

⌚ Table of Contents

<i>Table of Abbreviations</i>	xvii
<i>Preface</i>	xix
<i>Acknowledgments</i>	xxi
<i>Chapter 1. “New Media” and Marshall McLuhan</i>	1
1.1 Objectives of This Book	1
1.2 The Methodology Employed and What the Reader Can Expect to Find in This Book	2
1.3 What Are the “New Media?”	4
1.4 The Changing Figure/Ground Relation with the “New Media”	7
1.5 A “New Media” Taxonomy	9
1.6 A Medium Is a Technology Is a Tool Is a Language Is a Medium Is a...	11
1.7 Standing on the Shoulders of a Giant	11
1.8 McLuhan on New Media	12
 PART I. METHODOLOGICAL CONSIDERATION	15
<i>Chapter 2. McLuhan’s Methodology</i>	17
2.1 There Was Method in His Madness	17
2.2 A Summary of McLuhan’s Methodology	19
2.3 Was McLuhan a Technological Determinist?	21
<i>Chapter 3. Five Communication Ages</i>	27
3.1 Updating McLuhan’s Three Communication Ages	27
3.2 McLuhan’s Three Communication Ages: Oral, Literate, and Electric	28

3.3 The Origin and Evolution of Language	31
3.4 Refining the Distinction between Oral and Written Communication	33
3.5 The Ecology of Media and Ecosystems as Media	35
<i>Chapter 4. To What Extent Do the “New Media” Confirm or Contradict McLuhan’s Predictions?</i>	
4.1 New Patterns	37
4.2 Laws of the Media and the Evolution of Technology	39
4.3 The Revival of Literacy with “New Media” and the Reversal of the Negative Effects of the Mass Media	40
4.4 New Media’s Intensification of Trends McLuhan Identified for Electric Media	42
4.5 Faster than the Speed of Light	45
<i>Chapter 5. The Fourteen Messages of “New Media”</i>	48
5.0 Differences between the “New Media” and Mass Media	48
5.1 Two-way Communication	52
5.2 Ease of Access to and Dissemination of Information	53
5.3 Continuous Learning	54
5.4 Alignment and Integration	55
5.5 The Creation of Community	56
5.6 Portability	57
5.7 Convergence	57
5.8 Interoperability	60
5.9 Aggregation of Content	62
5.10 Variety, Choice, and the Long Tail	64
5.11 Reintegration of the Consumer and the Producer	66
5.12 Social Collectivity and Cyber-Cooperation	68
5.13 Remix Culture	70
5.14 The Transition from Products to Services	72
5.15 A Comparison of Media Old and New vis-à-vis the Fourteen Messages of the “New Media”	72
5.16 User-based Transformations of New Media	74
<i>Chapter 6. The “Digital Economy”</i>	76
6.1 Introducing the “Digital Economy”	76
6.2 It Is All About Access not Possession	78
6.3 A Paradigm Shift from Information to Knowledge	79
6.4 Knowledge Management and the Web	80

6.5 Lifelong Learning: Job Security in the Internet Age	81
<i>Chapter 7. Scaffolding and Cascading Technologies and Media</i>	82
7.1 Media as the Extensions of Man	82
7.2 The Evolution of Media and Technologies: Extending the Extensions of Man	84
7.3 Cascading Technologies and Media: Understanding New Media as the Extensions of Earlier Media or the Extensions of Extensions	88
7.4 What Is the Actual Content of a Medium?	89
7.5 Neo-Dualism and the Symbolosphere	90
7.6 Bifurcation of the Symbolosphere into the Mediasphere and the Human Mind	91
 PART II. HOW THE NEW MEDIA HAVE IMPACTED THE MEDIA ANALYZED IN <i>UNDERSTANDING MEDIA</i> (UM) 95	
<i>Chapter 8. The Spoken Word:</i>	97
Impact of “New Media” on the Spoken Word	97
<i>Chapter 9. The Written Word</i>	100
9.1 Impact of “New Media” on the Written Word	100
9.2 Tertiary or Digital Orality	102
9.3 The End of Writing?	104
9.4 Interactive Text	105
<i>Chapter 10. Roads and Paper Routes</i>	107
The Impact of “New Media” on Roads and Paper Routes	107
<i>Chapter 11. Number</i>	109
11.1 The First Digital Revolution	109
11.2 The Invention of Zero	110
11.3 From Digits to Digitization	111
<i>Chapter 12. Clothing</i>	112
<i>Chapter 13. Housing</i>	114
<i>Chapter 14. Money</i>	116
14.1 Impact of “New Media” on Money	116
14.2 The ATM	118
14.3 E-commerce	118

