

Bridging the Gap: Moving from Contextual Analysis to Design CHI 2010 Workshop Proposal

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CHI 2010 Workshop Proposal

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Introduction

Design is a complex and collaborative activity that requires designers to be creative while still being grounded in a thorough understanding of the system's domain and the users' activities, goals, and concerns. By designers, we are referring broadly to those individuals who create systems with an emphasis on the user interface and/or experience. As such, this certainly includes usability engineers, graphic designers, researchers, students, and other practitioners.

Typically, system design first involves some form of contextual analysis. Here we are referring to any number of methods that create an understanding of users, their tasks and practices, and the situational context in which their practices and behaviors lie. Generally speaking, this type of knowledge is obtained through methods such as contextual inquiry, ethnography, surveys, interviews, etc. Following this requirements elicitation, designers must transition into actual design based on the obtained contextual understanding. The challenge, however, is that this transition is often not simple to accomplish.

There are multiple reasons why this problem exists and likely more than we document here. First, designers are often required to draw from huge amounts of data gathered from users' work domain and make a leap into designing a new system. With large amounts of data to draw from, it is not clear how a designer can ascertain the most important and relevant information for design. Second, there is often a disconnect between the type of data gathered from contextual analysis and the information needed to guide a design. That is, contextual analysis artifacts do not necessarily map well to the artifacts or information that is necessary for design. Third, there is often a need for designers to be in two different modes of thinking, analysis-thinking and design-thinking, and separate these based on where they are in the design lifecycle. Contextual analysis often requires deductive reasoning and design typically requires inductive reasoning. Last, but not least, it is not always the case that the same individuals perform both contextual analysis and the resulting system design. Here the challenge lies in transitioning knowledge between individuals.

Even though processes such as Contextual Design (Holtzblatt, 2005) and design artifacts such as personas (Cooper, 1999), scenarios, or tasks (Greenberg, 2004), attempt to solve this problem, they often do not provide adequate support for designers to make this transition easily. Design literature in HCI tends to gloss over the steps taken to transition from contextual analysis to design. Similarly, researchers may tend to describe their method for contextual analysis and provide design implications, yet not describe how these implications directly affected the design decisions in an eventual system. Though, certainly counterexamples exist (e.g., Elliot et al, 2005, 2007).

Goals and Issues

The goal of this workshop is to bring together researchers, designers, and practitioners who: perform contextual analysis or requirements analysis, design, or face the challenge of moving between the two. We would like to build a community around these topics to understand the approaches people take to address the gap between contextual analysis and design, the limitations in their methods, and potential solutions to overcome these challenges. Within this scope, we will focus on and discuss the following issues:

1. **Contextual Analysis Artifacts:** What methods are commonly used to perform contextual analysis and what are the resulting artifacts from these respective methods? What pieces of information do designers have at the end of contextual analysis?

2. **Design Artifacts:** What types of design implications or requirements are needed as a basis for design? What knowledge and information is most useful to base a design around?

3. **Bridging the Gap:** How do designers transition from contextual analysis to design? What design artifacts or understanding is used to transition from analysis to design? What are the techniques used and what are the challenges being faced?

The workshop will involve individuals from a wide variety of backgrounds discussing and thinking about these issues in order to better understand these problems and potential solutions.

Attendees and Informal Schedule

We encourage participants who have performed work related to contextual analysis or design to submit workshop position papers. This includes researchers, designers, and practitioners who are studying design settings, generating design implications, or designing systems based on contextual and requirements analysis. We seek those who perform one or more of these activities in any application or design setting. We also desire the workshop to contain participants from a broad methodological background, e.g., contextual inquiry, ethnography, contextual design, usability engineering, and requirements engineering. The tentative workshop schedule is:

Introduction: The organizers will introduce themselves and present the workshop goals and schedule to the attendees.

Morning Session: A selection of attendees will provide 8-10 minute presentations of their research or design work. Here they will identify the methodological tools they typically use, their focus on user requirements analysis, design, or both, and challenges they face in moving from contextual understanding to design. We will select presenters who will provide a broad range of application areas, methodologies, and perspectives. These presentations will foster discussion points for synthesis discussions later in the day. At the completion of each presentation, as a group we will identify the presenters' answers to each of the aforementioned workshop issues.

Early and Late Afternoon Session: Attendees will come together and the organizers will lead a discussion around the variety of methodologies and tools that participants use to bridge the gap between contextual analysis and design. This will involve some affinity diagramming (or similar) analysis activities to distill the findings from the presentations. Participants will attempt to find commonalities in approaches and limitations with methods. This should lead to new perspectives on how to bridge the gap.

Findings from the workshop will be submitted to a special issue journal such as the HCI Journal or Design Issues. We would like to create a community in this space and organize a follow up workshop or SIG for CHI 2011.

