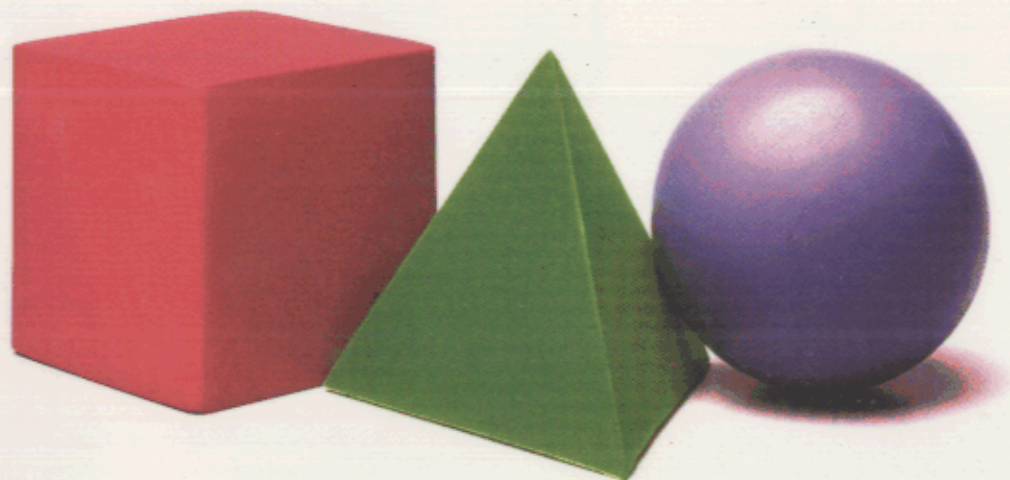


**Second
EDITION**

CREATIVE PROBLEM SOLVING FOR MANAGERS

**Developing skills for
decision making and innovation**



Tony Proctor



Contents

List of figures	xi
Preface to the second edition	xv
1 CREATIVITY AND ITS IMPORTANCE IN BUSINESS	1
<i>Introduction</i>	1
<i>Some definitions of creativity</i>	2
<i>Invention and creativity</i>	3
<i>Ideas and how they arise</i>	5
<i>The importance given to creativity in business</i>	6
<i>Conditions in which creative thinking is required most</i>	10
<i>Paradigm shift</i>	12
<i>Characteristics of creative thinking and creative thinkers</i>	15
<i>Questions</i>	19
<i>Cases</i>	20
2 BLOCKS TO CREATIVITY	23
<i>Introduction</i>	23
<i>The need to be ready for change</i>	24
<i>Problem solving</i>	24
<i>Mindset</i>	26
<i>Other barriers to an individual's creativity</i>	29
<i>Dealing with an individual's blocks to creativity</i>	29
<i>Diagnosing whether someone is blocked in their thinking</i>	30
<i>How techniques help to overcome blocks</i>	31
<i>Blocks to organisational creative thinking and ways of dealing with them</i>	34
<i>Elements and conditions of creative organisations</i>	35
<i>Questions</i>	36
<i>Cases</i>	37

3 THEORIES OF CREATIVITY AND THE CREATIVE PROBLEM SOLVING PROCESS	46
<i>Introduction</i>	46
<i>Creative thinking</i>	48
<i>The brain as an information processor</i>	49
<i>Convergent and divergent thinking</i>	52
<i>The conditions of creative thinking</i>	52
<i>Problem solving</i>	55
<i>Theories of creative problem solving</i>	56
<i>The cognitive theory of creativity</i>	59
<i>How we get ideas: the index metaphor</i>	61
<i>Problem solving mechanisms</i>	63
<i>Analogical reasoning</i>	64
<i>The problem solving process</i>	64
<i>The problem solving process and the creative process</i>	66
<i>The creative problem solving process</i>	67
<i>Questions</i>	69
<i>Cases</i>	69
4 OBJECTIVE FINDING, FACT FINDING AND PROBLEM FINDING/DEFINITION	72
<i>Introduction</i>	73
<i>Objective finding</i>	73
<i>Fact finding</i>	76
<i>Dimensional analysis</i>	77
<i>Problem finding/definition</i>	79
<i>Redefinition approaches</i>	81
<i>Redefinition approaches: laddering</i>	84
<i>Redefinition approaches: goal orientation</i>	85
<i>Redefinition approaches: boundary examination</i>	86
<i>Redefinition approaches: progressive abstractions</i>	87
<i>Redefinition approaches: 'why' method</i>	88
<i>Analytical techniques: decomposable matrices</i>	89
<i>Analytical techniques: cause-and-effect diagrams</i>	92
<i>Questions</i>	92
<i>Cases</i>	93
5 MORPHOLOGICAL ANALYSIS AND RELATED TECHNIQUES	97
<i>Introduction</i>	97
<i>Checklists</i>	98
<i>Attribute listing</i>	101
<i>Morphological analysis</i>	103
<i>Force-fitting triggers</i>	107
<i>Heuristic ideation technique</i>	109

