Design Journals: Personal Artifacts in Collaborative Design

Abstract
Traditionally, designers use physical paper notebooks to construct a personal design artifact, often referred to as a design journal. However, collaborative design projects require the construction of shared understanding among the group, which often relies on the creation of shared information artifacts such as whiteboards, prototypes, or formal design documentation. In this paper, we present a literature review of both the traditional role of design journals and proposed personal information systems. We also propose future investigation of the transition from personal information artifacts to shared understanding.

Keywords
Design journal, design information systems, collaborative design, shared understanding

Introduction
Design journals are a ubiquitous part of design practice; traditionally, designers use physical paper notebooks to keep track of information and ideas relevant to a given project (see Figure 1). Collaborative design teams often establish shared understanding through the creation of shared information artifacts such as whiteboards, prototypes, or formal design documentation. Personal design
journals are also social artifacts, as they are often present during group meetings or ideation sessions where they are used to document design activity and reference past thought processes.

In this paper, we present a literature review of both the traditional role of design journals, as well as proposed new journaling systems. We also propose future investigation of the transition from personal information artifacts to shared understanding.

![Figure 1: Example pages from a traditional design journal](image)

**Traditional Design Journals**

The design journal is a ubiquitous part of design practice. The core concept of a design journal goes by many different names; besides “design journal” [2], there is also “design notebook” [18], “engineer’s logbook” [13], “engineering notebook” [2] and “idea log” [14].

Designers have several motivations for keeping a design journal.

*Documentation for Intellectual Property*

Patent applications require documentation of the origins of the concept. Most engineering textbooks that mention design journals as an aspect of design communication emphasize its importance in the patent application process [2] [18].

*Centralized Personal Information Storage*

Designers use journals to collect information relevant to a project. These journals serve as central references to pertinent information [13]. As such, they act as part of the extended memory of their owner [21].

*Mobile access to design information*

In industry, designers wander from their desks to gather and pass along informal information to their fellow designers and coworkers [1]. Traditional paper-based journals allow designers to take their notes with them into the field.

**New Tools for Design Journals**

Researchers have explored new ways to digitally augment traditional paper design journals. This research can be clustered into three main motivations: archiving and information management, sharing and collaboration, and engaging multi-media.

*Archiving and Information Management*

One appeal of electronic design journals is their ability to serve as digital archives. Early examples of digital design journals including the Electronic Design Notebook [10] and the Electronic Cocktail Napkin [4] provided platforms for collecting and managing notes and sketches. Subsequent extensions, including the
Digital Design Sketchbook [5], allowed designers to remotely access a centralized archive of sketches, annotate archived drawings, and contribute additional content to the archive. Human-computer interaction researchers have since included both tangible, paper-based notes and digital artifacts into a single, unified archive using digital pens [20].

**Sharing and Collaboration**

Many research projects bring digital media to design journals in order to facilitate information sharing or distributed collaboration. For example, the Personal Electronic Notebook with Sharing, or PENS [6] was developed to facilitate sharing design knowledge over the internet with remote collaborators.

Researchers have also created tangible user interface tools for informal design tasks [9] and for synchronous collaborative note-taking [8]. iDeas [12][11] approached the development of design tools from a ‘design ecology’ perspective. Based on Butterfly Net [19], a digital copy of the physical iDeas notebooks is made available to immediate collaborators, allowing designers to share personal design journal content with each other.

**Engaging with Multimedia**

While conducting user-research, designers will often record conversations or interviews with users to reference later on during group meetings. Both the Audio Notebook [17] and Dynomite [19] were developed to enable users to both capture audio data and navigate through it by interacting with their written notes from the interview. These research projects extend the abilities of paper to not only capture written or graphic information, but also multimedia information that otherwise was exclusively available to digital media.

**Research Questions**

We propose applying a private/personal/public framework [16][3] from PDA use to designers’ interactions with design journals or other personal information artifacts. This proposed research addresses designers’ interactions with individual information tools during collaborative design projects. In particular, we intend to investigate how information from individual tools is communicated in the shared design space. Primary research questions include:

- What are designers’ attitudes towards personal design information artifacts?
- How do designers interact with personal design information artifacts during collaborative meetings?
- How can future personal information artifacts better support collaborative design tasks?

Addressing these research questions will shed light on how the social implications of the design process impact the usage of individual design tools. This will also inform the design of future personal design artifacts that recognize the designer’s needs for both private and shared information.

**References**


