DIY for CHI: Methods, Communities, and Values of Reuse and Customization

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CHI 2009, April 3 – April 9, 2009, Boston, MA, USA
ACM 978-1-60558-247-4/08/04.

Abstract
People tinker, hack, fix, reuse, and assemble materials in creative and unexpected ways, often codifying and sharing their production process with others. Do-it-yourself (DIY) encompasses a range of design activities that have become increasingly prominent in online discussion forums and blogs, in addition to a small-but-growing presence in professional/research forums such as CHI. This workshop will explore DIY practice from the ground up—examining DIY as a set of methods, communities, values and goals and examining its impact in the domains of traditional crafts, technology development, and sustainable design.

Introduction
People are driven to customize their objects and build things. Passionate makers sew dresses, build furniture, cook meals and write computer programs. People also spend copious amounts of time tinkering with the things they own. They decorate their notebooks, hack their cell phones and fix their cars. Groups often get together to share these techniques for building, modifying and embellishing artifacts, and vibrant social communities develop as a result. All of these activities are part of a rich do-it-yourself (DIY) tradition.

Essentially, DIY involves an array of creative activities in which people use, repurpose and modify existing materials to produce something. These techniques are sometimes codified and shared so that others can reproduce, re-interpret or extend them. While the CHI community has paid attention to some technical aspects of these processes in the past [1-6], we have yet to embrace DIY communities' dialogue on such practice or to conduct detailed investigations of these groups. We believe there are a host of fascinating and important questions to examine in this area. What are the DIY subcultures that have emerged? How can we learn from people's passions for building and re-purposing everyday materials? What resources must be built to support the future of DIY?

This workshop will explore DIY as an important alternative design practice. We will discuss the set of methods, communities, values and goals involved in DIY activities. Our investigation will serve to unearth design motivations and techniques that may inform HCI design methods and the design of new tools to support DIY. As a quick perusal of existing DIY publications [7,8] and projects [9] will reveal, many members of the CHI research community (not just the organizers of this workshop) already participate in and write for grassroots DIY communities as well. A DIY workshop will provide a forum for participants in these overlapping communities to collaborate around DIY issues and support ongoing research on DIY practice in ways that may be more visible to CHI.

Workshop Goals and Themes

The workshop will aim to explore DIY activity and how HCI researchers can support and learn from DIY practice. The workshop will give participants a chance to share their knowledge of the individual and collective social practices that surround DIY with the goal of establishing a more thorough understanding of DIY design processes and outcomes.

Specifically, our goal is to examine in depth three facets of DIY practice: DIY methods, DIY communities, and DIY values and goals.

DIY Methods

Our investigation of DIY methods will examine both how people build things and how people communicate designs and instructions to others. We are particularly interested in exploring:

1. DIY materials and tools. What tools and materials do different DIY communities use to build stuff? What is the relationship between communities and tools? Can we (as designers) spark new communities or expand existing ones by developing new tools, toolkits, and materials?

2. DIY notations. How are how-to/DIY instructions developed? How can complex activities be efficiently communicated? What can we learn from existing notational systems like knitting patterns, origami folding instructions, and cookbooks? How is technology impacting notational traditions?

3. DIY dissemination. How are DIY instructions disseminated and shared? How did earlier DIY communities (ie: the computer tinkerers of the 1970s and the quilters of the 19th century) share information? How are online tools like instructables, etsy, flickr, and youtube affecting how people share and distribute designs and instructions?

DIY Communities
We will explore how DIY/hobbyist groups are powerful and important social entities. Topics for discussion will include:

1. DIY as a social activity. How and why do craft communities like "stitch-n-bitch" groups, robotics leagues, and scrap-booking clubs emerge? What are the social rewards people receive from participating in DIY communities?

2. DIY and identity. How do hobbyist/DIY communities shape and impact participants' identity? Do DIY communities reinforce or subvert gender and other stereotypes? How do physical materials (ie: yarn, wood, electronics) shape community identities? Can we leverage existing communities to encourage broader participation in science, engineering, art or other activities?

3. DIY as collective/open source design. How do DIY communities share, modify, and collectively develop designs? How does this differ, and what advantages or disadvantages might this offer, compared to mainstream professional and academic design practice?

DIY Values and Goals
We will explore implicit and explicit values and goals of various DIY communities. In particular, we will discuss:

1. DIY as an ideology. What are the political and economic implications of DIY? Is DIY intrinsically anti-corporate, anti-intellectual property, or anti-consumerist? What is the relationship between DIY, open source development, and hacking? Do (or should) people have the right to take apart, repurpose, hack, and share the artifacts they own? How can we design artifacts that are easy to take apart, reuse, and repurpose?

2. DIY as a sustainable practice. How might DIY improve the environmental impact of products and technology? How might DIY contribute to sustainability? Is DIY an intrinsically sustainable design method? Does DIY discourage consumption, or merely displace it? Does the "hand-craft" of DIY increase emotional attachment to objects and improve product lifespans?

3. DIY as an economic necessity, both at home and abroad. How does/could DIY activity in developing countries and poor communities relate to sustainable development? What is its role in developing countries? Can DIY practice foster independence in a postcolonial world increasingly dependent on global consumption?

Topics of interest

We invite contributions on topics including but not limited to:

- Craft and handiwork
- Sustainable practices
- Reuse, repair and economic necessity
- Open source software
- Open source hardware
- Political implications of DIY
- Economic implications of DIY
- Social implications of DIY
- DIY and education
- DIY communities
- DIY and marginalized groups
- DIY in developing countries

Outcomes

Discussions and materials generated during the workshop will be documented and posted to the workshop blog. Workshop submissions will remain on the instructables.com site for others to comment on, repurpose, and develop. These will not only make real-world contributions to interested audiences, but provide CHI attendees with materials that demonstrate the rich diversity of DIY networks and communities. The physical artifacts created during the workshop will be displayed at the conference along with a workshop poster, and will be documented and displayed on the workshop blog. The workshop blog will be maintained after the workshop, allowing for participants to continue discussions and collaborations and support future DIY research. If the need and interest is there, the workshop website can support a forum.

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