records managers is to nurture and equip individuals as archivists of their own documents in the digital era. Cunningham (2011) also notes the idea of “a distributed custody context” or “anti-centralized repository” (p.82) while emphasizing that “all archivists should have an interest in helping individuals to become digital auto-archivists (p. 82).” The public outreach and education activity by the U.S. Library of Congress’ preservation division can be an example of an advocacy effort heading toward grass-roots level preservation. Its *Personal Archiving: Preserving your digital memories* Website (see [www.digitalpreservation.gov/personalarchiving/](http://www.digitalpreservation.gov/personalarchiving/)) provides promotional video clips, tips, and resources regarding how ordinary individuals can preserve their own digital materials.

Archival scholars and practitioners have generated a significant amount of literature that provides a foundation for and in-depth discussions about how to contextualize personal digital archives of individuals in an overall societal and cultural landscape. A handful of archival scholars ask for a reconceptualization of notions of the archives and of archival endeavor, recognizing that “archivists have the ability to document the human experience as never before” (Onuf and Hyry, 2011, p. 251). There are existing archival theories and practices that can be utilized in constructing the decentralized, network-based universe of personal digital archives of ordinary people, for example, documentation strategy.

Archival exploration of preserving and managing personal digital collections, however, is only beginning. Personal digital archives as a research topic for archivists is a complex subject, since it challenges what has been done in the archival tradition as well as offers an unsuspected opportunity to expand the scope of archives.

Regardless of visionary ideas and suggestions, there is a need to gain more hands-on experience of how archives can look after and embrace collections from various groups of people without abandoning their own institutional identities and specialties. There are a few case studies reporting hands-on work with personal digital collections in memory institutions (e.g., Johnston, 2011; Thomas, 2011). Therefore, an accumulation of empirical studies that can provide the archival profession with insight into the world of personal digital archiving is necessary, descriptive studies that examine the formation of personal digital archives in everyday lives and the anticipated future for digital archives after the creator’s lifetime from an individual’s perspective. What archivists learn from

individuals' thoughts and practices will help them to find constructive methods and strategies for working with "citizen archivists" in practice.

### **Studies of digital memories**

Memory has been a subject of inquiry for a long time in human history. Since the early 1900s, memory studies have greatly expanded, especially following World War II. The rise of attentiveness to "small histories" (van Dijck, 2007, p. 10), genealogical research and family histories, trauma, emotions, reconciliation, and therapy along with the development of biotechnology and brain imaging technology are among a few of the reasons for the proliferation of interest in memory (Garde-Hansen, 2011, pp. 13-14). Studies of memory are carried out in specific disciplines, from neuroscience, psychology, and biology to art, humanities, and social science. However, they never remain in isolation. Rather, as José van Dijck (2007) states, "the question of memory ties together the intricacies of the brain with the dynamics of social behavior and the multilayered density of material and social culture" (p. xiii). Memory and remembering is also a subject frequently discussed in Archival Studies and PIM research. For example, archival scholars have produced a large amount of literature exploring relationships between institutional archives and the construction of collective memory and identities (e.g., Schwartz and Cook, 2002; Millar, 2006). In a different sense, PIM researchers have investigated the role of memory in retrieval of information objects (e.g., Lansdale, 1998; Kelly, Chen, Fuller, and Jones, 2008).

In recent years, the expression “digital memory” has increasingly appeared in literature that ranges from cultural studies and media studies to technical fields, such as HCI and STS research. Theories and discussions about digital memory are accompanied by an acknowledgement of the development of digital media and associated technology and their influence on why and how we remember and forget, including computer memory (e.g., processing memory and storage memory) as a possible extension of or support for human memory.

Media scholars take the view that “the digital status of memory-making, documenting, archiving, and retrieval has elicited a change or shift or brought about a new form of the relationship between media and memory” (Garde-Hansen et al., 2009, p. 14). As the power of digital or new media is linked to maximizing creativity, imagination, and sharing and thus freeing the process of recording and creating events and memory, the relationships among memory, media, and technology become more intimate. Andrew Hoskins (2011) defines media “as the holistic mix of techniques, technologies and practices through which social and cultural life is mediated” (p. 20). Joanne Garde-Hansen (2011) offers a similar description of media as the recording of events, media technologies as memory aids, tools or devices (e.g., computers, smartphones, cameras), and media as being the key drivers of memory practices (e.g., online memorials and digital storytelling) (pp. 52-53). Van Dijck (2007) proposes mediated memory as “the activities and objects we produce and appropriate by means of media technologies, for creating and re-creating a sense of past, present, and future of ourselves in relation to others” with an emphasis on “the mutual shaping of memory and

media” (p. 21). While the development of methods for recording and disseminating human experiences has been an on-going task throughout history, the dynamics of digitally mediated memory and its pervasive penetration into everyday life, in particular, seem to offer an opportunity to further facilitate the democratization of memory-making or archives at both the personal and collective levels (Garde-Hansen, 2011, p. 71-87).

Concepts, terminologies, and discussions about memory objects and the practice of memory-making as introduced by media scholars seem to serve as an inspiration for digital memory technology studies in HCI and STS (e.g., Van House and Churchill, 2008). Researchers from IS and IT industries explore home and family archives in particular for the purpose of gaining new insights applicable to the development of personal/family digital archives systems (e.g., Kirk and Sellen, 2008; Petrelli and Whittaker, 2010; Kirk et al. 2010). Often their view of “home archives” encompasses the physical and digital as well as two- and three-dimensional objects that people keep and display in their home environments. The researchers’ view of “home archives” centers on the connection between object and personal memory, family history, and emotions. The issue of preserving digital documents beyond a lifetime is another newly emerging topic that, from an HCI perspective, comes under the category of digital memory-related research. Researchers active in this area start with the question of how digital technology can help with bereavement by treating personal digital documents as memorial and mourning objects (e.g., Kirk and Banks, 2008; Odom, Harper, Sellen, Kirk, and Banks, 2010; Massimi and Baecker, 2010; Massimi and Odom, 2010; Massimi, Odom, Banks, and Kirk, 2011; Lindley, 2011; Massimi and Baecker, 2011). For example, Michael

Massimi and Andrea Charise (2009) introduce a concept called “thanatosensitivity” as “a novel, humanistically-grounded approach to HCI research and design that recognizes and actively engages with the facts of mortality, dying, and death in the creation of interactive systems” (p. 2464). Many of these HCI studies focus on storytelling and sharing memories through the design of virtual memorial systems, digital heirlooms, and family digital archives. Online commercial services are rapidly emerging that offer assistance to families for planning how to bequeath personal documentary assets, services for sending posthumous e-mails and messages, and advice for building memorial sites where people can share photos of or stories about a deceased person. For example, Evan Carroll and John Romano provide a list of the commercial digital services related to death in their website, “Digital beyond” (see [www.thedigitalbeyond.com/online-services-list](http://www.thedigitalbeyond.com/online-services-list)).

Inspired by the technological promise of capturing and keeping everything as an opportunity to actualize the vision of Vannevar Bush’s (1945) memex as “an enlarged intimate supplement to his [one’s] memory” (sec. 6), HCI researchers are attempting to design devices and applications to automatically capture, store, and provide access to an entire lifetime of activities in digital form, the so-called “lifelog.” The potential benefits of lifelog data are certainly appealing. Lifelog data can assist in remembering, replaying, and sharing past events as well as improving personal time management, security, and health (Czerwinski et al., 2006; Bell and Gemmell, 2007; Sellen and Whittaker, 2010). Lifelog data can be utilized also for many other purposes, such as information behavior research and micro advertising. Microsoft’s MyLifeBits is a pioneering project that stemmed from Gordon Bell’s project of digitizing every document (and some three

dimensional objects) that he owns, an undertaking that has evolved into lifelogging technology research (Bell and Gemmell, 2009). The Memories for Life (M4L) set up by U.K. computing and engineering communities is a similar lifelog related project. As an umbrella project, M4L research topics cover both M4L technologies and related theoretical and social challenges. Although the project is still rooted in an “engineering-like epistemological and methodological stance” (Van House and Elizabeth F Churchill, 2008, p. 299 ), M4L calls for participation from a relatively wide range of fields, including cultural heritage preservation, knowledge management, neuroscience, and psychology as well as computer science (O’Hara et al., 2006).

Along with its innovativeness, however, lifelogging technology research raises many serious questions. For example, what will having lifetime data about oneself actually mean to a person? How will individuals live with massive amounts of lifetime data about themselves, including data mechanically captured with or without awareness? While there is no single answer, it is obvious that usable lifelog technologies for individuals need to be built upon a thorough understanding of the complexity of how human memories and minds work (e.g., van Dijck, 2007, Sellen and Whittaker, 2010). Lifelog technology research and tool design will need to take into consideration the psychological and social functions of forgetting as well as remembering along with the relationship between active forgetting and intentional deletion of the recorded past (e.g., Mayer-Schonberger, 2007 and 2009).

## **OBJECTIVE OF THE STUDY**

How researchers from different backgrounds share similar yet diverse views about the phenomenon of personal digital archiving is fascinating to observe. PIM studies, for example, respond to the growing concern about the practicality of information management methods. Digital memory-related studies in HCI are driven by the view of the influence of digital technology on creation of and interaction with digital memory objects. Overall, both areas are based on a utilitarian motivation that is geared toward developing digital archiving tools that can help people to manage digital objects and thereby manage their life activities. In these studies, people who are creators, primary users, and preservers of their own personal digital information are basically “customers” or “users” of potential digital archiving tools and services. Archival studies, on the other hand, are concerned with a historically oriented demand for safeguarding our collective documentary heritage. The significant amount of literature generated by archival scholars and practitioners provides a foundation for in-depth discussions about how personal digital archives of individuals are situated in an overall societal and cultural context. Archival literature and practices often presuppose the archivist as intermediary and the archival institution as a permanent repository. Therefore the creator of records and the user of records (e.g., potential researchers or visitors of memory institutions) are usually not the same person, while the record manager and the preserver of records (e.g., archivists and manuscript curators) usually serve as intermediaries. Discussions on digital memory in cultural and media studies brings views from humanities, communications, and sociology into personal digital archiving research and stimulates us to think of the

layers of memory (from autobiographical to collective and from private to public) embedded in and captured through digital media.

In fact, the shared phenomena of inquiry and the substantially distinct positions taken by researchers and practitioners across the fields call for some kind of crosswalk research (e.g., Lee and Capra, 2011). Attention of PIM studies to the day-to-day task performance will support the exploration of “the business of creating our records as documents, capturing them as records (i.e. ordering them in relation to each other and ‘placing’ them in the context of related activities), and keeping and discarding them over time (i.e. organizing them to function as long-term memory of significant activities and relationships)” that resemble the activities of professional archivists (McKemmish, 1996, p. 29). HCI researchers’ interests that are directed more toward digital materials as memory objects will be useful in investigating people’s self-reflective and emotional associations with their digital possessions. The polished definition of the meaning of archives and the preservation needs of personal digital documents supplied by archives professionals will assist in understanding and differentiating “archival” documents from other documents based on their values and meanings to the owner as well as others including a society. The unique purpose of personal archiving, which is collecting and preserving documents of personal and social significance, should be recognized and taken into account more actively in digital archiving technology design.

Emphasis on collaborating among experts with different backgrounds has already been put into action. The Personal Digital Archiving conferences are an example of an effort to build bridges. First hosted in 2010 at the Internet Archives in San Francisco,

participants in the Personal Digital Archiving conferences included IT entrepreneurs, researchers in IT companies, working archivists and preservation professionals, scholars in academia, and individuals simply interested in the topic. In 2012, participants presented a variety of topics such as on-going software development projects, case studies and work experiences in memory institutions, and results of scholarly research. While conversations among these participants may or may not be compelling to one another yet, it is certain that this cross-boundary conference serves as a space for people concerned with personal digital archiving to exchange their findings and ideas.

Additionally, it should be noted that individuals who are interested in constructing digital archives for themselves, for their families, and for their communities are the essential driving force of personal digital archiving activities and research. The keynote address by Mike Ashenfelder of the Library of Congress at the Personal Digital Archiving Conference 2012 was preceded by Stan James's presentation about his on-going personal family photos and memorabilia scanning project that he and his father have been working on for the past several years (see [scanwithstan.com](http://scanwithstan.com) and [archive.scanwithstan.com](http://archive.scanwithstan.com)). Although not everyone wants to actively build his own or family digital archives, people's private desires and actions, as represented by Stan James's case, inspire us to contemplate what additional factors need to be explored in terms of personal digital archiving research and development.

As a whole, researchers from diverse backgrounds are uncovering interesting empirical data and setting forth new conceptual discussions and theories as well as visionary suggestions related to personal digital archiving. The interests of individuals in

the topic underpin the research need for personal digital archiving. The goal of this dissertation is to investigate and understand personal digital archiving practices in a holistic manner, taking into consideration the previous and ongoing research and interests revolving around it.

## **DEFINITIONS OF KEY TERMS**

“Personal,” “digital,” and “archives” are three main threads that individually run through this study. Woven together, these three keywords define the phenomena under investigation. In the section above, I reviewed the many approaches to issues of archiving individuals’ digital documents. It will be useful to establish more specific definitions of personal digital archiving and archives for this study.

### **Laying the groundwork**

The word “archives” would have different meanings depending on who is using it in which context. Information service developers and their customers may assign the term to a virtual place where old data is stored. Although it may not be a vocabulary item that people use every day, to the general public, especially those who have been visitors, donors, or patrons of archival institutions, “archives” would mean documents with historical significance. Professionals involved in memory institutions would think of archives with many formal concepts such as continuing value, evidence, principle of provenance, authenticity, permanent retention, accountability, collective memory and cultural heritage. Even within the archival profession, the boundaries of “archives” would be drawn differently depending on the type of archival institution—the mission,

acquisition policy, and types of holdings vary from collecting archives, to manuscript repositories, to government archives, to business archives.

Some professional archivists may still consider the popularized use of the term “archives”—sometimes “inappropriate or clearly incorrect uses” of the term (Maher, 1997, para. 5)—as a concern. The unsettled understanding of “archives,” however, offers an opportunity to constantly re-configure and apply the meaning of archives and archiving more flexibly to various settings beyond the context of memory institutions.

Overall, the philosophical standpoint and missions of archival/memory institutions, formed and nurtured through the long tradition of recordkeeping endeavor and appraisal practices with the intention of preserving cultural heritage, are the foundation of my understanding of what “archives” means. Contemplating “archives/archiving” in the “personal” and “digital” context, however, I use “archives” in a most comprehensive and inclusive sense. Galloway (2010) points out that “the significance to society of digital archiving, like that of all archiving, touches everyone, from the individual to whole cultures” (p. 1518). Although many people might not call their long-term recordkeeping activities “archiving,” applying this concept to everyday lives, archives, especially digital archives, are everywhere and should be everywhere from a very private level to an organizational level, without being limited to a formal institution.

In order to define what constitutes “archives” in this study, I focus on functions and values of documentary objects to people and a society rather than on their forms, locations, or the entities in charge of preserving them. With this view, I also use the term

“archiving” as a collective action, practice, and process of forming “archives,” the essential resources for life narrative construction.

### **Framing personal digital archives and archiving**

Borrowing Beagrie’s (2005) description of “personal digital collection,” Williams et al. (2009) use the term “personal digital archives” as:

Informal, diverse, and expanding memory collections created or acquired and accumulated and maintained by individuals in the course of their personal lives, and belonging to them, rather than to their institutions or other places of work. These digital collections are essentially the digital equivalent of the ‘personal papers’ manifested in contemporary historical archives and manuscript collections and the individual items within can be referred to as ‘personal digital objects’ or as ‘eManuscripts’, a term used by the British Library (BL) since 2000. ... the ‘papers’ held by an individual are referred to as a personal archive, and its development involves many informational aspects of a person’s life from the passive receiving of letters, the selective retaining and discarding of notes, and the creating of diaries, essays and photographs. (p. 341)

The authors’ characterization of personal digital archives brings out its “personal” aspect by putting an emphasis on individuals and digital materials belonging to and managed by people in the context of their lives. Yet I would like to elaborate further what personal digital archives means by specifically exploring value, ownership, and time variables involved in the construction of personal digital archives.

### ***Becoming “archival”: Value of personal documents***

Due to the staggering amount of records produced by modern organizations and the limited amount of space available for preserving them, since the turn of the twentieth century, reducing the volume of records has been a primary task of archivists. As a result, appraisal has become an essential part of the archiving process. After undergoing appraisal, certain records will be selected and retained in archives (i.e., become archives), while others will be destroyed.

In the North American tradition, archival appraisal involves assessing and determining the potential usefulness or significance of records in the future. Predicting which records will be useful in the future and in which way, however, is a fundamentally uncertain process. Thus, it is not surprising that appraisal has been at the center of controversy and has created tension across and beyond the archival community. In response, archival scholars and archivists have attempted to elucidate what constitutes the archival value of records.

For example, American archivist Theodore Schellenberg (1984) articulates the idea of primary and secondary values as the most basic categories of the value of records. His concept has had an influence on the formation of work practices in many archival institutions such as the U.S. National Archives and Records Administration where Schellenberg worked and also in state archives. The Society of American Archivists Glossary (2005) provides more contemporary definitions of primary and secondary values. Primary value is “the value of records derived from the original use that caused them to be created.” Secondary value is “the usefulness or significance of records based

on purposes other than that for which they were originally created.” Primary value, which is the value to the record creator, is temporary, while secondary value, which is the value to everyone such as historians, is long lasting or even permanent. According to Schellenberg, what identifies records as archival materials is the secondary value.

By definition, records that enter into the appraisal stage no longer have primary value. First developed by Schellenberg, among many types of values found in archival discourse the following four values are most relevant to determine and justify the secondary value of records: informational, evidential, historical, and legal values. Again, the Society of American Archivists Glossary (2005) provides definitions of these values:

1. Informational value is “the usefulness or significance of materials based on their content”;
2. Evidential value is “the usefulness or significance of materials providing information about the origins, functions, and activities of their creators”;
3. Historical value is “the usefulness or significance of records for understanding the past”;
4. Legal value is “the usefulness or significance of records to document and protect the rights and interests of an individual or organization”

When a record is identified as having one or all of these values, it is said to have secondary value and so needs to be preserved in archival institutions as archives. If not, the life of the record ends there.

Schellenberg’s ideas have a great influence on how archival value is defined in U.S. context: “The continuing usefulness or significance of records, based on the

administrative, legal, fiscal, evidential, or historical information they contain, justifying their ongoing preservation” (Society of American Archivists Glossary, 2005). Many personal documents retained by individuals might have the above values just as organizational records do. For example, people may keep their expired passports as officially documented evidence of their previous travel activities. The Schellenbergian appraisal paradigm, however, has been criticized, since his categories of values are shaped by a desire to select “the kinds of records that historians might want” (Cook, 2005, p. 112). Since the purpose of archives is hardly limited to serving historians and their research activities, it is problematic to stay with this narrowly defined basis for archival appraisal any longer. It is also important to keep in mind that the above value categories are formed around modern organizational records mostly in analog form and government records in particular. What is documented in organizational records is the operation of an organization: how the organization functions and how business transactions in the organization were conducted. Obviously, personal records as the documentation of a record creator’s life contain not only information about an individual’s business transactions or public activities, but also information close to the person (Williams, John, and Rowland, 2009) and his personality (Hobbs, 2001). In memory institutions that focus on personal papers such as collecting archives and special collections departments, the cultural significance of records and record creators would be the focus of archival appraisal, combined with their collection development policies that partially function as up-front selection criteria.

Overall, the point is that in theories and practices developed in memory institutions, the on-going value has been the pivotal criterion for understanding what makes materials “archival” and what constitutes “archives.” While the kinds of values personal digital documents would have to an owner and to our society need to be explored further in depth, I also use the value of documents beyond the context of their original creation and use as the basis of what distinguishes “archival” documents from other information objects in this dissertation.

***Ownership: “personal” digital documents***

I use “personal digital documents” in a very broad sense: any kind of documentary materials in digital form that belong to a person through creating, collecting, receiving, and purchasing. As mentioned in Chapter 1, drawing a line around the ownership of digital objects is becoming extremely challenging in a digital environment due to the inseparable attachment of digital objects to a tool, system, or a service used to create them.

In this study, I am simply concerned with digital documents that people—specifically a group of research participants—consider as “mine.” For example, digital records whose ownership and management are governed by a company or organization that individuals work for, may not be considered as “personal” digital documents, even though individuals generate them. By contrast digital goods such as commercial digital music files, e-books, and films that people possess (e.g., downloaded, received as a gift, or purchased) would be counted as a part of personal digital archives by owners on a

case-by-case basis, if they give a particular meaning to these digital goods.

### *Life trajectories and time*

Recordkeeping as a practice of everyday life is not a one-time act but a continuous process that evolves with time. Furthermore, the term “archives” denotes a continuing retention of archival records. The lifespan of at least some personal digital documents is likely longer than the lifespan of an owner unless they are intentionally deleted at some point. Therefore, in this study, the meaning of “long-term” preservation stretches to a continuing maintenance of digital materials by other entities such as family members and institutional archives after the owner’s death.

### **Characteristics of personal digital archives and archiving**

Taking into account archival value, ownership, and the time variable, and based on my review of existing literature devoted to the topic, I therefore characterize personal digital archives and archiving in the following way in this dissertation.

#### *Personal digital archives:*

1. are an outcome or a product of a personal digital archiving practice;
2. are a constellation of digital objects preserved by an owner throughout an owner’s lifetime due to their personal meaningfulness and values to an owner, including their functions as a reference to the past for the person who owns them, either as evidential resources or as memory objects;
3. are a personal heritage collection that might be handed down to someone else—another individual or a cultural institution—after an owner’s death.

*Personal digital archiving:*

1. is a lifelong practice or process of forming personal digital archives;
2. is part of everyday recordkeeping or personal information management activities
  - a) that involve a creation and acquisition of digital documents and decisions about their retention, deletion, organization, and long-term accommodation
  - b) through which people constantly assign new or different meanings and values to certain documents at given moments and situations;
3. aims for long-term preservation of a digital document, possibly beyond an owner's lifetime; and
4. may involve others as future caretakers or users of an owner's personal digital archives.

Figure 2 visually summarizes how I understand and use the concepts of personal digital archives and archiving practices in this study.

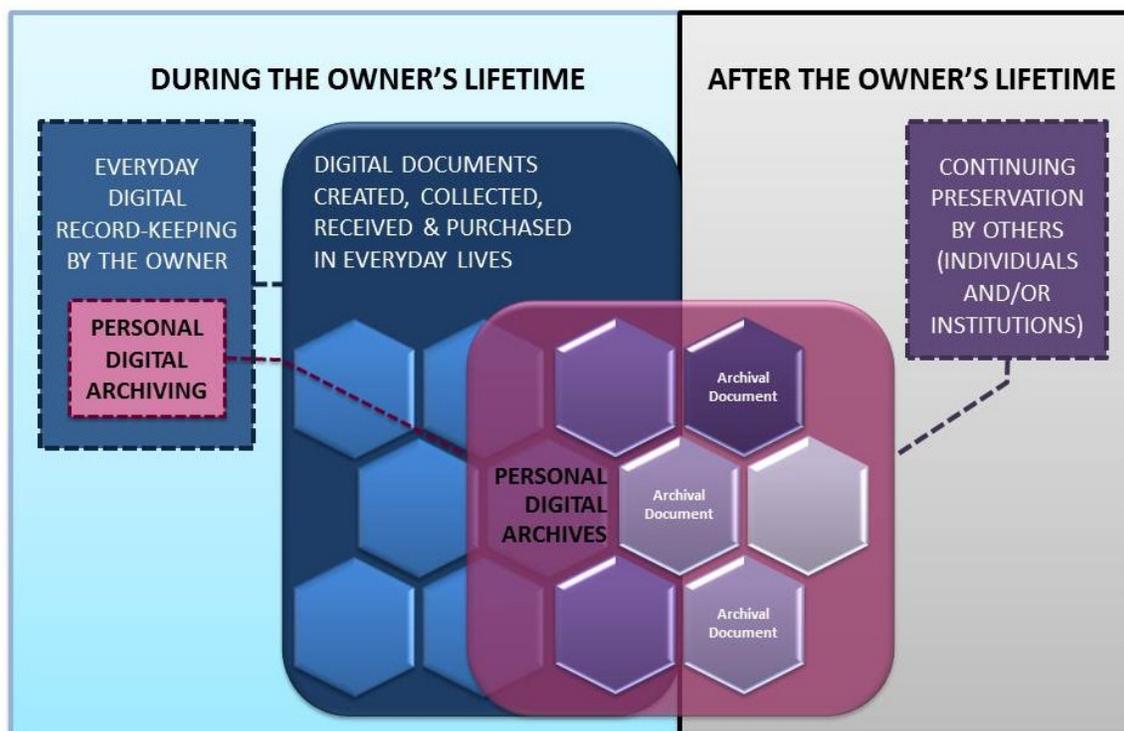


Figure 2: Defining personal digital archives and archiving in the context of an owner's lifetime

### **Chapter 3: Conceptual Background: Construction of Self**

In the previous chapter, I defined “personal digital archives” as a constellation of digital documents that the owner considers as valuable and meaningful to her. The meanings and values of a personal document are assigned or determined by the owner at a given moment and in a particular situation. Therefore, the value or meaning of a document to an owner is not inherent to the document, but is a malleable quality; varying from time to time, place to place, and person to person. People may discover new or different values of documents that have survived when they (accidentally) encounter them many years later (e.g., historical or nostalgic values). In this chapter I will explore the values of personal digital documents identified in PIM and archival literatures. Based on my understanding of these values, I will discuss the process of constructing the self as a conceptual frame of the present study.

#### **UNDERSTANDING VALUES**

Several empirical studies mostly conducted in the area of personal information management (PIM) provide clues to what kinds of values make people want to keep specific documentary materials. Experiences in the archival community and memory institutions with personal papers also offer certain insights into the value of personally retained documents to an owner.

## **Types of values of personal documents**

Whittaker and Hirschberg (2001) investigate the nature and function of personal paper archives in office work. They collected online survey data from 50 people and follow-up interview data with a subset of 14 people in a research laboratory. Since the laboratory was in the middle of moving to a slightly smaller office space, research participants had opportunities to spend time in discarding and rearranging their personal paper records for the move. Regarding what factors influence individuals' decisions to continue to keep particular documents, the authors identify "functional" and "emotional or sentimental" reasons. The major categories of functional reasons are: 1) as reference for future projects, 2) as legal and administrative evidence, 3) for immediate access, 4) for later re-use, 5) as a reminder of the possession of that information, and 6) the lack of trust in external information storage. According to the authors, "an emotional or sentimental" reason explains why people retain paper documents even though they do not see much direct use of the documents for the future (p. 166). These documents include reviews of their first published papers and materials on their theses. Research participants considered them as a part of their intellectual history and could not just throw them away (p. 159). The category of "emotional or sentimental" reasons for keeping documentary materials suggests that individuals have an emotional bond with specific documents, not always explicit and somewhat unexplainable or indescribable.

Kaye et al. (2006) observe individuals' information archiving and organizing behavior in both physical and virtual spaces. After conducting semi-structured interviews and office tours with 48 scholars in various academic fields, they identified five reasons

for personal archiving: 1) easy retrieval for later use, 2) building legacy archives as a unified body of materials that reflect their career trajectory, achievements, and personal pride, 3) sharing resources with others, 4) fear of losing irreplaceable information, and 5) constructing, maintaining, and expressing their identity through archiving practices. Kaye et al.'s research findings provide a picture of the internalized meanings of work-related documents to scholars in academia, beyond the original purpose of creation and use of documents. These documents serve as a significant indicator of what has been achieved, thus they help their owners to review their past work, build their legacies, and continue to form their identities as scholars.

Williams, Dean, Rowland, and John (2008) examine how personal collections of individuals are built, including decision factors in archiving. Through in-depth interviews with 25 individuals in politics, the arts, and the sciences, the authors address “affective/emotional” and “utilitarian” factors that influence individuals’ archiving decisions. First, they categorize the possible future use of records and the necessity of backup as “utilitarian” factors. Possible future use includes both direct re-use of a document (e.g., an instructor’s lecture notes reused annually) and use for other than its original purpose (e.g., materials related to the course that one does not teach any longer but are kept as evidence of teaching activities). Second, the authors explain the “affective/emotional” factor in terms of time and effort invested in the creation of a document. Memories and the history surrounding the creation of a document also define the value of the document. The content of these documents does not seem to be treated as an important element in the decision about what is to be kept for a longer term. For

example, one of their research participants continues to keep old notes in WordPerfect file format, which has become obsolete and makes the files no longer readable.

Kirk and Sellen (2008) explore the material culture of the home and current home archiving practices in terms of “sentimental” artifacts. In their research, “sentimental” artifacts are defined as physical objects and digital materials that people “feel in some way attached to” (p. 1). According to the authors, they are the opposite of “functional” objects, whose existence is rather temporary and dependent on the manner of use. The authors conducted guided home tours and in-depth interviews with 11 families focusing on what people archive and why, for whom, and how they are doing it. They conclude that research participants keep sentimental items to facilitate memories and evoke feelings. They report the following four core values of artifacts that belong to the home archives of the participating families: 1) value in constructing one’s persona and reinforcing the self by connecting people to their personal histories, 2) value in sharing their past with people whom they know, 3) value in preserving a family or personal legacy for unknown others in the future, and 4) value in honoring the past.

These studies were conducted with different types of informants in work and home environments. The types and functions of documents at work and at home would seem to be different. The distinction between work-related and non-work-related documents, however, is not always clear but a subjective matter depending on what people do for a living and how they perceive work and non-work domains of their lives. Especially since increasingly people work at remote places, from home offices and with the assistance of mobile devices, people’s work and non-work spaces are becoming

mixed. The point to notice, however, is that each of the studies above took a naturalistic approach that involves observations and interviews with people in a natural setting. As a whole, these studies help us to gain a broad picture of meanings and roles of personally preserved documents in people's lives and thus why people retain them regardless of genres, types, and subjects of documents.

It is of particular interest that similar themes emerged from the reviewed literature. Based on these overlapping themes, the following five types of values can be identified as possible continuing values of personal documents:

1. Emotional/sentimental value: Significance of documents based on their emotional bond with a person; for evoking emotions and memories (e.g., pride, happiness, feeling of accomplishment, and indescribable feeling) related to the process of creation or acquisition of documents;
2. Historical value: Usefulness of documents for understanding the past and/or family history;
3. Identity (formation and expression) value: Significance of documents in constructing, maintaining, and expressing one's identity and personality;
4. Personal legacy value: Significance of documents in exploring one's professional or career trajectory or life achievement and building a personal legacy; and
5. Sharing value: Usefulness of documents for sharing personal life stories, memories, and family histories with others, including future generations.

These categories of values echo certain observations made in the field of archives and cultural heritage preservation. For example, based on his experiences as a researcher

in archival studies, Cox (2006a, 2006b, 2006c, and 2008) notes that personal or family archives are preserved for emotional and sentimental reasons as well as legal and regulatory reasons. Records in personal archives are a trail of evidence, sometimes showing individuals' behavioral patterns, e.g., personal spending habits implicitly documented in checkbooks. Personal documents connect individuals to their pasts, and so provide "comfort, security, and testimony to our lives" (2008, xiii). According to Cox, people have a romanticized feeling toward old archived records and assign values to records that do not have any practical use. People enjoy pulling stories out of those records and desire to share with others their stories, personal legacy, and memories embedded in records.