14.4 Online Auctioning and Fixed-Price Sales	120
14.5 Online Shopping Payments, Credit Cards, and e-Money	123
<i>Chapter 15. Clocks</i>	126
<i>Chapter 16. The Print</i>	127
<i>Chapter 17. Comics</i>	128
<i>Chapter 18. The Printed Word and Books</i>	130
18.1 The Impact of the “New Media” on the Book and the Academic Journal	131
18.2 Alternative Formats of Text	134
18.3 e-Books	135
18.4 Audio Books	137
18.5 Ezines	138
18.6 The Library	138
<i>Chapter 19. Wheel, Bicycle, and Airplane</i>	139
<i>Chapter 20. The Photograph</i>	140
<i>Chapter 21. Press (Newspapers) and the News</i>	142
21.1 Impact of “New Media” on the News	142
21.2 The “New” News Consumer	143
21.3 The “New” News Producers	144
<i>Chapter 22. Motorcar</i>	151
<i>Chapter 23. Ads</i>	153
23.1 Advertising on Mass Media	153
23.2 Advertising on the Internet, the Web, and Other “New Media” Venues	155
23.3 Online Viral Marketing	158
<i>Chapter 24. Games</i>	160
24.1 Electronic games	160
24.2 Social Impacts of Games	164
<i>Chapter 25. Telegraph</i>	166
<i>Chapter 26. The Typewriter</i>	167
<i>Chapter 27. The Telephone</i>	168
27.1 Impact of the “New Media on the Telephone	168
27.2 Teletype and fax	170
27.3 The Pager	170

27.4 VOIP (Voice over IP or the Internet)	170
27.5 The Videophone	172
27.6 Telecos and Convergence	172
<i>Chapter 28. The Phonograph and New Modes of Recorded Music</i>	173
28.1 Impact of “New Media” on the Phonograph, the Tape Recorder, the Walkman and Recorded Music	173
28.2 The CD	174
28.3 The MP3 Player, the iPod, and iTunes iTunes U	175
28.4 The Sony DRM Affair	178
<i>Chapter 29. Movies</i>	179
29.1 The video camera	179
29.2 The VCR (Video Cassette Recorder), the DVD (Digital Versatile Disc), and the Blu-ray Disc	180
29.3 iMovies	181
29.4 Movies and the Web	181
29.5 The YouTube Phenomenon	182
<i>Chapter 30. Radio</i>	185
30.1 Impact of “New Media” on Radio	185
30.2 Satellite radio	186
30.3 Online (Web) radio	187
30.4 Podcasting	189
<i>Chapter 31. Television</i>	192
31.1 Videotape and Television Production	192
31.2 The Remote Controller	193
31.3 Television and Education	193
31.4 Cable and Satellite Television	194
31.5 Globalization versus Fragmentation	196
31.6 TV and the Cell Phone	196
31.7 The Convergence of Television, Short Form Video, and Google	197
31.8 Interactive Television?	198
31.9 Digital Television and High Definition TV	198
31.10 DVR (Digital Video Recorder)—A Television Revolution in the Making: TiVo and ReplayTV	199
31.11 Television on the iPod	201

