

# Preface

Many books on user centered design and HCI focus on the way people interact with technology. This is an important issue, because people routinely interact with technology on a daily basis—personal computers, mobile phones, airplane cockpits, or even more mundane things like electric kettles and toasters. Despite everything that we know about interaction, however, technology still does not always support what we, as *users*, are trying to do, or behave in the way we expect it to. This can be exasperating for us: as users, as designers, *and* as developers.

In *Foundations for Designing User-Centered Systems* we help you to understand *why* people behave and interact with technology in the way they do. By helping you understand both *how* and *why* people behave in the way they do, and by helping you to develop a more systems oriented perspective, we provide you with a framework that will enable you to develop technologies that are both useful and usable. These technologies will also be more acceptable to users because they will be better suited to the way users work in their normal environment.

## Our Approach

The people who use technology must be considered to be part of the systems they use. Although people—“users”—are diverse, they also have many characteristics in common. Not all of these characteristics are directly visible or available to system designers without much closer investigation. By understanding the characteristics of users, designers are better able to create safer, more usable, and more acceptable systems.

We have designed *Foundations for Designing User-Centered Systems* to encourage you to ask critical and reflective questions throughout the design process about how your users will work with your technology. Whilst we provide key facts and characteristics about people as users, we have resisted creating a source book filled with lists of endless facts about human characteristics. We have also avoided the temptation of promoting design by rules, so we do not provide lists of guidelines that must be rigidly followed, or known problems that must be avoided.

Our goal is to help you understand the process of designing interactive technologies and to introduce you to a user-centered, systems oriented approach to design. We present a detailed, theoretically grounded approach to understanding people: how they accomplish the things they do and how they work out what they need to do (their tasks) in particular situations.

We have tried to select the most important things you should know about people, based on our experience of working in industry and academia. *Foundations for Designing User-Centered Systems* will help you develop a principled model of users, based on regularities of human behavior, which encapsulates this information so that you can predict how users will behave in different situations. This model will incorporate aspects of how perception, action, cognition, and social processes all contribute to human behavior.

We believe it is important to have the grounding for innovation as well as the ability to evaluate existing systems. Our approach will give you a solid foundation for dealing with a wide range of situations and provide you with the analytical skills to design in innovative ways—including introducing you to computational and cognitive models of how users think. We build on existing methods and techniques, providing you with the basic knowledge that will let you invent your own methods for design and evaluation based on the different settings that you find yourself in.

## **For Practitioners**

As the book has developed, many of our colleagues and collaborators from industry have reiterated the importance of the issues that we address, and how much they support the idea of *Foundations for Designing User-Centered Systems*. They often find that they have to train their staff about users, their tasks, and the context in which they perform those tasks. To address this we provide an extensive theoretical information about design-relevant user characteristics to make practitioners aware of the important issues. In addition, throughout the book we consider the implications for system design, where we offer concrete examples of how the information we present can be applied.

## **For Teachers and Advanced Students**

Our book provides enough material for a semester-long course on users, human-computer interaction, human factors, interface design, or human behavior modeling where users are an inherent part of the envisaged systems. While much more

is known about users than we present here, we have intentionally limited ourselves to what can be covered in a semester. We provide follow-up reading for those who wish to take things further at the end of each chapter. More resources on the topics we cover are continually becoming available online and these could be used to extend our material to support longer or more advanced courses. You will also find some useful resources on the *Foundations for Designing User-Centered Systems* web site ([www.frankritter.com/fducs](http://www.frankritter.com/fducs)).

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