
Passing On The Cloud: A Human Information Organization Behavior Perspective On Digital Inheritance

Joachim Pfister

University of Zurich
Binzmuehlestrasse 14
Zurich, Switzerland
pfister@ifi.uzh.ch

Abstract

This paper motivates the challenges human information organization behavior faces during major life events such as death when cloud storage services are involved. Challenges arise, because social, legal or commercial ties and relationships have to be managed or maintained with individuals and organizations over an individual's lifespan and beyond. Digital inheritance might be technically feasible but will people really benefit from such approaches?

Author Keywords

electronic data safes; thanatosensitive design; human information organization behavior; personal information management; lifespan-orientation; digital inheritance

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Motivation and introduction

M. S., a 38 year old father of a family, went skiing. Unfortunately, he fell and hurt himself so badly that he went into a coma and stayed in this state for months before he died. Besides the emotional stress, his wife had to solve a puzzle of administrative issues because nearly all interactions with service providers, such as

banks and insurances, were dealt with by her husband – preferably online. Until now, months later, she is not sure if she has obtained access to all items that M. managed digitally, such as online banking accounts. What she regrets most, is the lack of access to the family photos of former, happier years that have been stored somewhere in the cloud as a backup but she does not know the password. She still grieves over the loss of her beloved one and is very unhappy about the loss of valuable digital memories. (fictitious case)

This vignette demonstrates an extreme case exhibiting human information organization behavior (HIOB, a term coined by Spink and Cole [10]) in a major life event. We all engage in human information organization behavior on a daily basis encountering physical and electronic information items in different forms and contexts. It is quite common nowadays to have several digital devices that are used to create and access digital information items and store them at various locations, for example, locally on the device or using cloud-based storage services involving various service providers. However, we are anchored in the physical world and have to manage paper-based information items, too. Three major challenges to personal information management [PIM, cf. 5] have been identified [2], that can be predominantly situated on an individual level: information fragmentation (information in different formats and on different devices needs to be related to accomplish a task), information overload (more information to manage leads to stress) and the loss of context (harming successful recall of information items). The term HIOB is used here to broaden the scope of PIM beyond the individual practices in order to encompass a human's embeddedness in social, legal or commercial interactions where ties/bonds and relations are formed

with other individuals or organizations. Taking this HIOB perspective can uncover new challenges with respect to today's fragmented and cloud-supported information management practices of individuals.

Challenges and Opportunities

As described in the vignette at the beginning, death is amongst other major life events which are varied and often include milestones, such as moving out of the parent's home, the first job, marriage, having children etc. The author assumes that each major life event has some influence on an individual's HIOB and technology needs to support an individual's whole lifespan and beyond because of the ties, bonds and/or relations that were formed. They will persist – socially, commercially or legally – and they will create further challenges due to the steady shift to digital information worlds:

Challenge one - Managing and maintaining legal and commercial relationships: More and more information items are stored digitally but still, we have to bridge the paper-digital based worlds in order to manage our lives, for example, if we engage in governmental or business processes for which we are required to look up or provide information items. In the online age, new services like personal data stores/lockers [7] or electronic data safes [9] are arriving on the horizon supporting these e-business or e-government processes. But since the increasing fragmentation of our digital information seems to change our HIOB practices, it is worthwhile to check if already established (PIM) knowledge still holds and what future challenges arise to maintain these bonds and relationships.

Challenge two – Managing and maintaining social ties and bonds: Because digital data becomes more and

more widespread and most probably persists a user's life, questions surrounding a digital death for creating a digital legacy must be considered with respect to HIOB. A lifespan-orientation in HCI research and the concept of thanatosensitivity was suggested by Massimi et al. [6] putting emphasis on the developmental perspective from conception to death of technology. This opens up the question what happens with virtual possessions [1] "in the cloud", for instance stored in electronic data safes, if the their owner passes away. How can the creation of digital legacies and its transmission be supported [3,8] with technology, not only legally [4]? And how can services be designed to incentivize people to care for their digital afterlife – if this is a true need?

On the one hand, applying the HIOB perspective to these two challenges of (digitally) maintaining bonds and relationships will help us to deepen the knowledge on HIOB itself. On the other hand, it will provide insights to designers of information systems with cloud-based storage services that are aiming at maintaining bonds and relationships in such a way that information fragmentation, information overload or loss of context are reduced for the people involved in a case of death, such as the bereaved [cf. 6].