Responding to the growing interest in family history in health care and the resulting increase in the use of archives by care professionals such as psychologists, therapists, social workers, and family history researchers, British archivist Judith Etherton (2006) investigates the role of personal records in the process of building family history and an individual's identity. Based on her interviews with care professionals (e.g., psychologists, therapists and social workers) and archives professionals, she argues that family history provides individuals with a sense of belonging and a sense of place, which are important components of a person's mental health. Family history also works as a therapeutic exercise: assisting patients to see themselves from a different perspective that can help individuals relieve their anxiety and past trauma. Etherton stresses that personal records, including public records that contain personal information, can play a vital part in identity formation and mental health improvement. For example, in cases of children

in the care system (e.g., adoption, foster care), social workers and medical professionals use documents about a child's birth family as evidence of family to promote the child's understanding of her identity and sense of belonging.

### **Self-reflective value of personal documents**

The above five values are not a complete set, but are rather starting points to explore the continuing values of personal documents. As a whole, however, these values suggest that personally preserved documents play a vital role in assisting people to reflectively look back on their past experiences, share memories with others, understand who they are and where they come from, and form their identities throughout their lives. From this perspective, these five types of values can be summed up in the concept of "self-reflective value": significance or usefulness of documents in constructing the self.

Through conducting a survey with eighty families in Chicago, Csikszentmihalyi and Rochberg-Halton explore common household objects that people possess and their psychological and symbolic significance in people's lives. In the introduction of *The Meaning of Things: Domestic Symbols and the Self* (1981), Csikszentmihalyi and Rochberg-Halton articulate the mental support provided by objects that people may experience as taken for granted:

It is also relatively easy to admit that the things people use, own, and surround themselves with might quite accurately reflect aspects of the owner's personality.... Thus the things that surround us are inseparable from who we are. The material objects we use are not just tools we can pick up and discard at our

convenience; they constitute the framework of experience that gives order to our otherwise shapeless selves. (pp. 14-16)

Their view on the role of material possessions in the formation of self supports the self-reflective function of personal documents. Documents either in analog form or digital form are materials that fill up human habitats such as work and home. Furthermore, the assistance of documents in the construction of self seems to be distinguishable from that of other material possessions due to their informational and evidential values and their origins as byproducts of everyday activities. For example, documents associated with particular objects help people to connect with various meanings, histories, and memories related to the objects by providing the provenance or contextual information for the objects. Documents are the central pieces that constitute “evidence of me” (McKemmish, 1996) and contribute to the on-going formation of self.

#### **PERSONAL DIGITAL ARCHIVES AND THE SELF**

In Chapter 2, I characterized personal digital archiving as a lifelong practice of forming personal digital archives. In specific terms, it is a process through which people constantly assign new or different meanings and values to particular documentary objects at given moments and situations. Connecting this definition with the self-reflective value of personal documents, personal digital archiving seems to be closely related to the understanding and re-making of a self. In other words, self-reflectivity is embedded in the way that people make decisions in their digital archiving practice. Past experiences, social status, cultural backgrounds, relationships with others, and how a person

understands and feels about her life and self at a given moment likely have significant influence on personal digital archiving. Therefore, how self-reflectivity plays out in the process of forming personal archives is a framework for this study. Concepts and theories that discuss the self provide a useful perspective for examining, interpreting, and understanding individual personal digital archiving activities.

Many scholars have discussed self and identity throughout history as fundamental aspects of human existence. For the purpose of this study, I understand “self” as a unified being or an agent that perceives and identifies who she is, and “identity” as a mental projection of an individual about how she sees and claims herself through identification with a certain community or with a social role that she takes in her life setting. Among numerous literatures that explore self and identity, I will look particularly into 1. the concept of a narrative as a way of organizing life, articulated in narrative psychology; 2. the notion of a socially constructed self, explored in social psychology; and 3. the idea of representing the self, developed in Goffman’s impression management theory.

### **Narrative as a way of organizing life**

Narrative psychology focuses on the narrative as an account of human actions. When American psychologist Theodore Sarbin introduced the term “narrative psychology” in 1986, he proposed to employ narrative as a “root metaphor” for examining and interpreting human actions. This concept departs from the mechanistic framework in psychology that aims to uncover “context-free” or trans-historical laws of behavior (Sarbin, 1986, p. 7). From the perspective of narrative psychology, individuals

organize what happens in their everyday lives and understand themselves in a narrative form: by constructing stories, telling stories to themselves and to others, and listening to the stories of others. The interest of narrative psychology is in how narrative operates as “an instrument of mind in the construction of reality” (Bruner, 1991, p. 5-6).

Many key researchers in narrative psychology such as Theodore Sarbin, Jerome Bruner, Kenneth Gergen, Donald Polkinghorne, and Dan McAdams stress narrative as an organizing principle for our lives: “The narrative is a way of organizing episodes, actions, and accounts of actions” (Sarbin, 1986, p. 9). “Way of organizing” means locating individual events in a particular temporal location in the process of constructing a sequence of what happened. This unique sequence is the principal property of narrative (Bruner, 1990). Constructing a sequence is a purposeful activity through which a narrator attempts to make sense of her actions, experiences, and memories. In this meaning-making process, the narrator assigns the significance of events, the role of individual events, and the relationship among events. The narrator’s mental status, moral choices, beliefs, desires, and imagination, as well as cultural and social context, play roles in this process. Narrative and narrative construction are thus forms of meaning-making (Bruner, 1990; Polkinghorne, 1988; Crossley, 2000a and 2000b). As an organizing principle, narrative is distinguished from a mere chronological order of what happens. In the formation of narrative, people select and emphasize particular events while they eliminate or diminish others, based on the meaningfulness of the event. The meaningfulness of events may vary depending on where, when, for whom, and how the narrative is constructed and told.

### *Self-narrative*

Self-narrative or personal narrative is a type of narrative whose theme is the self and identity. Kenneth Gergen and Mary Gergen (1988) define self-narrative as “the individual’s account of the relationship among self-relevant events across time” (p. 19). Dan McAdams (1997a) treats personal narrative as “a special kind of story that each of us naturally constructs to bring together different parts of our selves into a purposeful and convincing whole” (p. 12). Both definitions indicate that self-narrative is a process and a product of establishing coherent connections among elements in life. Each individual is the author (the I) of her self-narrative and is the actor (the me) in self-narrative (Sarbin, 1986; McAdams, 1997b). Gergen and Gergen (1988) assert that one’s present identity is a “sensible result of a life story” (self-narrative) (p. 19).

The notion of using narrative as a root metaphor for social psychology requires understanding a life and a self as historical and cohesive units, within which the relationship among fragmented elements and multiple selves are (re)constructed. Although this notion as formed may be applicable only to a particular culture, such as modern Western culture, this view is particularly valuable for the present study. If narrative is one of the main forms through which we organize our experiences, make sense of our lives, and construct our selves across time, narrative form would be a sustainable frame for understanding the formation of personal digital archives in relation to the construction of self. Moreover, in “Evidence of Me,” McKemish (1996) finds the fundamental function of recordkeeping as an act of witnessing, “a way of evidencing and memorializing our existence, experiences, and identities” (p. 28), in using the concept of

Anthony Giddens's "narrative of the self." According to Giddens (1991), narratives provide models for individuals to integrate their various social roles and personae, personalities, interactions with others, memories, and day-to-day events. Thus, the narrative of the self allows individuals to maintain their continuing senses of self (Upward and McKemmish, 2001). McKemmish (1996) identifies recordkeeping as one way of "keeping a particular narrative going" (p. 31).

In this study I assume that such a narrative project would explain how individuals organize and sort personal documents. When we interpret personal archiving in terms of constructing personal/self narrative, then the keeping of personal digital archives concerns preserving the self of a creator/owner of life memories, stories, and legacy, not accumulating a miscellaneous group of digital materials. The historical aspect of narrative also emphasizes personal digital archiving as an on-going active project of preservation of "me" as against the passive attitudes about long-term care of personal documents (e.g., benign neglect or keep-everything) that have been suggested by PIM researchers. Individuals (re)construct and revise their self-narratives over time in the course of their lives, influenced by changes in the external environment and in their perceptions of self. Thus construction of personal digital archives is not likely to be a single event that happens in one's late adulthood, but would be practiced throughout one's life.

### ***Narrative construction as a method of exploring the self***

Dan P. McAdams is a researcher in the areas of personality and life-span

developmental psychology, who has published many works related to narrative approaches to studying human lives. In *The Stories We Live By*, McAdams (1997a) proposes the life-story interview as a (practical) method that individuals can use to identify their personal narratives and thus enhance self-understanding. While conducting numerous life-story interviews for his own research, McAdams noticed that interview participants experienced the interview itself as an enlightening process. He saw that the life-story interview would help people realize “the importance of interpersonal dialogue in exploring the self” (p. 254). He outlines the life-story interview technique as a semi-structured, almost self-help interview, telling one’s life story to a listener, who can be anyone, even oneself. McAdams suggest that the life-story interview needs to be a continuing project rather than a single interview. Each interview should lead a narrator to further explorations about her life and self. Assuming that individuals can develop their own interview questions, McAdams suggests the following life-story interview protocol as one tool to which individuals can refer:

- Thinking about one’s life as if it were an unfinished and open-ended book, where each part of the life can compose a “life-chapter” (pp. 256-257)
- Detailed storytelling about the most wonderful and the worst moments in one’s life; turning points in one’s life; the earliest memory one has; important childhood, adolescent, and adult memories that stand out at the moment; and other particular past events that stand out (pp. 257-260)
- Talking about the most important people in one’s life story, including the relationship with each person and each person’s impact on one’s life story (pp.

260-261)

- Talking about the overall plan, outline, or dream for the narrator's own future (pp. 261-262)
- Storytelling about problems, stresses, or challenges in one's life, including the nature and source of the concern, and a brief history of problems (p. 262)
- Talking about personal philosophy such as fundamental beliefs, religious beliefs, and political orientation (pp. 262-263)
- Talking about the recognized major theme of one's life while quickly looking back over one's life story as a book (pp. 263-264)

McAdams stresses that each section helps a narrator to articulate and express her personality, identity, and perspective about her own life and aspects of identity formation.

McAdams's life-story interview method does not seem strikingly new. Researchers have asked similar questions in life history interviews, performed in many disciplines. Qualitative researchers who conduct oral history interviews at least, however, would agree with the positive (e.g., enlightening and therapeutic) impact of the life-story interview on a narrator's mental status. What McAdams suggests is to utilize and apply the benefits of life-story interview to everyday lives beyond the professional setting. The goal of his life-story interview method is promoting understanding the self of a narrator by making "conscious and explicit that which already exists implicitly, generally outside of your everyday awareness" (1997a, p. 264). Through the life-story interview, a narrator has an opportunity to allocate meanings and values to past events in her life and also to think of these events in relation to her general life goals and ideology rather than merely

to recollect what happened in the past.

The experience of navigating the self that the life-story interview method represents has an implication for the present study. If personal archiving is a psychological process that can be interpreted in relation to narrative construction, then the process of forming personal digital archives, which contain elements memorializing life experiences, can provide a less direct but similar experience of exploring the self. The present study considers the activities of personal digital archives construction and maintenance as the moments when individuals consciously think about and review their selves.

### **Socially constructed self**

In the preceding section, I juxtaposed personal archives and archiving practices with the narrative construction in which understanding of self and making meaning of one's life take place. As many researchers in sociology and social psychology have discussed, however, formation of self is performed in the midst of the social interaction of everyday life and results in private and public acts situated in social settings. The idea of a socially constructed self leads the present study to consider the social aspect of personal archiving.

### ***“Togetherness”: Social construction of documents***

In the discussion of self narrative, Gergen and Gergen (1988) mention that “although the object of the self-narrative is the single self, it would be a mistake to view such constructions as the product or possession of single selves” (p. 37). Their

observation indicates that self-narrative is a form in which an individual internally organizes and makes sense of her life, but the way that self-narrative is constructed is social or environmental. Self-narrative is an outcome of interaction with the external environment and other individuals.

In sociology and social psychology, the role of others in construction of the self has been studied extensively. Jerome Bruner (1997) argues that “what we observe in others” and “statements that other people make” (p. 147) are resources for our knowledge about ourselves. That is, knowing how others see “me” and who others think “I” am (and vice versa) and seeing how others perceive themselves are essential parts of understanding one’s self and how mutual construction of meaning occurs in concert with others. Sociologist Herbert Blumer (1969), in particular, discussed the construction of meanings as fundamental to the nature of the objects around which individuals’ activities are formed. In his interpretation of sociologist George Herbert Mead’s concept of object and symbolic interactionism, Blumer stated that “people are prepared or set to act toward objects on the basis of the meaning of an object for them” (p. 69). The meaning of the object “for the person or persons for whom it is an object,” however, is “not intrinsic to the object” (p. 68). The meaning is “fabricated through the process of social interaction” and the meanings of objects are “formed from the ways in which others refer to such objects or act toward them” (p. 69).

These notions, especially Blumer’s idea of objects—all objects—as “social products” (p. 69) suggest that a construction of personal digital archives is also a social process, which inherently involves interactions with others. This interaction will have an

influence on how the person assigns meaning and value to each document, constructs relationships among documents, and shapes the meaning of her personal archives as a whole. Personal document collections in one's childhood provide a useful example. Those who collect and keep childhood documents are most likely parents. As a result, these personal documents have meanings to at least two or three different individuals: a mother, a father, and a child. When the child grows up and reaches adulthood, these personal documents will be an important part of her life and her personal documents collection. These documents, indeed, are evidence and memories about her early life, which she may or may not remember very well. Parents may diligently collect and keep documents of their child in anticipation that they will be useful to the child in the future. These documents, however, also hold many meanings for the parents. They evoke memories, stories about a certain period of the parents' lives, and their identities as parents. In addition, sharing the value of one's childhood documents between the child and her parents has an impact on the formation of personal archives. Seeing which documents her parent(s) keep and treat as important is likely to affect a child's assessment of the meaning of documents and her self and cause her to re-interpret her own memories, her past, and her relationship with her parent(s). Through this sharing of personal archives, the meaning of a document, the meaning of a past event, the meaning of a relationship, and the perception of self are mutually constructed. Similar "togetherness" would take place among siblings and extended family members, including different generations in the family, partners, and friends.

## **Presentation of self**

Often categorized as a symbolic interactionist, sociologist Erving Goffman took an “interaction order” as his unit of analysis (Fine and Manning, 2003). In *The Presentation of Self in Everyday Life*, Goffman (1959) discusses everyday social life (i.e., social interaction) focusing on the performative aspects of self-presentation. In order to describe daily social interaction, which is a taken-for-granted but highly complicated human behavior, Goffman uses a metaphor of theater where individuals on stage perform for audiences.

## ***Impression management***

Goffman argues that, in the presence of others, an individual as performer creates and makes a particular impression on others and attempts to control how others experience the impression, such as an impression that the performer presents of having “ideal motives for acquiring the role which they are performing” (p. 46). He suggests impression management as a framework to study interpersonal social interaction.

The target of Goffman’s microanalysis of everyday life is a routine face-to-face interaction. Considering his idea that creating and presenting an impression is an essential element of everyday social life, however, his work invites us to think about another probable social dimension of personal archiving activities: the intentional or unintentional projection of one’s self-image through personal archives to a known and/or unknown audience.

Canadian archivist Catherine Hobbs (2001) discusses the character of personal

archives based on her work with literary manuscript collections acquired from individuals, such as poets, novelists, and playwrights at the National Library in Canada. Hobbs sees personal papers as an expression of “the inner soul” (p. 126) of the record creators and their personalities as well. The fact that her insight stems from personal papers deliberately transferred to institutions such as national libraries raises questions about the donors’ side of the story: how do they decide to make their or their family members’ lifetime documents public and allow them to be used by unknown people? There might be many interesting factors influencing such decisions, e.g., the significance or social recognition of the individual in a given field or community, willingness to share resources with others, and personal desire to contribute to enriching societal cultural heritage. Extending this curiosity to a very personal level, more questions follow: How do donors distinguish between what to donate and what not? To what degree and why do donors intend to open documents that reveal their private lives for public use? Would donors have specific wishes regarding how their lives and personalities are portrayed through the body of their personal papers? We can ask similar questions of creators and owners of homegrown personal or family archives.

Applying impression management to these questions, once a person considers leaving her personal document collection for others to interact with in the future, she may have her own idea of how future generations will regard and remember her public image. This desired image is likely to be embedded in her personal archives as a representation/portrait of herself.

Furthermore, in the domain of face-to-face interaction from which Goffman

derives his theory, others participate in the self-presentation performance “by virtue of their response to the individual and by virtue of any lines of action they initiate to him” (p. 9). Unlike face-to-face interaction, the owners of personal digital archives cannot directly observe and react to how others will receive, accept, and respond to the embedded impression in their personal archives. The virtual presence of others, however, still plays an important role in the impression management of personal archiving. First, consideration of potential users (i.e., who they are or will be) influences how the individual formulates a desired public image. Second, Goffman argues that information control, especially hiding from the audience any information which can weaken the desired public image, is a basic problem with many performances and impression management. Individuals highlight some matters and conceal others to manipulate and maintain a desired public image of themselves in a given situation (p. 65). In a similar way, the individual’s archival decision-making, such as choosing which documents to keep and which to destroy, the degree and level of access to permit to her personal documents, and how to display them, will change depending on the designated users. Additionally, it is likely that people have different designated or expected users in mind influenced by changes in their lives such as becoming a parent, achieving social recognition, or growing older. For example, if a mother considers her children and future generations of her family as the possible users of her personal documents, records that tell about her as a mother and a family member and the memory, tradition, and history of her family will likely be the main body of her personal archives. In contrast, if a retired college professor wants to donate her personal documents to her university archives, she

may choose to leave documents that represent her legacy and contribution as a researcher and an educator at the university. These two examples offer a simplified version of the series of decisions involved in archiving, which is more multi-dimensional and complicated than described here. The point being illustrated is that the designated users of one's personal archives are participants in how the individual projects and fosters her public self-image, how she reflects her desired image in her personal archives, and how she constructs her personal archives.

***Self: Performer and performed character***

Another implication of Goffman's impression management for the present study is his idea of a private and public self. Goffman divided the individual into two parts: as a performer (private self) and as a performed character (public identity), produced in a specific social setting. For Goffman, a performer is a "harried fabricator of impressions involved in the all-too-human task of staging performances" while a character is "a figure whose spirits, strength, and other sterling qualities the performances were designed to evoke" (p. 252). Although culture, social norms, standards, the tradition of a group, and expected social roles around the individual are evoked when a performed self is constructed in a particular scene of social interaction, the public identity of an individual is not defined or determined by these social standards only. Goffman emphasizes the capacity of self as a performer whose interest is "engineering a convincing impression that these standards are being realized" (p. 251). In Goffman's impression management idea, the individual is "the creative and reflective agent who decides on how to carry out

such roles as well as the staging of role performances” (Elliott, 2008, p. 38).

Personal archiving as a social process can be viewed using Goffman’s concept of self as a performer and as a performed character. The groups of selected and archived personal documents would represent the performed characters of an individual: her public identities. The individual who is in the process of constructing her personal archives is a performer in Goffman’s sense: “the creative and reflective agent” who controls both front stage (where the performance is presented) and backstage (where the performance is prepared). Assigning meanings and values to each document, selecting or destroying a specific document, and organizing, categorizing, and displaying the archived documents can be viewed as her ways of “engineering a convincing impression” (Goffman, 1959, p. 251) about her public identities. For example, a collection of syllabi of a college professor included in her personal archives would not only represent her public role as an educator but reflect her decision as a performer to put the accent on that particular public identity as well.

### ***Presentation of self through material object***

Sociologist Stephen Harold Riggins (1990) uses the work of Goffman to investigate the relationship between the self and domestic objects. Riggins adds material objects and the selective display of objects to the scene of personal interaction. He argues that social interaction is not limited to the “face-to-face” present of participants. He considers that the meaning of objects is established through human interaction and sees the role of objects as mediators of interaction and relationships. Since Goffman did not

explicitly discuss material objects, Riggins gathers and analyses Goffman's thoughts about material objects as mentioned throughout his works. Based on his interpretation and redefinition of Goffman's ideas concerning objects, Riggins identifies nine "categories of symbols" (p. 347): 1) status objects; 2) esteem objects; 3) occupational objects; 4) indigenous objects; 5) collective objects; 6) stigma objects; 7) disidentifying objects; 8) alien use; and 9) social facilitators.

In Riggins's study, records or written documents appear as examples of specific categories among other domestic objects, for example, "fashionable curtains in the living room windows facing the street" (p. 348) as status object, trophies as an esteem object, crutches and canes as stigma objects, national symbols as a collective object, "scholarly-looking spectacles worn by illiterate people" (p. 351) as an disidentifying object. According to Riggins, publicly displayed greeting cards, congratulatory cards, and framed citations are esteem symbols that show "how well a person fulfills general duties" (p. 349). Riggins identifies "family photographs on office desks or erotic photographs in a soldier's locker" as occupational objects that would indicate "the desire to exert distance from formal roles" and vice versa, therefore function as "role distancing devices" (p. 349).

Without necessarily sharing Riggins's interpretation and analysis of Goffman's view, the categories of objects found in domestic environments that he suggests make us think about digital objects displayed in people's digital domestic environments in relation to the presentation of self. For example, digital pictures of an individual's daily events distributed via her social networking site such as Facebook could be considered as status

objects that show off the person's style of life (e.g., pictures of dinner dishes in an expensive local restaurant). Travel pictures uploaded to an online photo sharing site such as Flickr would be similar to indigenous-made objects that indicate the person's "exceptional" knowledge of and experience in a visited region (p. 350). Personal pictures that people carry in their smart phones would function as social facilitators (e.g., pictures of their newborn baby or pets). Moreover, the personalized virtual spaces where people selectively display their digital objects can be compared to their physical "living room, the exterior of the house, and the yard" which are "part of the 'front stage' of social interaction where messages about the self are presented" (Riggins, 1990, p. 343; see Figure 3 as an example). "As living on the Internet becomes less of a second life and more of a first one for more people" (Galloway, 2010, p. 1526), the personalized virtual spaces (e.g., personal homepages, blogs, online photo albums, and social networking profile pages) become places where social interaction of a different, but increasingly mundane kind happens today. The digital objects selectively displayed for viewers in the virtual habitat are likely to be part of people's personal digital archives.

In spite of his inspirational analysis of everyday social life, one of the main criticisms of Goffman is that the emotional or psychological dynamics of the self and social relationships are vague in his research (Elliott, 2008), except for his treatment of embarrassment and shame as emotions (Scheff, 2006). Goffman's impression management theory suggests that individuals are unemotional social beings whose interest focuses on manipulating and maintaining impressions. As reviewed in previous sections, however, an individual's emotional attachment to her personal documents is one

of the key elements and motivations for the construction and preservation of her personal archives for herself and for future generations.

A more severe criticism is that Goffman's theatrical analysis and use of the metaphor over-extends the notions of performing to the whole of everyday life without providing accurate explanation for actors' intentions. Thus, "as a comprehensive account of everyday life, it is inadequate" (Manning, 1992, p. 54). Goffman's idea, however, can be re-defined and applied to research that especially explores social dimensions of everyday practice and life. In this section, far from pretending to review all the relevant literature on Goffman's impression management, I restricted myself to his ideas useful for exploring personal digital archiving practices. Goffman's impression management provides one conceptual frame to explore personal archiving as a social process where the private self (the performer) constructs and presents its public self (the performed character) in consideration of the anticipated perception by others (the known and unknown future audience) of one's public self.

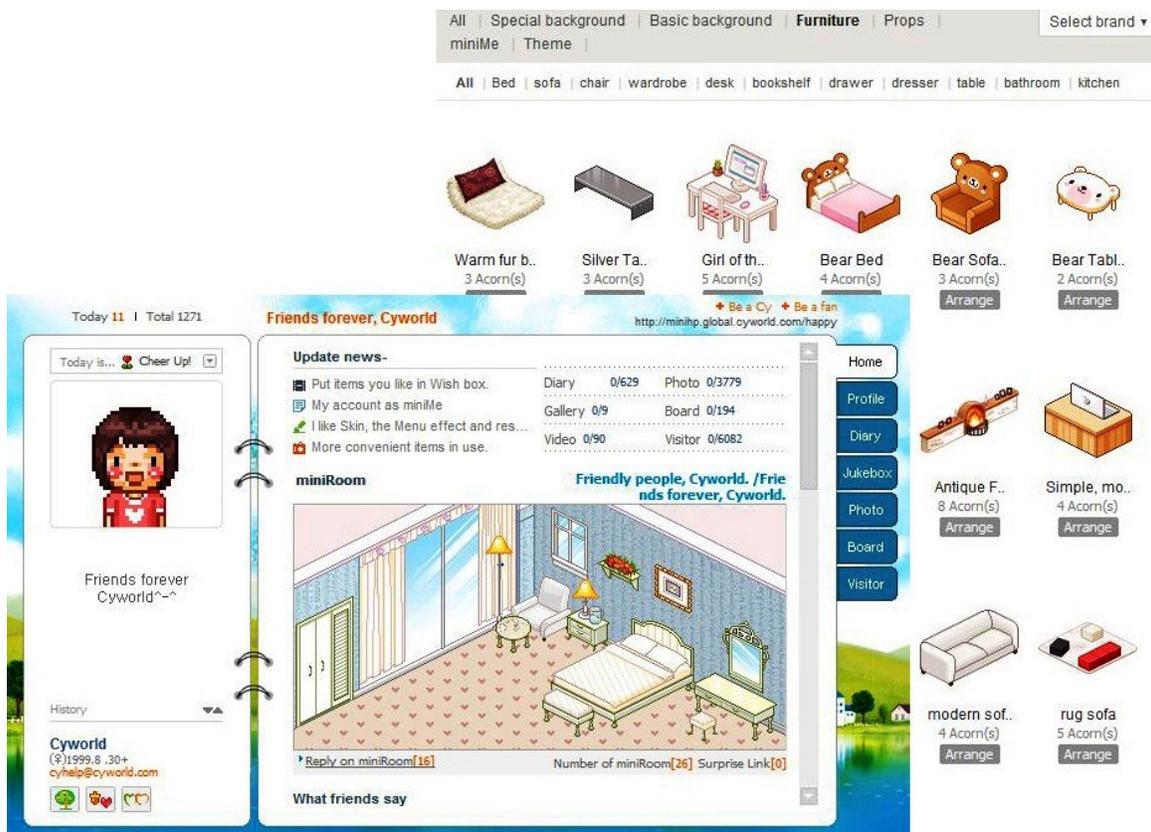


Figure 3: Screenshot of a default “miniHome” interface of Cyworld and examples of virtual goods for “miniRoom”: Cyworld is one of the most popular social networking services in South Korea, launched in 1999. Its networking function is similar to other SNSs (e.g., requesting to be a “friend,” posting status, and sharing photos). The distinctive feature of Cyworld, however, is its interface design that attempts to mimic reality. In the Cyworld, users have their own “miniHome” that has a three-dimensional “miniRoom” where “miniMe”—a user’s avatar—lives. Users can buy “virtual goods” such as furniture, art, and background music to decorate their “miniRoom” and clothing for their “miniMe.” Sales of digital goods involve actual commercial transactions, through which the company makes its profit. In 2004, Cyworld’s online store is reported to have accounted for 80% of its \$54 million revenue (Evans, 2005). Its success in online sales for virtual goods that have no other function but simple decoration of “miniRoom” and “miniMe,” attest to its users’ rather aggressive activities of displaying personality and self before the awareness of visitors of their “miniHome.”

## Chapter 4: Research Design

I started this study with the question of why people retain some personal documents throughout their lives; such activity leads to the construction of their own archives (i.e., personal archives). The purpose of keeping documents, however, is not always clear in a real life setting. Documents may be retained due to simple neglect or because an owner forgot their existence. At the same time, there must be “an impulse that leads most people to hold onto older records” (Cox, 2006b, p. 4). Especially in a digital environment, the intention of keeping documents seems to be disappearing, since keeping becomes a default action for many individuals. This does not mean, however, that the function and role of documents is diminishing in people’s lives or that documents in digital form become meaningless objects.

While exploring related literature such as work related to personal information management (PIM), archives, and digital preservation, I recognized a more intimate connection between personal archiving and self-reflectivity. With this recognition, I sought to identify conceptual frameworks for investigating further the link between personal (digital) archiving and self-reflectivity.

The idea of a narrative as an organizing principle of our lives suggests that people make sense of their lives and understand their selves through narrative construction. Based on this idea, McAdams discussed a life-story interview as a method for individuals to explore their selves. As a fundamental form of understanding the self, narrative

provides a frame for examining how personal digital archiving practice relates to the way that people create and modify their life narratives.

The notion of a socially constructed self brings out the social aspect of personal archiving. The interaction between the private self (I) and the public self (me) and between oneself and others is a vital part of the construction of self. Thus, it is likely that mutual interactions with others have an influence on shaping the meaning of one's documents and personal archives as a whole. Goffman's impression management theory (1959) introduces the possibility that the multi-dimensional dialogue among selves and others can be reflected in the presentational aspect of personal archives.

## **RESEARCH QUESTIONS**

Building on the above concepts, I have elaborated my view of personal digital archiving as part of the construction of self and as one way to preserve and revise the self. Viewing digital archiving as an act of preserving one's life and self distinguishes the body of preserved personal materials from data accumulated as a result of benign neglect or default keeping. It suggests that looking into the way that people archive their digital materials will possibly reveal the individuals' intentionality in long-term recordkeeping beyond the purpose of increasing the efficiency of personal information management.

Therefore, I use "the construction of self"—a fundamental part of our being—as a key phrase that defines the scope of the present inquiry. With this focus, I investigate the following overarching research questions:

1. How are personal digital archives of individuals formed through the individual's life and continued after that lifetime; and
2. What are the influencing elements that affect people's decision-making in personal digital archiving?
3. Do the answers to 1. and 2. suggest that individuals shape their selves and life narratives by ongoing personal digital archiving activities?

I take a case-based qualitative approach to exploring the research questions. The goal is to generate interpretive narratives of individuals' personal digital archiving experiences. In this chapter, I will describe the research methodology and procedure in detail.

#### **RESEARCH METHOD OVERVIEW**

Charles Naumer and Karen Fisher (2007) discuss the usefulness of a discovery-oriented naturalistic and holistic research method for PIM studies. They emphasize that researchers need to investigate multifaceted PIM activities not only related to a specific technology or workplace setting but in the wholeness of people's lives. For studies that focus on an actor (i.e., a person) and his actions, a qualitative method allows researchers to understand human information behavior in a specific context.

In general, qualitative research methods 1) are concerned with the "complexity and entirety" of the topic under investigation; 2) focus on understanding research participants' experiences and perspectives, which are diverse and individualized; 3) explore and study individuals in their natural settings; 4) test transferability of research and 5) embrace the researcher's role as an "active learner" rather than as an "expert"

(Creswell, 1998; Flick, 2002; Delamont and Atkinson, 2004).