Workshop participants will be selected based on refereed submissions. We will solicit 2-4 page position papers (CHI extended abstract format) and expect to accept 15-20 participants. Authors are asked to direct their paper at identifying the methodological tools they use to perform research in their domain, the challenges they face in moving from contextual analysis to design, and solutions, if any, that they have used to overcome these challenges. We also ask that authors include short biographies for each of the position paper's authors. We expect that only one author for each paper will participate in the workshop.

Submissions will be evaluated based on their relevance to the topic area of the workshop, originality, and its ability to bring a unique perspective to the discussions in the workshop. We also seek to include participants from a variety of backgrounds (e.g., designers, ethnographers, computer scientists, software engineers etc). The workshop organizers will review all submissions prior to the conference. Accepted position papers will be made available on a workshop web page where all participants will have access to them.

The Organizers:

Tejinder Judge – Virginia Tech

Tejinder Judge is a PhD candidate in the Center for Human-Computer Interaction at Virginia Tech. Her research interests are in human-computer interaction with a focus on user-centered design methodologies, contextual analysis and design knowledge reuse. Tejinder's dissertation work is aimed at understanding how designers transition from an understanding of users' existing work practices, and needs, to the design of a system that supports these requirements. She is researching challenges faced by designers in making this transition and is developing a methodology to aid designers in transitioning from contextual analysis, to the design of a new system. To this end, Tejinder led a five-month project to design an online system aimed to streamline and manage information between students, faculty, departments, and the Graduate School at Virginia Tech. This project allowed her to investigate and experience problems faced by designers when designing a new interactive system. She is also co-authoring a book chapter with Dr. Rex Hartson and Dr. Pardha Pyla, describing a potential method to aid designers while transitioning from contextual analysis to design. Tejinder is involved in ongoing projects that include domestic media spaces, designing collaborative tools for designers and determining the utility of reuse in design. She worked as a Usability Engineer at Meridium Inc. as part of an NSF grant investigating the incorporation of usability in agile software engineering projects.

Carman Neustaedter – Kodak Research Labs

Dr. Carman Neustaedter is a research scientist at Kodak Research Labs in the Multimedia Systems group. His main research interests are in human-computer interaction with special interests in computer-supported cooperative work, ubiquitous computing, and domestic computing. In these areas, he seeks to understand the socio-technical factors of ubiquitous technology design to support the everyday social practices of individuals and groups. Recent projects include studies of virtual worlds, domestic media spaces, digital and print photos, family calendars, and family communication information. Each of these projects has involved moving from requirements analysis to either design implications or system design. Carman is also an Adjunct Professor in the Department of Computer Science at the University of Rochester. Here he teaches graduate and undergraduate students human-computer interaction design and research methodologies. Carman previously co-organized a Designing for Families workshop at CSCW 2008 as well as a follow-up SIG at CHI 2009.

Anthony Tang – University of British Columbia

Anthony (Tony) Tang is a PhD candidate with Dr Sid Fels from the Human Communication Technologies Lab at the University of British Columbia. Tony's research interest is in how the design of new technologies can be informed by an understanding of users' existing work practices and mental models of their work, be it collaborative or independent activity. His dissertation work focuses on the design of applications for large interactive surfaces, though his interests more broadly fall into the domains of CSCW and Ubiquitous Computing. Concurrent to his dissertation work, he is actively engaged in ongoing projects that include work with digital video manipulation, telepresence, MMORPGs, and location-based games.

Steve Harrison – Virginia Tech

Steve Harrison, previously at Xerox PARC, is a professor of practice in Computer Science and the School of Visual Arts at Virginia Tech. His interests include design methods, process representation, and collaborative design tools. He is also a licensed architect (California). He has organized workshops on media space and design process and was Workshops chair for CHI 2006.

References

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Bridging the Gap: Moving from Contextual Analysis to Design CHI 2010 Workshop Call for Participation

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A typical development lifecycle for interactive systems starts with contextual analysis to guide system design. By contextual analysis, we are referring to any number of methods that create an understanding of users, their tasks and practices, and the situational context in which their practices and behaviors lie. Following this requirements elicitation, designers must transition into actual design based on the obtained contextual understanding. The challenge, however, is that this transition is often not simple to accomplish. In this workshop, we seek to bring together researchers, designers, and practitioners who regularly face the challenge of transitioning from contextual analysis to design implications and/or actual design. Our goal is to foster a community in this space, understand the techniques that are being employed to move from contextual analysis to design, the challenges that still exist, and solutions to overcome them. Interested parties should submit a 2-4 page position paper (in CHI extended abstract format) to tkjudge@vt.edu by October 23, 2009. Authors should provide details of the methodological tools they use and the challenges they face in bridging the gap, along with biographies for each author. Submissions will be evaluated based on their relevance to the topic area and the authors' ability to bring a unique perspective. At least one author of each accepted paper must register for the workshop and at least one day of the conference. The workshop will involve short presentations from select attendees and we will compliment these with group discussions.

