

Contents

1	Introduction	1
	Bibliography	3
Part I Decision Problems and Decision-Making Procedures		
2	Decision Problems	7
2.1	Notion of Decision Problem	7
2.2	Types of Decision Problems	7
2.3	Ways to Solve Decision Problems	12
	Bibliography	15
3	Goal and Problem-Finding Systems as Requirements for the Discovery of Decision Problems	17
3.1	The Functions of Goal and Problem-Finding Systems in the Discovery of Decision Problems	17
3.2	Goal Systems	18
3.3	Problem-Finding Systems	21
	Bibliography	24
4	Rational Decision-Making	25
4.1	Sequence of Events in Decision-Making Procedures	25
4.2	Requirements of a Rational Decision-Making Process	30
4.3	Support of Rational Decision-Making by Management Science	32
	Bibliography	34
5	Decision-Making Procedures	35
5.1	Notion of Decision-Making Procedure	35
5.2	Dimensions of Decision-Making Procedures and Their Characteristics	36
5.3	Types of Decision-Making Procedures	36
5.4	Comparison of Heuristic and Analytic Decision-Making Procedures	37

5.5	Examples of the Different Types of Decision-Making Procedures	41
5.5.1	Introduction	41
5.5.2	Example of a Specific Heuristic Decision-Making Procedure	41
5.5.3	Example of a General Analytic Decision-Making Procedure	42
5.5.4	Example of a Specific Analytic Decision-Making Procedure	44
5.5.5	Comparison of the Three Examples	46
	Bibliography	46
 Part II A General Heuristic Decision-Making Procedure		
6	Overview of the Decision-Making Procedure	51
6.1	Value of a General Heuristic Decision-Making Procedure	51
6.2	Proposed Sequence of Steps	53
6.3	Brief Explanation of the Steps	56
6.4	Basis of the Procedure	58
	Bibliography	60
7	Problem Verification and Analysis	61
7.1	Overview of the Chapter	61
7.2	Verifying the Discovered Decision Problem	61
7.3	Problem Analysis	63
7.3.1	Introduction	63
7.3.2	If Possible: Framing and Structuring the Decision Problem	64
7.3.3	Determining the Problem Causes in the Case of a Threat Problem	66
7.3.4	Confirming the Opportunity in the case of an Opportunity Problem	71
7.3.5	Defining Sub-problems and Determining Their Processing	71
	Bibliography	72
8	Developing and Evaluating Solution Options	73
8.1	Overview of the Chapter	73
8.2	Developing Solution Options	73
8.2.1	Introduction	73
8.2.2	If Necessary: Determining Boundary Conditions	73
8.2.3	If Necessary: Gaining an Overview of the Solution Space	74
8.2.4	Developing Few, but Significantly Different Options	74

8.3	Determining the Decision Criteria	76
8.3.1	Introduction	76
8.3.2	Clarifying the Pursued Goals	77
8.3.3	Fixing One or Several Criteria Per Goal	77
8.3.4	Eliminating Overlappings	78
8.4	Determining Environmental Scenarios	78
8.4.1	Introduction	78
8.4.2	Clarifying the Need for Environmental Scenarios	79
8.4.3	If Necessary: Developing Few, but Significantly Different Environmental Scenarios	79
8.4.4	If Possible: Determining Probabilities for the Environmental Scenarios	80
8.5	Determining the Consequences of the Options	80
8.5.1	Introduction	80
8.5.2	Determining the Decision Matrix	81
8.5.3	Determining the Quality Level of the Consequences . . .	84
8.5.4	Determining the Consequence Values	85
	Bibliography	85
9	Decision Maxims for Establishing the Overall Consequences of the Options	87
9.1	Introduction	87
9.2	Decision Maxims for Overcoming Polyvalence	88
9.2.1	Utility Value Maxim	88
9.2.2	Quasi-Univalent Decision Maxim	93
9.3	Decision Maxims for Overcoming Risk	94
9.3.1	Expectation Value Maxim	94
9.3.2	Utility Expectation Value Maxim	95
9.3.3	Problems with the Application of the Decision Maxims for Overcoming Risk	101
9.4	Decision Maxims for Overcoming Uncertainty	101
9.5	Combining Decision Maxims to Overcome Polyvalence and Risk or Polyvalence and Uncertainty	104
9.6	Evaluation of the Decision Maxims	108
	Bibliography	109
10	Overall Evaluation of the Options and Decision	111
10.1	Introduction	111
10.2	Eliminating Irrelevant Options	111
10.3	Choosing Whether to Proceed Analytically or Summarily	114
10.4	Establishing the Overall Consequences or Determining the Crucial Strengths and Weaknesses of the Options	115
10.5	Making the Decision	115
	Bibliography	116

11	A Case Study Illustrating the Application of the Procedure	117
11.1	Initial Situation	117
11.2	Verifying the Discovered Problem	119
11.3	Problem Analysis	120
11.4	Developing Solution Options	127
11.5	Determining the Decision Criteria	129
11.6	Determining the Consequences of the Options	129
11.7	Overall Evaluation of the Options and Decision	132

Part III Special Problems and Approaches to Solve Them

12	Decision Sequences	137
12.1	Decision Sequences and Their Differentiation from Decisions with Several Sub-problems	137
12.2	Visualizing Decision Sequences with the Help of Decision Trees	138
12.3	Choosing the Best Option in a Decision Sequence	138
12.4	Case Example of a Decision Sequence	141
	Bibliography	146
13	Information Procurement Decisions	147
13.1	Information Procurement Decisions as Decisions at the Meta-Level	147
13.2	Recommendations for Making Information Procurement Decisions	148
	Bibliography	157
14	Collective Decisions	159
14.1	Collective Decisions and Their Importance in Companies	159
14.2	Group Goal Systems and Group Decision Behavior as Boundary Conditions for Collective Decisions	160
14.2.1	Group Goal Systems	160
14.2.2	Group Decision Behavior	162
14.3	Rules for Making Collective Decisions	165
14.3.1	Differing Individual Orders of Preference as a Starting Point	165
14.3.2	Requirements for Forming a Collective Order of Preference	166
14.3.3	Classic Rules for the Formation of a Collective Order of Preference or for Determining the Option Preferred by the Collective	168
14.3.4	More Complex Procedures to Form the Collective Order of Preference	170
	Bibliography	177

15	Final Remarks	179
	Bibliography	179
	Glossary	181
	Bibliography	185
	Index	189