
Contents

Preface	ix
Introduction	xiii
Part 1. New Frontiers and Governance of Digital Space	1
Chapter 1. Fragmentation and Compartmentalization of Virtual Space	3
1.1. The nymph Carna and Internet census	3
1.2. Dimensions of cyberspace	5
1.3. <i>Deep web, darknet</i> and <i>dark web</i>	8
Chapter 2. A Society of Control and Panopticism	13
2.1. Horizontal panopticism and cyber-narcissism	13
2.2. The neutrality of the network in question	15
2.2.1. How can network neutrality be preserved?	18
2.2.2. A threatened principle	19
2.3. Going toward an Internet 3.0 and a new form of digital civility?	22
2.3.1. Is cyberspace a public space?	22
2.3.2. Tyrannies of privacy	24
Chapter 3. The Internet, a Governance Subject to Controversy	27
3.1. ICANN, an influenced institution	27
3.1.1. Is this the end of US supremacy?	28
3.1.2. The role of the GAC	29
3.2. Cybersecurity, domains and electronic addressing	32
3.2.1. The essential role of WHOIS	34

3.2.2. Domain name extension and migration from IPv4 to IPv6	37
3.3. Who regulates those who are in control?	39
3.3.1. Conflict within ICANN	40
3.3.2. Encrypted networks: a major security issue for ICANN	42
Part 2. Crypto-Anarchism, Cryptography and Hidden Networks	45
Chapter 4. From the ARPANET to the Darknet: When States Lose Cryptographic Warfare	49
4.1. From Minitel to ARPANET	49
4.1.1. Rapid growth	51
4.1.2. The privatization of the Internet	52
4.2. The rise of asymmetric cryptography	53
4.2.1. Steganography.	53
4.2.2. Modern cryptographic methods	56
4.2.3. Asymmetric cryptography.	57
4.3. “The Crypto Wars are over!”	60
4.3.1. Planetary electronic monitoring	62
4.3.2. “Rendering Big Brother obsolete”	64
4.3.3. Cryptography at the service of hidden networks.	68
Chapter 5. From Sneaker Nets to Darknets	71
5.1. Peer to peer: the first darknets	71
5.1.1. P2P against the entertainment industry: David versus Goliath	73
5.1.2. The BitTorrent revolution	77
5.1.3. The emergence of darknets	81
5.2. “Netopias” and darknets: the appearance of parallel networks.	84
5.2.1. Cypherpunks and cyberpunk	84
5.2.2. Crypto-anarchism and activism: Peekabooby.	88
5.2.3. Freenet	90
5.2.4. It is a small world...	93
5.3. The Tor network	98
5.3.1. The origins of Tor	100
5.3.2. The Tor paradox	103
5.3.3. How Tor works	105
5.3.4. The principle of the .onion address	108
5.3.5. An evolution of Tor uses thanks to Tor2Web?.	112
Chapter 6. Geopolitics and Cybersecurity	117
6.1. From “hacktivism” to “cyberwarfare”	117
6.1.1. The first hackers	118

6.1.2. When states engage in cyberwarfare.	120
6.1.3. Computer attacks of an unprecedented magnitude	122
6.1.4. The darknet: cybercrime market	124
6.2. Cybercrime, politics and subversion in the “half-world”	126
6.2.1. The “half-world” appeal.	130
6.2.2. Fighting crime and Bitcoins: current and future economic and security issues	134
Conclusion	141
Appendices	145
Appendix 1	147
Appendix 2	153
Glossary	157
Bibliography	163
Index	169