

Personal Information Management in Context

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ABSTRACT

An early paper that explored personal information management (PIM) described two general needs for personal information management behaviors at work [1]. The first, finding, as it relates to search, has been explored in some depth. The second, reminding, has hardly been explored at all although it was clearly important to the subjects studied. Reminding, in digital environments, isn't about searching - it is about triggering memory, managing tasks, and learning from experience. This paper briefly explores the notion of reminding and describes ongoing research under the M² project that will examine the role of reminding as it relates to how college students utilize personal documents in a learning environment.

Categories and Subject Descriptors

J.4 [Social and Behavioral Science]: Sociology.

General Terms

Human Factors.

Keywords

Personal information management, Records management, Personal digital portfolio, Context.

1. INTRODUCTION

Research into information use in the workplace reports that individuals engage in management behaviors that will help them to find information when they need it and to remind them of things that they need to do [1][2][3][4]. These behaviors may vary based upon the type or format of the information, its relative importance, its relationship to other information, or some other dimension, but it is evident that the strategies people develop in the physical world work very well for them. For example, in the physical world, if I need to remember to take a paper with me to a meeting, I can physically place it by other things I will need when I leave - its proximity to those things allows me to put it out of my mind and attend to other matters. Its location will remind me when I am ready to leave. If I want to remember a passage from a text, I may dog-ear a page or mark it with a highlighter, or both, as a reminder of where it was found. And, I may place the journal or book in a stack of similar items to be revisited later as I draft an article or a course syllabus.

In the digital environment, reminding is dependent on the available tools and the ability to capture and make use of appropriate contextual information. I have the option to set schedulers, timers, or alarms as reminders, or I can carry my materials with me on a portable device and find them when needed. I may keep email messages as reminders, as a type of to-

do list, but there is some evidence (including personal experience) that the reliability of this strategy is diminished by the growing volume of email [5][6].

Cognitive theories suggest that learning is a process of knowledge construction, building upon the learner's past knowledge and relating it to the learning situation [7][8][9]. In these situations, reminding involves recognition and recall and assists with analysis and synthesis. Tools that capture and display a rich variety of contextual information may extend the learner's capacity for reflection by expanding the amount of usable resources. Just as the color, shape, or physical proximity or location of items on a desk can serve as reminders, tools that group digital items by source, type, purpose, or task can serve as aids to memory as well.

While much of the PIM literature concerns how people file and find personal information [10], more important behaviors may relate to how they use it. We know, for example, that people organize information so that they can find it later, but studies have shown that there are documents and files in personal workspace (physical and digital) that are not used. While better retrieval tools help us to find things that we intend to find, they may not help us to make connections between things that we have forgotten are there, synthesize information from diverse sources, identify undesirable clutter, or remember why we have the files in the first place.

2. ORGANIZATIONAL CONTEXTS

Much of our personal information management occurs in the context of our work. We create, acquire, organize, manage, and use information to accomplish tasks. While research studies have looked at self-reported PIM behaviors, few have examined actual use. Learning environments offer an opportunity to study PIM behavior and use in context. Within the context of a course or an academic program, there are goals, objectives, and tasks set by professors and administrators and there are goals, objectives, and tasks designed by students to achieve the course or program objectives. Such strategies are typically varied and robust.

Digital environments offer opportunities to access and synthesize large quantities of information and there is some evidence that students are turning more often to digital resources and often with the encouragement of their academic programs. Some programs for teacher education and nursing, for example, require that students develop personal portfolios for evaluation and for professional certification [11]. Increasingly, these portfolios are going digital [12][13][14]. The portfolio approach requires that students identify their best, or most illustrative, work, for self-appraisal, for reflection, and for demonstrating personal development. These portfolios provide opportunity to answer questions about the PIM behaviors related to their use. How do

students manage their course-related materials? How do they make decisions about what to include in the portfolios? What tools are used as they draft papers and prepare assignments? Can automatic capture of contextual data assist in reminding students of information they might otherwise have forgotten, increasing their ability to recall and use information?

3. CONTEXT IN LEARNING ENVIRONMENTS: M²

Memex Metadata for Student Portfolios (M²) project is a research project to explore how botany students who are studying local flora use contextual information that may later aid them in creating and analyzing their work products. The project makes use of contextual metadata captured on a laptop computer during field work. Some of the metadata are captured automatically using sensory tools (SenseCam, global positioning system, etc.) and some metadata are user-created. Behaviors of students who use the enhanced system will be compared with those who use their own unenhanced systems to create a digital portfolio of their coursework. We will assess the utility of the additional contextual data for reminding as well as finding through observation and logging of field work, follow-up interviews, and instructor assessment of the final products.

The portable M² workstation consists of a tablet PC and SenseCam and Microsoft's MyLifeBits software. The PC includes access to resource guides as well as the capability to capture field notes and diagrams. Preliminary pilot tests are in process and results are promising. Exercises are designed to assess student ability to examine collected materials (notes, images, documents, etc.) relative to specific questions and uses and to apply the contextual information to building personal collections. Students learn to use the system with minimal instruction and seem to enjoy using it, but observations of how this may benefit learning have not yet been explored.

4. SUMMARY

This research attempts to expand knowledge of PIM behaviors and supports previous work on the need for "refinding" [15] and for reminding individuals of what is there. In learning situations, information in personal space must both reinforce what one knows and facilitate the exploration of relationships that may exist among things and among ideas, including those created by the individual as well as those generated by others (instructors, lab partners, etc.) in the personal workspace.

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