The advantage of a case-based qualitative method is “the proximity to reality” that the case study can generate (Flyvbjerg, 2004, p. 429). Through case studies, a researcher is able to delve into experience in a real life context, produce a rich description of “what is going on,” and learn about the phenomena under study. Participants are respected as individuals “whose accounts of themselves call for exploration and understanding,” and are often treated as collaborative partners in the study (Edwards, 1998, p. 3).

The individual’s experience with his digital documents is the unit of analysis of this study. Experiences include not only how people manage and preserve digital documents but also the thoughts, emotions, attitudes, and motivations related to their digital archiving practices. Therefore, a case-based qualitative research method is appropriate for this study.

### **Research methodology**

In order to specify the methodology of this study, I mostly refer to characteristics of qualitative research discussed in Interpretative Phenomenological Analysis (IPA). As an experiential, qualitative, psychological research method, IPA focuses on studying the phenomena under investigation through the micro-level, descriptive analysis of individuals’ personalized experiences and their interpretations of the experiences. Rooted in the tradition of phenomenological psychology, IPA has developed through the work of Jonathan A. Smith and colleagues since the mid-1990s. IPA has been used primarily for inquiries in the fields of health psychology and applied psychology. Increased awareness

of the importance of understanding patients' own experiences related to their illnesses and treatments drives the growing adoption of IPA in health psychology (Brocki and Wearden, 2006).

This study is not specifically designed as IPA research. Its aim is to gain a holistic understanding of personal digital archiving experiences, not limited to psychological analysis of the experience. IPA, however, offers useful concepts and guidelines regarding how to work with individual cases involving single participants. The research method depends on respect for the individuality of each participant, the role of the researcher in interpreting data, and a gradual approach toward generating theories and models.

### ***Individuality of each case***

Focusing on the “particular” is an important aspect of IPA: “understanding how particular experiential phenomena have been understood from the particular people, in a particular context” (Smith, Flowers, and Larkin, 2009, p .29). Therefore, IPA research can be based on a detailed single case study while a researcher can eventually move from the examination of the single case to more general claims. This, however, does not mean that each case (i.e., each participant) is considered as a socially isolated entity. In IPA, people's experience is viewed as uniquely situated but at the same time embedded in a “world of things and relationships” (Smith et al., 2009, p. 29).

Smith, Jarman, and Osborn (1999) suggest that a researcher could aim to treat each case on its own terms until the analysis of each individual case is completed. Rather than pursuing theoretical saturation, the results of the analysis of the first case are

bracketed while analyzing the second case as much as possible in the early stage of data analysis. The influence of what has already been recognized in the process of research is undeniable, but respecting the individuality of each case allows diverse themes to emerge, thus permitting a researcher to recognize divergence as well as convergence of these emerging themes (Smith et al., 2009, p. 100; Brocki and Wearden, 2006, p. 95).

In this study, comparison across cases and integration of findings from each case is not set aside, but can take place in the later stages of data analysis. Reading and understanding each case in its own right, however, benefits the exploration of where individual differences come from, considering the specificity of people's life experiences and environments. Norms and rules of records management and information systems and digital technology in use, especially at work places, might have an impact on shaping one's personal digital information management/archiving behavior. Personal digital recordkeeping and archiving, however, is a practice that is not uniformly prescribed to people but is intimately contextualized action. As routinized but constantly edited activities, individual differences among people in personal record keeping are anticipated. For example, PIM researchers Gwizdka and Chigneli (2007) discuss that people may exhibit a different "PIM personality" in different environments and when dealing with different types of information objects (p. 217).

### ***Dual interpretation process in research***

The concept of a "dual interpretation process" discussed in IPA (Smith and Eatough, 2006, p. 324) stresses the active and engaged role of a researcher in interpreting

the phenomenon under study as well as the participants' interpretations of their own experiences. Dual interpretation assumes that research is a dynamic process between research participants and a researcher (Smith, 1996, p. 264) since, by its nature, "understanding" is the process of interpretation and it is impossible for researchers to gain direct access to a participant's experience (Smith et al., 2009). A researcher relies on what the participant says about his experience. Thus, the researcher needs to make sense out of what she hears from the participant to understand the participant's experience. Research findings are always based on the researcher's interpretation of the participant's account of his experience (Willig, 2001, p. 53).

Rooting the study in the idea of a dual interpretation process allowed me to work with participants as a research partner and to pay more attention to how their narratives unfolded as self-explorations of their actions, motivations, and emotions. Furthermore, as a researcher, I am also an individual who has to manage digital documents that I create and collect every day. My own recordkeeping and digital archiving experience is likely to help me to reach a deeper understanding of participants' digital archiving experience.

### ***Long-term generalization as part of building theories***

With the emphasis on case-by-case analysis and generating rich and detailed descriptions of the phenomena I observe, I take a cautious and gradual approach toward generalizations. Generalizations of results of this study will be possible as a way of building theory through a steady accumulation of similar cases (Smith and Eatough, 2006), likely to continue beyond this study. Thus, the discussions in this study will

remain open and flexible for modification and refinement through further examination and/or constant comparison with other cases and other conceptual claims (Smith and Eatough, 2006). The openness of research findings also allows readers of this study to understand the results reflectively in the context of their own experiences or to transfer them to other social settings (Smith et al., 2009; Delamont and Atkinson, 2004).

Moreover, as discussed in Chapter 2, I view personal digital archiving as a lifetime practice that is likely influenced by changes in the inner and outer environments of each person (e.g., being in a different stage of life, entering a new career, undergoing changes in family status and roles in communities) as well as continuing changes in digital technology. Studying personal digital archiving experiences requires a longitudinal investigation, of which the present study will be the first step. Thus, the gradual approach toward generalization and a continual accumulation of cases is an important condition for this study.

### **Research design**

I collected narrative accounts through semi-structured interviews with individual participants. I conducted close reading of each case and then analyzed cases through thematic coding: categorizing segments of narrative data into meaningful themes. As a whole, I aimed to accomplish the following steps:

- Step 1. Build a thorough understanding of how different individuals engage in and experience personal digital archiving and how personal digital archives are formed in everyday life

- Step 2. Seek connections and relationships between the “themes” (i.e., patterns, categories) that emerge from an analysis of each case by comparison of the individual cases
- Step 3. Generate a master list of themes regarding personal digital archiving practices relative to the reflective construction of social and private selves

### **Research participants**

Janice Morse (1991) noted that, for qualitative research, a participant needs to be someone who “has undergone or is undergoing the experience” and is both “able to reflect and provide detailed experiential information about the phenomenon,” and “willing to share the experience with” the researcher (p. 132). I asked individuals to participate in this study based upon the following three conditions:

1. S/he has used digital documentation technology on an everyday basis for more than 5 years;
2. S/he is currently retaining personal digital documents; and
3. S/he is willing to share detailed information about her/his experiences and the characteristics of her/his personal digital documents retained.

The first two conditions were to ensure that participants had enough experience with digital documentation technology and had engaged in personal digital record management to some degree. The commitment of participants to share their experience, the third condition, was important since the data collection process included requests for sensitive personal information.

Additionally, taking advantage of my capability to communicate in Korean, I recruited native-Korean-speaking and native-American English-speaking participants for a possible cross-cultural comparison. Two of the native-Korean-speaking participants currently live outside of South Korea, while the rest of the native-Korean-speaking participants currently reside in South Korea. The two participants who live outside of South Korea use multiple languages in their everyday lives. I asked them to choose the language for the interview. Both participants chose Korean for their interview.

I excluded individuals under 18 years old from this study in order to simplify the process of obtaining consent and setting up interviews. Furthermore, parents are likely to be involved in management of the digital documents that children create and/or collect for reasons such as supervision. The digital recordkeeping practice of teenagers and younger children, however, remains an interesting topic for future research. In the industrialized world, at least, a large percentage of this young population would consist of “digital natives” who grow up with digital technology, “surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age” (Prensky, 2001, p. 1). Due to their familiarity with digital technology, digital natives might have different attitudes toward digital documents than their elders. Investigating the relationship between the way that digital natives manage and preserve their digital documents and their development of self would provide additional and/or different insights on personal digital archiving behavior (see the concluding chapter for further discussion about “digital natives” as future research participants).

Since this study aims to treat each participant as an individual case, I did not actively seek particular characteristics of gender, type of profession, or socio-economic status when seeking participants. Demographically specific investigation and generalization will be suitable for future research as more cases are accumulated.

I contacted participants primarily through selection among people with whom “the researcher has a relationship” (Morse, 1991, p. 136), self-nomination, and peer referral. All interviewed individuals voluntarily made their decision to take part in this study without any compensation offered. All the interviewees consented by signing a copy of the consent form, approved by the University of Texas at Austin Institutional Review Board (IRB), at the time of the interview (see Appendix C).

***Overview of participants’ demographic information***

Twenty-four individuals with a mix of genders and an age range of 19-75 participated in interviews. Table 1 provides brief demographic information about the 23 participants.

	<b>American English</b>		<b>Korean</b>		<b>Total</b>
<b>Age range</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	
<i>20 to 35</i>	6	2	3	3	14
<i>36 to 65</i>	1	2	1	3	7
<i>66 and older</i>				2	2
<b>Total</b>	7	4	4	8	23

Table 1: Summary of demographic characteristics of participants

Participants' occupations and/or professions at the time of interviews varied. Several participants stated that they have more than one occupation or profession.

- Administration manager
- Artist
- Attorney
- Cartoonist
- Conservation technician
- Government employee
- Graduate Student
- Lecturer
- Librarian
- Manager at a company
- Policeman
- Researcher/Scholar
- Restaurant owner
- Retired professor
- Social worker
- Software developer
- Software engineer
- Unemployed
- Web designer

Several participants reported changes in their careers, personal relationships, and family relations between their initial interviews and follow-up interviews, such as starting a new career/profession, status change from unemployed to employed, from single to engaged or married, and expecting a child.

All participants have been using numerous digital devices such as personal computers, digital cameras, cellphones, and digital storage media and the Internet for their works and for a wide verity of personal purposes: community engagement, entertainment, shopping, personal finance management, social networking, and hobby related activities. Many participants in younger age groups started using computers relatively early in their childhood, before and during their elementary school years. It must be noticed, however, that the circumstances under which each participant first learned computing varies influenced by factors such as economic status of the family, educational environment, work environment, their parents' profession, and personal interests in computing.

## **Data collection**

I collected data through semi-structured, face-to-face interviews. Compared to other qualitative data collection methods such as diary writing, the in-depth interview has the advantages of being flexible and interactive. While a researcher and participants engage in a conversation, the researcher is able to modify prepared questions “in the light of participants’ responses” and to seek more information by asking other questions which arise during the interview (Smith et al., 2009, p. 57). Moreover, in-depth interviews can provide an opportunity for a researcher to establish a rapport with participants. Finally, in-depth interviews can be a more time-effective method for participants to communicate in than diary writing.

In-depth interviews can be designed as an unstructured or semi-structured form. The semi-structured interview can “be participant-led in the fullest sense, yet guided by the researcher” (Smith and Eatough, 2006, p. 330). For the purpose of effective thematic coding and comparison across cases in a later stage of the study, I adopted the semi-structured interview form.

Depending on the purpose of research and research questions, a researcher can conduct semi-structured interviews in person, through e-mail conversation, by telephone, or by video conference. I chose to conduct face-to-face interviews so as to be able to ask participants to show their personal computers or other digital storage devices if they were willing to do so during interviews. I also planned to collect supplementary data after interviews—I describe types of supplementary data collected and data collection methods in detail below.

### *Design and implementation of interview questionnaire*

I created a list of questions related to personal digital archiving activities. My previous research experiences with personal digital collections served as references to generate the initial interview questions; during my graduate training, I have worked with several personal digital collections including digital manuscripts of British playwright Arnold Wesker acquired by the Harry Ransom Center at the University of Texas at Austin, personal digital documents of a retired faculty member in the School of Information at UT-Austin, and personal digital materials of a private client. I conducted a pilot interview with one individual using the questions.

Smith, Flowers, and Larkin (2009) recommend beginning a narrative interview with a question, “which allows the participant to recount a fairly descriptive episode or experience” and moving to “more analytic or evaluative questions” (p. 59). According to them, starting with questions related to descriptive experience is likely to help participants become comfortable talking. Based on the pilot interview and several early interviews conducted, opening an interview by asking participants to describe their history of computing seemed to be helpful for them and for me to gain an overview of their digital document creation and collecting activities. Participants also recalled more specific details of their digital archiving practices as they started describing what kinds of digital documents they had and where they stored them in general.

As a result, I organized open-ended initial interview questions in such a way as to reflect the past, present, and future aspects of a participant’s digital archiving practice. I also intended to move from broad questions (can you tell me what kinds of digital

documents you have?) to specific and/or evaluative questions (what are the most valuable digital objects among them?). In brief, the pre-structured interview protocol includes the following aspects of a personal digital archiving practice in sequence (Appendix B provides a full list of pre-structured questions prepared for interviews):

1. Participants' personal history of computing including scope and purposes of use of computers and the Internet;
2. Description of digital materials that participants have retained until today;
3. Ways that participants manage and/or organize their digital materials including selecting/deleting activities;
4. The oldest digital material(s) that participants currently have and reasons for retention;
5. The most valuable digital material(s) that participants currently have and their values or meanings to participants; and
6. Participants' long-term preservation plans for their digital documents including plans and expectations after their lifetime and the possibility of donating digital documents to memory institutions.

I used pre-structured questions as triggers and guidelines for creating dialogue and helping participants to start talking about their digital archiving experiences. More personally-oriented questions emerged during each interview depending on how the interview unfolded and how the participant shared her/his experience with me. Personally-oriented questions were about a participant's life experience in general, life philosophy, personality, personal preferences, and family relationships, not necessarily

directly related to their digital documents or archiving (Appendix B also contains examples of these context-specific questions asked during interviews).

### *Interview process*

Initial interviews took place in person at the convenience of the research participants (e.g., participant's home, participant's office at work, and café). Each interview took approximately one to two hours. I collected over 30 hours of interview data in total, including follow-up interviews. I audio-recorded interviews and then transcribed them. Transcribers helped to transcribe interviews after signing the Transcriber Confidentiality Agreement (see Appendix D).

In case I had further questions after listening to recorded audio and reading the interview transcription, I contacted participants for follow-up interviews. Follow-up interviews were mostly for the purpose of clarification of what the participant said during the first interview and/or obtaining more detailed stories. Six participants had follow-up interviews. Due to participants' geographical location, I conducted several follow-up interviews through video conferencing.

While narrative data (i.e., the content of interviews) are the primary data for analysis in this study, I also collected supplementary data during and after the interview with the permission of participants. Table 2 provides a summary of types of data collected in this study.

<b>Collected data type</b>	<b>Description</b>	<b>Data collection method</b>
1. Narrative data <i>(Primary)</i>	Content of semi-structured interview with individual participants	One-to-one interviews, audio-recorded and transcribed
2. Observation notes <i>(Supplementary)</i>	Includes notes on participants' digital living/working environment, demonstrations of participants' records management activities	Note taking
3. Visual documentation data <i>(Supplementary)</i>	Includes photographs of participants' offices and/or homes, screenshots of participants' personal computers <i>(with the permission of participants)</i>	Using a digital camera and/or the print screen function of participants' computers

Table 2: Summary of collected data types

The scope of observation notes includes descriptions of a research participant's digital living environment (e.g., quantity of digital devices in use including personal computers, software and hardware in use, types of Web applications and services in use), demonstrations of research participant's archiving or records management activities (e.g., directory structure in digital storage device and computers, digital file and folder names), and gestures and facial expressions of research participants during interviews.

With their permission, I collected visual documentation data from nine participants during interviews. Visual documents include photographs of the participants' offices and/or homes and screenshots of research participants' personal computers. I used a digital camera and/or the "print screen" function of participants computers to gather images.

## **Data analysis**

I analyzed gathered data through a process of qualitative commenting and thematic coding. Data analysis consisted of two successive phases: 1) individual case analysis and 2) cross case analysis.

### ***Individual case analysis***

In the first phase of data analysis, I focused on developing an in-depth understanding of the personal experience of digital archiving in each individual participant's own context of life.

I read an interview transcript in its entirety while listening to the recorded audio. Initial reading and listening served as an opportunity to make myself more familiar with a narrative and to proofread each interview transcript.

In a continuing reading of a recorded interview, I highlighted words and phrases considered as important in the description of a participant's experience, thought, and feelings. I made descriptive notes and exploratory comments, including notes about why I highlighted the words and phrases. For each interview, I developed broader categories primarily using prepared interview questions as a divider, such as the participant's response to the question about the possible donation of their personal digital documents after their deaths, and labeled each piece as a top level category. I further developed smaller labels within each category based on the nature of narrative content, such as descriptions of materials or practices in general, descriptions of specific life events, explanations of motivations, and expression of thoughts about a particular subject (see for

example Figure 4).

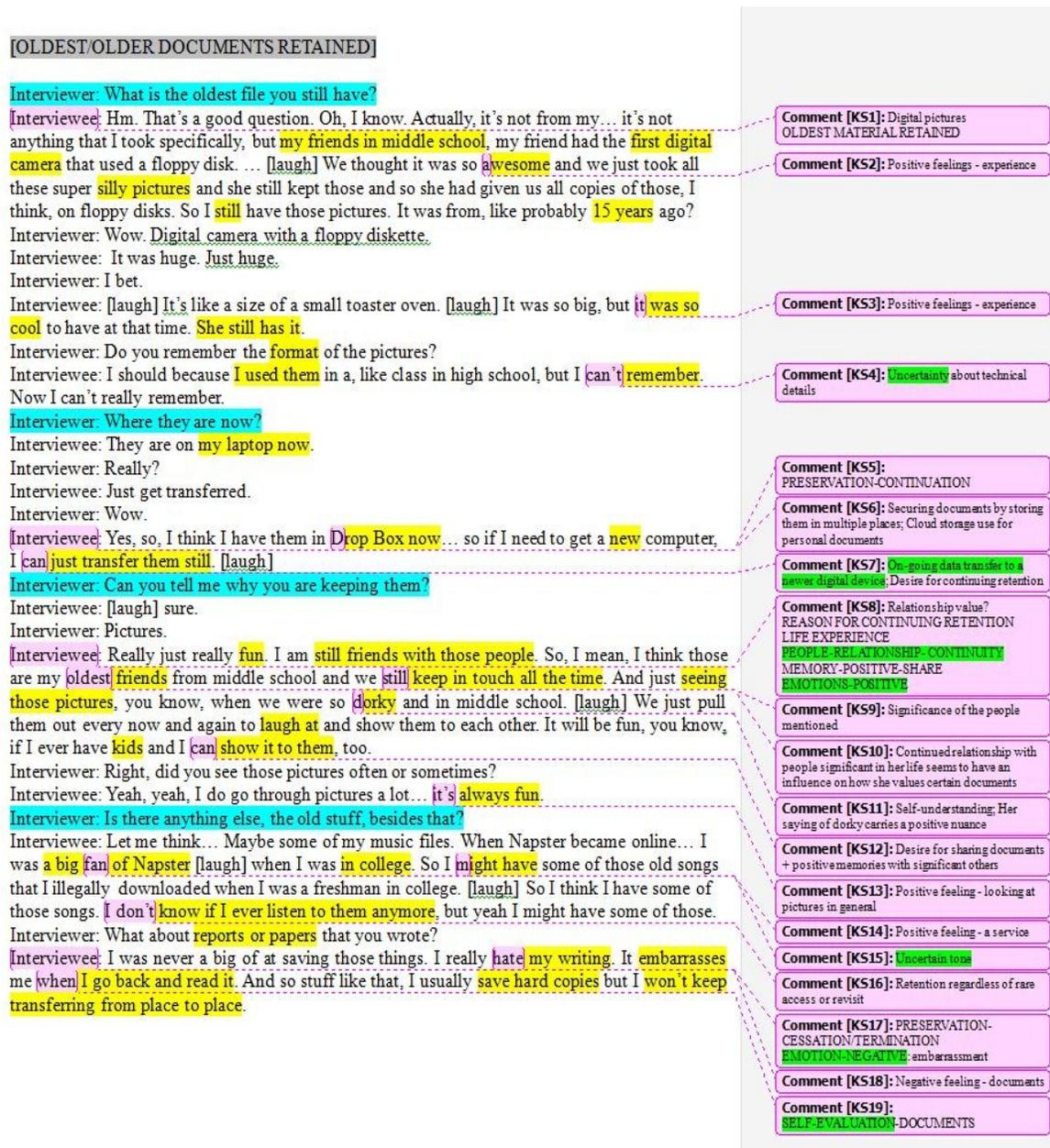


Figure 4: Example of initial noting and open coding. I highlighted key texts in different colors in order to make them more visible.

While re-visiting an interview as a whole and the notes and codes that I generated,

I practiced open thematic coding by adding emergent themes (e.g., social relationships and the meaning of documents, privacy concerns, personality and everyday practice).

### ***Cross case analysis***

In the second phase of data analysis, I concentrated on collecting patterns throughout cases while comparing and contrasting individual practices, attitudes, and thoughts, no matter whether a pattern was identified in multiple cases or in a single case.

I extracted statements with the same or similar labels from each interview. I copied qualitative notes and categorization codes generated during the initial case analysis with extracted interview statements. I conducted close reading of extracted narratives as a whole. I summarized the essence of experience of each narrative and grouped summaries by recognized patterns or categories. I again re-grouped summaries within each category by more specific themes, in particular related to reasons, motivations, feelings, and thoughts associated with the experience. I looked for similarities and differences among patterns as well as among broader categories.

Finally, I arranged and organized them in a sequence based on my understanding and construction of an overall picture of a personal digital archiving practice, which is presented in the following chapters of this study.

### **Member checking**

During the follow-up interview, I asked participants to verify certain stories mentioned during their first interview. I either read excerpts from a transcribed interview to a participant and/or provided summaries of my understandings about her/his

experience and thoughts in order to clarify what I heard. As the data analysis progressed, each participant received interview excerpts from her/his interview included in this dissertation. I asked participants to verify and/or confirm the accuracy of excerpts. Several participants provided additional thoughts and information regarding what they previously described during an interview.

In cases where the interview was conducted in Korean, I translated interview excerpts into American English and sent participants excerpts in both Korean and American English, asking them to review whether the translated texts were acceptable regarding what they meant. Translating texts from one language to another was not merely literal. Rather, it was a process to re-generate sentences to make sense in another language. Since the translated interview excerpts might raise a question of reliability or subjectivity, conducting member checking with native Korean speaking participants was especially important. Overall, the member checking for translated interview texts provided more opportunities for the participants and me to confirm my understandings of what they told me.

## Chapter 5: Research Results and Discussions

In the previous chapter, I described the objective of this study as gaining a holistic understanding of life-long personal digital archiving practices, especially in relation to the construction of self. I collected narrative accounts as the primary data for analysis through semi-structured interviews with 23 individuals from various backgrounds. The goal of data analysis was to identify patterns throughout the cases and to generate interpretive narratives of individuals' personal digital archiving experiences. In this chapter, I will present the results of my analysis of the data.

The results are broadly organized in two sections based on the lifespan of an owner (i.e., a record creator): 1) the formation of personal digital archives *during* the owner's lifetime and 2) the anticipated long-term fate of personal digital archives *after* the owner's lifetime. I include several other results related to 1) participants' responses to the interview question about how they apply the concept of "private" and "public" to their own digital documents, 2) participants' perceptions about personal digital documents addressed by several participants during the interviews, and 3) digital documents as materials for rescue in a disaster situation based on answers of a prepared interview question. Additionally, I report observations on comparisons between cases of Korean-speaking participants and English-speaking participants.

I assigned anonymous identification codes, P1 through P23, to the 23 participants that serve as reference points for interview excerpts. See Appendix A for ID number,

gender, age range, first language, and language chosen for the interview as well as occupation/profession information for each participant. In the preparation of interview excerpts for presentation here, I used the following marks:

- Square brackets [ ] for notes that supply information which is not on the recording, for non-verbal sounds, and for excluded texts to keep them confidential.
- Ellipses in square brackets [...] indicate that material has been left out.
- Em dash — for a hanging phrase resulting in an incomplete sentence.
- Single parentheses ( ) for the comments or questions made by the interviewer.

#### **FORMATION OF PERSONAL DIGITAL ARCHIVES ACROSS THE LIFE SPAN**

In the course of everyday recordkeeping, people function as record managers, archivists, and publishers of the (digital) materials they accumulate. Through the performance of these life-long tasks, people shape a body of “archival” materials.

In this section, I report the results of data analysis, focusing on activities involved in the construction of personal digital archives: keeping, organizing, deleting and assigning meanings. I begin with a brief description about the participants’ “ancient” (P21) digital materials retained.

#### **Survival of digital materials from early days in computing**

During the interviews, I asked participants to describe the oldest digital materials that they currently retain. Several participants recalled specific files. Some participants talked more broadly about types of relatively “old” documents that they still possess. The

following six categories loosely summarize the types of materials mentioned, followed by the code numbers for participants who responded to the question:

1. Digital pictures created or received (P3, P4, P5, P8, P15, P16, P21, P22, P23\*)
2. Other non-textual digital materials (e.g., audio recordings and drawings) created (P8, P15, P18) or collected (e.g., music files) (P22)
3. E-mail sent or received (P3, P4, P6, P18, P20, P21, P23)
4. Resumes/CVs created (P14, P21)
5. School class papers and project materials created (P1, P3, P6, P7, P9, P14, P19, P20)
6. Records created at work (e.g., work report, syllabus) (P9, P10, P12)

With variation, most of the participants' stories about their oldest or older digital materials that they believe they still have go back to the time when they first started to "make," co-create, or collect digital objects using digital devices such as computers and digital cameras. For example, P1 guessed that her oldest digital materials she still retains are class papers that she wrote during her freshman year in college. She had been introduced to computing during her early elementary school years and had access to the family computer throughout her childhood. However, she described her undergraduate years in the late 1990s as the time when she began to "use" a computer. Before becoming a college student and using computers to prepare class papers, she considered computers as game machines. P10 said that his use of computers began in the early 1990s for the purpose of writing reports at work that he identified as his oldest digital materials. P8 mentioned as his oldest digital material an image file that he created in 1997 when his

friend's sister was preparing to be married. He described that image file as his "first computer drawing work."

Many participants reported that they had saved and occasionally re-saved their older digital materials, either as a whole or selectively, onto newer digital storage devices as new technology became commercially available. Several participants continue the practice of migrating on an ongoing basis. As a result, they are likely to relocate their older digital documents on storage media or computing devices that they currently use. Other participants, on the other hand, terminated at some time in the past their practice of refreshing or migrating digital documents onto storage media. Therefore, digital documents from their early days of computing are preserved by their keeping external storage media previously used to copy and save digital files, such as 3.5 inch floppy diskettes or CDs/DVDs.

Although several participants described in detail some their old materials, most participants' narratives carried an uncertain tone regarding preservation of digital documents from early days of their use of computing devices, as indicated by words and phrases, such as "probably," "I think", "I guess," "I bet," and "it would be." The participants' "presumptive" knowing of the existence of old digital documents suggests they have not frequently used or accessed the mentioned digital files for some time. Several participants addressed uncertainty about the current locations of their relatively older digital materials as well as doubts about readability and accessibility. For example, P7 described class papers that she wrote in college as the oldest digital materials retained. When I asked where she saved them, she was certain that they are not in her current lap

top computer but that the floppy diskettes and CDs, where she saved those class paper files, are at her current residence. However, she was not confident about whether she could find them at the moment of the interview.

P7: I cannot find them now. [...] I don't know where they are [floppy diskettes and CDs]. But they are in this house. I carried all of them when I moved out from [former home, which was located in a different country than her current country of residence].

Even though many participants were not sure about the whereabouts and whether they will be able to “open” digital materials from early days of their computing activities, most said that they were not likely to discard them any time soon. In fact, many participants planned to preserve them throughout their lives “until the end.”

P19: I will keep it [the oldest digital material described] as long as I survive.

Overall, participants expressed a desire to “go back and look at” the retained digital materials at some time in the future even though they do not need them now and never or rarely re-visit them, even serendipitously.

P19: It's like a time capsule. You get to see what you were doing at that time.

## **Shaping of personal digital archives**

The rough sketch above that describes participants' older surviving digital documents indicates that most participants have kept at least some of their early digital documents for more than a decade and those documents are likely to continue to exist for many years to come. The infrequency with which people re-use or review older digital documents, including the fact that many realize that in future years it may be technically impossible to access some of their early digital documents, seems to have little impact on their retention plans. So, what motivates participants to keep their old digital documents?

### ***Keeping***

A relatively obvious reason, as discussed in previous studies, is the sheer abundance of storage space and the possibility that older personal digital documents might be required in the future to meet unpredicted needs. My informants were no exception. For instance, P23's statement in response to why he still keeps older digital materials is a typical example that addresses the above reasons: he said the oldest things on his computer are "definitely e-mails." Even during the interview, he navigated through his e-mail clients and traced back to an e-mail dated 1994. However, he was "not really sure" why he still keeps them, especially since he did not "really care about" any of the messages from the 90's, "even in a nostalgic sort of way." But he said:

P23: I guess, the chance there might be one or two things that I would really like to see again. But I have thousands and thousands of emails and so, the storage was cheap. It's just much easier to keep everything than to sort through it.

In Chapter 1, I reviewed the notion that due to an abundance of digital storage, the retention of documents has become a default action. Many participants in this study generally shared the idea that high capacity digital storage is becoming more affordable so that it is easier to keep digital documents than to sort them, especially in terms of time, effort, and the risk of accidental deletion of important materials. Thus, it is apparent that people prefer to keep digital materials.

Today, few people consider a gigabyte or even a terabyte size of digital data as a large amount of data since many people already hold several gigabytes of digital materials on digital devices, e-mail accounts, and other virtual places. P14 mentioned that even the recycle bin on her laptop computer has “2.8 gigs of trash.” How the perception of “space” plays out in people’s keeping digital materials, however, needs further description.

Innovators, thinkers, and developers in information technology foresaw terabyte scale digital storage in the early days of computing. From the perspective of ordinary users, however, an increase in the capacity of popular digital storage media has grown steadily yet dramatically from 3.5 inch floppy diskettes with 1.44MB capacity to zip drives with 100 MB and later 200 MB, CDs with 700 MB, DVDs 4.7 GB, thumb drives with several GB, and external hard drives with tens and hundreds of GBs. Every year, personal computers feature higher capacity hard drives, while online spaces offered by e-mail service providers also continue to expand.

The point is that for ordinary users, digital space has become abundant. In retrospect, the limitations of space in the early days of computing forced people to be

selective about keeping digital documents. In the past, to prevent running out of space on their hard drives, on servers at the work place, or on e-mail accounts, people regularly deleted or were asked to delete their digital materials. The habit of deleting files to gain more space with low-capacity storage might remain as a personal preference for some users or still be required in certain work places; however, most people no longer consider space a limiting factor for their personal digital materials. For example,

P17: I used to go through and clean my email inbox. But on my Gmail, I don't, because there's so much storage [laughing].

