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Nota di contenuto	I A Framework for Design Science -- 1 What is Design Science? -- 2 Research Goals and Research Questions -- II The Design Cycle -- 3 The Design Cycle -- 4 Stakeholder and Goal Analysis -- 5 Implementation Evaluation and Problem Investigation -- 6 Requirements Specification -- 7 Treatment Validation -- III Theoretical Frameworks -- 8 Conceptual Frameworks -- 9 Scientific Theories -- IV The Empirical Cycle -- 10 The Empirical Cycle -- 11 Research Design -- 12 Descriptive Inference Design -- 13 Statistical Inference Design -- 14 Abductive Inference Design -- 15 Analogic Inference Design -- V Some Research Methods -- 16 A Roadmap of Research Methods -- 17 Observational Case Studies -- 18 Single-case Mechanism Experiments -- 19 Technical Action Research -- 20 Statistical Difference-Making Experiments -- A Checklist for the Design Cycle -- B Checklist for the Empirical Cycle.
Sommario/riassunto	This book provides guidelines for practicing design science in the fields of information systems and software engineering research. A design process usually iterates over two activities: first designing an artifact

that improves something for stakeholders, and subsequently empirically investigating the performance of that artifact in its context. This “validation in context” is a key feature of the book - since an artifact is designed for a context, it should also be validated in this context. The book is divided into five parts. Part I discusses the fundamental nature of design science and its artifacts, as well as related design research questions and goals. Part II deals with the design cycle, i.e. the creation, design and validation of artifacts based on requirements and stakeholder goals. To elaborate this further, Part III presents the role of conceptual frameworks and theories in design science. Part IV continues with the empirical cycle to investigate artifacts in context, and presents the different elements of research problem analysis, research setup, and data analysis. Finally, Part V deals with the practical application of the empirical cycle by presenting in detail various research methods, including observational case studies, case-based and sample-based experiments, and technical action research. These main sections are complemented by two generic checklists, one for the design cycle and one for the empirical cycle. The book is written for students as well as academic and industrial researchers in software engineering or information systems. It provides guidelines on how to effectively structure research goals, how to analyze research problems concerning design goals and knowledge questions, how to validate artifact designs, and how to empirically investigate artifacts in context – and finally how to present the results of the design cycle as a whole.