<i>Component detailing</i>	111
<i>Sequence-attribute modification matrix</i>	111
<i>Questions</i>	113
<i>Cases</i>	114
6 BRAINSTORMING AND ITS VARIANTS	118
<i>Introduction</i>	118
<i>Classical brainstorming</i>	118
<i>The process of brainstorming</i>	121
<i>Wildest-idea variant</i>	125
<i>Stop-and-go brainstorming</i>	125
<i>Round-robin brainstorming</i>	125
<i>Gordon–Little variation</i>	125
<i>Trigger method</i>	127
<i>Problems with brainstorming</i>	127
<i>Brainwriting</i>	127
<i>Brainlining</i>	128
<i>Questions</i>	130
<i>Cases</i>	130
7 LATERAL THINKING AND ASSOCIATED METHODS	137
<i>Introduction</i>	137
<i>Overview</i>	138
<i>Awareness</i>	139
<i>Assumptions</i>	141
<i>Alternatives</i>	144
<i>Provocative methods</i>	146
<i>Metaphorical thinking</i>	152
<i>Analogy</i>	153
<i>The discontinuity principle</i>	155
<i>Questions</i>	155
<i>Cases</i>	156
8 SYNECTICS	160
<i>Introduction</i>	160
<i>Synectics</i>	160
<i>Conducting synectics sessions</i>	165
<i>Synectics in action</i>	170
<i>Questions</i>	173
<i>Cases</i>	174

9 PARADIGM-BREAKING TECHNIQUES AND SOME MISCELLANEOUS IDEATION METHODS	179
<i>Introduction</i>	180
<i>Vision building</i>	180
<i>Symbolic representation</i>	181
<i>Miscellaneous ideation techniques</i>	185
<i>Clichés, proverbs and maxims</i>	186
<i>Storyboarding</i>	187
<i>Scenario writing</i>	188
<i>Scenario day-dreaming</i>	191
<i>Bionics</i>	194
<i>Two words</i>	195
<i>Free association</i>	196
<i>Story writing</i>	198
<i>Mind map</i>	200
<i>Lotus blossom technique</i>	203
<i>Fishbone diagram</i>	204
<i>Questions</i>	205
<i>Cases</i>	206
10 EVALUATION	212
<i>Introduction</i>	213
<i>Sorting</i>	213
<i>Evaluation methods</i>	216
<i>Advantage–disadvantage tables</i>	216
<i>PMI: Plus/Minus/Interesting</i>	217
<i>Castle technique</i>	218
<i>Sticking dots</i>	218
<i>Creative evaluation</i>	220
<i>Force-field analysis</i>	220
<i>Weighting systems</i>	221
<i>The process of choosing</i>	222
<i>Qualitative evaluation: reverse brainstorming</i>	224
<i>Financial/mathematical evaluations</i>	226
<i>Pay-off tables</i>	226
<i>Decision trees</i>	227
<i>Questions</i>	228
<i>Cases</i>	229
11 IMPLEMENTING IDEAS	238
<i>Introduction</i>	239
<i>Ideas are not readily implemented</i>	239
<i>Sources of resistance to change</i>	241
<i>Role of communication in overcoming resistance to change</i>	242

<i>Putting ideas into practice</i>	243
<i>Reducing resistance to change</i>	246
<i>Climate for change</i>	251
<i>Questions</i>	254
<i>Cases</i>	255
12 COMPUTER-ASSISTED CREATIVE PROBLEM SOLVING	258
<i>Introduction</i>	258
<i>History of development</i>	259
<i>Structured approach to creative problem solving in computer programs</i>	260
<i>Types of program</i>	261
<i>Group creative problem solving aids</i>	266
<i>Conventional software</i>	267
<i>Questions</i>	269
<i>Cases</i>	270
<i>Appendix to chapter: notes on some creativity programs</i>	270
Bibliography	277
Author index	284
Subject index	286