Peoples' perceptions that virtual space is affordable (e.g., "Space's cheap.") and will likely continue to expand (e.g., "It seems—like Gmail, I don't think it will ever run out of space there."), which now seems to be taken for granted, has evolved along with people's experiences of using digital storage media.

The idea of abundance of digital storage is accompanied by the perception that space is not a limitation. This appears to be not only a technical change but also has a psychological dimension. Several participants described themselves, in general, as having a "collector" or a "packrat" habit (P1, P8, P22, and P23). For example,

P23: I am just a little bit of collector. [laughing] I guess, you know—I am rather a packrat. I don't throw things away.

P23's packrat attitude also applies to physical objects. The increasing capacity of digital storage and its affordable cost correspond positively with his collector habit, providing feelings of freedom from spatial restrictions coupled with feelings of being allowed to collect.

P23: (Interviewer: You said you are sort of a packrat. Does it apply to your physical—?) Yeah, physical, too, a little bit. But more constrained in a physical world than I am in a digital world. You know, my house doesn't double-size every couple of years like hard drives.

Another participant, P21, also has relatively positive feelings toward holding a mass of digital documents versus filling up the physical space with documents in analog form.

P21: It's not like physical stuff. It [accumulated digital collection] doesn't feel clutter-y to me.

In a physical environment, space is often a constraint that requires individuals to find ways to utilize a given space effectively. Space limitation is a pervasive problem in our everyday living environments (e.g., a living room, kitchen cabinet, garage, office space). By contrast, as P23 commented, in a digital environment, with the continuing development of digital storage technology, the current approach to space focuses on expansion rather than seeking solutions within a given space. Thus, people feel freer to do what they want with their digital materials. P14 also described herself as a "packrat."

P14: I am a packrat, in some ways, even though I have a very big, kind of philosophical issue about how much you save.

As suggested in the excerpt above, P14's story is rather complicated. Unlike P23's case, P14's packrat attitude applies only to digital materials. She treats physical objects in a different (almost opposite) way. Since her story illustrates the impact of an abundance of digital space on people's keeping behavior, I will describe her case in detail.

Losing "a really special email" from her parents that she received on her 21<sup>st</sup> birthday triggered her desire to adopt contrasting attitudes.

P14: I remember being in college and I got this great email from my parents on my 21<sup>st</sup> birthday. And it was a really special email, and I loved it. I know I printed it out because it was very special. And then, I was an idiot. When I was leaving home and packing up my stuff after I graduated college, I thought, "oh, I'll always have the email," and I must have thrown out the printout because I can't find it any more. And the college account that the email came from was deleted a year after I graduated college, and I didn't have the foresight to think about the important emails in that account, so I didn't choose to roll the email account to an alumni account and lost the college account. And it makes me so mad. I've thought about this email a great deal in the last 10 years, I can't tell you how many times.

During the interview P14 repeated several times that it makes her "mad" every time she thinks about losing that email. The fact that her mother's health was deteriorating and she was too ill to communicate verbally around that time explains why her experience of

losing that particular e-mail is associated with strong negative emotions, even today. In her case, the loss of an email that she “loved” combined with the loss of an important person in her life became an experience to cope with. Furthermore, according to her story, the initial problem was losing the message that she had printed out on paper. The paper copy of the email made her believe that she had the text, prompting her to not keep the e-mail account over which she had received the initial text from her mother. As a result, she has developed a sort of coping strategy that separates her memories from material objects and allows her to focus on “keeping” (remembering) her past experiences and feelings without an aid of “stuff.”

P14: (P14 was talking about her loss of the e-mail) At the same time, I think my reaction would be never throwing anything out, but you can't live that way either. But because I had to deal with losing that email, I eventually developed a philosophy that I had to get over the actual letter and remember what the email said, remember when I got it, where I read it, how I felt when I read it. Those are the things you really keep with you, the memories of how you feel about your stuff, not the actual things, you know? It's the loss of that email that really makes me feel like “okay, it's just stuff,” even though you need stuff to live. [...] When you lose the thing, what do you have? You've only got the memory left.

P14's “philosophy” helps her to not only mentally detach herself from material things but also to physically “get rid of” objects, so that she has positive feelings when she discards “stuff.”

P14: You know, some things I just have to get rid of. Before I started graduate school, I got rid of a lot of stuff close to me, and stuff my mom gave me. I knew I probably should hang on to it but I know I'm never going to use it. And I know what my mom was like without having the stuff, I don't necessarily need the stuff to remember her. And I feel so heavy just having all the stuff. So having cleaned it out, I feel much much better.

Interestingly, however, while she physically throws away objects, she generates new records that document her memories and feelings related to the objects.

P14: I started writing everything down that I got rid of. So for example, I have a pair of shoes my mom and I bought when we were in L.A. 10 years ago. There's nothing very important about the shoes; the shoes are just important to me because of the memory of her and I being there and buying them together. So I write down the memory and get rid of the shoes.

Her writing replaces physical objects related to the people, events, or experiences that she wants to remember.

While any of P14's material possessions can be discarded at any time in the future, when it comes down to digital materials, she "almost never" throws out anything and tries "to keep as much as" she can. For example, she occasionally puts some files in her trash folder in her current lap top computer, but she does not recall ever emptying her trash folder. As mentioned above, she had "2.8 gigs of trash" at the time of the interview.

P14: So this [a file in her trash folder] may have been stuff I downloaded on accident, or it was a music file. I would say I don't want them anymore but I never actually threw them out.

With reference to P14's experience of emotional relief when she got rid of material things, as opposed to feeling "heavy" when keeping them around, I asked if she feels heavy because she keeps everything in digital form. She said "no" since she does not have any emotional attachment to her digital materials.

P14: No, I definitely don't have the same emotional feeling toward my electronic files like I do with my physical possessions—because I do keep all my electronic files—it doesn't bother me a bit.

Considering that P14 seeks to preserve memories and feelings but not related objects, the lack of an emotional connection to her digital documents explains why her keeper character works only in the digital environment. At the same time, when I asked why she never emptied her trash folder, she answered:

P14: Because space is cheap, right? [laughing] And I'm a packrat. So I keep everything.

She seemed to be satisfied with the digital space she had at the time of the interview.

P14: You know, this hard drive is, I think, 140 gig. It's really funny. When my hard drive crashed a year ago, I asked the computer guy replacing the hard drive, "is there any way to get a larger hard drive?" They were like, oh, we don't even make 80 gig drives any more. You are getting the 140 gig drive, whether you wanted it or not." So I said, okay. So I'm only using 90 [gigabits]. Look, I've got 82 left of 140 gig.

Besides having a sufficient digital space, P14's feelings that she is able to keep her digital materials organized and that the size of her digital materials is relatively manageable also support her packrat habit. To keep everything in digital form "works" for her.

P14: I have no problem making more folders and putting more stuff in folders and I know it's all in there. [...] I have it all organized the way I wanted. [...] I mean, at some point, if I get irritated, I may move a folder or file into another folder, but I really really never get rid of it. [...] I do keep everything. And, you know, I think I can do it because I don't have any movies—like really, my files are extremely small. [...] I don't take that many pictures. I think, you might find my pictures taking up a relatively small space compared to other people. (Interviewer: So you feel (it is) manageable.) Yeah, exactly. I do think this is not a scalable solution. [...] This works for me because I know what I've got—yeah, because I'm not creating that much and I don't have that much.

The idea of an abundance of digital space seems to offer feelings of freedom for people to do whatever they like without feelings of being confined. Individuals' perceptions of digital space have a simple and clear impact on how they preserve their digital materials: people assume they will be able to keep more digital materials in the

future if they want or need to. For example, during follow-up interviews, P4, who has been a relatively selective keeper, said that he tends to keep more digital documents as his career develops. While the meaningfulness he attaches to his job influences how he values digital documents that he produces at work, he also mentioned that the availability of more digital space has changed his thoughts about preserving more documents:

P4: Since 2006, when I started working as a policeman, I have kept and managed documents related to my police work on my laptop and an external hard drive. Also, while I was working at the Police University in 2010 and attended graduate school in 2012, I began to manage and maintain all things that I wrote, even short articles. [...] I think, the change in my thinking is influenced not only by changes in my personal goals, but also by the development of technology. Ten years ago, 1 or 2 GB space was enough, but now I feel that even 1 TB storage space is not sufficient. And the storage price is getting cheaper.

### ***Organizing***

P8 was one of the participants who described having habits of a collector or keeper.

P8: Strangely, it is very hard for me to throw things away, even something rubbish. It might be like some sort of compulsiveness.

Although P8 seems to perceive his keeping behavior as out of the ordinary, his desire to collect and keep more materials relates also to his profession as a cartoonist and artist and the way that he interacts with documentary objects for his work. During the interview, P8

said that he views documents and treats them— analog and digital records and materials created by others and by himself—as a kind of “source” that can be useful for him or for others. While studying Fine Art in college, P8 was interested in drawing cartoons and became a professional cartoonist and illustrator. For him, the documents he collects serve as sources of inspiration for his art or as reference materials from which he can learn about shapes or details of what he wants to draw.

P8: Because I draw cartoons, like pictures that are not even related to what I am interested in, but from time to time, there are moments that I am inspired and have a certain cartoon scene in my mind in seeing one specific photograph.

In general, P8 prefers to think positively about collecting and keeping materials. However, his discomfort with not having a system to organize digital documents is an obstacle to his collecting and keeping as many documents as he would like to. The lack of organizational structure for his digital documents is a problem for which he hopes to receive some external help.

P8: If someone helps me to set up some systematic way [to manage], I think, collecting would be a good thing.

Improving retrieval or “(re)finding” of information objects has been one of the main interests among many PIM researchers. With advance of the desktop searching function and full-text search for finding digital materials saved on Web storage, the

retrieval of particular files has become relatively easy. As seen in P8's case, the organization of digital documents, however, clearly remains a concern for some. Many participants mentioned that finding a specific document when they need it is an important goal in terms of managing their digital documents. Some participants become creative about how they can make a specific digital folder or file more noticeable than others by adding to a file name special characters or words from a different language.

Participants' stories, however, reveal that the activity of organizing digital documents serves purposes other than ease of access or retrieval. Furthermore, in several cases, participants' thoughts about keeping and organizing digital materials as well as their organizing behaviors are closely connected to what they do for a living, their life interests, and individual lifestyle. For example, P3 shared her personal opinion about keeping more digital documents and on the abundance of space, especially in terms of efficiency in retrieving digital documents.

P3: I believe that it is unnecessary to have two pictures of the same kind even though they were taken at slightly different angles. [...] I think, even if, in these days, digital storage is cheap and it is possible to store things in that unlimited storage, it is a waste of labor to find things. I don't think it is efficient.

Compared to other participants who generally do not seem to be bothered by the idea of keeping more digital materials, especially digital pictures, P3's thinking stands out. Based on P3's interview as a whole, her comment on efficiency reflects, to a certain degree, her lifestyle. P3 works as an administration manager at a private company. Her

daily work involves numerous scheduling, booking, and ordering tasks. In her private life, she prefers to plan things in advance, such as family vacations and holiday gatherings. During the interview, she talked about her experience in helping friends to plan events, such as wedding receptions. When she manages numerous scheduling and planning tasks that involve other people, her ability to be efficient and precise is important for meeting deadlines.

P1, on the other hand, demonstrated a keeper attitude. She rarely deletes digital documents once she acquires them. She organizes as a way to sort through important documents from a pile of materials. She organizes—categorizes and locates in specific folders with new, descriptive file names—only those documents that she thinks will be useful or that she will want to revisit in the future. Other materials that she does not need to view again are left out. During the interview, she talked about how she organizes digital movies and films that she downloaded. When I asked her criterion to decide which digital film to organize, she said “it depends on what I am interested in,” which is clustered around her area of study and profession, which is history.

P1: Well, it has nothing to do with how entertaining it was. You know, once you watch the film and know the story; you are not going to watch it again. But for example, I use clips from a historical film as resources in my class [P1 teaches history classes at a university]. In that case, I tend to watch it multiple times and then organize it.

P1 treats and organizes her digital pictures, including photos taken during her honeymoon trip, in a similar way for the same purpose.

P1: (Interviewer: What about pictures?) Pictures—I consider pictures as records, I mean, historical resources. [...] The only pictures that I plan to organize are pictures taken during history fieldtrips. Except for those, I don't feel that it is necessary to organize any [P1 planned her honeymoon as a quasi-history-fieldtrip].

P1 is a scholar in history. She has studied history on an ongoing basis. Since her freshman year in college she has spent the majority of her time at school—the same university where she was teaching classes at the time of the interview. Her interest in history and her research activities as well as social activities related to school are major elements that shape her everyday life. In P1's case, her organizational tasks function as an appraisal activity that reflects her life-long interest in history. As a whole, her organizing activity emphasizes the importance of being a scholar although this does not necessarily mean that she cares less about her other social roles such as being a wife and daughter.

Some participants exhibited strong tendencies to be organized that have been formed through their lives. The same tendency continues to be played out in their digital environments. For example,

P5: I cannot stand things that are not organized. So, if I put all my [digital]

pictures in Travel folder, I may not open that folder again. I think it is my personality. I have a tendency to organize. I do not like when things are not organized. (Interviewer: How do you feel when you see all your organized folders?) I feel good, feel like being logical.

For P5, organizing materials around him seems to serve as a way to feel comfortable in his (physical and virtual) environment. Putting things in order gives him feelings of self-satisfaction.

P10 was another participant with strong organizing habits. During the interview, he mentioned that he organizes digital documents saved on his workplace computer when he has time. In fact, he makes time to organize, even on weekends.

P10: (Interviewer: You said that you organize digital documents when you have time. When do you usually do it?) Ah, I make some time for it. Saturdays. We work 5 days a week. I sometimes come here [P10's work place] on Saturday to do some more work or to organize my research [related files]. So, either Saturday or Sunday, I come and work on organizing—or whenever I do not have a particular work schedule. So, after having a lunch, if I have any spare time, I work on organizing folders one at a time.

Like P5's case, for P10, organizing digital documents is not regarded as a burdensome task but rather a task associated with positive feelings (e.g., personal enjoyment and satisfaction). Furthermore, for P10, organizing seems to have become a personal ritual that helps him prepare mentally to perform tasks at hand.

P10: (Interviewer: You seem to like to spend quite a large amount of time organizing—) Compared to other people, I think I do. Not in terms of time, but more in terms of my devotion. [...] I think I am better at organizing than other people. (Interviewer: You sound like you enjoy organizing things.) I read in a book that when we are well-organized and put things into systematic order, we can increase efficiency. Because, when you organize things, it is easier to find and it saves time. (Interviewer: Just curious, were you also diligent about organizing when you were young?) It has been my habit. I remember, whenever I sat down to study, I spent about the 20 minutes organizing my desk first [laughing].

In a similar way, P9 described the performance of organizing or being organized as a part of his daily practice of self-discipline.

P9: In my mind, like living is a process of putting everyday activities in order, documents from the past and documents that will be created in the future. [...] If you want to plan to do something in the future, you have to organize them, right? I see it in that way. There is no excuse for being disorganized. It's sort of my sense of value or my view of life, right? So I think, as like we try to live an everyday life worthy of a human being, it would be meaningful to organize documents with a similar mindset. Like, live a well-regulated life, right?—[My organizing activity] is related to my view of life or the meaning of life. [...] So, organize documents in conjunction to my life, right? Making things easier to use and find, that would be like a secondary purpose.

As both P9 and P10 noted, organizing their digital files to improve retrieval and accessibility is one goal. For P5, P9, and P10, however, organizing activity as a whole is an integral part of being true to themselves as well as expressing and arranging how they

operate their lives. For them, organizing activities provide feelings of comfort and confidence that serve to enhance their sense of self.

In the excerpt above, P9 also made a connection between organizing documents and planning of the future of his life: putting past activities (represented by documents) in “order” as an essential step to plan future activities. From this perspective, organizing documents is a way of organizing his life. Another participant, P21, shared the same idea that organizing digital documents assists in both organizing and reviewing her life activities.

At the time of the interview, P21 was planning to buy a new computer—she had a particular model in mind—but she made a “deal” with herself that she would not buy a new computer until she cleaned up her current computer because she did not want to carry her “little mess into a nice new computer.” But she also mentioned that organizing materials for her means not only to literally clean up her computer but also to “de-clutter” and “organize” her “head.”

P21: (Interviewer: So you, sort of, have a desire to organize at some point.) Because I think it will help me. Especially, I mean, like being in graduate school, I feel like I need to organize my head, organize my plans, and make a timeline. And I think doing that [organizing files] can sort of help me to see what brought [me] here, courses done, materials I’ve read—what I need to do is really de-clutter artifacts, de-clutter my head, if that could work.

As P21's statement indicates, organizing for her means making a "timeline" of her past activities and experiences in graduate school in order to gain a clear understanding of where she is standing now and her plans for the future. Furthermore, her idea of organizing as a way of reviewing her life experiences is reflected, to some degree, in her keeping activity. When I asked about her older digital documents that she still has, P21 said that she keeps her resume that she made when she finished graduate school around 1996 for "more utilitarian" purposes.

P21: Some seem more utilitarian, like keeping old versions of my resume, I want to go back. [...] When did I have a job? When did that happen? I would like to have that.

Her old resume serves as condensed reference to her past that provides an historical overview of her professional activities. She considers such information necessary as she continues to (re)build her career.

For some participants, organizing digital documents also marks a sense of completion as well as a process for reviewing previous activities that require the passage of time or the gaining of temporal distance from events. For example,

P14: [she was navigating through folders on her computer] Here's my top level. See, this is pretty well organized. These are all representative of the major things in my life at the moment. [...] I haven't gone there and cleaned this up. Um, it is kind of organized, not quite as easily, because sort of—as I was going through school, you know, I didn't know how many classes I had. [...] I feel like I need a

little bit of distance because it's hard to organize things sometimes when you are in there, you know, because you are not quite sure what the categories will be, you. Now maybe that I have some distance from school, I might try and go back.

### ***Deleting***

Since many people tend to keep more digital materials, either by choice or by default, and consider the deletion of digital files no longer necessary for storage purposes, it is reasonable to expect that deleting or cleaning up digital documents would not be performed. Thus, many people view tasks of sorting and cleaning up digital documents as least desired; yet, most participants occasionally weed out personal digital documents, even those who have a collector and keeper attitude. In the discussion that follows, I did not count the “spam” or irrelevant digital materials that people immediately or automatically delete. Rather, I focused on digital documents that participants (may) decide to delete among the materials that they collected or created for specific purposes in the past.

In general, participants reported that running out of storage space, shifting to a new computing device, or expecting to change their social status served as reminders for them to go through their digital folders and documents and delete as well as (re)organize materials. Some participants sometimes voluntarily perform cleanup or deletion tasks. For example, in P7 and P8's cases, it was when they had time with “nothing else” that they wanted to do.

P7: I do some cleaning, when I really have nothing to do. [...] When I am alone

[P7 has a child], for example, when I feel too exhausted to do any creative work but have time.

P8 said that once or twice a year, moments occur when all of a sudden he wants to clean up his computer. Even though he does not perform cleaning tasks frequently, he considers the activity a “fun” thing to do.

P8: When I delete files, I can see how much more space I have in my hard drive. It is fun to see that. (Interviewer: I see.) It is like a game.

The following examples are types of digital materials that participants said they deleted in the past or tend to delete in general:

1. Digital materials that have not been used for some time or are considered no longer relevant (P3, P5, P8, P10, P17, P16)
2. Digital materials that can be searchable or that are available in other places or easily reproduced (P9, P16, P19)
3. Duplicated files (P1, P8, P9, P17)
4. Digital materials that “take up too much space” (P19, P17, P21)
5. Digital materials of a completed project or work assignment (P15)
6. Programming code for which the participant “created a new version” (P19)
7. Digital images slightly modified from an original version to fill a temporary need (P7)
8. Online contents that might raise privacy concerns (P16, P17)

9. Papers or personal notes associated with feelings of dissatisfaction (P4, P5, P16).

Based on the list above, it is apparent that participants delete digital materials that they consider to be no longer relevant to them. Lapses of time between original events and clean-up activities seem to help participants decide which documents have become irrelevant. For example,

P5: I don't clean up that often. I think I do it once in a long time, like when I change my computer—so, once in several years. Then, [I clean up] files related to people that I have not kept in touch [with] for years or files that I have not used any more—I think time helps me to decide what to delete. If I have to make that decision every day, it would be difficult to delete. Like, I might need it next week. But files from 5 years ago, I think they are not useful any longer and I will not need them in the future because I did not use them for a long time.

When it comes to the deletion of a specific digital document, however, the decision to get rid of documents becomes more situational and differs case-by-case. For example, while P1 generally deletes duplicated files, she keeps e-mails with the same content but sent by different people. She gives priority to *who* sent the message since knowing who sent the message makes her read the message from different perspectives. Therefore, for P1, the messages are not duplicative documents. P5 mentioned that he has different thoughts about the long-term usefulness of his digital documents, depending on types of digital material.

P5: I think it also has something to do with the nature of documents. For pictures,

it is possible that I will re-visit them any time even though I have not seen them in 10 years. But something like my thesis, I could delete it because I didn't think it has a purpose any longer.

For several participants, privacy concerns for digital materials published on-line led them to "delete everything." For example, P16 said that she "deleted everything" on her My Space, a social networking service that she used for a while. She completely closed down her account on that site due to "privacy issues." She hopes that "there is nothing still on that one somewhere." Privacy concerns related to personal digital materials in both online and offline environments play an important role in participants' thoughts about long-term preservation, especially regarding the possible situations in which others are able to gain access to their digital documents. I will discuss privacy concerns addressed in participants' interviews further in the next section.

In some cases, dissatisfaction about a created work or dislike for an activity associated with a particular document led several participants to eventually terminate or delete digital documents. For example, P5 had produced and collected digital documents, such as e-mails and digital pictures, since his college years. When I asked about class papers that he wrote as an undergraduate, he said, "They are all gone. I deleted them." His decision to delete these documents was based neither on storage constraints nor because he saw little value in his digital documents in general. Rather, P1's undergraduate major was electrical engineering. As a result, he possesses skills to build his own computer and to fix most computer related problems by himself. In his daily life he owns and uses various portable digital devices. During the interview, he mentioned

several times that digital pictures are the materials he cares for the most. He perceives them as objects that help him remember what he did in the past and bring back memories of events in his life. He has kept most of his digital pictures since 2000, when he first bought a digital camera. When I asked whether he considers class papers, like digital pictures, to be memory objects, his answer was clearly “no,” revealing how he remembers his previous class writing experiences:

P5: (Interviewer: Why is that?) Because, that [writing a class paper] was what I was told to do. [...] (Interviewer: Was there any paper that you were proud of or thought was well done?) No. Because, if I did not get a good grade for it, it means it was not well written. And, I never received good grades in my non-major liberal art classes [it was a requirement to take a certain number of non-major classes in his undergraduate program]. No ‘A’s. If I wanted to keep something, I would rather keep test papers for my major classes. My test scores were good and I was proud. It sounds a bit sad that I relied on someone else’s evaluation when I decided which documents to continue to keep, but I think, someone else’s opinion does have an influence on how I evaluate things.

For P5, his class papers were associated with negative emotions when he received grades that were lower than he had expected. Unlike his digital pictures, as products of his self-documentation activities of personal moments in his life, for P5, his class papers represented a work that he was forced to do and were eventually deleted.

As interviews with P5 continued, the impact of emotional experience on preservation or deletion of particular digital documents became more apparent. Between

the initial and follow up interviews, P5 underwent a significant change in his profession, from being an employee of a hierarchically structured company to an attorney, a type of profession that offered him more freedom to manage his own work. Because his new position brings him feelings of satisfaction and pride, P5 expressed a desire to preserve for a long time digital documents that he creates in his current position. The content of those documents—case reports—is neither private nor uniquely his own since they are eventually published as publicly available records. He said, however, that the presence of those documents saved on his personal computer helps him review what kind of cases he worked on in the past, how many cases he has processed, and which cases were successful or unsuccessful. When he talked about his motivation for long-term preservation of his case reports, P5 stated,

P5: I think, what goes with the value of documents is how much value I assign to what I do.

Participant P4 made a similar statement in his interview regarding the relationship between the self-evaluation of what he does and how he values the digital documents that he produces at work. Interestingly, P4 also deleted many of the class papers that he wrote as an undergraduate, thinking “they are not useful anymore.” However, what led him to think that they are not useful for him was based fundamentally on his evaluation of the quality of his work, described as “poorly done.” He considered that compared to other experiences in his life at that time that the class papers were part of less meaningful

learning experiences and that the papers did not necessarily represent what he was good at.

P4: At that time [graduation], I did not have a laptop computer. So, when I pulled out files from a school computer, pictures were my priorities. There were a few things [class papers] that I kept. But when I looked again later, they seemed poorly done. [...] (Interviewer: What do you think about it [deleting class papers] now?) I am fine with it. Well, I am a bit regretful that I did not study harder when I was in college. But I learned many things during that time outside of classes. And, looking back then, papers were important, but I was better at speaking and talking.

P16 also expressed similar negative feelings toward her writing. When I asked the current preservation status of papers that she wrote, she linked feelings of embarrassment to those documents.

P16: I was never a big fan of saving those things. I really hate my writing. [laughing] It embarrasses me when I go back and read it. And so stuff like that, I usually save hard copies but I won't keep transferring from place to place.

Although it is unclear why P16 associates her written work with negative emotions, those emotions lead to a preservation of digitally created documents in paper form. During the interview, P16 reported that she “moved around a lot” and lived in various places in her life. She clearly prefers keeping documents in digital form, which take up a relatively small physical space and are easier to carry around compared to documents in an analog

format. She also stated, “my laptop, sort of centers around my whole life” and “it’s [digital object] something that I can also easily look at, too, without getting out a box of letters or photos.” She has been diligent about copying and re-saving digital documents that are meaningful to her whenever she acquires a new computing device. Therefore, keeping only hard copies of her previous writing minimizes the likelihood for her to even serendipitously encounter those documents.

Furthermore, P16 described herself as a “purger.” I asked her if she has enough digital storage space, whether she prefers to keep types of digital documents that she tends to delete or previously deleted. Her answer was:

P16: I don’t think so. I’m the person who purges a lot, physical things and digital things. And so I feel like if I keep those things, it is clutter. It makes me feel a little burdened by it. [...] I mean even scrolling through it, you see those documents—I am like “what is that?” It makes me anxious.

Therefore, it is highly likely that P16 will continue to “go through everything and purge it” at least once a year, even though, in the past, she regretted having deleted several materials and she is well aware that she sometimes makes mistakes in deleting.

P16: I know, I won’t stop doing it. It’s just, it’s just who I am. Hopefully the personal error thing, I will stop doing (it), [laughing] because especially at work, that’s trouble.

Her childhood home environment seems to have had a significant impact on P16's development of her positive attitude toward purging and being a "minimalist."

P16: My family is a big purger. My family, growing up, my mom and step dad—they never let me keep anything. [laughing] I was always a kind of a packrat when I was little. I usually kept everything. I was so sentimental about everything and so, I had a suitcase full of all my personal letters, love letters, you know, photographs and stuff like that. And that was the one thing that I could keep. I knew that they [the participant's parents] wouldn't be concerned about—but they never let me keep like furniture or collectors anything like that, because they were like, "Oh, you just want everything clean—this is our house—when you have your own house, you can do whatever you want with it."

For a while she was "mad" that her parents did not let her keep what she considered "personal" things. However, she eventually felt positive toward getting rid of material possessions and the idea that she does not need to have them all, which makes her "sort of a minimalist." With her purging habit she puts higher value on "very personal" documents such as letters and photographs than on other materials such as furniture.

P16: [she was talking about her previous material possessions that she gave away] Maybe there was some sort of sentimental value, but it has a lot lesser [value] than what, you know, a letter or photograph has. This is more of a memory that I have.

Viewing P16's interview as a whole, her self-described purger attitude makes her a

selective keeper. Among her personal physical possessions, memory objects take priority and are retained. Among her personal documents, those that are associated with positive memories or that appeal to her sentimentality are preserved.

Furthermore, in P16's case, personal digital documents related to important people in her life are given special attention in her mind as valuable documents to preserve. For example, when she was talking about deleting digital materials, I asked whether she deletes e-mails. She said:

P16: I keep those. (Interviewer: You don't delete them at all.) In a while, I don't know—I guess—it's like a sentimental part of me, like, what if one of them died or goes away or something like that. And [I would like to read] the latest correspondence to go back through to see what the conversation was—I don't know. That's very sentimental of me. But you never know.

### *Assigning values*

P16's feelings toward e-mails that she exchanges with her friends and family members also apply to her digital pictures taken with her childhood friends approximately 15 years ago, described as her oldest digital materials that she still has. At that time, one of her friends had a digital camera with storage on a 3.5 inch floppy diskette. With the excitement of having a digital camera, they took "all these super silly pictures" and each friend then received digital copies from the camera's owner. Her response to my follow-up question of why she is still keeping those pictures was:

P16: Really just really fun. I am still friends with those people. So, I mean, I think those are my oldest friends from middle school and we still keep in touch all the time. And just seeing those pictures, you know, when we were so dorky and in middle school. [laughing] We just pull them out every now and again to laugh at and show them to each other. It will be fun, you know, if I ever have kids and I can show it to them, too.

For P16, those digital pictures were byproducts of positive social interactions with her childhood friends, with whom she continues to maintain good relationships. They are linked with positive emotions such as joy when she looks at them and have become objects that she wants to share with others, such as her own children, in the future. She saved them in her Drop Box—commercial online storage—and her current laptop computer. Compared to her passive preservation of her digital writing (see P16’s interview excerpt on page 124), she takes an active measure to keep those pictures near her. P16’s story indicates that she assigns high value to documents that bring out memories of people in her life.

Value assignment is a meta-activity in keeping, organizing and deleting personal digital documents. In Chapter 2, I distinguished “archival” documents in terms of their being merely a pile of materials based on their value and meaningfulness to an owner, regardless of the waning of their original purpose of creation or use. Appraisal of the value of given documents is not evidently a clear-cut task—probably except for the archivist who evaluates them once according to a set of specific rules. For individuals it is a situationally contingent and on-going process.

Marshall (2011) said that “people are notoriously poor judges of what they’ll want later in their lives, and they’re not necessarily technologically savvy when it comes to choosing among formats and storage media” (p. 2). Determining future usefulness of digital documents is a difficult task, which can be attested by the long history of development of appraisal theories and related continuing controversies in the archival profession.

However, the practice of assigning value to documents or objects as well as personal events and experiences is something humans are accustomed to doing. When it comes to the moment of deciding what to keep or delete, people often hesitate or postpone taking any action (See Figure 5 as an example). At the same time, people also have general but clear ideas about what kinds of digital documents are important to them in terms of what they most appreciate and value in their lives.

During the interviews, I asked participants if there are any digital documents that are particularly meaningful or valuable to them. Participants’ responses were diverse, mentioning specific documents (P1, P7), certain types of materials—writing created either at work or as a part of personal activities (P1, P7, P8, P10, P12, P15, P18, P21); digital pictures or video recordings of family members in particular (P3, P5, P7, P8, P15, P13, P19, P21, P23); content on social networking sites (P13); and electronic messages (P21)—, as well as “everything” they have (P9, P16, P20, P22). Viewing participants’ responses in relation to their whole interviews, the meaningfulness of relationships with particular people and the meaningfulness of what they are doing and did—either as a

professional, a student, or just a person—emerged as a basis for assigning values to personal digital documents.

