Part I
Under Tabletops

This first part of the book addresses aspects of Hardware/Software and Computer Science of tabletop systems. The positioning of the chapters topics *under tabletops* may not be taken too literally. In a boarder sense the chapters of this part refer to topics "hidden from and invisible to the user" and to core tabletop technology and its evolvement. The part introduces basic technical topics and provides a system classification as well as more specific aspects such as high-resolution and object recognition.

Schöning et al. begin this book part with a comprehensive and detailed overview and documentation to build a multi-touch surface system. Beyond practical technical details, this team of authors also provides insights into the complexity of technologies and software for tabletop systems. In the following chapter Kunz and Fjeld offer a classification of tabletop interaction input devices and tracking technologies and work out systematically the characteristic features of prominent tabletop systems. Then Ashdown et al. present work on high-resolution tabletop displays focusing on the applications that require detailed graphics and text. The topic is presented with comprehensive background information from related disciplines and describes future trends in various directions. The chapter from Kakehi and Naemura presents an optical design approach for tabletop systems that provides a view-dependent display of information and possible interactive applications. Even objects held over the surface can become part of the tabletop display. The final chapter in this part of Koike et al. discusses the possibilities of a vision-based hand and object recognition for tabletop systems. This work is centered on the unique optical characteristics of current Liquid Cristal Display technologies and showcase applications on tabletop systems.