Patterns for Computer-Mediated Interaction
Patterns for Computer-Mediated Interaction

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John Wiley & Sons, Ltd
To Jutta, Noah, and Liam.

Till Schümmer

For Heide and Greta.

Stephan Lukosch
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The Internet has changed the way we interact and communicate. Two to three decades ago the only way to stay in touch with people was to see them in person, write letters, or use a fixed network phone. At work, we had video conferencing and fax, but that was basically it. The Internet was available, but only few of us actually had an e-mail account—and if we had, we often had to share it with others. Those were the days...

Today everything is different. Most of us have a mobile phone, a PDA, and a computer connected to the Internet. Flat rates and high-speed Internet connections make communication and access to information easy and cheap. We don’t need actually to meet our friends anymore, but can communicate with them remotely and in realtime, via (IP) telephony, e-mail, instant messaging, chat forums, and Internet communities. In addition to voice and text, we can also exchange photos or even live video streams easily. At work, the picture is similar. Many projects require collaboration both in and with distributed teams—often across countries, continents, cultures, and time-zones. Communication enabled business processes, as described and advocated by Gartner, are a growing trend in the support of business value chains in enterprises and firms. Consequently there is a huge need for communication and collaboration tools that allow distributed groups of people to coordinate their activities and share and work on a common set of artifacts effectively and in real-time.

There is a flip-side to this scenario. Group communication and collaboration via electronic devices and the Internet require appropriate ways of interaction with the systems. In computer-mediated interaction there is no sense of real human personality in the communication. Simply put, you can’t use your human senses, but are limited to the senses offered by the collaboration and communication tools you are using. As a result you may feel unsafe, uncertain, or even lost. Many of you probably know such a situation from communicating or working with a person you haven’t yet met in person—just via e-mail, phone, and other means of electronic
communication and collaboration. In such a scenario you often feel uncertain or unsafe about how to interpret an e-mail, letter, or memo, simply because you have no real clue about the personality of the person who wrote it. What a difference there is in the communication, however, if you know the person with whom you interact: her face, voice, habits, personality. The same e-mail that sounded strange to you before you met makes perfect sense now. From the tone of the exchanged information you know how she is feeling or what is annoying her or making her happy. You feel safer and more comfortable—and the interaction with the remote person becomes more effective.

The lesson we can learn from the above story is clear: tools and applications for computer-mediated communication and interaction must address the needs of both of the humans using them and the needs of the type of communication and interaction they provide or support. In particular, users must be invited to use the applications and need guidance to feel safe, rather than lost, in them. Users also need a sense of the personalities of their communication partners, but, at the same time, their privacy must be protected. In the same way, the communication and interaction between people that is supported by the tools must be both efficient and effective. For example, data exchanged or shared between people must be consistent for all parties, especially when it can be modified during the collaboration. Voice and video must be transmitted in real-time so that everybody sees and hears the same thing, and any interaction between people causes no unnecessary delays. Collaborative sessions often also need explicit guidance and moderation to be effective.

In a nutshell, there is a whole range of really challenging topics that developers of computer-mediated collaboration tools and applications must address, or that users of such tools and applications need to be aware of. But what are the approaches to addressing these challenges? And what are the specific solutions for mastering them? This is what this book is all about. Till and Stephan, two experts in the field of human-computer-human interaction, collected the best practices in computer-mediated interaction and captured them in a pattern language. By means of this language, Till’s and Stephan’s knowledge becomes readily available and accessible for you. The patterns in the language present the specific practices in computer-mediated interaction, distilled into bite-sized chunks expressed in an appealing writing style, which allows you to easily grasp and understand them and to apply them in your own applications. The language itself shows how all these practices relate to, and depend on, one another. All topics of importance are addressed: welcoming users to a community, guiding them through the topics and interactions in a group, protecting their privacy, modifying shared artifacts, supporting communication within a group, keeping a group alive and vital, guiding collaboration sessions, and managing data and ensuring its consistency.

In other words, the pattern language in this book guides you through key areas of relevance in computer-mediated interaction and the timeless, best practices within these areas. Thus it can help you build group communication and collaboration applications more effectively and successfully, if you are a developer, and to
understand how they (should) work if you are using such applications. There is no other book on the topic of computer-mediated interaction that provides the same practical and useful advice as the one you are holding.

I hope you enjoy reading this book as much as I did—and, after reading it, look upon computer-mediated interaction with different eyes than before.

Frank Buschmann

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