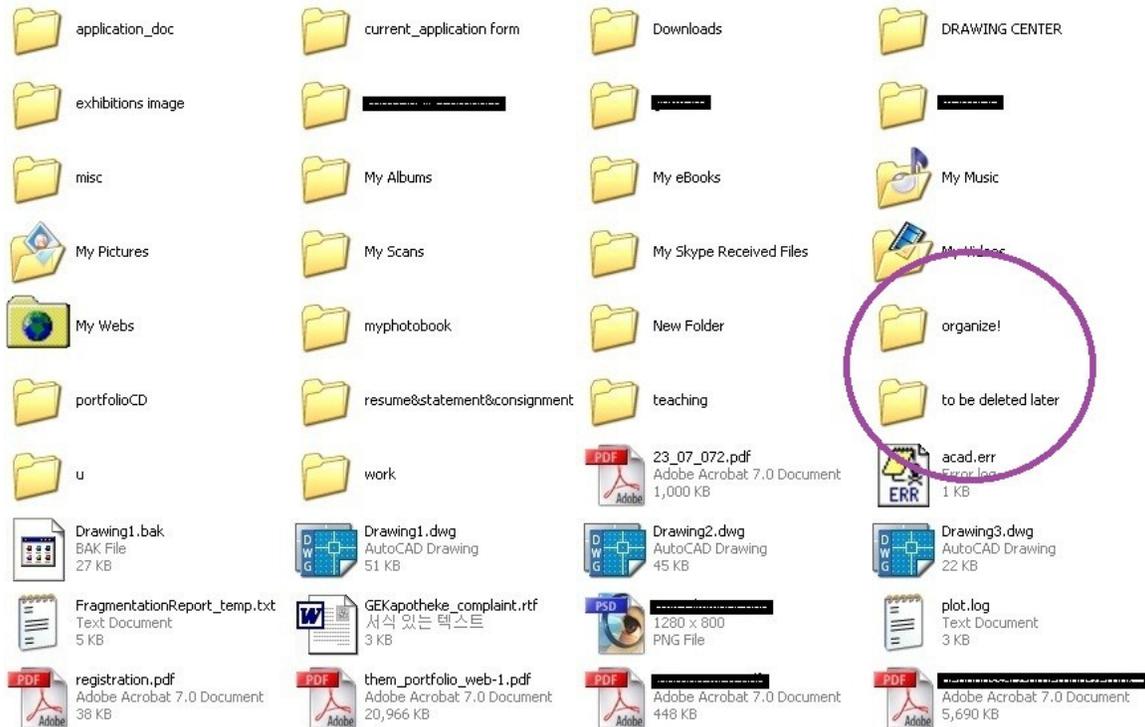


Figure 5: Materials in “My Documents” folder of one participant’s laptop computer. “organize!” and “to be deleted later” folders give evidence of the necessary time interval and the difficulties of appraising the value of digital documents. These folders function as a placeholder or a reminder for clean-up activity.

When I asked P21 if there were any digital documents particularly meaningful or valuable to her, she talked about her e-mails as well as her “school stuff” and photographs. How P21 values her e-mail exchanges is similar to the way that P16

considers and preserves her e-mails and her old digital photos as a “lively connection” with others.

P21: All the email exchanges I’ve going on with people—some exchanges with friends and some long, long emails with friends from different periods in our lives that are personally meaningful.

P21 further talked about her particular e-mail exchanges with her close friends who live far away. She considered those “big long” e-mails that she received from her friends as “really good pieces of writing” through which her friends are expressive about “meaningful points in their lives.” While the content of the e-mails could cover either good or bad news, for P21, receiving an e-mail and being part of a private conversation with her friends conveyed positive emotions such as feelings of caring.

P21: It was important to them and it was important to me. It meant a lot that it was shared with me. The impression I got; they cared enough about our relationship. I was the one they sent this to.

In P21’s case, the e-mails and the act of exchanging e-mails become a symbol of friendship. In response to the same question, P13 reported that the content of her online social networking sites, such as her Facebook profile and Tweets, are the most valuable digital documents to her, saying that she is “definitely sentimental about” them. When I wondered about where this sentimentality came from, she answered,

P13: It's interaction with the people.

Furthermore, P14 explained the circumstances in which she becomes emotionally attached to her digital documents, which is strongly related to significant people around her and changes in their status of being.

P14: Right now, I don't feel any emotional sentimentality towards these electronic files because all these people are still in my life. If for some reason, something happens to [P14's dog] or [P14's partner], God forbid, then, I will be like, oh my God, I've got to have these things, you know. That's what happened with mom and dad, too. Because mom is kind of gone, that's where emotionality comes in. Because of her strokes, she's basically gone; she's not the same person who raised me.

P13, P14, P16, and P21's stories demonstrate the significance of documents that support ongoing relationships with others: the relationship value of personal documents. Regardless of type, some digital documents serve as mediators of relationships between an owner and other people, evoking memories and emotions embedded in those relationships. In this sense, ongoing retention and occasional sharing of the digital documents symbolize or support the continuity of relationships between participants and people associated with particular digital materials.

When I asked P7 if she had any particularly meaningful or valuable digital documents, she talked about a specific video that she had recorded with the permission of her teacher during one of his seminars.

P7: I have the original tape and the copy in VHS Those two—no matter what happens—those should be donated to libraries sometime in the future. Those are the most important. If there is a fire, I will take them first. They are on the top of my desk.

When I asked why the video is so valuable to her, P7 mentioned the importance in her life of the people she recorded during that video: her teacher and friends.

P7: Because I believe that of [participant's teacher] is an important figure who should appear in a book someday—that recording is a vivid documentation of him. I was also there as a witness. And there were my friends in the recording. I believe, this will be historically important later.

P7 said that she watched the video once several years after she recorded it in order to introduce her husband to her teacher in an indirect way.

P7's case supports the relationship value of personal digital documents. However, comparing P7's video recording with her relatively older digital materials that she has kept provides some clues about why the people who were recorded in the video are meaningful to her. During the interview, she mentioned class papers as old digital materials retained. When I asked why she still keeps them, she showed a strong but indescribable emotional attachment to those documents that she considers "the outcome of my thoughts."

P7: I think, it is because I cannot throw them [class papers described as old digital materials retained] away. It is not like that I want them because they are needed. I don't know how to discard—I cannot throw them away. How? (Interviewer: Do you mean technically?) No, no. It is like I cannot throw away old diaries. They are not for showing to someone. I think, because they are traces that I left, I cannot dump them like old clothes. They are the outcome of my thoughts. I keep them because I cannot throw them away.

When I asked P7 if there were any occasions when she revisited them, her answer reflected that her interaction with those documents is rather complicated. Although she rarely re-reads specific papers, she said “they are somewhere near, always.” She tends to keep reviewing what she wrote related to her work. Therefore, the content of her previous writing has been copied, modified, and is reflected in the writing that she is currently working on. When I asked what she thinks when she sees her previous writing, she stated,

P7: I see coherence. Although I did not re-use old phrases as they are, but what I thought at that time continues. So I think there is coherence in my work, in terms of their meanings.

P7 is an artist in the Fine Arts. Her professional life is built upon what she chose to study starting from the time when she was in high school. P7's older creations, such as her early drawings and college class papers, thus, continue to serve as a vital part of the person she has become. For P7, they are an externalized part of her thoughts about her art

and herself as an artist, which not only provide her with feelings of “coherence,” but also make her feel incapable of throwing the documents away.

Unlike the class papers, P7’s video recording is about someone else’s lecture. Though she recorded it, the document is not a direct representation or result of what she created or achieved as her own work. Yet, the meaningfulness of both documents is fundamentally connected to her being an artist. For P7, her teacher was a source of inspiration for her work and for that reason she wanted to document his seminar and has kept it ever since.

P1, a scholar in history mentioned earlier who was teaching courses at a university at the time of the interview (see description on page 113) also talked about specific digital documents as being personally meaningful to her: Korean War related court records that she converted into digital form by re-typing the contents. P1’s digital creations share similar characteristics with P7’s video recording in that both capture feelings of inspiration or enlightenment relative to their professions.

P1: Until 2-3- years ago, I worked on—do you know about the committee for re-examining the past? There was a committee related to the past—I was working on it part time. There were hand-written court records such as trial documents. Since it would be difficult for the committee members to read those hand written records—a lot of them, it was my job to make clean copies of those records using Word [a Word processor]. There were almost 4-500 case files and I collected those files through my—over two years of work. In fact, since they are documents related to 1950’s, they are not useful for me and it would not a big deal if I do not

have them. But, they are quite too valuable to throw away—since there were things that I felt while I was working on them.

When I asked what she felt in the process of retyping historical court records on a computer, she said:

P1: In the early 1950's, during the Korean War, battles between the so-called communists [the Northern army] and the Southern army—people were—especially in the Jeol-la province [the southern area of Korea], [these documents] contain many stories of people who were accused and killed as communists when the Southern army occupied the area and people who were accused and killed as supporters of the Southern army when the communists occupied the same area. So because [the documents] gave me not an obscure, but a realistic sense of the true circumstances of the Korean War.

P1's digital documents of the court records were not the outcome of her own research or teaching activities, although she engaged in creating them as part of a temporary job. In fact the informational content of those documents was not even related to her specialty in history. P1 said that she did not revisit the documents after the project was completed. Yet, during the time she was interacting with the records, she gained a new insight about specific events in Korean history.

Considering P7 and P1's cases together, the content and type of digital materials mentioned are unique just as the two participants are unique individuals. However, over time, these documents have preserved the memories of the participants' being inspired or

enlightened as an artist and as an historian. In turn, the documents seem to function also to strengthen their professional identities, as reminders of who they are and what they do.

Materials described above in the cases of P7 and P1's cases were not the only things that were meaningful to these two participants. However, the type of personal digital documents that both participants talked mostly about during their interviews were their digital creations related to their professions (e.g., digital art drawings and research papers). P8, who is a cartoonist and artist, also talked about his own art creations as being the most valuable materials to him and specifically mentioned that he gives particular attention to his recent works. When I asked why his "recent" works are relatively more meaningful than the others, he said:

P8: Well, this has nothing to do with the computer, but personally, it was around 2006 or 2007 when I started drawing comics that I really wanted to draw.

P8 assigns greater meaning to his recent work since those reflect more closely his current identity as an artist. In a similar way, P18, who is an independent Web designer, talked passionately about her Website as the digital documents that she values the most.

P18: Just my website. That's the most important thing I have because it's a very deliberate record; it's not haphazard like random photos or texts or you know, it's very deliberately crafted. It's my work. It's my job. It's my website. So that's the only thing that is precious to me.

P18's interest in graphic design began in her childhood—possibly in the second grade—when she was able to use painting programs such as “the Sesame Street Paint Program and [Mavis Beacon] Teaches Typing” on her first computer, bought for her by her father. When she was 16, she was “making websites,” which led her to pursue academic degrees in Design and creating websites professionally. Additionally, her personal website serves as more than a static medium to convey information about her. It consists of many different components that she constantly updates such as publications of her work as well as a blog type “lifestreaming,” which she described as “keeping a public online record of my life.”

In the cases of P1, P7, P8, and P18, participants assign high value to the digital documents that are related to their professional lives, which in turn reflect that for those participants their work life is a significant and meaningful part of who they are. This echoes the identity value of personal documents (i.e., significance of documents in constructing, maintaining, and expressing one's identity and personality) mentioned in Chapter 3. In fact, four participants share a characteristic in common: their individual areas of interests (e.g., history, art, and Web design), which were formed during childhood or early adulthood, have remained relatively consistent throughout their lives and, at the time of the interviews, had become the foundation of their professional identities.

In a related way, P3's story also supports the role that the preservation of personal digital creations play in enhancing one's sense of self and the identity value of personal digital documents. When I asked P3 about the oldest digital materials that she retains, she

mentioned class papers and project materials that she created in college and graduate school. She was certain that she will not need those again in the future. However, she said:

P3: They [class papers and projects created] remind me that I did something with my life; I did study back in those days. [laughing] Not much, but still—if I have a job that creates things in general, I wouldn't care much about the class materials from 6 or 7 years ago. However, what I do right now does not involve conducting research and writing papers or presentations. That is why I cherish these and keep them. It is more than likely that I wouldn't use them at work or even look at them again.

The fact that P3 has fewer opportunities to do creative work in her current job influences how she “cherishes” those digital creations. Her class documents function as a nostalgic reminder of a certain period of her life and as a representation of her past self. The existence of those documents has become important in helping her to uphold her creative side, regardless of the continuing usefulness of the documents for which they were originally created.

### ***Personal digital archiving and confirmation of self***

While the stories above provide glimpses of why people value particular digital documents, they are suggestive of the life-story based appraisal. As a whole, how participants perceive or evaluate 1) connections among current and past life activities, 2) changes in and persistence of their social identities and 3) evolving social relationships

are interwoven into assigning meanings to personal digital documents. Over the long term, the value of personal digital documents stems from the meaningfulness of specific life experiences (e.g., special events, travel, work, social relationships) to an owner; experience that digital documents are associated with as outcomes, evidences, or representations of the experience.

Another element frequently observed throughout the data analysis process was emotion. Emotions associated with particular life experiences play an important role in how people value and manage their digital documents. Specifically, negative emotions, such as disappointment-sadness, unpleasantness, disliking, and embarrassment connected with a document influence participants' decisions to delete or hide documents or to assign less value to those materials. By contrast, positive emotions, such as satisfaction-happiness, pleasantness, liking, and pride, which participants experienced during particular social interactions and events, were, in turn, attached to particular documents that they sought to preserve over time and share with others. In some cases, organizing and deleting activities are accompanied by positive feelings, which make people continue to perform these tasks in the course of their everyday recordkeeping. Furthermore, the amount of time and effort that went into creating, obtaining, or using documents or the uniqueness of the situation of doing so caused interviewees to build an emotional attachment not only to the documents but also to other objects, such as floppy diskettes. For example, P14 has a box of 3.5 inch floppy diskettes. Even though she already "pulled off" files from the diskettes that she wants to keep, she said that she will never get rid of

this box of 3.5 inch floppy diskettes and the idea of throwing away her floppy diskettes has never occurred to her.

P14: I think—because they were very precious. Like when I was in high school and college, that was it. All your work was on these stupid disks. And I had to carry them everywhere.

P14's feelings toward those storage media as objects that she lived with—"carry them everywhere"—remain and support her retention of the materials. For other participants, the emotional bond seems to be accompanied by nostalgia or the treatment of a document as a symbolic representation of self. The emotional attachment is often indescribable, neither necessarily positive nor negative.

Overall, the interviews showed that meaningfulness of life experiences and the emotions associated with those experiences influence how people evaluate and assign meanings to their digital documents. Although the definition of "meaningful" varies from person to person and time to time, on the whole, participants' stories support the self-reflective value of personal documents, as discussed in Chapter 3: significance or usefulness of documents in constructing the self. For example, during the interview P9 listed factors that make particular documents important or valuable to him. Briefly, those factors included materials that are 1) created with an "investment of time and sincere labor"; 2) useful in pursuing his own goals in life or strengthening "the meaning of existence"; 3) useful in "looking back on what I have done"; 4) useful in "planning for the future"; and 5) "irreplaceable." Many of the reasons that P9 listed applied also to

other participants' cases. For instance, several participants mentioned family pictures and personal electronic messages as irreplaceable documents. Other meaningful documents include those created as by owners as professionals or amateurs, for example, compositions or collections of music, in which participants invested a lot of time and effort. Several participants directly addressed their thoughts about personal (digital) records as reminders of previous life experiences or as resources for looking back at the past and planning for the future, which underpin their motivations for preservation. More importantly, overall, usefulness of documents in pursuing personal goals in life or strengthening "the meaning of existence" captured the essence of themes that emerged from the data analysis presented in this section. However, the question remains: How does preservation of personal documents assist people in reviewing their lives, pursuing life goals, or enhancing the meaning of their existence?

Personal digital archiving practice consists of a variety of interactions between people and their digital documents: re-reading preserved digital documents; re-saving them on different or new storage devices; (re)organizing them; assigning new names to some digital files; revising the categorical schema for digital materials that often takes place when people experience changes in their social or professional roles; and sorting and cleaning out digital documents when people have time or feel inclined to do so. All of these activities, directly or indirectly, provide opportunities for people to refresh their memories of what the documents are about; how and for what reason they were created or collected; and why and how they have been preserved. These practices refresh their memories of events, special experiences, or periods of their lives that the documents

represent, as well as the chain of thoughts reflected in the provenance of the documents.

Moments of recollection offer stepping stones toward self-evaluation of previous life experiences and evaluation of the current revision of self, more specifically moments of private self-enhancement or self-verification, which are often accompanied by the surfacing of emotions. Thoughts and emotions that arise during the evaluation of self are applied back to documents eliciting the self-reflection and exert an influence on people's continuing retention or decision making about what to do with the documents. The greater the usefulness of the documents in terms of enhancing and verifying the self, the higher the level of care people seem to devote to preserving their digital documents.

Furthermore, as we have seen, many other factors related to larger patterns of life and self-creation come into play during the process of recollection and self-evaluation: for example, the level of personal dedication to a person's professional life, the home environment in which a person grew up, habits, or even personal life philosophy. Accordingly, these larger patterns of life also affect people's behaviors with regard to digital archiving (e.g., organizing, cleaning-out). At the same time, personal digital recordkeeping or archiving activities become means by which people are able to fulfill life needs, and consequently their need for the confirmation of self. For example, (re)organizing digital files for a completed project helps people gain a sense of closure regarding a project or a particular period in their lives. Looking through the structure of a person's travel picture folders—not necessarily pictures—which displays places that the person had visited in specific years, generates positive emotions such as pride, satisfaction, and happiness. For several participants, setting aside time daily to organize

files and folders serves as an act of practicing self-discipline or a routine that constitutes a vital part of who that person is. Figure 6 visually summarizes how the evaluation and preservation of personal digital documents relate to the context of life and self.

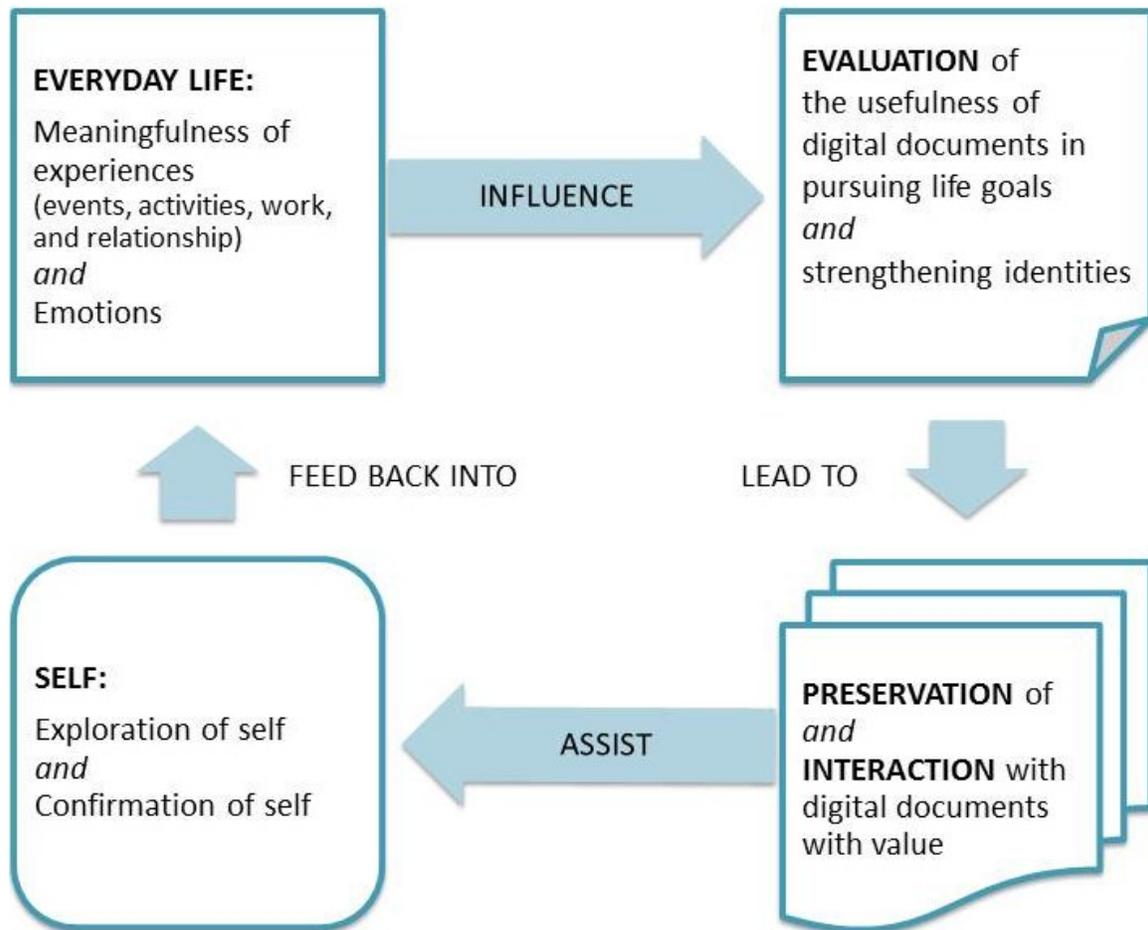


Figure 6: Cycle of valuation and preservation of personal digital documents in the context of life

## **LONG-TERM FATE OF PERSONAL DIGITAL ARCHIVES AFTER A CREATOR'S LIFETIME**

While human life is destined to end at some point for everyone, the life span of digital documents is potentially longer than an owner's lifetime. Although the details are arguable, digital bits and bytes are not governed by the deterioration process of organic materials. It is likely that people will intentionally or unintentionally leave behind their personal digital documents after their death unless they purposely delete them at some point of their lives. Digital documents surviving after an owner's death would become materials for other people such as family members, close friends, colleagues or memory institutions to continue to preserve and manage.

### **Plans for personal digital documents after one's lifetime**

During the interviews, I asked participants what they expect to happen to their digital documents after they die or if they have any plan for their digital archives after their lifetime. Many participants reported that they never thought about it.

In a real life setting, the fate of personal digital documents after one's death, like that of many other belongings, may not be a topic that people think of every day. Many people, however, are already experiencing the death of family and friends who leave behind a significant amount of digital material. Once one has been exposed to this situation, managing personal documents of a deceased person can easily become a concern. Commercial services are emerging that offer assistance to people for planning how to bequeath and access personal documentary assets. There is, however, not yet a

uniform widespread practice of what to do with digital documents that remain after one's death.

Although the question of the long-term fate of personal digital documents beyond an individual lifetime was new to many participants, they provided a spectrum of thoughts from intentionally deleting everything to allowing others to manage it. I identified six patterns.

1. Delete everything (P1, P4, P5, P9)
2. Create a condensed collection with selected documents, near the end of life (P3, P5, P8)
3. Sort out and distribute particular documents to designated entities (P4, P7, P9, P10, P17, P23)
4. Eventually write in a will or leave a note about what to do, including disposal or access methods (P2, P20)
5. Allow caretakers or others to manage (P1, P6, P11, P13, P15, P16, P18, P21, P22)
6. Expect materials eventually to be lost or deleted (P3, P10, P11, P14, P20, P19, P23)

These six categories of plan of action, however, were not mutually exclusive but addressed in a mixed way in individual cases. The consideration of a future generation in their family, especially of a participant's children or an anticipation of having a child, provides a potential caretaker and a potential future audience. This factor causes participants to have multiple plans for their digital documents. For example, P5 and P9 mentioned that they would like to delete everything when they are close to death, mainly

due to privacy concerns. Both participants, however, want to leave behind some digital documents. In P9's case, what he wants to pass on is his daughter's life that he has been diligently documenting by creating, collecting, and organizing digital materials related to her.

P9: I would keep [my digital documents] until I die and delete everything when I am close to die. Like burn every book. [...] But I have a daughter. I would select and leave things to my daughter separately and I will destroy the rest without any hesitation. (Interviewer: What kind of digital materials do you want to leave for your daughter?) We have now—pictures of her. Related to her, like pictures taken when she was in her mother's womb, her ultrasound pictures, [I am] organizing chronologically. [...] I also have music files related to her.

Therefore, the digital materials that would survive after P9's death would be documents about or related to other people than him. P9's statement reflects his thoughts about personal documents as resources for reviewing the past and understanding one's life: the identity value of personal documents. For P5, wanting to be remembered by important people in his life, including his future child, is his motivation to leave behind several digital documents as exception.

P5: I would delete everything. There may be things that I have to pass on or leave behind and I would do that. [...] I would leave some pictures—to my child—and probably for people around me, if there is anything that can help them to remember me, [I might leave] not everything, but several things, as 'think of me.'

P5's thought that documents about him will be helpful for people to remember him supports the relationship value of personal documents, discussed in the previous section. He mentioned that he would like to select some digital documents as a collection for others to have near the end of life. P3 shared a similar idea and plan with P5.

P3: If I have time, I would like to sort them [digital documents] out. [...] I would like to select several thing essential and have a condensed collection that can present my life.

When I further asked what kinds of documents that she might include her collection, she said:

P3: Documents that shows the passing of time such as my passport or pictures or documents that are related to graduation ceremonies, an elementary school entrance ceremony, or my wedding day. And then, things that I created or recipes of my most favorite foods that I cooked. Resumes can be included. And something like my green card or immigration related documents because it was a big turning point in my life. Although I am still a Korean, I lived as a Korean until then and my status changed. I think it was a big event because I immigrated to another country. Well, so I would like to save documents that are related to my milestones to me, although they would be insignificant to others.

P3's idea of creating a collection using "milestones" in her life as selection criteria resembles the process of constructing a life narrative. In her case, P3's collection would serves as a chronological overview with stress on particular events or periods of time in

her life. It would reflect which events or experience she considered as milestones or meaningful in her life. Overall, the activity of selecting digital documents for the purpose of leaving them behind for others involves review of one's life. It suggests that sorting out, selecting, and re-organizing digital documents can be a useful technique for exploring self, similar to Dan McAdams's life-story interview method described in Chapter 3.

Many participants also reported that they would sort out and distribute particular documents to designated entities. For example, P7 said that family related documents need to return to family members, such as her husband, children, and parents. When it comes down to her work-related digital documents, she addressed that she wants to "find" a person who would most benefit from her digital documents in terms of artistic interests and possibly continue to develop or use her ideas documented in those records in their own work. That person can be anyone such as one of her colleagues or one of her students as long as she considers that the person shares a similar artistic interest and vision with her.

P7: Things like my drawings, I always want to hand them over to someone who is interested in them, who has a vision, and who knows how to handle them well, especially my digital drawings. It can be a scientist or whomever. But no matter who that will be, it would be important for me to find a person. So, for example, if I continue to teach, it can be someone among my students or it can be one of my peer artists, who share a similar vision with me. I would like to give them to someone, but I do not have any clear idea yet.

Her specific wish for her work-related documents to remain useful for someone else's artwork after her death reflects her dedication for her profession—being an artist—as described in previous section (see description on page 134).

While the above participants' statements indicate that they want to take care of their digital materials at the later stage of their lives, other participants do not have any particular idea or plan of action at the moment. Many of those participants prefer to allow caretakers or others to manage the remaining digital documents after their death although several participants wished other family members will take care of their digital documents as a way of remembering them or because they have emotional attachments to their digital documents. The most common reason is that other people might find some of remaining digital documents useful in some way, which participants cannot predict. For example, P13 has experienced death of her friends whose social networking site accounts serve as memorials for her in a positive sense.

P13: This [death] is something that we've encountered. Especially like I have several friends passed away in this past year, who were my age. And like they live, their Facebook is left up like a memorial. And their online presences are still there. It's almost sort of comforting. I feel like I know that you can kind of look them up and you can see them on Facebook. It's kind of nice.

About her own digital materials, P13 thinks that how other people will interact with her remaining personal digital documents is up to them. Her experience with her deceased friends, who are relatively young therefore their death would be highly likely sudden or

unexpected by those closest to them, might influence her to think that she cannot “dictate” what people want to do with her digital documents.

P13: In terms of my files, I am not sure. People will look at them. My progeny or whoever, who are my family, look at them and they will deal with it just as with like regular files; either toss it or keep some of them. I can’t really dictate what people are going to find interesting and useful.

The participants’ perception of the demise of their being also seems to help them to relatively easily disconnect themselves from their digital documents after their lifetimes. For example,

P6: Even by accident, if I die at the moment when I was not prepared for and my files are there—I would not like if someone sees them while I am alive, but after my death, it would not mean too much any longer.

The attitude of being unconcerned what will happen after their death supports the idea that the long-term fate or continuing usefulness of their remaining digital documents is for others to determine. For example,

P18: Maybe my siblings would take care of it. [...] I can’t say I care. I know that it would be preserved in ways that I don’t know or I understand yet. It might not be preserved in the way as it exists. What I write, anything that I write that is important, will be preserved. I trust that. [...] I just don’t care. It doesn’t matter to me at all. I have no plans for post-death.

Furthermore some participants considered that the remaining digital documents likely affect people who are alive rather than themselves after their deaths. Therefore, participants want people related to the digital documents to decide which materials need to be preserved or not.

P16: I guess if I have kids, I'd love them to decide, you know, what's embarrassing to them, because if I am dead, I don't care.

Several participants expect their digital materials eventually to be lost or deleted after their deaths. For example, P19 saves his personal digital documents at his private server that he set up and has managed by himself at his home. Regarding technical knowledge required to manage his home server, he said:

P19: I think that will probably—unless it gets online—if it just stays on the server [P19's home server], they probably would die with the server as soon as it gets recycled. It will disappear.

However, he expected that the digital documents uploaded to his online sites will remain. In fact, he uses these online sites as places where he publishes specific digital documents mostly his pictures that he wants to share with other people such as his family members and friends.

P19: I think anything online, though, they will preserve for a very long time. So anything that is on Facebook, anything that is on Flickr will exist for as long as the data will be stored.

The idea that their personal documents are just for them therefore no one will be interested in them was one of the reasons that participants expect that their digital documents will be eventually lost or deleted. For example,

P14: There are no children to hand this off to. Even if there were, they wouldn't want it anyway, right? So there's really nobody who's going to be interested in this stuff. [...] People say this, and you think 'oh, no, someone will be interested,' but honestly—I really think all my stuff will just go away when I go away, it's really just for me. I do think, when I am organizing, I know that it's just for me. If I want something between now and 80, that's why I'm keeping it all. [laughing]

P4, who mentioned that he wants to delete his digital documents at the end of his life, shared a similar idea that his digital materials are only valuable to him.

P4: I guess they would disappear. [...] Because I mean they are meaningless if they are not for me. [...] [They have] values more than 100 million, a billion, and 10 billion won [Korean currency] to me, but [they would be of] value less than 1 won to others. [...] I think that it would be a good idea to go through and delete them when I get old and stop using computers.

