

# Contents

About the Authors	xi
Abbreviations and Acronyms	xiii
List of Figures	xix
List of Tables	xxiii
<b>1 Introduction</b>	<b>1</b>
References	4
<b>2 Multicast</b>	<b>5</b>
2.1 The Idea of Multicast	7
2.2 Justifying the Cost of Multicast	9
2.3 Drawbacks of Multicast	13
2.4 IP Multicast	16
2.4.1 IP Multicast Networking Procedure	18
2.4.2 Mobility of Users	21
References	22
<b>3 Internet Protocol Datacasting</b>	<b>23</b>
3.1 System Architecture	25
3.2 Digital Video Broadcasting	28
3.2.1 DVB-T as a Basis for DVB-H	29
3.2.2 Digital Video Broadcasting Handheld	30
3.3 Electronic Service Guide	40
3.4 Streaming	43
3.5 Data Transmission	46
3.6 Interaction Channel	48
References	51

<b>4</b>	<b>Multimedia Broadcast/Multicast Service (MBMS)</b>	<b>55</b>
4.1	MBMS Overview	56
4.2	MBMS Architecture	59
4.3	MBMS Services	65
4.4	Performance of MBMS	68
	References	69
<b>5</b>	<b>Alternative Technologies</b>	<b>71</b>
5.1	MediaFLO	71
5.1.1	Architecture	72
5.1.2	System Performance	73
5.1.3	Technical Description	74
5.1.4	Summary	77
5.2	Digital Multimedia Broadcasting (DMB)	78
5.2.1	Multiplexing and Channel Coding	82
5.2.2	Modulation and Transmission	86
5.2.3	Summary	88
5.3	Terrestrial Integrated Services Digital Broadcasting (ISDB-T)	88
5.3.1	Overview of ISDB-T	89
5.3.2	ISDB-T Transmission System	90
5.3.3	Summary	97
5.4	Comparison of Technologies	97
	References	99
<b>6</b>	<b>Digital Rights Management (DRM)</b>	<b>101</b>
6.1	OMA DRM v2.0	102
6.2	Windows Media DRM 10	105
6.3	IPsec	106
6.4	Secure Real-Time Transport Protocol	108
6.5	ISMACrypt	110
6.6	DVB Conditional Access	111
6.7	Limitations of DRM Systems	112
	References	114
<b>7</b>	<b>Business Model</b>	<b>115</b>
7.1	Common Components	116
7.2	Components Specific to IPDC	119
7.3	Components Specific to MBMS	121
7.4	Terminals and Network Infrastructure	123

7.5	Charging Scenarios	130
7.6	Spectrum for Mobile TV	132
7.7	Summary	138
	References	138
<b>8</b>	<b>Trials</b>	<b>141</b>
8.1	DVB-H Trials	142
8.2	MBMS Trials	149
8.3	MediaFLO Trials	150
	References	151
<b>9</b>	<b>User Feedback</b>	<b>153</b>
9.1	Interest	154
9.2	Threats	155
9.3	Business Issues	157
9.4	Usage Schemes	158
9.5	The User	161
9.6	Comparison of Services	163
9.7	Mobile TV and Interactivity	165
9.8	Summary	169
	References	170
<b>10</b>	<b>Conclusion</b>	<b>171</b>
	<b>Further Reading</b>	<b>175</b>
	<b>Index</b>	<b>177</b>

