Artifacts in Design: Representation, Ideation, and Process

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Abstract

Artifacts—representations that express properties or captured information—can serve to inspire, represent, and manage the decisions made throughout the design process. This workshop will explore how these artifacts are created, used, and reused during design projects, toward understanding the overall impact on the larger discipline of design. Through active engagement with novel design artifacts and methods, workshop participants will examine, categorize, and evaluate various design artifacts.

Keywords
design artifact, representation, ideation, process

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms
Design

Introduction
Design is a process of creation, and artifacts are leveraged in various ways throughout the process of design. These artifacts exist in various forms; some are used as prompts for design research [12], while others

act as artificial organizational schema imposed as constraints to help the designer manage complexity [10]. Still others are used to manage both the design process itself and the various thoughts and reflections that occur during design.

This workshop will explore how the use and reuse of artifacts in the design of interfaces. Workshop participants will outline the different ways artifacts can be defined and represented, toward understanding the role of artifacts in ideation. It is expected that participants will come to the workshop with expertise in one or more of the key areas of: definition and representation of artifacts, the role of artifacts in design ideation, and artifact-centric processes and tools for design.

The Role of Artifacts

Fundamentally, artifacts are representations that express characteristics such as the properties of the object itself or captured information such as design constraints. They can emerge naturally during the design process or be created and distributed to others to help inspire new design. As such, artifacts can serve as an ongoing record of what can be and is created through design.

During the design process, especially early prototyping phases, designers collaboratively may take advantage of artifacts of different kinds that provide rationale to explain the consequences of design choices [11], represent constraints of a possible solution, guide the process of design, or provide inspiration.

figure 1. A collaborative design activity in which the designers are using premade artifacts containing pictures and rationale to create a representation in the form of a storyboard.

Pictures are one exemplary form of artifact. A designer might, for example, use pictures of interface elements in a particular context of use (a car, a house, a boat); this allows the design team to question how physical context affects use, and acts as a provocation to shift perspectives. Another form of artifact commonly used in design is a sketch; a sketch might be thought of as low-fidelity picture, but another way of thinking about a sketch is as a focusing-tool. A sketch can emphasize particular characteristics while trivializing others [4]. Still another form of artifact is a video, which can articulate carefully crafted scenes that impact the design [7].
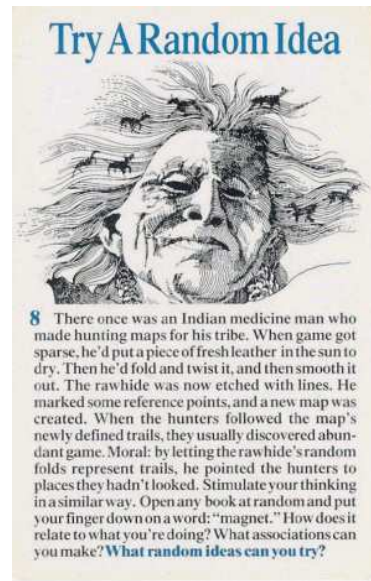
Try A Random Idea

8   There once was an Indian medicine man who made hunting maps for his tribe. When game got sparse, he'd put a piece of fresh leather in the sun to dry. Then he'd fold and twist it, and then smooth it out. The rawhide was now etched with lines. He marked some reference points, and a new map was created. When the hunters followed the map's newly defined trails, they usually discovered abundant game. Moral: by letting the rawhide's random folds represent trails, he pointed the hunters to places they hadn't looked. Stimulate your thinking in a similar way. Open any book at random and put your finger down on a word: "magnet." How does it relate to what you're doing? What associations can you make? **What random ideas can you try?**

figure 2. A card from the Creative Whack Pack serves to encourage creative ways of thinking during design.

Artifacts are often used in a collaborative sense, as is the case of note cards and post-it notes. Designers may gather insight informally and record these on a series of note cards, or they may formally transcribe an observational study onto a series of post-it notes [8]. This raw data can then be organized into certain design representations, often with the support of digital tools, such as affinity diagrams [2] allowing the entire design team to explore the relationships between the artifacts.

Artifacts can also guide the process of design itself by representing steps or procedures that designers would like to consider. In such cases, the artifacts teach or remind the practitioners of the methods needed to

create new systems, providing opportunities to potentially increase the quality of their designs.

Artifacts can specifically be crafted with the intent of reuse. Pattern libraries act as reusable artifacts that identify common approaches to solving common design problems [1][3][5]. Claims, often stored in digital repositories, also strive to provide reusable knowledge to aid designers during early phases of design [9][11].

The Workshop: Sharing and Learning Artifact-Based Methods

This workshop is intended for designers and researchers who use, build, or study the use of artifacts in the process of design.   Participants will have knowledge and experience with the definition and representation of artifacts, the role of artifacts in design ideation, and artifact-centric processes and tools for design. The goal of the workshop is to gain common experiences with artifact-centric design tools from industry and academia—such as IDEO's Method cards [6], Friedman's design cards [5], and methods submitted or cited by participants—toward reflecting on definitions and representations for artifacts and on characteristics of processes and tools that are useful to designers. There is a need to identify the characteristics of artifacts and their usage that contribute to how designers think, represent, and manage early design efforts. With these issues in mind, some of the questions to be examined during this workshop are:

▪   How does artifact-use differ in the context of an applied design problem (in a consultancy) as compared to in a research problem (in an academic research context)?

- What are the advantages and disadvantages of using certain kinds of artifacts?

- What types of artifacts lead to increased ideation, either in quantity or quality?

- How do designers find and learn about artifacts?

- How can designers create novel artifacts out of existing ones?

- How can artifacts be interpreted, especially those that are being reused, in creative ways?

- What kinds of artifacts can be combined together into a design representation?

- What collaborative design activities can benefit from the use of artifacts?

- How can tools and online repositories of artifacts be best structured to facilitate design?

There are several intended outcomes of this workshop:

1. To identify and bring together researchers interested in exploring the use of artifacts and their utility in early design work.

2. To author a highly visible article or special issue of a widely dispersed magazine (e.g., *interactions*), toward promoting ways to capture and use artifacts in emerging design environments.

3. To foster further collaboration on among researchers in academia and industry engaged in artifact-based design.

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