31.12 iTuning Television Shows and Movies: The BitTorrent Opportunity	202
31.13 The Convergence of Television and the Computer	203
<i>Chapter 32. Weapons</i>	204
<i>Chapter 33. Automation (Plus the Factory)</i>	206
 PART III. THE ANALYSIS OF NEW MEDIA NOT DEALT WITH IN UM: ARE THE MASS MEDIA ABATING IN INFLUENCE? 209	
<i>Chapter 34. Hybrid or Convergent Technologies</i>	211
<i>Chapter 35. The Multifunction Printer, Photocopier, Scanner, and Fax</i>	214
35.1 Impact of “New Media” on the Printer	214
35.2 The Scanner and OCR Software	215
<i>Chapter 36. The Cell Phone</i>	217
36.1 The Impact of “New Media” on the Telephone: The Emergence of the Cell Phone	218
36.2 New Cell Phone Services	218
36.3 The Multifunction Cell Phone	219
36.4 The Social Impact of the Camera Cell Phone	221
<i>Chapter 37. The Personal Computer</i>	223
37.1 Desktop and Notebook Computers	223
37.2 The Tablet PC	226
37.3 The Service and Disservice of Computers	226
<i>Chapter 38. The PDA (Personal Digital Assistant)</i>	228
38.1 The PDA, Wireless Email, and Smart Phones	228
38.2 The Pentop Computer	230
38.3 Pen Computing	231
<i>Chapter 39. Computer Software</i>	232
<i>Chapter 40. The Internet</i>	235
40.1 A Medium of Media	235
40.2 Roots: The History of Pre-electronic Proto-Internets	237
40.3 The Origins of the Internet	238
40.4 Oral Structure of the Internet	240
40.5 Discussion Groups on the Internet	241

40.6 Netocracy: The Ultimate Participatory Democracy	241
40.7 Electronic Crime and Punishment	242
40.8 The Internet and Commerce	243
40.9 Art and the Internet	246
40.10 Internet Service Providers and Portals	247
40.11 Cloud computing	249
<i>Chapter 41. Email, Instant Messaging (IM) and SMS (Short Message Service)</i>	
41.1 IM and SMS	250
41.2 Email	252
41.3 Gmail	253
<i>Chapter 42. Bulletin Boards, Usenets, Listservs, and Chat</i>	254
<i>Chapter 43. The World Wide Web</i>	256
43.1 Emergence of the World Wide Web	257
43.2 The Service and Disservice of the Web	259
43.3 Web TV	260
43.4 Web-based Social Networks	261
Corporate Social Networks	266
Twitter	266
A Novel Use of Social Networking	267
43.5 Web 2.0	267
43.6 The Semantic Web	269
43.7 Folksonomy	270
43.8 del.icio.us	270
43.9 The Emergence and Evolution of the World Wide Web and Individual Web Sites	271
Descent, Modification, and Selection	273
<i>Chapter 44. Blogs</i>	276
44.1 What Is a Blog?	277
44.2 The Blog as News Medium	278
44.3 Social and Psychological Impacts of Blogs	281
44.4 Non-textual Blogs	283
44.5 The Blook	283
44.6 The Blog Goes Mainstream	284
<i>Chapter 45. Search Engines plus Google and Libraries</i>	285
45.1 Search Engines	285

45.2 The Dominance of Google	287
45.3 Google's Competitors	289
45.4 Initiatives of Google Technologies Inc.	290
45.5 Google, Wyse, Thin Clients, and a Possible Personal Computing Revolution: A Speculation	298
45.6 Digitizing and Searching the World's Literature: The Impact of the "New Media" on the Library	298
45.7 Will Google Realize Vannevar Bush's Vision of the Memex Device	305
45.8 The Flight of Books from Undergraduate Libraries	305
45.9 Electronic Browsing	306
45.10 About.com—The Human Internet	306
45.11 Is Google the Seventh Language?	307
<i>Chapter 46. Video Conferencing and Web-based Collaboration Tools</i>	308
46.1 Video Conferencing	308
46.2 Web-based Collaboration Tools	309
46.3 Collective Intelligence	311
<i>Chapter 47. Virtual Reality (VR) and Simulations</i>	312
47.1 What Is VR?	312
47.2 The Reality of Virtual Reality	313
47.3 Games and Role Playing on 3D Virtual Reality Platforms	314
<i>Chapter 48. Robots, Bots, and Agents</i>	318
48.1 Robots	318
48.2 Bots and Software Agents	320
<i>Chapter 49. Artificial Intelligence (AI) and Expert Systems</i>	322
49.1 What Is AI?	322
49.2 What Is Strong AI?	323
49.3 A Personal Critique of Strong AI	323
49.4 The Potential AI Exploitation of the World Wide Web	327
<i>Chapter 50. "Smart Tags" and Dataspace</i>	329
50.1 Bar Codes and "Smart Tags"	329
50.2 Dataspace	331
50.3 The Dataspace Enabler: Accessing, Navigating, and Searching Dataspace	332

