

Table of Contents

Glossary.....	13
---------------	----

Executive Summary

Introduction.....	19
Defining Mobile Web 2.0.....	19
What is Web 2.0?.....	20
Table ES1: Web 2.0 Terminology and Feature Sets.....	20
The Mobile Web 2.0 Framework.....	21
Table ES2: The Juniper Research Mobile Web 2.0 Framework.....	21
The Market for Mobile Web 2.0.....	22
Table ES3: Number of Mobile Internet Users (millions) by Region, 2008-2013.....	22
Figure ES1: Total Global Revenues for Mobile Web 2.0, by Application, 2008-2013.....	23
Table ES4: Total Global Revenues (\$m) for Mobile Web 2.0, by Application, 2008-2013.....	23
Figure ES2: Total Mobile Web 2.0 Revenues (\$m), by Type. 2008-2013.....	24
Table ES5: Total Mobile Web 2.0 Revenues (\$m), by Type. 2008-2013.....	24
Figure ES3: Total Revenues (\$m) for Mobile Web 2.0, by Region, 2008-2013.....	25
Table ES6: Total Mobile Web 2.0 Revenues (\$m), by Region, 2008-2013.....	25
Challenges to Mobile Web 2.0 Adoption.....	25
Table ES7: Key Challenges for Mobile Web 2.0 Applications.....	26

I. The Building Blocks for Mobile Web 2.0

I.1 Introduction.....	29
I.2. What is Web 2.0?.....	30
Figure I.1: The Web 2.0 Framework.....	30
I.2.1 O'Reilly's Seven Principles of Web 2.0.....	31
I.2.2 Web 2.0 Terminology.....	32
i. Long Tail.....	32
Figure I.2: The Long Tail Rears its Head.....	32
ii. Mashups.....	33
Figure I.3: Zillow 'Mashes' Real Estate Information with Microsoft's Virtual Earth Platform.....	33
iii. Semantic Web.....	34
iv. Social Web (Social Computing/Social Software).....	34
v. Widgets.....	35
vi. Rise of the 'Prosumer'.....	36
Figure I.4: Prosumers – The 15-20% of Men and Women who Make and Break Markets.	36
I.3 The Mobile Web 2.0 Evolution.....	36
I.3.1 Ajit Jaokar's Seven Principles of Mobile Web 2.0.....	37
I.3.2 Translating Web 2.0 to Mobile: Share, Collaborate, Exploit.....	38
Figure I.5: Moving from Web 1.0 to Web 2.0.....	39
I.3.3 User Behaviour and Bi-directional Flows.....	39
I.4 Defining Mobile Web 2.0.....	40
I.4.1 Mobile Web 2.0 Applications.....	41
i. LBS (Location-Based Services).....	41
ii. Mobile Instant Messaging (Includes Presence).....	41
iii. Mobile Search.....	41
iv. Social Networking and User-Generated Content (UGC).....	41
I.4.2 The Mobile Web 2.0 Framework.....	41
Figure I.6: The Juniper Research Framework for Mobile Web 2.0.....	42
I.4.3 Why do we Need Mobile Web 2.0?.....	42
Figure I.7: ShoZu Provides One-Click Uploading/Downloading of Photos and Content.....	43

