‘Analog’ Tagging in Personal Information Management:

How Tagging Principles Apply to Non-Digital Information Systems

Manuela V. Aronofsky

Pratt Institute

Abstract

This paper expands upon an earlier study of my pen-and-paper personal information management system. The product of that investigation was an analysis of my personal information behavior, and a comparison of the contextual life events against which the data was recorded. Upon investigation, I had devised what could be defined as an ‘analog’ tagging system, in order to meet my specific information needs. This paper provides an overview of tagging practices, and how they have specifically been studied in the field of personal information management (PIM). It then discusses how digital tagging systems can be applied to ‘analog’ tagging practices, what ‘analog’ tagging looks like, and how it may be a potential solution for information overload in our digital age.

Keywords

personal information management; tagging; analog tagging

Introduction

Last semester, I underwent an investigative study of my personal information behavior. Specifically, I analyzed my pre-existing pen-and-paper, or ‘analog’ method of personal information management. This process involved qualitative analysis of pre-existing data, all of which was extracted from my physical planner, which I use as my primary organizational tool. Data gathered included my work schedule, daily to-do lists, reminders for personal engagements, medical appointments, and tasks related to graduate school coursework. The focus of this study was to analyze my data, in order to gain a perspective on my organizational behavior as situated in different social and academic contexts. What emerged was an overall analysis of my personal

information behavior, including breakdowns of my tasks per behavioral category, and a comparison of the contextual life events against which the data was recorded. This paper will diverge from these overall findings, and specifically describe the self-created ‘analog’ tagging system I had developed in order to organize my personal information. It will also discuss how tagging is currently seen in PIM, what pen-and-paper ‘analog’ tagging practices might look like, (including an examination of the bullet journal organizing system), and how these practices fit into the constructs of general tagging principles. Thus far, these principles have primarily been examined from a digital perspective, therefore I attempt to argue that an application of digital tagging practices onto our persistent analog organizing systems – in effect, making information ‘physical’ again - may be a way to address digital information overload.

Tagging in Personal Information Management

The majority of publications on tagging discuss social tagging, and the effect of crowd-sourced tags in both memory institutions, or online social platforms. There are far fewer studies on tagging in PIM, and there is hardly any information on tagging principles as applied to analog information systems, or vice versa. Gao (2011) studies the question of why people tag during PIM (their motivation), and then compares the “performance and workload difference in information organization and retrieval tasks between categorization and tagging interfaces” (p. 821). Their findings show that users display more frustration, and “mental demand” (p. 821) when using tags for retrieval purpose rather than categorization purposes. However, they also conclude that those who use tagging practices for their PIM have a better memory of their content than users who do not.

Suh, Oh, and Yoon (2016) also explore tags as being beneficial to PIM, arguing that they can help users navigate a growing issue: “as the amount of data grows, personal information

management has become essential as well as challenging for everyday lives” (p. 568). Their paper specifically analyzes the three attributes of tag commonness, tag frequency, and tag position, and how these factors affect what users remember when it comes to using tags for their PIM needs.

The reconciliation between recording, and later retrieval of information can be particularly difficult due to what Narayan and Olsson (2013) call “intra-subjectivity” – or “the coordination of meaning between one’s own past and present selves” (p. 8). Effectively, this means that one may store a piece of information in a way that they think makes sense at the time, only to find that later their subjectivity has shifted, resulting in a lack of memory as to how the information was initially stored. According to existing theories, the application of tags alleviates this issue, and was even being discussed before digital tagging became a practice - at least in the context of social tagging. Lansdale (1985) and Simpson (1986) (as cited in Lansdale, 1998) found that “users assigning retrieval tags to documents (pictures and words) have much stronger memory for those tags if they assign them themselves” (p. 65). For the purposes of this paper, a parallel can be drawn towards all of these ideas, and translated into why users may use tagging principles - even while preferring to do so on a physical platform. Specifically, applying tags to pieces of personal information such as to-do lists, due dates, and events or engagements, helps to categorize one’s information needs into a system that is both easier to visualize, and is more effective in terms of recall.

‘Analog’ Tagging Systems

“The need to organize information for personal later retrieval has been found to be one of the most important motivations for tagging” (Gao, 2011, p. 821). This statement rings very true for PIM, which often necessitates the retrieval of information after its initial recording, or storage.

For organizational needs such as to-do lists (whether for work, or personal use), and engagements, it is particularly true that this information must be recorded in a way that is easily accessed, and remembered. There are a multitude of ways that information can now be stored for PIM, especially with the availability of so many digital tools and platforms. However, it is important to also acknowledge that physical organizing systems (such as planners, journals, and calendars), are still widely used, and that paper persists as a medium. Steimle (2012) writes: “A large body of research shows that paper supports a wealth of interactions that has a number of inherent advantages over digital technologies” (p. 1). These benefits include the ability of paper to be annotated seamlessly with a pen, further integrating the act with reading and comprehension. Paper also “renders information tangible” (Steimle, 2012, p. 1). By facilitating interaction and navigation (for example by flipping pages in a book, physically color-coding text, or sorting paperwork), the information is more effectively comprehended, and stored for later recall. If tagging practices are applied to the physical information system, one can “transform an unsorted and possibly confusing collection of a large number of disparate documents to a unified and well-structured document space” (Steimle, 2012, p. 149).

Methods of attaching a “tag” (user-created, and often user-determined metadata generated for the later retrieval of information) to a piece of physical information may include the filing of documents into separate folders according to such tags as authorship, date created, or subject matter. The user may even go a step above this by attaching some sort of physical object, or symbol to each document (via flags, or stickers) further signifying the tag, and subsequent classification system. Physical tagging can also include a system of color-coding, in which notes, or text are coded with different colors (the colors acting as tags) signifying categories of, for example: main idea/subtopic(s), high relevance/low relevance, urgent/non-critical.

