

## Contents

List of Figures	<i>page</i> ix
List of Tables	x
List of Boxes	xi
Preface	xiii

## PART I INTRODUCTION

<b>1 Scope and Nature of this Handbook</b>	<b>3</b>
1.1 Objectives and Target Audiences	3
1.2 Design-Oriented and Theory-Informed Problem Solving in Organizations	6
1.3 How to Use this Handbook	8
<b>2 Types of Student Projects</b>	<b>10</b>
2.1 Introduction	10
2.2 Two Basic Process Structures	11
2.3 Three Knowledge-Generating Research Processes	14
2.4 Problems Caused by Mixing Different Process Types	19
2.5 Concluding Remarks	22
<b>3 Problem-Solving Projects</b>	<b>24</b>
3.1 Introduction	24
3.2 Rational Problem Solving	24
3.3 Problem-Solving Strategies	26
3.4 Theory-Informed Field Problem Solving	28
3.5 The Application Domain of Design-Oriented and Theory-Informed Problem Solving	30
3.6 The Nature of Field Problem-Solving Projects	31
3.7 The Basic Set-up of a Field Problem-Solving Project	37
3.8 Problem-Solving Projects in Different Execution Modes	39
3.9 Characteristics of Good Field Problem-Solving Projects	42
3.10 Concluding Remarks	44

## PART II

### THE PROBLEM-SOLVING PROJECT

<b>4 Intake and Problem Definition</b>	47
4.1 Introduction	47
4.2 Intake and External Exploration	48
4.3 Internal Orientation and Problem Definition	52
4.4 Project Design	58
4.5 Project Proposal	65
4.6 Example	66
4.7 Concluding Remarks	73
<b>5 Theory-Informed Diagnosis of Business Problems</b>	74
5.1 Introduction	74
5.2 Modelling Business Processes and Systems	76
5.3 Analysis of the Business Problem and its Causes	80
5.4 Theoretical Grounding	87
5.5 Example: <i>EcoLogic</i>	90
5.6 Integrating the Diagnostic Story	93
5.7 Alternative Approaches	94
5.8 Concluding Remarks: From Diagnosis to Redesign	96
<b>6 Solution Design</b>	98
6.1 Introduction	98
6.2 The Role of the Solution Design	99
6.3 The Overall Solution Design Process	100
6.4 Synthesis–Evaluation Iterations	103
6.5 Solution Validation: The Concluding Evaluation	108
6.6 Solution Design: The IIS Case	112
6.7 Concluding Remarks	117
<b>7 Change Plan Design and the Change Process</b>	118
7.1 The Timing of Change Plan Design	118
7.2 Change Plan Design	120
7.3 The Actual Change Process	126
7.4 Change Plan Design: The IIS Case	127
7.5 The Importance of Developing Organizational Support	132
7.6 Concluding Remarks	134
<b>8 Evaluation, Learning and Project Termination</b>	136
8.1 Introduction	136
8.2 Project-Oriented Evaluation	137

8.3	Learning for the Future	143
8.4	Scientific Reflection	146
8.5	Personal and Professional Development	148
8.6	Project Termination and Reporting	149
8.7	Concluding Remarks	150

## PART III METHODS

<b>9</b>	<b>Qualitative Research Methods</b>	153
9.1	Qualitative Versus Quantitative	153
9.2	Unit of Analysis	155
9.3	Sampling and Case Selection	158
9.4	Qualitative Data-Collection Methods	161
9.5	Qualitative Methods of Analysis	165
9.6	Concluding Remarks	169
<b>10</b>	<b>Searching and Using Scholarly Literature</b>	171
10.1	Introduction	171
10.2	Types of Publication	172
10.3	Focusing a Literature Review	175
10.4	Searching the Literature	177
10.5	Integrating Ideas and Findings	180
10.6	Concluding Remarks	183
<b>11</b>	<b>Quality Criteria for Research</b>	184
11.1	Introduction	184
11.2	Controllability	186
11.3	Reliability	187
11.4	Validity	192
11.5	Recognition of Results	196
11.6	Concluding Remarks	197

## PART IV DESIGNS, DESIGNING AND DESIGN SCIENCE RESEARCH

<b>12</b>	<b>Designs and Designing</b>	201
12.1	Introduction	201
12.2	Designing Material Artefacts: Designs and Designing	202

12.3	Designing Material Artefacts: The Overall Design Process	206
12.4	The Design of Material Artefacts: Synthesis–Evaluation Iterations	210
12.5	The Design of Material Artefacts: Minimal Specification and Hidden Properties	213
12.6	Social System Design	214
12.7	Paradigmatic Starting Points in Social System Design	219
12.8	Concluding Remarks	222
<b>13</b>	<b>Design Science Research: Developing Generic Solutions for Field Problems</b>	<b>223</b>
13.1	Introduction	223
13.2	The Key Methodological Problem in Developing Generic Solutions	225
13.3	A Learning Strategy for Developing Generic Solutions	227
13.4	Key Characteristics of Design Science Research	228
13.5	Using Generic Solutions in the Swamp of Practice: Evidence-Based Practice	233
13.6	Operational Issues in Conducting Design Science Research	235
13.7	Concluding Remarks	240

## PART V CASES

<b>14</b>	<b>Cases</b>	<b>243</b>
14.1	Introduction	243
14.2	The Assignment: Make a Project Proposal	244
14.3	Six Cases	245
	References	260
	The index for <i>Problem Solving in Organizations</i>	271