2. An Emerging Market

2.1 Introduction	45
Table 2.1: Mobile Data – Cost per Megabyte. Regional Forecast (\$) 2008-2013.	45
2.2 The Mobile Web 2.0 Market	46
2.2.1 Market Overview	46
Figure 2.1: The Mobile Web 2.0 Value Chain.	46
2.3 Mobile Web 2.0 Developments	47
2.3.1 North America.....	48
i. Helio (U.S.).....	48
Figure 2.2: Helio’s Ocean Device.	48
ii. Sprint (U.S.).....	48
iii. Rogers Wireless (Canada)	49
iv. Other MNO Services.....	50
a. Alltel Wireless (U.S.)	50
b. AT&T (U.S.).....	50
c. Boost Mobile (U.S.).....	50
d. Virgin Mobile USA	51
v. Market Indicators.....	51
2.3.2 South America.....	51
i. América Móvil	51
ii. Grupo Iusacell (Mexico)	51
iii. Movistar Chile	52
iv. Telefónica (Group).....	52
v. Vivo (Brazil).....	52
a. Market Indicators	52
2.3.3 Western Europe.....	53
i. 3 (UK)	53
ii. Bouygues Telecom (France)	54
iii. SFR (Vodafone)	54
iv. Telefónica Móviles España, S.A. (Telefónica Movistar – Spain).....	54
Figure 2.3: Telefónica Móviles España Mobile IM Screenshot.....	55
v. TMN Portugal.....	55
Figure 2.4: The TMN Portugal-Branded Opera Mini Browser.....	56
vi. Vodafone España.....	56
Figure 2.5: Windows Live Messenger is Provided as an Embedded Application.	57
vii. Vodafone Portugal	57
a. Market Indicators	58
2.3.4 Eastern Europe.....	58
i. Avea (Turkey).....	58
ii. Elisa (Estonia and Finland)	58
iii. EMT (Estonia)	58
iv. VimpelCom/Beeline (Russia)	58
v. Si.mobil – Vodafone (Slovenia).....	59
vi. T-Mobile (Czech Republic)	59
vii. T-Mobile (Hungary)	59
viii. Turkcell.....	60
2.3.5 Far East & China	60
i. China Mobile.....	60
ii. China Unicom.....	60
iii. KDDI (Japan).....	61
iv. KTF (Korea).....	61
v. NTT DoCoMo (Japan).....	62
vi. SK Telecom (Korea)	62
vii. Market Indicators.....	63
a. China	63
b. Japan.....	63
c. South Korea	64
2.3.6 Indian Sub Continent	64
i. Bharti Airtel	64
ii. IDEA Cellular.....	65

- iii. Reliance Mobile.....65
- iv. Spice Telecom.....66
- v. Market Indicators66
- 2.3.7 Rest of Asia66
 - i. Optus (Australia).....66
 - ii. Telstra Mobile (Australia).....67
 - iii. Globe Telecom (Philippines).....67
 - iv. DiGi and Maxis (Malaysia)67
 - v. MobileOne (Singapore).....68
- 2.3.8 Africa & Middle East.....68
 - i. Cellcom (Israel)68
 - ii. MTN (South Africa)68
 - iii. STC (Saudi Arabia).....69
 - iv. Market Indicators69
 - Figure 2.6: myGamma’s Revenue Distribution by Region (September 2007).....70
- 2.4 Other Market Drivers.....70
 - 2.4.1 The Web 2.0/Realtime Generation.....71
 - Table 2.2: Communications Habits of Participants in the U.S. ‘Teens and Social Media’ Report (Published in 2007).....72
 - Figure 2.7: A Demographic Analysis of myGamma’s User Base by Age.....72
 - 2.4.2 The Social Networking Phenomenon.....72
 - Table 2.3: Worldwide Growth of Selected Social Networking Sites June 2007 vs. June 200673
 - Table 2.4: Visitation to Selected Social Networking Sites by Worldwide Region, June 2007.73
 - Table 2.5: Use of Social Networking Sites (% of Adults with Broadband at Home).....74
 - 2.4.3 Application Trends75
 - 2.4.4 The Value Proposition76

3. Mobile Web Technology and Standards

- 3.1 Introduction.....79
- 3.2 Driving Mobile Web Standards80
 - 3.2.1 W3C and the Mobile Web Initiative (MWI).....80
 - i. Mobile Web Best Practices 1.0 (Basic Guidelines)81
 - ii. MobileOK81
 - iii. W3C Web and Mobile Web Standards82
 - Figure 3.1: W3C Technology Stack Illustration.82
 - a. XHTML Basic.....82
 - b. Mobile SVG.....83
 - c. SMIL Mobile83
 - d. XForms Basic.....83
 - e. CSS Mobile.....83
 - f. MWI BP84
 - iv. Widgets 1.0 Requirements.....84
 - Figure 3.2: The Technology Stack Typically Used by Widgets and Widget Engines.84
 - v. Document Object Model (DOM).....84
 - vi. ECMAScript.....84
 - 3.2.2 Open Mobile Alliance (WAP 2.0 & IMPS v.1.3).....85
 - i. Wireless Application Protocol 2.0 (WAP 2.0)85
 - a. Wireless Application Environment (WAE)85
 - b. Introduction of Internet protocols86
 - c. WAP Programming Model.....86
 - d. Enhanced Services86
 - ii. Instant Messaging and Presence Service (IMPS) v1.387
 - a. Presence.....88
 - b. Instant Messaging (IM)88
 - c. Groups/Chat.....88
 - d. Shared Content.....88
 - How IMPS Works.....88