### *Continuation vs. cessation of preservation*

P20's statement below reflects how participant thought differently about the long-term fate of their digital documents after their deaths, depending on the characteristics of digital materials (e.g., digital materials created and saved on personal digital devices or online) and potential recipients or audiences.

P20: I don't know I would become like an important person in the future and the people would want to see my stuff. What I think would happen right now is that it would all probably be lost because I think that, because of computers and things like that would go to my parents, they, it would be too hard for them to look at the stuff—they would, but I don't think they'd want to throw it away. So I think they would probably just put it away somewhere until the machine didn't work anymore. The Facebook would stay around, I suppose, and people would write on my wall how much they miss me, and how sad they are and things of that nature. (Interviewer: What if you have your own family and children in the future?) I might be different then. I might want them to be able to see it. Then, I would probably make sure that my spouse or something knew my password or has it written down somewhere.

As we have seen, participants' action plan and expectations are supported by various motivations and rationales from privacy concerns to being unconcerned with what happens after death. Tables 3 and 4 summarize six identified categories of associated reasons and feelings.

<b>Overall</b>	<b>Actions plans</b>	<b>Rationale</b>
Take care by myself	Delete all (P1, P4, P5, P9)	Desire not to leave any trace behind
		Belief of future disinterest in my documents
		Emphasis on personal values and ownership of documents
		Concerns for privacy
	Create a condensed collection with selected documents, near the end of life (e.g., select documents that record big events in my life such as graduation and wedding; select “well-done” works) (P3, P5, P8)	Concerns for privacy
		Wish to be remembered by family and friends
		Opportunity to review my life
		Consideration of potential usefulness of personal documents for other people
		Feeling of the burden of managing digital files
	Sort out and distribute particular documents to designated entities (P4, P7, P9, P10, P17, P21, P23)	Consideration of potential usefulness of personal documents for other people
		Interests in family history and genealogy
		Feeling of the burden of managing digital files (e.g., “I don’t want to give others a burden of managing my files.”)

Table 3: Participants’ afterlife plans for personal digital documents

<b>Overall</b>	<b>Expectations</b>	<b>Rationale</b>
No particular plan at the moment	Eventually write in a will or leave a note about what to do including disposal or access methods (P2, P20)	Consideration of potential usefulness of personal documents for other people
		Desire to leave certain documents eventually but need to see how life will change, therefore no particular plan at the moment
	Allow/expect caretakers or others to manage (e.g., select and keep things that they want) (P1, P6, P11, P16, P15, P18, P13, P21, P22)	Consideration of potential usefulness of personal documents for other people
		Sentimental attachment (e.g. “All that I have achieved are recorded in my computer”)
		Wish to be remembered by family and friends
		Difficulty to predict what can be useful for others
		Unconcerned with what happens after my death (e.g., “I don’t mind people look at my files, if I am dead.”)
	Expect materials eventually to be lost or deleted (P3, P10, P11, P14, P20, P19, P23)	Unconcerned with what happens after my death
		Belief of future disinterest in my documents
		Emphasis on personal values and ownership of documents
		Feeling of the burden of managing digital files

Table 4: Participants’ afterlife expectations for personal digital documents

Looking closely at the rationales in Tables 3 and 4, I noticed that similar rationales lead people to reach different plans of action and expectations. For example, emphasis on personal values and ownership of documents encourage people to consider

deleting all or to expect their digital collection eventually to be lost. Focusing on cumulative rationales, a loose picture of what possibly motivates either continuation or cessation of preservation of personal digital documents after the individual's lifetime emerges.

Factors that make people to want to leave "something" behind and contribute to a continuation of preservation are:

- Consideration of potential usefulness of personal documents for other people (e.g., useful for understanding family history and doing research in general)
- Interests in family history and genealogy
- Wish to be remembered by family and friends
- Sentimental attachment (e.g. "All that I have achieved are recorded in my computer.").

In contrast, factors that possibly lead to a cessation of preservation are:

- Desire not to leave any trace behind (e.g., Like burn every book)
- Concerns for privacy
- Emphasis on personal values and ownership of documents (e.g., "My documents are just for me.")
- Belief of future disinterest in my documents (e.g., "No one will be interested in my documents.").

Additionally, I identify reasons or motivations that promote sorting activities by an owner before the personal digital documents are transferred to others. Reasons for selection or sorting are:

- Concerns for privacy
- Opportunity to review my life
- Feeling of the burden of managing digital files (e.g., Not wanting to give others a burden of managing files).

Reasons for not selecting or sorting are:

- Difficulty to predict what can be useful for others
- Unconcerned with what happens after my death (e.g., “I don’t mind people look at my files, if I am dead.”).

### ***Leaving behind personal digital documents for others***

As a whole, the six categories of plan of action indicate that digital documents of some participants are unlikely to be preserved after their deaths or are likely to be destroyed by participants at the later stage of their lives. The majority of participants, however, either actively or passively want to pass on at least some personal digital documents. Then, what do these people desire to leave behind?

Several participants who have sentimental feelings toward and wishful thinking about being remembered by others after their deaths hope that their digital documents survive as a reminder of them for others. As a whole, however, the above stories suggest that what people want to pass on is not a digital document that tells much about “me” or “what I have achieved” but that can be useful for others in some way.

This motivation “for others” seems to be strongly supported by the participants’ own appreciations of having documents passed on to them by others, especially previous

generations in their family. Many participants considered these documents, mostly documents in analog form at the time of the interviews, as valuable materials for them to learn more deeply about their ancestors' lives, to explore their family history and genealogy, and thus to understand who they are. For example,

P16: My grandmother has Alzheimer's right now. So we went through her house; and just some of the stuff—personal stuff, you just want to keep that—I mean it is history, I guess. [...] I don't know how important it is to other people, but there's been a lot of historians in my family; just trying to research our backgrounds where we were coming from, or our heritage, and so I guess maybe somewhere along the line, somebody might be interested in the stuff that's going on now. [...] I mean even just comparing it to what life was then versus now, maybe that's the reason.

In another case, when I asked if P16 wants to preserve her parents' personal documents like her family keeps her grandmother's personal documents, she was certain about it.

P16: Definitely! Especially, more personal stuff. You know growing up or even as an adult, they don't tell you everything. And so after you're gone, it's a little different. You can pass on some things that [you] didn't say before. Maybe they have love letters. Those can be great to have after somebody's gone—to go through those, really—know a little bit more about them.

Considering P16's perception of "personal stuff" as a key to "research" in "history," she seemed to regard the previously untold life stories of people close to her as becoming a

part of history after their deaths. More fundamentally, her wanting to know more about those people after their deaths only helps her to understand herself in the context of family history. P17 has a similar experience with her grandmother's personal documents left behind, which made her want to pass on her digital documents to future generations.

P17: She [grandmother] kept just records of everything. She wrote a lot. She wrote not to herself but to, like, me and my father. It's kind of a history of what she knew about our family. [...] There's a lot of family history and stories she's written down. [...] Then, she had photographs. She wrote great stories about people she knew in the photographs. [...] Fascinating, I could read about every person. [...] Her keeping [of records] was sort of an inspiration to me—there is a picture when she was young: she looks a lot like me. That is a really interesting thing for me to see. She kept all my father's books. [...] It felt really nice when I read them because I felt connected to him. [...] I don't expect that just anyone would be interested. I think someone who was related to me would be. This would be part of their discovery for themselves of who they are, their sense of identity, like, this would be some part of that.

Positive emotions, such as feeling nice, that P17 experienced when she went through and read documents from her grandmother helped to enhance her sense of connectedness with her family members such as her father. During her interview, P17 mentioned that when people interact with documents from the previous generations in their family, it would be part of the discovery of “who they are” and “their sense of identity.”

In cases where participants have no particular plans at the moment and are willing to let (or wish) caretakers or others to manage their digital documents, many participants

talked about the meanings or usefulness of their digital documents for other people, not only for their family members and friends but also the potential unknown audience. Therefore, they would rather let others decide what is useful for them. For example, P11 said that his documents particularly related to his family, such as pictures, belong to his family in the first place.

P11: My documents, they are ours rather than mine. My family—what I have is ours. [...] I think, things that are related to our family history are not mine, but ours. [...] So, [I guess] others would save them as treasure.

When I asked about her thought about a future scenario in which her children want to preserve her personal digital documents such as e-mails after her death, P21 briefly addressed the potential usefulness of her personal digital documents for studying history in general.

P21: I guess—then, maybe some historical value to knowing what, you know, in 2011, this is what somebody in Texas wrote or something.

This theme of “for others” also becomes clearer when looking at what the participants do not want to leave behind: digital documents either as individual items or as a whole that they consider as “just for me” or “private.” For example, while P17 was generally positive about leaving behind personal documents for others in consideration of the role of personal documents in assisting people to discover who they are, she has

specific documents that she does not want other people to access.

P17: A lot of my early childhood stuff like school albums—and then [I] sort of wrote diaries a lot. Those are private. So even if I actually had children, I don't want them to read my journals.

Additionally, P8, a “collector” participant, wished that all of his digital materials would be preserved as a time capsule for future generations. He, however, talked differently about his electronic messages. He considered that electronic messages are very private and just for him, so that he can occasionally look back at what he did at a certain time in the past. He was not sure what to do with his e-mail messages after his death and said that he needs to think more about it. He mentioned that he may delete them all but he may not be able to do that since it is difficult for him to delete any digital document. P8 said “I may just keep thinking of it until I die.” For both P8 and P17, the purpose of creation, use, and preservation of the mentioned digital documents is fundamentally private.

### ***Plans for digital documents of others***

Several participants also talked about how they would like to treat digital documents of their family members or significant others left after their death. I identified four categories of plans. Table 5 summarizes these four categories and related thoughts.

<b>Plans for materials of others</b>	<b>Rationale</b>
Look through and selectively keep certain materials for myself that are meaningful to me (P20) a. After selection, delete the rest (P5) b. After selection, continue to keep the rest (P3)	Remembering a deceased person Wanting to learn more about the life of a deceased person that was not told
	a. Respect of the privacy of a deceased person
	b. Possible use in the future for unknown purposes
Keep most of them or everything (P16, P13)	Consideration of the whole body of documents including how they are organized as a reminder of a deceased person Wanting to learn more about the life of a deceased person that was not told Generally intending to keep everything
Keep digital media and devices (e.g., diskettes and computers) without looking through individual documents (P14, P20)	Desire to emotionally hold on to material objects Respect of the privacy of a deceased person (e.g., looking would invade privacy)
Inclined to delete without looking through individual documents (P21)	Respect of the privacy of a deceased person

Table 5: Participants' plans for digital documents of others

Some participants plan to and prefer to keep either specific digital documents or digital devices of a deceased person, motivated by wanting to remember a deceased person. There are, however, differences in plans depending on who the deceased is—how the participants perceive the meaningfulness of the remaining digital documents based on their own understanding of the deceased person's life. For example,

P20: (Interviewer: So, if they [your parents] pass away, what do you want to do with their current computers or any digital materials?) I don't want to keep them.

[...] It's sad. [...] Maybe I would put them away for a long time. I wouldn't want to look at them. I would also feel like I was invading their privacy in a way, like I don't think they would want me to do that. (Interviewer: What about your brother and sister's materials?) My sister is an avid photographer. She has probably many thousands of photographs. I would like to keep those. My brother—he probably doesn't have anything interesting other than—things he does for school. [...] I would try very hard to keep my sister's photography collection alive. (Interviewer: Is there a reason for that?) It's a big part of who she is. And—it's important to her. I like seeing her photographs. It would make me very sad if they all disappeared. My brother doesn't, he doesn't really like to make any kind of documents representative of him. So I think he has some pictures. I like to keep those.

On the other hand, P20 connected the act of looking through personal documents of a deceased person to feelings of invading the person's privacy. Respect for the privacy of a deceased person is a strong motivation for not keeping the remaining documents. For example, during the interview, P21 mentioned that her mother has a lot of digital materials including e-mails and it will be a difficult for her to manage, if her mother passes away. When I asked what P21 wants to do with the remaining digital documents, she said:

P21: I think, like an email and stuff, I would just—I don't want to read it. I would just delete it all, unless there's something she specifically said, you know, "I want you to have this," and "this is something I want you to know." I think I'd just delete all the emails. Photos, I would probably try to save and fold them into my

archive. Anything else, any personal documents or letters to people or emails she has, I think I would just delete it. I wouldn't go through it.

In some cases, the privacy of a deceased person makes participants want to treat the remaining documents as a locked box rather than as information objects. For example,

P14: I would keep his computer just like the old floppies. [...] I knew it was important to him and it will be like I'm kind of holding on to him. [...] But knowing that I don't need anything on them.

### ***Private and public nature of personal digital archiving***

Overall, participants' perceptions of the potential usefulness of their documents for other people are important for the likelihood of survival of their personal digital documents after their deaths. However, the long-term fate of those digital documents ultimately relies on how the other people who receive the remaining digital documents see their usefulness and meanings to themselves, in the sense that interacting with the digital documents can assist them to explore and enhance their sense of self—not of the original owners. Therefore, the patterns and rationales identified from each narrative account provide a glimpse of the private and public nature of personal digital archiving and personal digital archives.

During an owner's lifetime, "I" as a conductor of a life or a "performer" in Goffman's sense is the primary beneficiary of personal digital archiving practice. The purpose of interactions between a person and the digital documents that she has focuses

on understanding who “I” am and confirming a sense of self. People want to (selectively) keep digital documents from a deceased family member or significant other not for the deceased person, but for themselves. The meaningfulness and significance that people assign to the remaining personal documents and how they understand the other’s life can be different from what the deceased person considered as representative materials of her life legacy and stories during her lifetime.

After the owner’s lifetime, when “I” does not exist anymore, her personal digital archives left behind, like a fossil of a “performed character” in Goffman’s terminology, becomes a part of other people’s—other “I”s—personal digital archiving and thus part of their life stories that are constructed in their own life contexts. Thus, personal digital archiving as practice and process of constructing personal digital archives is fundamentally private in nature, while personal digital archives as material evidence of “me” is more public.

### **Donation possibility**

As a follow-up question about the long-term fate of personal digital documents, I asked participants if they would be willing to donate their digital documents to memory institutions, such as archives or local historical societies, toward the end of their lives or after their lifetimes. While the question asked was a simple yes or no inquiry, participants’ responses reflected their own ideas about personal and social values of personal digital documents, what memory institutions are, and what “donation” means.

***“I do not think that there is anything valuable to donate”***

While participants talked about their plans and expectations for their digital documents beyond their lifetimes, only one participant said that he might donate his old computing devices to a memory institution. That one participant is relatively familiar with what the work of archives is because of his work-related involvement with archives. Besides the fact that most participants never seriously thought about long-term preservation of their digital documents, most participants strongly doubted that their digital documents were valuable enough to donate and whether a memory institution would be interested in having their personal digital documents.

Participants thought that their digital documents would be interesting to others only if they (the respondents) became public figures or famous persons who achieved something socially recognizable or a person who influenced “someone else that became or becomes famous.” Interestingly, several participants said that they would feel “thankful” or “grateful” if a memory institution wanted to have their documents. P4 said that the fact that some institution would want to have his digital documents would indicate that he had made a socially acknowledgeable contribution. Assuming that the documents were “valuable to someone,” “someone wants” them, or “they [memory institutions] accept” their materials, the majority of participants reported that they would be willing to donate at least some digital documents to a memory institution.

Participants’ relatively passive attitude toward donation as a means of long-term preservation of personal digital documents and the value that participants place on their digital documents for unknown audiences are worth further consideration, especially for

archives and digital preservation professionals. Considering the shared idea among participants that their digital materials would be undesirable for memory institutions, ordinary people in their day-to-day lives may not be sufficiently motivated to adopt and follow digital record creation and management guidelines as recommended by archives and preservation professionals. Furthermore, people may not be likely to reach out to a cultural institution and to offer to donate their personal papers. At the same time, however, people may be willing to donate their personal digital documents if they are asked to do so. For example, when I asked if some archivist invited her to donate her document collection to the local archives, what she would like to do, P14 answered with mixed feelings.

P14: I probably would. Although, that's a great question because I've asked my dad if—the Library of Congress has [asked American veterans to submit their memories]—you know, especially for the Korean War. It is a forgotten war. They want people to record their stories. He was like, “Oh, I didn't do anything. I don't want to do it.” But I am like, no! He was a cook. He's got some stories. I mean, his are not huge, but he doesn't want to do it. I've always wondered why. When you asked [me] that question, I am like, well, I could see sort of myself has the exact same attitude, even though I wonder about my dad doing it. I will be like “there's nothing important here. You don't need it.” But if they really wanted it, I will give it to them. But I will also say there's nothing important here. [laughing] I'm like, where my dad is, “Oh, there's nothing important.”

The fact that most of the participants in this study are under fifty and still actively developing their careers, forming their own families, and exploring their roles in

communities may explain their generally passive attitude about possibly donating their digital documents. It may be too early for them to say how the future will unfold in their lives. At the same time, considering how P14 views the act of donation differently in her father's situation and for herself suggests that people are shy about making contributions about their own lives and undervalue their own contributions to society. For archives and digital preservation professionals, shyness on the part of ordinary citizens raises a fundamental question about how professionals want the public to perceive the goals of an archives and whether professionals want to re-configure the identity of memory institutions in order to be perceived as embracing the documentary heritage and individual life experiences of ordinary people in addition to contributions by government officials or celebrities.

### ***Willingness to donate***

The degree of willingness to donate digital documents ranged widely in the interviews depending on the individual participant's rationale for an eventual donation, related concerns, and types of materials for possible donation.

Several participants described the idea of donation as "the best option" For example,

P18: Oh, sure if someone else—that would be the best option. I would donate it to anyone who wants it.

P7 was another participant who talked about the possibility of donation as the

“best route” for her. She would be glad if someone who has the same professional interest and vision as she does wants to use her work and continue to develop what she has done. P18 and P7’s positive answers reflect their life-long interests in and dedication to their work, which I described throughout this Chapter—P7 is an artist and P18 is a Web designer (see descriptions on page 134 and 137). They perceived the usefulness of their work and ideas, which are documented in their digital materials, to someone else after their lifetimes. In that sense, they hoped that their digital creations would serve as a source for inspiration to others. P7, at the same time, expressed concerns about copyright protection. She worried that people might simply copy her work and claim it as their own since “it is relatively easy to copy digital files.”

Although P11 did not specifically mention digital documents, he said that he, too, would be willing to share with unknown others a specific collection of documents that he has accumulated about a topic related to his professional interest: namely, science and physics as culture. P11, a retired physics professor, said that initially he wanted to write a book about that topic and gathered resources for it.

P11: I think, they [documents that P11 has been collecting] can be a great resource for someone who has a similar preference and idea as me. [...] I gathered these materials thinking that it can be a good resource, later, when someone needs to put her/his idea into shape.

For participants whose possible digital donation materials are not limited to their work-related documents, their first reactions to the questions were not always “yes.” P9,

for example, said that he is willing to give a set of pictures of his hometown that he has been collecting and keeping. Some of the pictures are from his childhood, which he wants to digitize someday. He thought this set of pictures might be useful for his home town community to see how the town had developed over time. P9's overall reaction, however, was "no." He did not consider a donation. Viewing P9's interview as a whole, his concerns for privacy, which surfaced several times during the interview, seem to be a significant factor in his decision-making. P5 is another participant who began his answer with "no," mentioning his concerns about privacy.

P5: No. But probably—to someone who does not know me at all. So I think, it will depend on who is receiving my documents. I am willing to hand them over to someone who is not related to me at all, who does not know me at all. But if someone whom I know asks me "Leave your notebook to me so I can remember you," it would be an extremely embarrassing thing to do because that person could see my entire life. [...] So I don't think I can do that. They [my documents] are very private data.

The above excerpt indicates that P5 views his digital materials as documentation of his "entire life," which explains his high concern for privacy. Furthermore, privacy concerns caused him to think further about the ways in which his digital documents might be used as well as who would have access to his donated digital documents.

P5: So in case of a donation, I think, what is problematic to me is the idea of opening it all. So, I would not mind if it is used for scholarly research, if it is not

opened as raw data to the world, but if it is processed and used to understand people's tendency. I would mind if it becomes an open resource that everyone can see.

Overall, P5 would consider donating only if his digital documents will be accessed and used by people who do not know him personally, as data for research. His thought about a donation situation echoes his plan for his digital documents after his lifetime. During the interview, P5 said that he wants to select several of his digital materials and pass them on to his family members and friends with a wish for being remembered by people close to him after his death, while he may delete the rest of his digital documents toward the end of his life (see P5's interview excerpt on page 147). P5's case suggests that regarding a donation situation, being identified, presented, and remembered as a particular individual, becomes less desired or less important to several participants. P8 did not specifically talk about privacy concerns, but he reported a similar wish or condition regarding access to and use of his digital documents, in the event they are donated.

P8: At this point, I don't think they are valuable to donate. But somewhere like a research institution, I would donate if it is not open for the public but used as a resource for research. So not for placing on exhibition, but for studying what was going on in the past.

In P3's case, her motivation for donation also seemed to be based on the idea of making a contribution as one of individuals without wanting to be identified and remembered as a particular person, especially in a negative way.

P3: If I can organize them and someone [cultural institution] will accept [my collection], why not? My life has been uneventful so far, so I don't think there are big chances that I [may] become involved in a big scandal; therefore, unless I get involved in a scandal so I do not want people to remember. [...] If I live [an] ordinary life and die and if I can organize them so they will have some value as a resource, why not?

P3 sees the value of her donated digital documents for studying and understanding people's lives in general, not her life in specific.

P3: Because, I think, they [my documents] can have a value as a resource for research. They show the culture and lifestyle of the time I am living. Of course, people might say clothes that Marilyn Monroe wore would be a lot more valuable than goods that some grandmother used in that era or not, but if it is a material that can show how people lived in 1950's and 1960's, and if it is mine, I will be happy to do that.

Several other participants reported concerns about the privacy of other individuals whose lives and identities are related to the content of digital documents, for example, their own children, other family members, and friends. For example, P19 and P23 were direct about excluding particular documents that involve other people's information or presence. P19 talked about pictures as examples.

P19: If it's only material that's related to me; I have the content; I have the photographs that have other people in them; I don't want to publish my materials

on behalf of them; I think if it's only my content, I am fine donating that material to some type of archive.

P23 mentioned his e-mails as examples.

P23: I don't know. I have to think about that. I mean if they were just like my writings, then, you know, I was like, "sure," but all the emails involve someone else. I would have to think about the implications of that.

While she felt positively about the idea of donation in general, P21 had to think about if there are any digital documents that need to be excluded for donation. She told me a story about David Foster Wallace's personal papers that she read.

P21: I think so. I am trying to think if there's anything that I feel—I just read that thing about David Foster Wallace. He donated, he's a writer. He died. He killed himself about two years ago. He donated all of his things to the Ransom Center; but he had a lot of notes like marginalia in his books about his family. It was like a diagnostic book of mental illness; I can't remember the names of some of his diagnoses. And you know his executors, I think, it was his wife, his widow, has given these items, but she didn't realize it was in there. And they were scanning these things and they are available. And his family is, of course, embarrassed; his wife didn't know. She feels bad. So they're taking some of this down.

P21's worry about materials that can possibly be embarrassing to other people who would be alive after the deceased person's digital documents were transferred to a

memory institution seems to serve a primary filtering criterion in her responses as well as a limiting factor for possible donation.

P21: It's like, you know, I may not care if I am deceased, but is there in my email that, you know, I said something about a cousin of mine who is still living. If there is something that would make somebody really feel uncomfortable or embarrassed. That would be like the only thing that I could think of that would make me not want to do that. But, yeah, that's the only thing. But I don't think—you should be pretty careful in email, not to gossip too much, because you don't know where it's gone. It is going everywhere. But, no, I think, I would donate it. Sure, yeah.

As briefly indicated in P21's statement, shame and embarrassment also seem to serve an inhibitory role in her decisions to create and preserve records about herself or others such as being careful when writing and exchanging e-mails, especially in relation to privacy concerns. Furthermore, the ease of disseminating documents in digital form makes participants more conscious about the creation of digital content and what is being recorded. That is, people are less likely to document, share, or leave behind something that might be potentially embarrassing when seen by others. In Goffman's term, this indicates people's needs for information control in the presentation of self—highlighting, maintaining, or concealing information which can strengthen or weaken images that they desire to display in public settings and in a given situation. P13 is another participant who seeks to avoid generating or sharing possibly shameful content with others.

P13: So it's like privacy is a great idea, but it's not really realistic because anyone can track and find out all these things about you and there are all these—many many many different ways [to do that]. And it's frustrating, but it's not. So instead of, you know, being fearful of this, you just have to monitor. Like monitor my credit, I am trying to monitor all these online outlets and don't produce things that I would not want to be shared.

P13 actively explores and uses various types of online services such as Facebook and Twitter. Her perception of privacy is clearly influenced by her engagement in online activities and observing how much personal information is distributable and searchable in a digital environment. For P13, privacy concerns are embedded in her everyday life as a preventable problem that requires her to self-monitor what she includes in her digital documents. Several other participants also indicated their awareness of self-monitoring, especially at the stage of creating digital content. In the case of P1, when I asked if she has any privacy concerns related to the idea of donation, she said she believes that, in general, she does not record or have anything in the form of a record that would cause her to worry about possible privacy issues.

Meanwhile, regarding the idea of donation, these participants hardly worried about their own privacy. According to P23, in particular, there is a difference in knowing about someone first-hand or second-hand knowledge. Knowing someone through a mediated form, for example, through reading stories constructed by someone or by reading evidence found in certain types of documents, adds a certain distance.

P23: (Interviewer: I am just wondering, so if it's only about you, you are fine with [the idea that] someone else who doesn't know you reads your writings and sees your pictures.) Yeah. I understand that everyone doesn't feel that way. (Interviewer: Yes, some people can be protective—so I wonder—how can you be so easy about letting people—?) I don't know. Maybe it's just because I find it fascinating—reading about other people.

Although she recalled that she had an old digital journal, which is a relatively private document to her, P14 described herself as a less private person in general.

P14: I would maybe take out the financial stuff. But otherwise, I mean there's not much in it, except for me personally. (Interviewer: Will you still be going to donate?) I am—because I am not that private about it. There's nothing here like, “oh, this is so private.” That could be just because I'm more open. It's just my personality. Especially if I am gone, I don't care [laughing].

Moreover, participants who did not have particular concerns for privacy reacted to the questions with a relatively affirmative tone overall: “happily,” “of course,” “sure,” and “why not?” For example;

P2: If they accept, yes, I will donate, happily. (Interviewer: Yes?) Yes, after I die, there is nothing to be embarrassed about. Later, I think it can be an educational resource for our future generations to learn about “did people have something like that?” I am curious what kind of things will be new in the future.

P20: Sure, why not? I don't care. (Interviewer: And do you have any idea how

people might use your materials?) I don't think there's a whole lot in there that would be helpful to other people. Uh, I mean it might be that they could look at it and see how early 21<sup>st</sup> century graduate students organize their materials or see what programs I have on the computer and try to make some assumptions about navigating information or but that's all that I can think of, unless they were interested in the subjects that I was writing about.

As indicated in P2, P14, P20, and P21's interview excerpts, the attitude of being unconcerned with how people will perceive them after death seems to have eased participants' feelings toward the idea of donation. For example, P16 expressed a similar privacy concern for others with P21 and wanted to let her children decide what to preserve or donate based on their own judgments about potentially embarrassing materials to them. She said that if she does not have any children, she will be willing to donate her digital documents as they are, even if there are materials embarrassing to her. If she is dead, it would not bother her and she wants to be as honest as possible regarding what she did in her life.

Table 6 summarizes the participants' initial responses, associated concerns and rationales for donation as well as the types of materials that they might consider for donation.

<b>Initial response and willingness to donate</b>	<b>Major concern</b>	<b>Eventual donation materials</b>	<b>Rationale for eventual donation</b>
It will be the best option (P7, P18)	Copyright	Work related documents	Making a contribution through continuation of my works
Maybe some documents (P11)	No concern		
Why not (P1, P2, P3, P4, P6, P15, P13, P16)	No concern	Work and non-work related documents, unsorted or selected by myself or others related (e.g., children, family members)	Making a contribution to research and education in general (e.g., studying and learning how people lived in 21st century)
I think so (P19, P21, P23)	Privacy of others related to documents		
For research purpose only (P5, P8)	My own privacy		
Maybe some documents (P9)		Documents related to a specific topic	Making a contribution toward local communities

Table 6: Donation possibilities and concerns

***Being public and being anonymous***

Despite various concerns about privacy and being uncertain or shy about the potential value of their digital documents for unknown other people, more than half of the participants said that they would be willing to donate. As indicated in many interview excerpts, the common motivation mentioned for making a contribution was for purposes of research and education, to help future generations understand better how people lived in the past. For some participants, this motivation seems to be positively supported by their personal interests in history in general. For example,

P16: Sure, sure! I don't think it needs to be a personal family thing. And then, there were some archive projects going on around Austin. Just Austin, looking at pictures of Austin, you know, going back 50 years—it's just great to see how things have changed and to see how life was back then. I think I will definitely do that [donate].

P23 addressed his interest in learning more about stories of everyday life.

P23: I find it frustrating sometimes, listening to history or reading history, when we don't really know what day-to-day life was for people.

P23's interests in history of ordinary people also corresponded with his family's interest in genealogy. For example, P23 is currently in possession of a family genealogy based on a narrative that his father created. He and his sister are trying to collect and write about their family history. While P23 is mostly in charge of gathering and digitizing family pictures, his sister is more focused on conducting research.

Participants' motivation in making a contribution to research and education is not a surprising observation. As discussed in the previous section, before I asked about their thoughts about donation, many participants reported that they want to leave behind some of their digital documents because they can be useful for people such as family members and friends, colleagues, or unknown others. This motivation, however, may be of interest as a topic for future investigation. In connection with overall privacy concerns, the desire to contribute an understanding to future generations brings up "anonymity" as a concept for exploration. When individuals consider memory institutions as a possible final

destination for their personal digital documents after their lives, there seems to be a significant mental or attitude shift: that is, people treat their digital documents as a collection that is not about them or their lives in particular, but rather they want their collection to become a part of or a representative of particular life experiences or about a specific group of people. For some participants, the act of donation is, therefore, not about asking others to remember “me” or “my legacy,” but instead is about letting go of “me,” in other words, viewing “me” as part of a larger group. Participants who are unconcerned about what will happen after their deaths also support the idea that the act of donation is less relevant to presenting or showing off “me” through the remaining digital documents.

This attitude of “being an anonymous someone” was not expressed by the participants as negative but rather the basis for what might motivate them to open themselves to unknown future audiences. This is a point where people may find and locate social value in their digital documents.

## **OTHER RESULTS**

In this section, I will present results of data analysis related to a particular theme that emerged as well as more general questions asked during the interviews, along with findings related to a comparison between Korean-speaking and American English-speaking participants.

## **“Private” and “Public” personal documents**

As reported in the section above, when participants thought about the possibility of donating their digital documents, privacy related to the documents—relative to oneself or others—was a major concern. During the interviews, I asked participants what the terms “private” and “public” mean to them or how they generally define the two words regarding their personal digital documents. For most participants, what they felt comfortable sharing with other people or allowing other people to see was the line that separated private documents from public documents. For example,

P1: Things that I can show to someone and things that I cannot.