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Abstract

A typical product development lifecycle for interactive systems starts with contextual analysis to guide system design. The challenge however is in transitioning from findings about users, their activities, and needs, into design requirements, constraints and implications that are directly applicable to design. In this workshop, we seek to bring together researchers, designers, and practitioners who regularly face the challenge of transitioning from contextual analysis to design implications and design practices. Our goal is to foster a community in this space, understand the techniques that are being employed to move from contextual analysis to design, the challenges that still exist, and solutions to overcome them.

Keywords

Contextual analysis, design, requirements analysis, gap

ACM Classification Keywords

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

Introduction

Design is a complex and collaborative activity that requires designers to be creative while still being grounded in a thorough understanding of the system's

domain and the users' activities, goals, and concerns. By designers, we are referring broadly to those individuals who create systems with an emphasis on the user interface and/or experience. As such, this certainly includes usability engineers, graphic designers, researchers, students, and other practitioners.

Typically, a product development lifecycle first involves some form of contextual analysis to later inform design. By contextual analysis, we are referring to any number of methods that create an understanding of users, their tasks and practices, and the situational context in which their practices and behaviors lie. Generally speaking, this type of knowledge is obtained through methods such as contextual inquiry, ethnography, surveys, interviews, etc. Following this requirements elicitation, designers must transition into actual design based on the obtained contextual understanding. The challenge, however, is that this transition is often not simple to accomplish.

There are multiple reasons why this problem exists. We discuss a few of them though there are certainly more. In fact, building on this list of problems and further defining them is a primary goal of this workshop.

First, designers are often required to draw from huge amounts of data gathered from users' work domain and make a leap into designing a new system. An example is an affinity diagram containing 1800 notes created by a group at Hewlett-Packard as a result of their contextual inquiry [3]. With such a large amount of data to draw from, it is not clear how a designer can

ascertain the most important and relevant information for design.

Second, there may be a disconnect between the types of data gathered from contextual analysis and the information needed to guide a design. That is, contextual analysis artifacts do not necessarily map well to the artifacts or information that is necessary for design [9]. In some cases, design implications are not even the direct outcome of studies of users and their context [4].

Third, there is often a need for designers to be in two different modes of thinking, analysis-thinking and design-thinking, and separate these based on where they are in the design lifecycle. Contextual analysis often requires deductive reasoning and design typically requires inductive reasoning. Although Krabbel et al [8] claim that the intertwining of analysis and design is inevitable, designers tend to compartmentalize the process, focusing first on contextual analysis then proceeding to design. The consequence is that designers must then consciously switch between analysis-thinking and design-thinking. What are problems that designers face while making this cognitive transition?

Last, but not least, it is not always the case that the same individuals perform both contextual analysis and the resulting system design. Here the challenge lies in transferring knowledge between individuals. How is the transfer made from one group to the other? Where is the ending point of analysis and where does design begin? And, what artifacts are shared between the groups?

Even though processes such as Contextual Design [1] and design artifacts such as personas [2], scenarios, or tasks [7], attempt to solve this problem, they often do not provide adequate support for designers to make this transition easily. Moreover, design literature in HCI tends to gloss over the steps needed to use these artifacts as transitional elements for moving from contextual analysis to design. Similarly, researchers may describe their method for contextual analysis and provide design implications, yet not describe how these implications directly affected the design decisions in an eventual system. Certainly counterexamples exist, see the contextual study from [6] and the eventual system design in [5], though they are rarer.

Goals and Issues

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Within this scope, we will focus on and discuss the following issues:

1. Contextual Analysis Artifacts: What methods are commonly used to perform contextual analysis and what are the resulting artifacts from these respective methods? What pieces of information do designers have at the end of contextual analysis?

2. Design Artifacts: What types of design implications or requirements are needed as a basis for design? What knowledge and information is most useful to base a design around?

3. Bridging the Gap: How do designers transition from contextual analysis to design? What design artifacts or understanding is used to transition from analysis to design? What are the techniques used and what are the challenges being faced?

This workshop will involve individuals from a wide variety of backgrounds discussing and thinking about these issues in order to better understand these problems and potential solutions.

Workshop Activities

The workshop will include activities centered on addressing the aforementioned issues. Select workshop attendees will present their research or design work, focusing on the methodological tools they typically use and the challenges they face in presenting design implications or moving from contextual understanding to design. These will be followed by group analysis activities (e.g., affinity diagramming) where workshop participants will attempt to distill common themes across each others' work.

Conclusion

The goal of the workshop is to build community among researchers and designers who face the challenge of moving from contextual analysis to design. This involves discussing pertinent issues such as understanding what artifacts are created as a result of contextual analysis, what artifacts and knowledge are needed as a basis for design, and what are the

commonalities and disconnects between the two. We also seek to bring forward any additional issues that workshop participants see as being crucial for bridging the gap between these two key aspects of system design.

Citations

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