The personal tagging system I had created in order to organize my personal information included a combination of these methods: four different highlighted colors signifying information classified into four ‘Everyday Life Behavioral Categories’ – School, Social, Work, and what I had termed PLM (or Personal Life Management). A second tagging practice was enacted through a self-created symbol system, utilized to classify different ‘Action Types.’ To further clarify, unique symbols, which in this context are synonymous to “tags,” are attached to information items in order to classify such things as tasks, and events. This system alleviated any issues of personal ‘intra-subjectivity.’ Because of the consistent color-coded, and symbol tags, I had no trouble remembering how, or in what format I recorded the information for later retrieval. The added factor of the information being handwritten, and inscribed onto a physical platform, improved my comprehension and ability to remember the information, as I ultimately made the information, and tags themselves ‘physical.’

While what I discuss above is a self-devised tagging information system, created in order to fit my specific information needs, the concept of bullet journaling is an established, popular organizational method that also (while not explicitly stating so) relies on the idea of ‘analog’ tags. Bullet journaling is self-described as the “analog method for the digital age” (Bullet Journal, n.d.), and is effectively a pen-and-paper organizational tool that uses bulleted lists in order to organize information. Different ‘bullets’ (for this purpose called ‘tags’), signify different actions (see Table 1), in order to allow for what the creators call a “rapid logging” technique. The system also uses more advanced information organization methods (adapted from digital tools such as html), such as nesting, and added signifiers. However, its basic function of using tags in order to classify personal information needs, allows for the user to quickly record, and store information items, as well as “retrieve” it easily, and with precision whenever needed. For example, a quick look at one’s tags for the day, week, or month (the bullet journal system is

ACTIONS	DEFINITION OF ACTION	REPRESENTATION & DESCRIPTION OF SYMBOL, OR "TAG"
Task Incomplete	"A thing you have to do" (Bullet Journal, n.d.)	• Single bullet point before task description
Task Complete	A task that has been fully accomplished	X An X placed over the task's original bullet point
Event	"Noteworth moments in time" (Bullet Journal, n.d.)	○ An open circle before the event description
Notes	"Things you don't want to forget" (Bullet Journal, n.d.)	- A dash placed before the note

Table 1: A Summary and Explanation of Bullet Journaling Tags (adapted from bulletjournal.com)

flexible in terms of temporal layout), allows the user to quickly retrieve such information as how many tasks are left to complete, how many tasks have been completed, or how many events are scheduled.

Discussion & Conclusion

In a brief explanation of why we use hierarchical organizing systems for PIM, Kotfila (2015) theorizes, "We lack the ability to keep track of everything in our mind. By writing them down the cognitive task shifts towards keeping track of where we have put the information rather than keeping track of the information itself." This statement similarly qualifies the concept of why we tag our information, as explained throughout this paper. However, one significant limitation of 'analog' tagging must also be addressed, and that is its inability of acting as a complete alternative to tree-structured, or hierarchical classification systems. That is to say, one of the main qualities and benefits of digital tagging (most prominently seen in social tagging systems), is that it "allows users to classify a single information item in multiple categories" (Suh, Oh & Yoon, 2016, p. 1). The nature of physical documents is that they are tangible information objects, and therefore cannot usually be in two (or more) places at once, or subsequently organized into more than one category (this, of course bars photocopying, or other methods of reproduction). For example, while organizing physical files by author can be seen as a systematic tagging practice, the one-to-one document to folder aspect restricts each file to being categorized under

only one “tag.” Using my personal tagging system as an example, it would not be possible to color code one information object with more than color, without physically duplicating (or re-writing) the phrase or note.

Despite this limitation, the motivations for digital tagging that have been discussed, can most certainly be applied to tagging practices on non-digital platforms. The persistence of paper, as represented in such ways as the recent popularity of bullet journaling, is just one example of how people are adapting digital organizing techniques for pen-and-paper. Kotfila asks, “What happens when our pointer based models (reading lists, TODO lists, calendars, etc) overwhelm our cognitive system?” (2015). For one, ‘analog’ tagging of information transforms it once again into a tangible resource. It may be that making our information physical is one solution for alleviating an inability to comprehend, and recall the ever-growing amounts of personal information we encounter, and collect on a daily basis.

References

Bullet Journal. (n.d.) Bullet journal – the analog system for the digital age. Retrieved from http://bulletjournal.com

Gao, Q. (2011, September). An empirical study of tagging for personal information organization: performance, workload, memory, and consistency. *International Journal of Human-Computer Interaction, 27*(9), 821-863.

Kotfila, C. (2015, April 9). Hierarchies, tagging and personal information management [blog post]. Retrieved from http://kotfic.github.io/hierarchies-tagging-and-personal-information-management.html

Lansdale, M. (1998, March). The psychology of personal information management. *Applied Ergonomics. 19*(1), pp. 55-66.

Narayan, B. & Olsson, M. (2013, November). *Sense-making across space and time: Implications for the organization and findability of information*. Paper presented at 76th ASIS&T Annual Meeting: Beyond the Cloud: Rethinking Information Boundaries, Montreal, Quebec, Canada.

Steimle, J. (2012). *Pen-and-paper user interfaces: Integrating printed and digital documents.* Berlin: Springer-Veirlag.

Suh, H., Oh, J., & Yoon, W.C. (2016). Which tags do we remember in personal information management? *International Journal of Human-Computer Interaction*, *32*(7), 568-583.