50.4 The Future Convergence of Cyberspace and Dataspace and the “Smart Box”	333
50.5 The “Smart-Tagged” Book That Is Smart, Readable, Searchable, and Networkable	334
50.6 Is Dataspace the Eighth Language?	336
<i>Chapter 51. Enabling Technologies Not Dealt with in <i>Understanding Media</i></i>	338
51.0 Definitions	338
51.1 Electronics	338
51.2 The Mouse and the Graphical User Interface (GUI)	340
51.3 Haptic and Olfactory Technology	340
51.4 Hyperlinks, Hypertext and Hypermedia	341
51.5 Modems and ADSL (Asymmetric Digital Subscriber Line)	342
51.6 Fiber Optics	342
51.7 Communication Satellites	343
51.8 WiFi, Bluetooth, and FireWire	343
51.9 Open Source Technology and Wikis	344
The Oral Roots of the Open Source Movement: Resource Sharing on the Net	345
51.10 Wikis and the Wikipedia	347
51.11 Ubiquitous Computing	348
51.12 RSS (Really Simple Syndication)	349
<i>Appendix I. McLuhan’s Methodology</i>	351
A.1 The Equivalence of Media and Technologies	351
A.2 Technology as Extensions of the Body and Media as Extensions of the Psyche	352
A.3 Media as Living Vortices of Power	352
A.4 Media Create New Social Patterns and Restructure Perceptions	352
A.5 “The Medium is the Message”	353
A.6 The Content of Any New Medium Is Another Older Medium	354
A.7 Hybrid Systems	354
A.8 The Subliminal Effects of Media	355
A.9 The Counterintuitive Effect of Media	355
A.10 The Flip: Humankind as an Extension of Its Technologies	356
A.11 Societies Imitate Their Technologies	357

A.12 The Global Village	358
A.13 The Rear View Mirror: History as the Laboratory of Media Studies	359
A.14 Three Communication Ages	359
A.15 Break Boundaries	360
A.16 Acoustic versus Visual Space	361
A.17 Writing, the Alphabet, and the Printing Press	361
A.18 Fragmentation in the Age of Literacy	363
A.19 New Information Patterns Emerge at the Speed of Light	363
A.20 Centralization versus Decentralization	364
A.21 Integration and Multidisciplinarity versus Specialization	364
A.22 Hardware versus Software and Information	365
A.23 Hot and Cool/ Light On Versus Light Through	365
A.24 Media Studies as Civil Defense Against Media Fallout	366
A.25 Understanding Both the Service and Disservice of New Media	367
A.26 The Absence of a Moral Judgment	368
A.27 The Myth of Objectivity	368
A.28 The Oral Tradition and Probes	368
A.29 Art as Radar and an Early Warning System	369
A.30 Obsolesced Technologies Become Art Forms	370
A.31 Multidisciplinarity	370
A.32 "Media Analysis" versus "Content Analysis"	371
A.33 The Study of Interface and Pattern Rather Than a "Point of View"	371
A.34 Figure-Ground Relationship	372
A.35 The Reversal of Cause and Effect	373
A.36 The User Is the Content	373
A.37 An Antiacademic Bias	374
A.38 Laws of the Media (LOM)	375
<i>Appendix II. The Emergence and Evolution of the World Wide Web and Individual Web Sites</i>	377
Descent, Modification and Selection	380
<i>References</i>	383