Current Work

To generate data about people's current HIOB practices, in order to derive design requirements for electronic data safes, the author followed a qualitative approach conducting 17 semi-structured interviews of about 90 minutes duration each. The interview protocol was based on an extensive literature search related to various PIM practices, also including potential preparations concerning a digital death. After transcription, a grounded theory approach [11] was used to analyze

the data. In the following, some results related to digital inheritance are described.

One interviewee indicated that he saw himself as responsible for maintaining an electronic repository and serving as the family archivist. He reported that his whole family appreciates his perfect archive and the fact that he is able to retrieve information items quickly, for example, a manual or a receipt in case of having to handle warranty issues. In this respect, the family's archive, containing administrative documents and digital photos and videos, is managed by him. He even prepared for digital estate planning and he has not separated areas within his personal information collections which should be accessible selectively: *"I think it would be terrible if all my work of digitizing and managing digital items would be in vain and would get lost. Therefore, I placed a sealed envelope somewhere containing several passwords and instructions how to access my data. Everything will be open then – I even placed there my key for my password manager and for the cloud storage service I am using."*

Another interviewee expressed that all aspects of his life would be recoverable from his electronic archive he curates with the help of a cloud-based storage provider. But he has not made any preparations for digital inheritance, as all the other interviewees expressed. From their answers, we inferred that only if people have children, the topic of dealing with digital data as part of one's estate was judged as being somewhat important: *"No, passing on physical things... maybe. But digital data... not yet. Maybe this will change if I had children."*

Discussion points

In the workshop, I would like to spark discussions around the following points that are dealing with life events and possible technology support with respect to data management surmounting an individual's lifespan:

- How can people be incentivized to think about uneasy questions associated with major life events, such as death, and the consequences for their personal data management, expressed through HIOB?
- Can or even shall current work practices of data management adapt a lifespan-approach that is integrated unobtrusively without or very little conscious user involvement?
- Does inheriting a digital legacy always have positive consequences? What are user's perceptions and experiences being the beneficiaries of such a digital legacy? How shall research in these sensitive life events be designed to capture experiences and opinions, for example, when talking to beneficiaries of data inheritance solutions? What are the ethical and practical problems such research might encounter?

References

- [1] Cushing, A.L. "It's stuff that speaks to me": Exploring the characteristics of digital possessions. *Journal of the American Society for Information Science and Technology* 64, 8 (2013), 1723–1734.
- [2] Evéquo, F. Supporting personal information management with visual facets. 2010. <http://doc.rero.ch/record/21169>.
- [3] Gulotta, R., Odom, W., Forlizzi, J., and Faste, H. Digital Artifacts As Legacy: Exploring the Lifespan and Value of Digital Data. *Proc. SIGCHI* (2013), 1813–1822.
- [4] Hopkins, J.P. Afterlife in the Cloud: Managing a Digital Estate. *Hastings and Science Technology Law Journal* 210, 5 (2013), 209–2044.
- [5] Jones, W. and Teevan, J., eds. *Personal Information Management*. Univ of Washington Pr, 2007.
- [6] Massimi, M., Odom, W., Banks, R., and Kirk, D. Matters of life and death: locating the end of life in lifespan-oriented hci research. *Proc. of the SIGCHI* (2011), 987–996.
- [7] Narayanan, A., Toubiana, V., Barocas, S., Nissenbaum, H., and Boneh, D. A Critical Look at Decentralized Personal Data Architectures. *arXiv:1202.4503*, (2012).
- [8] Odom, W., Banks, R., Kirk, D., Harper, R., Lindley, S., and Sellen, A. Technology heirlooms?: considerations for passing down and inheriting digital materials. *Proc. SIGCHI* (2012), 337–346.
- [9] Pfister, J. and Schwabe, G. The Landscape of Electronic Data Safes and Their Adoption in E-Government and E-Business. *2013 46th HICSS*, (2013), 1963–1972.
- [10] Spink, A. and Cole, C. Human information behavior: Integrating diverse approaches and information use. *Journal of the American Soc. for Inf. Science and Technology* 57, 1 (2006), 25–35.
- [11] Strauss, A. and Corbin, J.M. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE, 1998.