P7: It is a matter for an individual to decide. Like, this document is better to share with others and that document is better not to share.

In particular, for participants who have created and published content that is personal via online media, such as Facebook and blogs—for example, comments about their status or feelings and digital pictures—their sharing practices reflected their perceptions of private and public documents.

P20: Where it shifts is—it’s the decision that I make about how I am willing to allow other people to access it. So I think it’s an access that shifts for me. It’s, that’s uh, I am okay when I make a decision that other people can see it. I feel like I am participating in this site, Facebook or whatever, I am giving people

permission to look at, but I don't feel like I give people permission to look at another area of data, so—

P16 addressed similar issues with other participants. Furthermore, her statement shows that her understanding of publishing materials online is about giving people not only “permission to look at,” but also permission to use and re-disseminate. Therefore, “other people” always include unknown others.

P16: I will say it this way. I used to [have] this idea a lot on Facebook—like I wouldn't post anything that I wouldn't post on the evening news. [...] I feel like if something that I wouldn't mind being right on the public news, then, that's like public documents for me.

Participants' comments about deciding which personal documents can be seen by others, including unknown others, indicate that this is an area oftentimes difficult to explain. Their decisions are based on personal and situational choices that frequently change. Several participants, however, shared glimpses of what matters to them. For example, when P5 talked about digital pictures as an example of what he publishes in his public blog, he said that he is careful about not publishing “pictures that reveal my personal life” on the Web.

P5: A picture that captures scenery or animals is fine since it does not exhibit my life. But I do not want to show others the pictures that I took with my friends or on a special day since I think they are documentation of my memories.

To P5, protecting privacy seemed to serve as an important criterion for self-restriction. P4 also has a sort of self-censorship criterion in terms of deciding which documents are fine when they are seen by others.

P4: because it is going to be published under my name, because I am a policeman, I think whether it is acceptable behavior for a police officer. For example, let's say if I am wearing my uniform. I will share pictures of me standing still, but nothing that shows me being casual or wearing my police cap backwards. I think it is demeaning.

For P4, complying with his own idea of being a professional is important. When he talked about digital pictures as an example of what he publishes on his public blog, P8 said that he shares and wants to share with others documents that show his professional activities.

P8: For example, if I hang out with cartoonists from another country, then I would let people know which cartoonist I have been interacting with, not focusing on the fact that I hang out with someone. So, there is some sort of personal desire, too, but I kind of want to let people know what kinds of activities are going on in the publishing company that I am currently working with.

Overall, different values that help participants decide about what to make visible to others ranged from protecting privacy, to complying with a (self-defined) professional expectation, and presenting a professional identity. Although limited to a few cases, the

above stories suggest that Goffman's impression management plays a role in how people share their digital documents with others. P4 and P8's wanting to present images that they consider appropriate for their particular social roles responds to their ideas of what other people will think of them and how others will perceive their behavior rather than observed reactions from other people in face-to-face interactions. However, the image that these participants see as a positive reflection of their social identity is based on the idea morphed through their interactions with others, including social norms and expectations that they learn in those interactions.

Furthermore, for P7 in particular, the question itself and the interview as a whole stimulated her to think further about the involvement of others in personal record management practices. At the end of the interview, when I asked if there is anything that she wanted to talk more about, she re-addressed the question about the meaning of "private" and "public."

P7: In fact, records are something personal. But when managing them, they are not personal things any more. It seems like the goal is shifted. No matter to whom I will leave them [digital documents], either my family or someone else, it [thinking of giving or leaving the records] is the beginning of being aware of someone else besides me. Then, problems change.

Additionally, P13 and P18 offered viewpoints that were not mentioned by others. However, what they said reflects how their life circumstances including their professions and a home environment in which a person grew up have influence on their thoughts.

P13: Anything involving my research is private. That's not my privacy. That's someone else's. That's someone else's confidentiality. So that's the only clear hard line. The rest of it, it's all kind of amorphous.

P18: Most like, I don't talk about anything illegal online. That's my main line. It's what's legal or what's not. (Interviewer: Just curious, where did that come from?) My dad is a lawyer. I guess, that's where it comes from. I am very cautious about acceptable use policies. I don't want my data deleted because I said wrong words or something. So I pay special attention to the law and that's it. That's all I mind because I don't want to be arrested or I don't want my stuff to be deleted. That's only my criteria. [...] I just consider "will this get me arrested or not?" [laughing]

### **Digital vs. analog documents**

Several participants thought about documents differently depending on whether the material is in analog or digital form in general.

P16: I think digital copies are more important to me than physical [ones]. There's something that will make it probably last longer. So I assume I can open it. [...] You know, it's something that I can also easily look at, too, without getting out a box of letters or photos, something like that.

Despite her awareness of possible concerns about long-term accessibility, P16 has a positive attitude about digital documents especially in terms of durability and ease of navigation. Her mention of "last longer" seems to be closely related to her personal lifestyle as well as life experiences. As reported above (see P16's interview excerpt on page 126), she has been selective about what to keep among her material possessions,

including documents, a habit that was influenced by her home environment when she was growing up. Additionally, during the interview she said that she has “moved around a lot” in her life. Thus, digital documents, which take up a relatively small physical space, meet with her needs and personal style because they are easier to keep and carry around compared to documents in an analog format. She also talked about her interest in and hopes for “cloud”-based data storage. She is even willing to pay for a “cloud space,” when cloud service “becomes more and more popular and have a little bit more privacy laws attached to it.” Therefore, she feels that documents in digital form are less likely to be deleted but more likely to survive and “last longer” in her lifetime in general.

Another interviewee, P9, shared similar thoughts about the relative ease of keeping and using digital documents.

P9: So, personally, in the past, when we did not use a computer, we kept papers. They can get lost during a move and it was impossible to find and use them later. But now, they [digital files] are there in a “room” [digital folder] so I can find and look at them whenever I need to. And things that I wrote [digitally], I organize them by year and when I feel that it is time to review my life, I can pull them out, edit, and do two-sided printing. Then, there, I have a book, right? So personally, I think it is helpful to keep, manage, and use my life history.

P9 has switched back and forth between paper and a digital medium for the purpose of keeping a diary and writing essays and poems. He said that handwriting sometimes helps him to better articulate certain thoughts. However, his overall positive attitude toward digital documents stems from his feelings of freedom when he constantly interacts with

his personal documents in digital form. It also reflects his character as an organizer. During the interview, he emphasized the importance of being organized as a practice of self-discipline (see P9's interview excerpt on page 115) in other areas of his life.

P7 perceives materials in digital form as something obscure that lacks existential solidity, compared to the same materials printed on paper.

P7: I am not sure if I believe it 100%. I mean, this is quite strange, but I tend to think that until I print it out, it does not exist wholly.

During the follow-up interview, P7 briefly added,

P7: For me, records in digital form are something that are never complete, something that are ongoing and that constantly “transpose”—a kind of organic body.

P7's idea about the incompleteness of digital materials seems to be influenced by how she uses digital tools and digital documents especially in her professional work. As mentioned before, she is an artist. Digital drawings and photographs of her art work constitute not only the major body of her digital materials but also represent documents that she cares a lot about. She uses AutoCAD, a software program for architectural drawings and models, to create a basic structure of what she will create as wooden or metal sculptures. Generating and interacting with digital drawings are essential parts of her creative process when she explores, expresses, and articulates her ideas. Once she is

ready to construct her artwork, she prints out the digital drawings. These drawings on paper then serve as a final blueprint for her sculptures. Although paper copies of her digital drawings are important, they are only one part of producing her sculptures, which includes a series of execution tasks—choosing materials, colors, and methods of construction, molding and building structures, polishing, and painting. Furthermore, P7 creates a new digital drawing by modifying and experimenting with her previous digital drawings: for example applying a different mathematical formula, a different angle, ratio, and colors. Considering her work process as a whole, a digital file is a drawing that she constantly plays with and changes, while a print-out copy of the drawing represents her finalized idea for a specific sculpture that she plans to build.

Overall, the differences among participants in their perceptions of and feelings toward documents in digital form compared to documents in analog form reflect their ways of creating and using digital documents, their habits, and unique life circumstances. Their attitudes toward digital documents play a role in their digital recordkeeping activities. In this sense, personal digital archives are the reflections of how people interact with their digital documents and the (indirect) documentations of how they construct their digital recordkeeping practices as well.

### **Objects to rescue in case of a fire**

At the end of the interview, I asked participants what they would like to rescue from the house if it were on fire, after living creatures such as family members or pets. This type of question makes people imagine an extreme situation—hopefully an unlikely

life event for anyone—when they possibly lose objects that construct their everyday lives. I asked this question hoping to hear what the most needed object is to participants in any sense. Many participants included document types of materials either in analog or digital form along with other objects, such as an old fishing rod, camera, cellphone, wedding ring, pillow, and guitar, except one participant who thought of nothing. Document type materials or containers that store documents mentioned were:

- Paper documents described as “important” or “treasured” materials (e.g., passport, health records, documents related to financial assets, bank records, degree certificates, and award certificates), often grouped and kept together in a particular place (e.g., box, briefcase) (P6, P10)
- Hand-written personal documents (e.g., paper diaries and drawings) (P8, P9)
- Particular video recordings (P7, P20)
- Laptop computers and/or external hard drives currently in use (P5, P6, P2, P1, P9, P16, P15, P13, P14, P21, P22, P23)

Most participants shared the idea that personal documents (e.g., pictures, records created for both work and non-work related activities) are irreplaceable or irrecoverable in case of loss while most everything else is “replaceable” or can be “re-purchased.” Several participants made the same comments about irreplaceability of personal documents when I asked if there are any digital documents that are particularly meaningful or valuable to them. For example,

P5: I would feel sorry if materials in my picture folder are erased, no matter if it is a good picture or not, if it is printed out or not. Because they contain a trace of a particular time. Because I cannot re-gain them. Music or movie files, I can re-purchase, but my pictures are things that only I have. They are irreplaceable.

P5's statement indicates that he considers personal documents as irreplaceable because they are authentic raw products of time—a specific, un-repeatable moment of a person's life. To some degree, this differentiation resembles the general distinction between unique records in archives and books in libraries—except rare books and special collections. In some cases, memories associated with certain documents (e.g., video recordings) caused those particular documents to be put in the “to-be-rescued” category. For example,

P20: There's a bag of 8 mm films that my Dad took of me, and my brother, and my mother when I was a child, probably 2 or 3 years old. And he had a brief fascination with these films and uh, he only made like 6 of them. One of them is Christmas and has my grandparents in them; they are dead now. And uh, I would take that, that bag.

Since I asked the question at the end of the interviews, when they responded, participants might think about documentary objects that they talked about throughout the interviews. Concerning the same question, however, van Dijck (2007) mentioned:

Many people rate their shoeboxes filled with pictures, diaries, and similar mediated memory objects over, or on par with, valuable jewelry and identity papers. Whereas the latter two are expendable, the first is considered unique and irreplaceable: memory objects apparently carry an intense material preciousness, although their nominal economic value is negligible. The loss of these items is often equated to the loss of identity, of personal history inscribed in treasured shoebox contents. (p. 35).

While many participants perceived documents as irreplaceable memory objects, several participants also considered that documents are important in order to move on and continue their lives.

P21: The laptop has, it has all the things on it that I would need to get back at work right away.

Although what people might do when confronted with a disastrous situation is unpredictable, participants' responses attest to the meaningful role that documentary objects play in people's lives, regardless of their form. A laptop computer or an external hard drive that holds a lot more documents than conventional shoeboxes seems to give people a feeling that electronic documents are easy to save. This advantage, however, raises further questions in terms of how respondents' answers might change if they started to use cloud data storage for their personal digital materials more: will saving their digital documents in cloud storage make people feel safer than preserving them in their local hard drives or computers and help people feel free from a fear of losing their

“irreplaceable” personal digital documents?; will the use of cloud data storage make people stop preserving their digital documents in their self-managed/controlled local storage devices?: will people consider cloud storage as a trusted repository?

### **Observations between two language groups**

For this study, I recruited native-Korean-speaking and native-American English-speaking participants. While a comparison among different cultural groups was not the primary focus of the present study, I took advantage of my capability to communicate in Korean and English. Therefore, I applied a language as a provisional basis to divide participants in two groups.

Several participants have experiences living in multiple countries using their second or third language as a primary language for a certain amount of time. Two of the native Korean-speaking participants currently live outside of Korea, using their second or third language as their primary language—the other native-Korean participants all live in Korea and use Korean as their primary language. The native-American English speaking participants all live in the U.S. and speak English as their primary language. Considering several participants’ life experiences in multi-cultural environments, a language would not be a valid category for the purpose of observing potential cultural differences. A “native” language, however, plays a role in forming one’s cultural identity. For example, after the interview, P3, who is a native Korean speaker but currently lives in the U.S. and speaks English in her daily life, explained what a native language means to her and its significance: It is the language that she grew up with, through her childhood and

emerging adulthood—until her mid-twenties. It is the language with which she developed her sense of self, established her personal, social, and national identities and acquired an understanding of social norms, values, and ethics. Therefore, she considers herself “basically” Korean with an overlay of American culture.

Within the narrow limits of the purpose of this dissertation, which is to examine people’s long-term preservation and digital archiving practices, I found no significant differences between participants from the two language groups. The finding of a lack of recognizable differences supports the fundamental value and function of personal digital documents in people’s lives, cross-culturally. Moreover, this finding underscores the widespread global aspects of digital technology development and its simultaneous uses and adaptations by people in both South Korea and the U.S. to meet their individual needs.

In general, both South Korea and the U.S. are technologically advanced in terms of offering access to digital technology for use by ordinary people in their everyday lives, even though the digital divide in both countries based on economic disparities continues to be an important issue. For example, according to statistics compiled based on Information and Communication Technology (ICT) indicators for the year 2011, compiled by International Telecommunication Union (ITU), 83.8% of the South Korean population and 77.86% of the U.S. population are currently using the Internet (ITU, n.d.). A comparison in the present study between native-Korean-speaking and native-American English-speaking participants in terms of their usage of digital technology, including the Internet, showed no substantial differences. They had been for a minimum of 10 years

engaged in or at least familiar with popular activities that involve the creation, collection, and preservation of digital documents in both online and offline environments.

With extreme caution, I report two observations. First, the four participants who mentioned that they would like to delete all of their personal digital documents at the end of their lives were all native Korean-speaking participants (see Table 3 on page 155). Considering the fact that each of the four respondents gave a different rationale for deletion, yet all four expressed a desire to pass along some personal digital documents to their family members or even a willingness to donate documents, raises questions about whether this observation has anything to do with the fact that the four participants are Koreans, who spent their childhood and young adulthood in South Korea. Due to the limited number of participants who said they wanted to delete all their documents, their responses may represent only chance rather than difference among these two language groups. Second, it seems that Korean-speaking participants tended to place a high value in being organized—not just for recordkeeping purposes but in their everyday lives as well. This observation does not imply that members of the two language groups differ in their organizing activities or skills. For example, several participants from both groups reported that they gain satisfaction with their current methods for managing their digital materials and expressed confidence in their ways of organizing things. However, two Korean-speaking participants mentioned specifically that they consider being organized a good virtue: an important element to live well. Whether these comments reflect a life style in South Korea, in which a dense population concentrated in a relatively small geographical area encourages people to be organized in use of space, or the cultural

emphasis on being organized—embedded in moral education at school, possibly influenced by Confucian tradition—, is not clear on the basis of this small sample.

Although I found no significant differences between the two language groups represented in this study, comparing two or more other language groups remains an interesting topic for continuing research, especially with regard to word usage within the context of specific groups. For example, I wonder why even in passing comments four native-Korean speaking participants chose to explicitly say that they want to delete all of their digital documents. Three of the participants used the Korean verb “지우다 (ji.u.da),” which means an action that intentionally makes things, thoughts, or feelings disappear from a visible surface or from one’s mind. As translated into English, the verb can mean to wipe out, erase, delete, rub out, expunge, remove, or efface, depending on context of use. The participants’ use of that particular word with regard to their digital documents raises questions as to whether there are cultural references that might be more useful for explaining peoples’ thoughts or feelings toward the act of wiping out records and thereby literally erasing all references to their lives at the time of death.

#### **CONSTRUCTION AND LONG-TERM PRESERVATION OF PERSONAL DIGITAL ARCHIVES**

In this study, I have pursued the two primary research questions:

1. How are personal digital archives of individuals formed throughout an individual’s life and continued after his/her lifetime, and
2. What are the influencing elements that affect people’s decision-making in archiving personal digital materials?

In this chapter, I presented a description of how people experience personal digital archiving, based on my readings and my understanding of what the participants described in interviews as their ways of preserving digital documents and their thoughts about the value of digital materials and long-term preservation.

I reported study results focusing on everyday digital recordkeeping activities that shape people's personal digital archives throughout their lives: keeping, organizing, deleting, and assigning values to personal digital documents. Many participants reported having kept digital documents from their early days of computing. Affordable digital storage helps participants retain most of the digital documents that they have created, received, and collected. Beyond this technical assistance, the idea of the abundance of digital space provides participants with feelings of relative freedom to keep digital documents, depending on their own personal needs or preferences.

Participants' thoughts and descriptions of their digital document organizing activities indicate that the task of organizing serves various functions beyond the goal of making materials easy to find and re-find. Some participants' organizing activities, for example, resemble an archival appraisal: a way to separate meaningful or relatively significant digital documents from the rest. For other participants, organizing tasks offer opportunities to review what they have done or achieved over the years. For several participants, organizing is a habit, a way to establish an order of things in their environments and lives, which is a vital part of being true to who they are.

Even though many participants tend to or prefer to keep most of their digital documents, they occasionally clean out and delete some of their digital materials.

Considering the abundance of digital space, the ongoing tasks related to deleting activity seem to be habitual or based on preference. For many participants, emotions associated with their digital documents and the events and people they represent affect owners' decisions to keep or delete materials. For example, some participants deleted digital documents related to specific life experiences or to a particular period in their lives that they recalled with negative emotions at the time when they sorted or cleaned up their digital materials or devices.

I explored value assignment as a meta-activity that has an impact on keeping, organizing, and deleting activities. The participants' narratives underscore the meaningfulness of relationships with other people and the importance of what they have done related to what they are now doing in their lives and their social identities as influencing elements when they place values on their digital documents.

With regard to the long-term fate of their digital documents beyond their lifetimes, some participants expressed more concerns about privacy than others. Several participants have different plans and expectations depending on the types and characteristics of digital documents that they have kept. Overall, many participants said they would like to leave behind some digital materials to others, such as family members, friends, and colleagues, in consideration of the potential usefulness of the remaining digital documents for others in the context of their own lives.

Participants' willingness to donate their digital documents for unknown others extends and supports the theme of "for others." Specifically, participants' attitudes toward being relatively unconcerned about what will happen to their digital documents

after their deaths is likely to increase the chance of possible donations.

Based on the themes that emerged as a result of this study, I discussed personal digital archiving as a life-long practice that offers ways for individuals to 1) explore their life experiences, 2) verify and enhance their social identities and roles, and 3) confirm their sense of self. Personal digital archives as remainders of this personal practice are likely to offer opportunities for others to explore and develop their own sense of self.

### **Influencing elements**

Divergence and complexity are two concepts that best characterize results of the data analysis reported in this chapter. While participants seemed to exhibit similar tendencies or preferences toward ways of managing and preserving their digital documents, the motivations that underlie those preferences are unique in terms of reflecting each participant's own life experiences and thoughts.

By focusing on the relationship between personal digital archiving and the construction of self, the following themes emerged as elements that contributed to people's activities in preserving and assigning value to their digital documents and thereby forming personal digital archives:

*In relation to a "digital" environment:*

- Experiences of or concerns about running out of digital storage space or, on the other hand, enjoying an abundance of free space
- Perceptions of digital documents and technology.

*In relation to emotional experiences in life and in interactions with digital documents:*

- Positive emotions associated with a particular life experience mediated by documents
- Negative emotions associated with a particular life experience mediated by documents
- Levels of (indescribable, nostalgic) emotional attachment to documents

*In relation to the individual's life experience:*

- Concerns about privacy of self or of others
- Need for evidence of what I have done
- Need for closure and moving forward
- Need for reviewing the past and planning for the future
- Self-evaluation of meaningfulness of a particular life experience or event (e.g., living abroad, traveling, getting married, expecting a child, loss of a significant person) in understanding who I am
- Self-evaluation of meaningfulness of relationships with specific people (e.g., childhood friends)
- Life background (e.g., generational interests in family genealogy, personal interests in history, influence from parents' life style)
- Personal disciplines or habits (e.g., being organized)
- Self-perceived personal characteristics (e.g., being open, shy, or private)
- Thoughts about death (e.g., unconcerned with what happens after death)

- Wishes to make a contribution for the benefit of others.

Most of the elements mentioned above were intertwined. For example, perceptions or expectations of “digital” storage as space that one could easily afford and expand seemed to be accompanied by feelings of liberation from spatial limitations, which in the past had forced people to discard documents. Having an abundance of space also allowed the participants to feel “free” to collect and keep digital materials in any way that they want or desire. At the same time, however, personal tendencies to organize along with preferences to occasionally clean up a living environment—either physical or digital— influenced interviewees to delete digital materials for reasons other than to gain storage space. Organizing and deleting activities provided some participants with positive emotional experiences, such as personal satisfaction and a sense of accomplishment. The above contributing elements and their interwoven influence on people’s personal digital archiving attest to the need for a holistic understanding of these everyday practices.

### **Preservation of documents and preservation of self**

At the beginning of the interviews, I asked participants to provide demographic information: their occupation or profession(s), personal hobbies or community activities, and family relations. I did not give any further instructions or descriptions of what I meant by those categories; it was up to participants to decide which social roles and identities they wanted to express and include. Based on the brief biographical data gathered, all participants obviously perceive and perform many social identities in their everyday lives, such as being a parent, wife, daughter, sister, community volunteer,

member of a social group, member of an amateur hobby club, a professional with particular skills. Individually, participants create and collect a variety of digital documents related to each of their social identities as well as their personal interests. The present study suggests that it might be possible to compose a circumstantial picture of people's life trajectories, experiences, and personal tendencies based on the content and types of personal digital documents left behind as well as the structure and methods by which they organized and preserved their materials.

Yet, based on findings of the present study, it is also clear that personal digital archives cannot be regarded as an exact representation of an owner's life. The types of digital documents that participants described as valuable and meaningful for them demonstrate that particular social identities or roles stand out in the process of digital recordkeeping, such as professional identities or roles as a parent or friend. This does not mean that participants consider their other social roles less important in any sense. However, it suggests that personal digital archiving offers a vehicle for people to understand and enhance specific aspects of their life performances. Similar to the ways that people construct stories or narratives in general, people would exclude, minimize, or keep some digital materials related to particular aspects of their lives without any order or care. From an overview of an individual's life, those documents would probably not make much sense. On the other hand, some digital materials would occupy a large portion of a person's personal digital archives. Those digital materials as a whole are likely to embody and highlight specific aspects of an owner's life experiences. From this

perspective, personal digital archives, as an outcome of a life-long digital archiving performance, are also indicative documentation of a person's way of self-understanding.

## **Chapter 6: Conclusion**

I will conclude with a brief summary and a discussion of the limitations and of contributions of the present study. Limitations of the current study open venues for future research, either extended or new, that can help to elaborate the understanding of personal digital archiving and recordkeeping activities.

### **A BRIEF SUMMARY OF THE STUDY**

In the present study, I took as a research topic one of the mundane practices of everyday life that many contemporary individuals perform: digital recordkeeping. I particularly focused on long-term digital recordkeeping, defined as personal digital archiving.

My interest in this phenomenon stems from the historically proven value of archives: both public and private archives are vital resources that allow us as individuals, communities, and as a society to learn more about our past. They are a personal and social heritage from previous generations and one that we will, in turn, leave behind for succeeding generations.

I was equally stimulated by the challenges of preserving digital documents. The pervasive use of digital technology in everyday life changes the way that people interact with documents and thus influences archiving practices. Due to the increasing quantity, the diversification of genres, and the degree of reliance on constantly changing

technology, the preservation of digital documents becomes a complicated task even for information preservation professionals. It is necessary to be concerned with the long-term fate of personal digital documents in order to transfer our heritage to future generations.

In this study, I framed personal digital archiving based on the literature review of related studies and discussions from areas such as Personal Information Management, Human Computer Interaction, archives and digital preservation, and digital memory studies. From these perspectives, I viewed personal digital archiving as an everyday practice through which people manage and preserve for a long time documents that have particular meanings to them. Beyond this functional description, personal digital archiving also involves a constant value assignment and meaning-making process that is intertwined with how people review their past and who they are.

Given the possible conceptual link between personal (digital) archiving and self-reflectivity, the purpose of this study was to learn about ordinary individuals' personal digital archiving. The goal was not limited to understanding what people do with their digital documents, but included exploring their desires, motivations, rationales, thoughts, feelings, and the preferences that play a role in various decision-making moments in personal digital archiving. I collected narrative data through semi-structured interviews (1-3 hours) from 23 individual participants from various occupations, ranging in age from their early 20's to early 70's.

As I built an understanding of each participant's narrative, the complexity of this taken-for-granted practice unfolded. While participants share patterns of digital archiving in terms of activities that they employ in management, each participant presents a wide

variety of different thoughts and motivations behind their activities. For example, many participants tend to retain more digital materials as they can afford digital storage with a high capacity. This tendency is enhanced by changes in the technological environment such as the convenience of copying and moving digital files from one place to another and a continuing supply of bigger digital storage, commonalities that many interviewees share. Increased digital recordkeeping, however, is also influenced by many other unique factors such as personal preference in organizing and being a minimalist, and collecting habits in general. Furthermore, regardless of the general tendency to keep documents, the actions of selection or prioritization are still embedded in individual digital archiving practice. How people evaluate their past and current life experiences, including relationships with others; how they see their roles in a social setting; their personal philosophy of life; feelings associated with a particular document or event; and emotions evoked during the encounter with a document or process—all may play an important role in the formation of personal digital archives and the decision for continuing retention of digital materials after one's lifetime.

I discussed the results in relation to the exploration, confirmation, and construction of self as a key theme of the present study. The interactions between an owner and her or his digital documents performed in personal digital archiving practice involves, directly or indirectly, self-enhancement and self-verification which are integral to the confirmation of self in one's life.

## **LIMITATIONS OF THE STUDY AND DIRECTIONS FOR FUTURE RESEARCH**

The complexity of researching personal digital archiving practices requires a continuing exploration of this topic from various perspectives. The relevance of this everyday digital recordkeeping practice to many different fields such as archives, cultural heritage preservation, sociological and psychological investigations of construction of the self, computer science, human computer interaction, and commercial information technology development and services, also asks for cross- or multidisciplinary scrutiny.

The results and discussion presented in this study are some of many possible explanations of individuals' own ways of preserving their digital documents. Therefore, this study remains open-ended, triggering possibilities for future research. Future research topics and directions suggested below denote the limitations of the current study.

### **Continuing accumulation of cases and longitudinal investigation**

In qualitative research, there is a no hard rule for determining the “right” size of a sample of study participants. Depending on the purpose and focus of a study, the number of participants can vary from a single person to many. In general, twenty-three participants is not a small number for qualitative case studies using a narrative interview method. A continuing accumulation of cases, however, will be highly beneficial 1) to discover more diverse patterns and thoughts related to personal digital archiving that individuals hold and 2) to identify more commonly shared practices among the cases. Identifying more patterns is necessary to develop meta-theories and behavior models of personal digital archiving practices. The recognition of shared experiences, in particular,

will offer pragmatic insight into what people want and what kinds of options and functions need to be accounted for in the design of digital archiving technologies and digital preservation strategies.

I view personal digital archiving as a life-long project for the individual that is constantly re-constructed and modified. By its nature, personal digital archiving practice is likely to be influenced by an individual's social roles, stage of life, and changes in life style. Therefore, studying personal digital archiving requires a longitudinal investigation. It will be useful to periodically revisit the participants from this study and track the evolution of their personal digital archiving practices. Furthermore, during the interviews, several participants mentioned that they never thought about some of the interview questions such as the fate of their digital documents after their deaths. At the end of the interviews, when I asked if there is anything else that they would like to add or talk about, some participants said that they want to pay more attention to how they keep and manage their digital documents from now on. It was clear that the interview became a chance for some participants to be reflective about and likely to have an influence on their everyday recordkeeping. Whether their ways of and thoughts about preserving digital materials are consistent or different, the continuing observation will help us to deepen the understandings of an individual's personal digital archiving behavior, especially in relation to time.

### **Demographic, culture, and environment specific studies**

The continuing accumulation of cases will allow more demographically,

culturally, and environmentally specific investigation. In this study, I loosely applied a native language criterion—Korean and American English—in the participant recruitment process. The participants in the current study, however, did not share any particular demographical profiles and were not treated as representatives of a certain group of people. The lack of homogeneity is not a limitation of this study, however, since the focus of the dissertation was on individuality regardless of participants' characteristics. Exploring personal digital archiving with a narrowly defined population, however, is necessary. Observations in this study suggest that characteristics such as age, gender, type of professions, cultural identity, and access to digital technology would likely have an impact on personal digital archiving practices.

Individuals often categorized as digital natives are one set of interesting research participants for future study of personal digital archiving. While a few participants in this study experienced computing in their early childhood, the majority of participants started using computers and other digital devices such as digital cameras, smartphones, and the Internet when they reached adulthood (e.g., during their college years or at work). In contrast, current children already engage with digital technology and activities on the Web (see Figure 7). For example, the South Korean government announced a goal to deliver all school curriculum materials in digital format by 2015 (Eason, 2011, October 18). This movement gives an indication of the increasing significance of digital technology in performing everyday activities. A survey published by the online charity YouthNet reports that 75% of 16 to 24 year old respondents feel that “they couldn’t live without the Internet” (BBC NEWS, 2009, October 13). Cunningham (2011) cites an

Australian survey which reported that “most people aged eighteen to twenty-four regarded their laptop computer as their most valuable asset” (p. 79). As digital technology becomes more fully integrated with education, communication, and everyday lives, it would be fair to assume that digital natives may develop different attitudes toward digital technology and different perceptions of the nature of digital documents that they produce and collect, compared to how their parents’ generations experience digital technology. Referring to the Digital Native project by the Berkman Center for Internet and Society at Harvard University and the Research Center for Information Law at the University of St. Gallen, Onuf and Hyry (2011) note “interestingly, many people—especially those digital natives who have grown up using technology and specifically the Internet—seem to have few qualms about placing personal information that would traditionally have been understood as private online” (p. 250). Based on their field study with 21 “tweens” and teenagers from a mid-sized city in the United States, Odom, Zimmerman, and Forlizzi (2011) discuss that participants showed a strong preference for cloud computing. According to the authors, teenagers perceive online services as providing unlimited and enduring storage and immediate access to their virtual possessions in and outside of the bedroom.

