

Contents

Introduction	1
Why Do We Need Creativity?	4
Ten Ages of Innovation	6
Measuring Creativity	9
Prehistory: The Dawn of Invention (<2700 BCE)	13
The Hand Axe (Date Unknown)	14
What Was Invented?	14
Why Was the Hand Axe Invented?	16
How Creative Was the Hand Axe?	16
The Oar (c4000 BCE)	17
What Was Invented?	18
Why Was the Oar Invented?	20
How Creative Was the Oar?	20
Cuneiform Writing (c2700 BCE)	21
What Was Invented?	22
Why Was Cuneiform Writing Invented?	23
How Creative Was Cuneiform Writing?	24
The Classical Period (753 BCE–476 CE): The Problems of Empires	27
Standardised Coinage (700–500 BCE)	28
What Was Invented?	28
Why Was Standardised Coinage Invented?	30
How Creative Was Standardise Coinage?	30
The Construction Crane (c550 BCE)	32
What Was Invented?	33
Why Was the Construction Crane Invented?	33
How Creative Was the Construction Crane?	34

The Julian Calendar (45 BCE)	36
What Was Invented?	36
Why Was the Julian Calendar Invented?	38
How Creative Was the Julian Calendar?	39
The Dark Ages (476–1453 CE): Eastern Creativity	41
Paper (105 CE)	42
What Was Invented?	42
Why Was Paper Invented?	43
How Creative Was Paper?	44
The Spinning Wheel (c700 CE)	45
What Was Invented?	46
Why Was the Spinning Wheel Invented?	47
How Creative Was the Spinning Wheel?	48
The Crankshaft (1206)	49
What Was Invented?	50
Why Was the Crankshaft Invented?	52
How Creative Was the Crankshaft?	52
The Renaissance (1300–1700): The Rebirth of Knowledge	55
The Scythe (c1300)	56
What Was Invented?	56
Why Was the Scythe Invented?	58
How Creative Was the Scythe?	58
The Printing Press (1450)	60
What Was Invented?	61
Why Was the Printing Press Invented?	63
How Creative Was the Printing Press?	63
The Condom (c1560)	65
What Was Invented?	65
Why Was the Linen Condom Invented?	65
How Creative Was the Linen Condom?	66
The Age of Exploration (1490–1700): New Worlds and New Problems	69
The Slide Rule (1622)	70
What Was Invented?	70
Why Was the Slide Rule Invented?	72
How Creative Was the Slide Rule?	72
The Pendulum Clock (1656)	74
What Was Invented?	74
Why Was the Pendulum Clock Invented?	75
How Creative Was the Pendulum Clock?	75

The Steam Pump (1698)	78
What Was Invented?	79
Why Was the Steam Pump Invented?	80
How Creative Was the Steam Pump?	81
The Age of Enlightenment (1685–1815): The <i>Business</i> of Invention	83
The Leyden Jar (1745)	84
What Was Invented?	84
Why Was the Leyden Jar Invented?	86
How Creative Was the Leyden Jar?	86
The Industrial Revolution (c1760–1830)	87
What Was Invented?	88
Why Was the Industrial Revolution <i>Invented</i> ?	90
How Creative Was the Industrial Revolution?	90
The Smallpox Vaccine (1796)	92
What Was Invented?	92
Why Was the Smallpox Vaccine Invented?	93
How Creative Was the Smallpox Vaccine?	94
The Romantic Period (1800–1900): Accelerating Change	97
The Velocipede (1817)	98
What Was Invented?	98
Why Was the Velocipede Invented?	100
How Creative Was the Velocipede?	100
Sewerage Systems (c1850)	102
What Was Invented?	102
Why Were Sewerage Systems Invented?	104
How Creative Were Sewerage Systems?	105
The Electric Lightbulb (1879)	106
What Was Invented?	106
Why Was the Electric Lightbulb Invented?	107
How Creative Was the Electric Lightbulb?	109
The Modern Age (1880–1950): Expansion and Conflict	111
Steel-Girder Skyscrapers (1885)	112
What Was Invented?	112
Why Was the Steel-Girder Skyscraper Invented?	113
How Creative Was the Steel-Girder Skyscraper?	113
The Wright Flyer (1903)	115
What Was Invented?	116
Why Was the Wright Flyer Invented?	117
How Creative Was the Wright Flyer?	117

Antibiotics (1940s)	119
What Was Invented?	119
Why Were Antibiotics Invented?	121
How Creative Were Antibiotics?	121
The Space Age (1950–1981): The Science of Creativity	125
The Nuclear Power Plant (1951)	126
What Was Invented?	126
Why Was the Nuclear Power Plant Invented?	127
How Creative Was the Nuclear Power Plant?	127
Sputnik I (1957)	130
What Was Invented?	131
Why Was Sputnik Invented?	132
How Creative Was Sputnik?	133
Antisense (Gene) Therapy (1978)	134
What Was Invented?	135
Why Was Antisense Therapy Invented?	136
How Creative Was Antisense Therapy?	137
The Digital Age (1981–Present): The Rise of Complexity	139
Artificial Skin (1981)	140
What Was Invented?	140
Why Was Artificial Skin Invented?	141
How Creative Was Artificial Skin?	142
The World Wide Web (1989)	144
What Was Invented?	144
Why Was the World Wide Web Invented?	145
How Creative Was the World Wide Web?	146
The Smartphone (1992)	147
What Was Invented?	148
Why Was the Smartphone Invented?	149
How Creative Was the Smartphone?	150
The Innovation Scoreboard	153
Appendix A: The Creative Solution Diagnosis Scale (CSDS)	159
Appendix B: Table of Creativity Scores	163
Bibliography	165