
Engaging Designers through Digital Imagery and Visual Thinking

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Abstract

Imagery encourages designerly thinking by empowering people to develop new ideas, to spark memories of prior experiences, highlight issues and drawbacks of the pictured situation, and converse and debate the merits of an idea. This paper explores the design ideas that emerge from two image-centric card sets, based on their use in brainstorming, storyboarding, and similar activities. We explore how images can be used as a bridge to design knowledge, presented in the form of claims. Finally, we speculate on ways that digital imagery can be crafted and used to encourage thought and reflection, both in formal and informal settings.

Author Keywords

Digital imagery, visual thinking, design, claims, rationale

ACM Classification Keywords

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

General Terms

Design, Human Factors, Theory

Introduction

Imagery provides opportunities to encourage thinking by enabling people to identify key aspects of an image and relate their own expertise to it. A well-chosen image can inspire new ideas, spark memories of prior experiences, highlight potential issues and drawbacks, and provide a point for conversation and debate. In his *interactions* article, Eli Blevins explores the impacts of digital imagery in HCI and design [1]. He describes digital imagery as a form of visual thinking, where visual forms are used to create content and make sense of the world. He challenges HCI professionals to consider how we can create meaning through visual forms, just as we do through textual forms. We seek to address that challenge.

This paper presents excerpts from two image-based interaction design card sets, examining their potential through the Blevins lens of digital imagery. We explore the design ideas that emerge from these card sets based on their use in brainstorming, storyboarding, and other similar activities. In the process, we discover how images can be used as a bridge to design knowledge, presented in the form of claims—nuggets of information capturing design tradeoffs. Finally, we speculate on ways that digital imagery can be crafted and used to encourage thought and reflection, both in formal and informal settings.

Imagery as design inspiration

We turned to imagery as a way to inspire groups of designers to think broadly and engage meaningfully with each other during the design process. We looked for ways that images could serve as a starting point for conversations during group design activities, and as a gateway to other design knowledge. Specifically, we

are interested in how imagery can be used to enhance claims during early-stage design.

Claims, conceptualized by the classic Toulmin book [8] and introduced to HCI by Carroll and Kellogg [2], present a design artifact together with observed or hypothesized upsides (+) and downsides (-); e.g., a public display used as an information exhibit (+) can notify large groups of people about things of shared concern, BUT (-) may become unattractive, densely-packed discordances of data. Claims are accessible when compared to much denser knowledge capture mechanisms like papers, patterns, and cases, but it is still a daunting task for designers to look through long lists of textual claims toward finding the right ideas.



Figure 1. Visual representation of an information exhibit claim, as appeared in our PIC-UP card set.

It was Gaver who first posited the crossover of claims from computing and psychology to design theory, considering how they served as a source of debate about “the psychological, social, and cultural effects that systems might make” [4]. Our examination builds on Gaver’s observation by exploring how to use imagery as a bridge to (and perhaps a bridge over and beyond) the knowledge stored in claims. We chose to represent each claim with an image, selected not just because it captured a key aspect of the claim, but also because it allowed designers who viewed it to include their own interpretation of the technology and the context. For example, the information exhibit claim described previously can be represented by the image in Figure 1—allowing the person looking at the image to marvel at the technological display, to feel sympathy at the bewilderment of the people looking at it, and to speculate about better ways to show the information.

Just as other image sets have established connections to values [3] or problem context [5], we believe that image sets based around research domains—i.e., notification systems and mobile interfaces—can help designers reflect, innovate, and interact. The next section explores our reflections.

Image set usage stories and speculation

We have used a set of around 30 image-claim cards in design activities such as brainstorming and storyboarding. Our prior research capture the lessons and tradeoffs from our development and use of image-based claims sets—used on paper, on laptop computers, and on handhelds [6,7,9,10,11]. We provide a few highlights of our lessons learned and speculate on future use.

A key decision in creating image-based claims was to present the images first. The benefits of the images-first approach were numerous. It allowed designers to process large numbers of claims quickly, connecting the ideas to their own experiences and expertise toward solving a design problem. It supported collaboration among designers through the shared understanding revolving around the images. It encouraged broad speculation down paths not captured by the claims, sometimes resulting in new and different directions.

Many of the cards were digitally modified, with circles or arrows or blurring used to highlight or de-emphasize certain parts of the image. However, the people we observed never commented directly on the digital modifications (though their conversations often gravitated to the highlights). Perhaps the modifications were too subtle, or perhaps they were effective without requiring comment. But perhaps it is people’s inclination to find the elements of an image that most closely connect to their own knowledge and experiences, whether highlighted or not—leading them down a more informed design path.

Our ongoing work seeks to develop images for handheld smart phones, and about handheld smart phones—sets of images that depict their minimally-understood interface functionality (e.g., abilities of the accelerometer, GPS, light sensor)—to enable designers to investigate the mobile platform while using the mobile platform. However, the types of activities that people do with the images changes when using paper cards (much more rich ordering and categorization) vs. laptop-based (creation of stacks/piles) vs. handheld (focus on individual cards). We seek to reflect the difference in the types of images we choose.

We also carry around the image cards and seek to use them in informal situations, to help inspire a discussion or change the focus of a conversation. Sometimes we are reminded of an image card during a discussion with colleagues, and we will pull it out and use it for reflection or brainstorming. And sometimes after showing off the cards, we find it interesting and insightful that people wish to choose a favorite card to take with them—a low cost to us and a source of joy (and perhaps inspiration) to them. Sometimes they pull it from their pocket and wave it at us when we see them later; sometimes we see the card posted on a door or hung from a corner of a bulletin board.

Conclusions

We believe all of this planned and speculative use is in keeping with the nature of a claim, whose original intent was as a falsifiable hypothesis [2,8]. However, a purely textual claim risks narrowing the associations of the reader to the words in the claim, and thus limiting the design considerations and even alienating designers unfamiliar with the text of a claim. It is through imagery—specifically images as the initial shared view in a design session—that designers can make sense of a problem and create meaningful and informed content.

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