## Internet adoption over time by teens & adults

% within each age group who go online

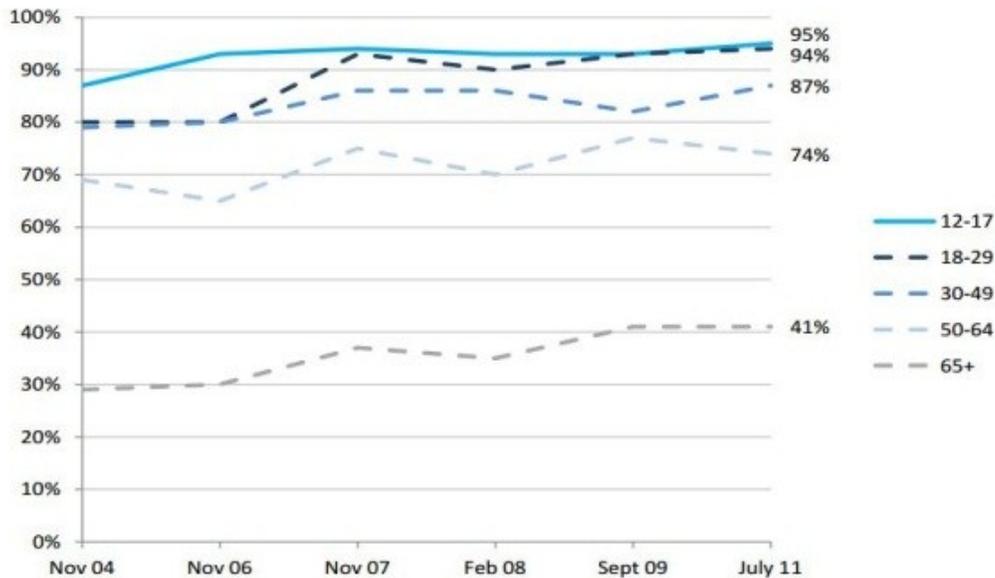


Figure 7: Internet adoption rate over time by teens and adults in U.S. Amanda Lenhart, Pew Research Center, Internet and American Life Project (accessed April 13, 2012, [www.slideshare.net/PewInternet/digital-divides-and-bridges-technology-use-among-youth](http://www.slideshare.net/PewInternet/digital-divides-and-bridges-technology-use-among-youth)).

Looking closely at the relationship between how youth interact with their digital documents such as how they create, manage, and preserve them and their identity and cognitive development remains a particularly interesting area of inquiry, considering that childhood is a critical period of the construction of self. Only a few studies have been conducted about children’s recordkeeping activities in general (e.g., Trace, 2008) and specifically targeting “digital natives” and their digital information management and

preservation behavior. Furthermore, even among this younger population, opportunities to access and interact with digital technology would vary depending on individual circumstances. We already know that the Digital Divide is a factor: children in low income families might have relatively limited exposure to digital technology in their childhood. In addition, even though the Web is a world-wide phenomenon, each country has different cultural norms, perceptions, and rules regarding Internet use, which would influence how children understand and behave in the virtual environment.

#### **CONTRIBUTIONS OF THIS STUDY**

In terms of exploring personal digital archives and archiving phenomena, this study offers the following conceptual contributions.

##### **Defining personal digital archiving**

This dissertation draws upon a range of areas of study including personal information management, human computer interaction, archival studies, digital preservation, and digital memory studies. Researchers in these various fields have similar concerns and interests regarding long-term management or preservation of personal digital documentary heritage. While the terms “personal digital archives” and “archiving” have been used across these areas, they have also been vaguely defined. The lack of definitions is beyond a technical or terminological problem since “archives” and “archiving” are pivotal words to understand and elucidate the phenomenon of interest. Furthermore, “personal,” “digital,” and “archives/archiving” as individual words are accompanied with complicated nuances of their own, depending on the perspectives of

the person who uses them. While it is unnecessary or unrealistic to expect to have one definition that everyone would agree on, it was necessary to consider what these terms mean as a whole in order to clarify the purpose of the present study.

When I defined personal digital archives and archiving in Chapter 2, I attempted to incorporate the possible functions of archives for individuals and a society and for the present and future. I tried to avoid both being restricted to and abandoning the concepts of “archives” and “archival” documents as they have been discussed in the archival profession for a long time. As our world has become an increasingly “document-pervaded” (Buckland, 2012, p. 6) and digitally charged society, managing and archiving digital documents has become a concern for many people. When archives are combined with a digital modality, especially, preservation of digital cultural heritage requires that more people get involved, from individual record creators to digital technology designers and providers as well as professional archivists. As a result, I focused on the value or meaningfulness of documents to an owner, ownership of personal documents, and life trajectory and time in order to articulate the characteristics of personal digital archives/archiving.

The definitions that I established at the beginning of the present study will need to be modified in the future in response to changes in how we, personally and collectively, perceive and value digital documents, and in response to the emergence of new types of digital objects that might have a significant impact on how we communicate with each other and document life experiences. The definitions provided, however, will serve as starting points to further think about what personal digital archives and archiving mean in

the context of the construction of individual and collective memories.

### **Taking a holistic approach to everyday recordkeeping**

Previous research reviewed in this dissertation provides many descriptive findings of individuals' recordkeeping behavior and valuable insights into the role of documents in people's lives. Many studies have focused only on a particular environment, such as people's work environment or private home environment, or a specific type of digital documents, such as digital pictures and electronic messages. In the present study, however, I aimed to look at individuals' everyday lives as a whole. The fundamental idea behind this goal was that contemporary individuals' daily lives consist of work and non-work activities: the life continuum. With the pervasive use of "personal" digital technology, work and non-work related documents are likely created and kept in close proximity. For example, Bring Your Own Device (BYOD) (Digital Services Advisory Group and Federal Chief Information Officers Council, 2013), a growing concept and a trend within business and government sectors, reflects the increasing flexibility in choosing and stewarding one's own digital habitat across the different domains of everyday life. Furthermore, an individual's so-called "personal digital collection" is hardly limited to one type of digital material. While people's treatment of or feelings toward work reports would be largely different from those regarding their family pictures, these documents are all byproducts of the individual's life activities. Additionally, people would perceive the meaning and scope of work life differently, depending on what they do, where they work, and how they feel about work.

From this perspective, the primary focus of this study was on people and their interaction with various kinds of digital documents. Without a holistic approach to individuals' everyday lives and their digital belongings, the picture of the relationship between people and their digital documents would remain fragmented.

### **Exploring digital archiving in the context of construction of self**

As people keep a large amount of digital materials, the value of an individual document might easily be lost or forgotten among the piles. I started this study with the question of what motivates people to retain some (or all) documents throughout and beyond their lifetime. Through a review of related literature, I identified five values that cause people to keep documents beyond their primary purposes of use: 1) emotional/sentimental value; 2) historical value; 3) identity (formation and expression) value; 4) personal legacy value; and 5) sharing value. Based on the data analysis, I added one more value to the list: 6) relationship value.

All these six values allowed me to explore people's digital archiving practice focusing on self-reflectivity as a meta-value of personal digital documents. I used the idea of the construction of self to frame the overall research questions of the present study. Exploring personal digital archiving in relation to a fundamental issue in human life, the process of understanding the self, provided a useful guide to navigate through and look for connections between how people do certain things and why or what makes them do these things in that certain way. Therefore, from a research point of view, it paves the way to the eventual development of a theory or a model of personal digital archiving that

will explain this observed behavior, beyond describing it.

For example, in his version of Everyday Life Information Seeking (ELIS) theory, Reijo Savolainen (1995, 2005, and 2009) explains everyday life using the concepts of way of life (order of things) and mastery of life (keeping things in order). Savolainen asserts that individuals have their own perceptions of how things are when they are “normal” (2005, p. 144). Through the practices of everyday life, through choices made in everyday life, people establish a particular order of things (1995, p. 264), and individuals try to keep this order of things as long as it is meaningful. Mastery of life is a caring activity of maintaining the meaningful order of things. He discusses everyday information seeking as a part of mastery of life, especially related to everyday problem solving. His theory provides a useful conceptual frame that helps us to consider everyday information seeking in the context of a whole life.

With this definition of way of life, personal digital archiving would be viewed as a part of mastery of life, like information seeking, an effort to maintain the meaningful order of things. Regardless of format and type, individuals preserve certain documents as meaningful materials. At the operational level, individuals evaluate the significance of digital documents and organize, display, store, retrieve, and select or discard them in consideration of their values. Archived digital documents function as an evidence of life, a memory aid for remembering and active forgetting, a symbol of legacy, and a reminder of life trajectory. Beyond the operational interactions with digital documents, functions and meanings of archived digital documents serve as a resource when people make choices in their lives, review their past, identify their roles and positions in social

contexts, and present themselves to others including unknown future generations. These meta-level interactions between people and their personally preserved digital documents can be considered a vital element of the mastery of life and a tool for maintaining a meaningful order of things. With further investigation, the results and discussions of the current study can eventually be transformed into a theory such as Everyday Life Information Archiving and Preservation theory.

### **Exploring emotional aspects of personal digital archiving**

During data analysis, I noticed that emotions were a frequently recurring element. Several researchers in archival studies, PIM, and HCI have discussed the impact of emotions or “sentimental” reasoning on why people keep certain records as well as particular documentary objects. Yet, as I built an understanding of each participant’s narrative, it became apparent that emotions are deeply embedded in the process of personal digital archiving in terms of how people interact with and assign meaning to their digital documents. I explored and presented how different types of emotions such as negative (e.g., embarrassment, shame) and positive (e.g., pride, satisfaction, fun) emotions, and emotional bonds are related to the formation of personal digital archives.

Emotions—subjective, personalized, and often indescribable human experiences—are, however, a relatively marginal topic in archival discourse. This is not surprising, given that many archival theories and practices have been built around institutional records. Institutions are not like people who have deep feelings not only toward other people but also with regard to what they do and what they experience.

Emotions, however, have a strong presence in archives, especially when we consider archives in relation to individual and collective memories. As Laura Millar (2006) explains, the memories and the act of remembering that materials in archives evoke are not mere recollections of facts but are often accompanied by various feelings. Furthermore, the association of emotional experience with archives may extend from the use of archival materials to the existence of archives in some cases. For example, in Anne Gilliland's (2012) on-going articulation of the framework for approaching archives and recordkeeping for the development of community-based archives, she also emphasizes the importance of understanding "affective aspects" of the community as well as community interests, needs, epistemologies, demographics, and the mentality of place and time.

As discussed in this study, personal archives are particularly interesting cases that not only accentuate emotional context but also require us to understand emotional relationships between people and their documents. For example, people produce some personal documents as a result of the expression of emotions (e.g., love letters) or as documentation of emotional events (e.g., wedding pictures). Personal archiving practice can be an emotional experience in itself. Understanding emotional aspects of personal digital archiving and archives is, therefore, vital in order to explore and preserve complex layers of meanings embedded in personal digital archives.

## **Rethinking keeping more or everything**

As mentioned several times in this dissertation, it is clear that even those people who identify themselves as selective keepers tend to keep more digital materials than they did paper ones, and keeping becomes a default action. As a result, it is likely that people will leave behind a massive amount of personal digital materials. At the same time, in this study I explored personal digital archiving as a practice which involves assigning meanings and values to digital materials; such activity includes time for self-reflection and evaluation.

PIM researchers William Jones and Jaime Teevan (2007) describe digital technology as a double-edged sword: 1) it accelerates the phenomenon of information overload, and 2) it offers opportunities for creativity. If we twist the negative connotation of information overload in a positive way, we can interpret it as producing and accumulating more information to utilize, so-called “big data.” When we combine this view of information overload with technological creativity, it appears that we have multitudes of interesting opportunities as well as capabilities to document, share, and preserve human experiences at an unprecedented scale and detail.

A digital documentary heritage constructed and formed by people throughout their life-long digital archiving (i.e., personal digital collections) offers a potentially enormous body of materials, especially useful for enriching the understanding of ourselves, our personal and collective histories, and identities within communities as well as the nature of society and culture for present and future. From this perspective, personal

archiving activities and related research may serve as a particularly important vehicle for capturing and better comprehending the human experience.

### **Practical insights**

The conceptual contributions of this study discussed above may be of interest to scholars who are investigating the phenomenon of personal digital recordkeeping and archiving. The discussion and results of data analysis presented in this study also offer practical insights for 1) designing personal digital archiving tools or systems with an emphasis on maximizing customization in respect of individual differences and accompanying emotional experiences and 2) developing strategies to build grass-roots archives and ways for memory institutions to approach and work with individuals so that voices from diverse social groups can be reflected in the preservation of a cultural heritage.

For example, the desire for anonymity emerged as one of the themes that I discussed in Chapter 5. When participants thought about the possibility of donating their digital documents to memory institutions, they indicated that they would feel more comfortable in being identified as a member of a larger group or a community, rather than as a specific individual. In contrast to these feelings, the idea of donor anonymity may seem contradictory to collection management practices in memory institutions for two reasons. First, obtaining information about a record creator and gathering metadata relative to digital documents, including provenance information, is vital for guaranteeing and preserving the authenticity and integrity of digital collections. Second, the

conventional collection development frame of memory institutions focuses on acquiring materials from well-known individuals, oftentimes using a record of the creator's name as the title of the collection. Although there would be differences among archival institutions with their own collection policies, currently there are not many collecting archives that acquire personal papers anonymously or receive anonymous donations from ordinary people. Yet, if ordinary citizens know they can make contributions anonymously as members of particular groups, rather than being remembered as particular individuals, they may be more willing to consider how materials from their lives can help others in the future to better understand the experiences of people who lived in a particular time and place. By taking an approach that emphasizes anonymity of donations by ordinary people, memory institutions may be able to encourage people to actively engage in collective archiving, not only as users but also as active participants and collaborators. Finding ways to connect with ordinary people for the purpose of developing a sustainable and trustworthy relationship with members of particular communities represents a significant opportunity as well as challenge for archives, especially community archives that have emerged in association with grass-roots movements and that are driven by the motivation to establish a community identity that may enable the group to thrive in the future.

From another perspective, the idea of anonymity reflects the increasing personal and social concerns about protection of privacy in a digital environment. Compared to documents in analog form, digital documents more easily reveal personally identifiable information. For example, personal information in an analog correspondence is not

searchable without looking through a collection box by box and folder by folder and reading every single document. By contrast, in using digital search tools, it is feasible to collect personal information about a particular individual from a corpus of e-mails. The use of digital forensic tools in preservation further allows for in-depth recovery of deleted digital files from storage media and extraction of machine-recorded information of which document creators are not fully aware. While digital documents and tools dramatically enhance the capability of conducting a detailed examination of records and of gaining a clearer understanding of a collection, the use of digital technology also increases the risk of possible abuse of private information and revelation of personal information that record creators deleted or did not intend to leave. In this study, I discussed that unintended disclosure of potentially shameful or embarrassing documents about owners or others is a significant concern for many people. The possibility of unintended disclosure also has an impact on how people create, preserve, and share their digital documents. Such exposure may lead to negative emotional experiences for people who are related to particular situations. Thus, archives and preservation professionals need to be fully aware of delicate privacy concerns and be responsible for helping donors and creators of personal archives to understand potential problems. Additionally, the adaptation of digital tools for processing and preserving digital collections, such as digital forensic tools, needs to be accompanied by ethical examinations regarding principles of confidentiality and protection of personal information.

## **Being self-reflective**

Overall, the aim of this study is descriptive rather than prescriptive with regard to personal digital archiving. Therefore, readers will develop their own interpretations and understandings of the results and discussions of this study, especially for pragmatic purposes.

Some readers of this study may discover experiences and emotions similar to those of the interviewees in terms of how they perceive, value, and preserve their digital documents. The identification of similarities with participants may stimulate us to further question and think about why we do what we do and feel what we feel in the context of our own lives. Awareness about how we perform everyday digital recordkeeping may not be of interest to everyone. As demonstrated in this study, however, personal digital archiving is a self-reflective practice that is fundamentally private in nature; therefore, observing my own practices can offer a useful opportunity to explore and better understand who I am as a person. Furthermore, at the collective level of human experience, personal digital documents created and preserved by ordinary individuals are significant in the construction of our social cultural heritage. Thinking about how my personal digital archives would reflect my life experience and which aspects of my life I am willing to choose to share with others may have an impact on our collective understanding of who we are as a society in the future.

Some readers may find participants' narratives as reported in this study, especially their rationales behind personal digital archiving activities and emotions associated with those activities, to be irrelevant to their own life experiences or perhaps unfamiliar. In a

positive sense, our perceptions of irrelevancy or unfamiliarity help us to understand individual differences in personal digital archiving practices as well as how we operate our lives in general. Although recognition of individual differences is not new, it is worth re-emphasizing since differences in personal digital archiving highlight the self-reflective nature of this very practice. Observations about differences in individual archiving practices may be particularly useful for researchers and developers of personal information management or digital archiving tools and services. Design of these tools and services should pay more attention to supporting the user's self-reflective experience in the organizing and preserving of their digital documents, which entail a wide range of human emotions.

## Appendices

### APPENDIX A. PARTICIPANT DEMOGRAPHIC INFORMATION

#### 1. Overview

Language		English speaking		Korean speaking		Total
Gender	Age group	Female	Male	Female	Male	
	<i>18 to 34</i>	6	2	3	3	14
	<i>35 to 64</i>	1	2	1	3	7
	<i>65 and older</i>				2	2
<b>Total</b>		7	4	4	8	<b>23</b>

#### 2. Demographic Information

ID	Age range	First Language	Interview Language	Gender	Profession/Occupation
P1	20-35	Korean	Korean	Female	Lecturer, Graduate student
P2	20-35	Korean	Korean	Female	Manager at a company
P3	20-35	Korean	Korean	Female	Administration manager
P4	20-35	Korean	Korean	Male	Policeman
P5	20-35	Korean	Korean	Male	Patent attorney, Engineer
P6	20-35	Korean	Korean	Male	Manager at a company, Restaurant owner
P7	35-65	Korean	Korean	Female	Artist, Architect
P8	35-65	Korean	Korean	Male	Illustrator, Cartoonist, Artist
P9	35-65	Korean	Korean	Male	Government employee, Researcher
P10	35-65	Korean	Korean	Male	Government employee, Researcher
P11	65-	Korean	Korean	Male	Retired professor
P12	65-	Korean	Korean	Male	Retired professor
P13	20-35	English	English	Female	Graduate student, Librarian
P14	20-35	English	English	Female	Part-time programmer
P15	20-35	English	English	Female	Graduate student
P16	20-35	English	English	Female	Social worker
P17	20-35	English	English	Female	Librarian
P18	20-35	English	English	Female	Independent designer
P19	20-35	English	English	Male	Software developer
P20	20-35	English	English	Male	Graduate student, Attorney
P21	35-65	English	English	Female	Graduate student
P22	35-65	English	English	Male	Conservation specialist
P23	35-65	English	English	Male	Software engineer

## **APPENDIX B. INTERVIEW PROTOCOL AND EXAMPLES OF INTERVIEW QUESTIONS**

### **1. Semi-structured interview protocol**

The researcher selectively used the following interview questions as starting points that help a participant to describe her/his digital archiving experience.

- A. Brief personal background and demographic information:
  - Profession(s)
  - Hobby or leisure activities
  - Roles in communities
  - Brief family structure
  - Gender
  - Age group (e.g. 20-25; 26-35; 36-45; 46-55; 56-65; 66-75; 76 and older)
  
- B. History of digital technology use:
  - When and how did you start using computers and the Internet?
  - Can you describe your early computing environment (e.g., models of previous computers, operating systems used, frequently used application and for what purposes, history of Internet use, etc.)?
  - How have your computing activities changed and how do you feel about those changes?
  - What kinds of digital technology (e.g., digital devices, online services, Web applications, etc.) do you use daily and for what purposes (e.g., creating files, collecting files, e-mail, chatting, blogging, social networking, etc.)?
  - How do you feel about your knowledge and skills in the use of digital technology (e.g., a mere user; self-problem solving; tech savvy; etc.)?
  - What do you most like about digital technology that you are using?
  - What do you most dislike about digital technology that you are using?
  
- C. Characteristics of retained digital materials:
  - Can you describe the types of digital documents you have and approximately how many?
  - What are the oldest digital document/items that you have kept and why?
  - How often did you open or use the oldest digital document/items that you have kept?
  - What are the most important or meaningful documents/items to you personally among the digital documents/items you have kept?
  - What kinds of meanings do the documents/items have for you?
  - What are the least important documents/items to you personally among the digital documents/items that you have kept?

D. Management of personal digital collection:

- Can you describe how you organize your digital documents?
- How do you name your digital documents?
- Where and how do you keep your digital documents (e.g., personal computer, web space, external hard drive, diskettes, CD/DVDs)?
- What are the important goals of your everyday document management?
- How do you feel about digital documents that you are creating and storing in a cloud-computing environment?
- Can you describe how you developed a process for organizing digital documents?
- How do you feel about your process for managing your digital documents?

E. Long-term preservation of personal digital collection:

- How long do you keep your digital documents and for what reasons?
- How long do you want to keep your digital documents and for what reasons?
- How often do you re-use kept documents?
- What is your plan for your digital documents after your lifetime?
- What do you expect to happen to your digital documents after your lifetime?
- What kinds of concern do you have about the long-term survival of your digital documents?
- Are you willing to donate your digital documents to memory institutions such as archives?

F. General question:

- How do you personally define what are private and what are public among your digital documents?
- What does digital “archiving” mean to you?

G. In a disaster situation:

- What would you like to grab first to rescue in case of fire at home (or your office)?

## **2. Examples of emergent questions during the interview**

Context specific (i.e., personally oriented) questions emerged during each interview. The following questions are a few examples of these emerged questions.

- How did you feel when you lost [those particular] digital materials?
- How would you feel if you lose the digital material(s) that you identify as meaningful?
- What made you to delete [those particular] digital materials?
- What would you like to do with your family member’s digital documents left

behind after she/he passed away?

- Where do you think your concerns for legal issues come from?
- What made you to be interested in digitization?
- Where do you think that your desire [to organize / to destroy] your digital materials comes from?
- When was the most memorable period or event in your life?
- When was the least memorable period in your life?
- What is the meaning or importance of [that particular] period in your life to you?
- What is the meaning or importance of [that particular] social role that you identified?

## APPENDIX C. PARTICIPANT CONSENT FORM

Contact information of the principal investigator and the faculty sponsor (e-mail addresses and phone numbers) were redacted in this appendix.

IRB Protocol # 2010-04-0040

(American English)

### CONSENT FORM

#### The University of Texas at Austin

You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) will also describe this study to you and answer all of your questions. Please read the information below and ask any questions you might have before deciding whether or not to take part. Your participation is entirely voluntary. You can refuse to participate without penalty or loss of benefits to which you are otherwise entitled. You can stop your participation at any time and your refusal will not impact current or future relationships with UT Austin. To do so simply tell the researcher you wish to stop participation. The researcher will provide you with a copy of this consent for your records.

**Title:** Personal Digital Archives: Preservation of Documents, Preservation of Self

#### **Principal investigator, faculty sponsor, and contact information:**

*Principal Investigator:* Sarah Kim

Ph.D. Student, School of Information, The University of Texas at Austin  
xxxxx@xxx.xxx; (###) ###-####

*Faculty Sponsor:* Patricia Galloway

Associate Professor, School of Information, The University of Texas at Austin  
xxxxx@xxx.xxx; (###) ###-####

**The purpose of this study** is to investigate how people archive personal digital documents that are created and accumulated throughout their lives and how people experience archiving activities in the digital environment.

**If you agree to be in this study, I will ask you to** participate in a semi-structured interview and follow-up interviews.

**Total estimated time to participate** in the study is about one to three hours for the initial interview and follow-up interviews.

**Risks of being in the study**

This study is estimated to result in no risk to you, since your identities will be kept confidential (see below). If you wish to discuss the information above or any other risks you may experience, you may ask questions now or call the Principal Investigator listed on this form.

**Benefits of being in the study**

You may find that participation in this study serves as an opportunity for you to think about your everyday archiving practices and the value of your personal digital documents.

**Compensation**

You will not receive compensation for participating in the study.

**Confidentiality and Privacy Protections**

- The data resulting from your participation, once processed prior to analysis, will contain no identifying information that could associate you with the data you provide.
- The data resulting from your participation will be saved on a password protected digital storage device, which will be kept disconnected from any networked environment and stored safely in a locked cabinet in the Principal Investigator's office, accessible only to the Principal Investigator.
- The data resulting from your participation will be heard or viewed only for research purposes by the Principal Investigator, except for the purpose of transcribing. Interview recordings will be transcribed by the Principal Investigator and/or a professional transcriber. A professional transcriber will be asked to sign a confidentiality statement before interview recordings are transferred to her/him.
- Once the data resulting from your participation has been permanently redacted, the information will be retained for as long as required for research purposes.
- You are entitled to review and request additional redactions at anytime.

The data collected and produced in this study will be stored securely and kept confidential. Authorized persons from The University of Texas at Austin and members of the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. All publications resulting from this study will exclude any information that will make it possible to identify you as a subject. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

**Contacts and Questions**

If you have any questions about the study please ask now. If you have questions later,

want additional information, or wish to withdraw your participation, contact the researchers conducting the study. Their names and e-mail addresses are at the top of this page. If you have questions about your rights as a research participant, complaints, concerns, or questions about the research please contact Jody Jensen, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects at (512) 232-2685 or the Office of Research Support at (512) 471-8871 or email: orsc@uts.cc.utexas.edu.

*You will be given a copy of this information to keep for your records.*

**Statement of Consent**

I have read the above information and have sufficient information to make a decision about participating in this study, “Personal Digital Archives: Preservation of documents, preservation of self.” I consent to participate in the study.

Participant Name: \_\_\_\_\_

Participant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Person  
Obtaining Consent: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Investigator: \_\_\_\_\_ Date: \_\_\_\_\_

(Korean)

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오스틴 텍사스 대학교 (The University of Texas at Austin)

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**연구 제목:** 개인의 전자 기록 보존: 문서의 보존과 자아의 보존

### 책임 연구원, 연구 지원 교수와 연락처 정보:

책임 연구원: 김사라 (Sarah Kim)

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**연구 참여에 따르는 혜택:** 본 연구에 참여 함으로서 귀하는 평소 귀하의 전자 문서 보존 행위와 귀하가 소지한 개인적인 전자 문서들의 가치에 대해 재 고찰해 볼 기회를 갖게 될 것입니다.

**보수:** 본 연구는 연구 참여에 대한 보수를 지급하지 않습니다.

**비밀 보장과 개인 정보 보호:**

1. 귀하와 관련될 수 있는 모든 신상 정보는 교정을 통해 귀하의 참여 결과로 수집된 자료에서 삭제될 것입니다.
2. 귀하의 참여 결과로 수집된 연구 자료는 비밀 번호로 보호된 전자 저장 장치에 저장될 것입니다. 본 전자 저장 장치는 모든 네트워크 환경과 단절되고 책임 연구원만이 접근 가능한 사무실 캐비닛에 안전하게 저장될 것입니다.
3. 책임 연구원은 귀하의 참여 결과로 수집된 연구 자료를 오직 연구 목적을 위해서만 사용할 것입니다. 음성 녹음 된 인터뷰는 책임 연구원이나 전문 전사가에 의해 문서로 작성될 것입니다. 전문 전사가는 음성 녹음된 인터뷰를 이수 받기 이전에 개인 정보 비밀 보장 동의문서에 서명할 것입니다.
4. 귀하의 참여 결과로 수집된 자료는 영구 교정 (모든 개인 신상 정보 삭제) 된 후에 연구 목적을 위하여 지속 보관될 것입니다.
5. 귀하는 교정된 자료를 심리하고 추가적 교정을 요구할 수 있습니다.

본 연구를 통해 수집, 생산된 연구 자료는 안전하게 저장되고 비밀로 유지될 것입니다. 오직 오스틴 텍사스 대학교 (The University of Texas at Austin) 로부터 권한을 부여 받은 사람이나 연구 윤리 심의 위원회 (the Institutional Review Board) 에 속한 위원만이 귀하의 연구 자료를 심리할 법적 권리를 가지고 있습니다. 연구 윤리 심의 위원들은 법이 허용하는 한도 내에서 귀하의 연구 자료의 비밀성을 보장할 것입니다. 귀하와 관련될 수 있는 신상 정보는 본 연구와 관련된 모든 출판물에서 제외 될 것입니다. 연구 전 과정에서 책임 연구원들은 귀하의 연구 참여 동의에 영향을 미칠 가능성이 있는 새로이 입수된 정보들을 귀하에게 지속적으로 제공할 것입니다.

**문의와 연락처:** 연구와 관련한 질문이 있으시면 지금 질문하십시오. 차후 연구에 대한 추가적 정보를 원하거나 연구에 참여하기를 중단하시길 원하시면 본 연구의 책임 연구원들에게 연락하시기 바랍니다. 책임 연구원들의 연락처는 본 동의서 상단에 언급되었습니다. 연구 참여자로서의 권리에 대한 질문, 불만, 염려 혹은 연구에 관련한 질문이 있으시면 아래 주소로 연락하십시오: 조디 젠슨 박사 (Jody Jensen, Ph.D.), 오스틴 텍사스 대학교 연구 윤리 심의 위원회 의장 (Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects), 전화 1-512-232-2685 (U.S.) 혹은 연구 지원 팀 (the Office of Research Support), 전화 1-512-471-8871 (U.S.) 혹은 이메일 orsc@uts.cc.utexas.edu.

*본 문서의 서명된 사본이 제공될 것입니다.*

**동의문**

본인은 "개인의 전자 기록 보존: 문서의 보존과 자아의 보존" 연구 참여에 관련한 충분한 정보를 제공 받았습니다. 본인은 이 연구에 참여하기를 동의합니다.

참여자 성명: \_\_\_\_\_

참여자 서명: \_\_\_\_\_ 날짜: \_\_\_\_\_

동의서 취득자 서명: \_\_\_\_\_ 날짜: \_\_\_\_\_

연구자 서명: \_\_\_\_\_ 날짜: \_\_\_\_\_

**APPENDIX D. TRANSCRIBER CONFIDENTIALITY AGREEMENT FORM**

**CONFIDENTIALITY AGREEMENT**

**Transcription Service**

I, \_\_\_\_\_, transcriptionist, agree to maintain full confidentiality with regard to any and all audio recording files and documentation received from *Sarah Kim* related to her doctoral study on “Personal Digital Archives: Preservation of documents, preservation of self.” Furthermore, I agree:

1. To hold in strictest confidence the identification of any individual that may be inadvertently revealed during the transcription of audio recorded interviews, or in any associated documents;
2. To not make copies of any audio recording files, the transcribed interview texts, and any other study-related materials, unless specifically requested to do so by *Sarah Kim*;
3. To store all audio recording files, the transcribed interview texts, and any other study-related materials in a safe, secure location as long as they are in my possession so as to avoid third persons unrelated to the project to access said materials;
4. To return all audio recording files, the transcribed interview texts, and any other study-related materials including digital storage media containing these materials to *Sarah Kim* in a complete manner, within ten (10) days after the completion of the work and at the request of *Sarah Kim*;
5. To delete all audio recording files, the transcribed interview texts, and any other study-related materials from my computer hard drive and any backup devices within ten (10) days after these materials returned to *Sarah Kim*.

I am aware that I can be held legally liable for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio recording and/or files to which I will have access.

Transcriber’s name (printed): \_\_\_\_\_

Transcriber’s signature and date: \_\_\_\_\_

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