Figure 3.3: IMPS Architecture.....	88
iii. eXtensible HyperText Markup Language Mobile Profile (XHTML MP)	89
3.2.3 Internet Engineering Task Force (IETF).....	89
i. Session Initiation Protocol (SIP)	89
ii. SIP for Instant Messaging and Presence Leveraging Extensions (SIMPLE)	90
a. Optimisations	90
b. Instant Messaging.....	90
c. IM Chat Rooms.....	91
d. IM Features.....	91
iii. eXtensible Messaging and Presence Protocol (XMPP)	91
3.2.4 dotMobi	91
i. Switch On! Guides.....	92
ii. Find.Mobi	92
iii. Device Database	92
iv. ready.mobi.....	93
v. Site Templates	93
vi. Virtual Developer Lab.....	93
vii. Mobile Web Developer Certification.....	93
- dotMobi's Commercial Progress.....	93
3.2.5 GSM Association's Personal Instant Messaging Initiative	94
3.2.6 Mobile Marketing Association (MMA)	96
3.2.7 Open Mobile Terminal Platform (OMTP).....	96
Figure 3.4: OMTP Focus	97
i. Device Management.....	98
ii. Usability	98
iii. Security and Trusted Environment	98
3.2.8 XMPP Standards Foundation (XSF).....	98
3.3 Further Mobile Web 2.0 Related Standards & Technologies	98
3.3.1 Ajax (Asynchronous JavaScript and XML)	98
Figure 3.5: Ajax-Powered User Experience.....	99
i. OpenAjax Alliance.....	99
3.3.2 DHTML (Dynamic HTML)	100
3.3.3 Flash Lite	100
3.3.4 Linux, Apache, MySQL, PHP/Perl/Python (LAMP)	100
i. Linux.....	101
ii. Apache	101
iii. MySQL.....	101
iv. Perl.....	101
v. PHP	101
vi. Python	101
vii. LAMP in Mobile.....	102
3.3.5 Web Services	102
3.3.6 eXtensible Markup Language (XML)	103
3.3.7 XHTML Overview (XHTML Basic, XHTML Mobile Profile, and WML2)	103
Figure 3.6: An Overview of Mobile Versions of XHTML.....	103
3.3.8 Content Adaptation.....	104
i. Server Side Adaptation.....	104
ii. In-Network Adaptation.....	104
iii. Client Side Adaptation.....	104
3.3.9 Device Detection	104
i. WURFL.....	105
ii. DetectRight.....	105
3.4 Additional 2.0 Technology Enablers.....	106
3.4.1 Android and the Open Handset Alliance (OHA).....	106
i. Android at a Glance:.....	106
ii. Questions Raised.....	107
3.4.2 GPE Palmtop Environment.....	107
3.4.3 J2ME Polish	108
3.4.4 LiMo Foundation.....	108
3.4.5 Linux Phone Standards (LiPS) Forum.....	109
3.4.6 Mobile Linux Initiative (MLI)	109

3.4.7 Mobile Browsers	109
i. WebKit Open Source Project.....	110
3.4.8 OpenMoko.....	110
3.4.9 Mobile Search	111
Figure 3.7: Basic Search Engine Architecture	111
3.4.10 Location-Based Services (LBS).....	113
3.4.11 Wireless Internet Platform for Interoperability (WIPI)	113

4. Business Models

4.1 Introduction.....	115
4.2 Sizing the Mobile Web Market.....	115
4.2.1 Report Parameters & Mobile Web Adoption.....	116
Table 4.1: Number of 2.5G and 3G Subscribers (m), 2008-2013.	116
Table 4.2: Number of Mobile Internet Users (m), by Region, 2008-2013.....	117
4.2.2 Mobile Web Content and Device Trends.....	117
Figure 4.1: Top Ten Most Popular Types of Mobile Content.....	118
Figure 4.2: Downloads by Region (as of December 2007).	118
Figure 4.3: What are People Buying	119
Table 4.3: The Top Five Handsets with Mippin Users, by Country.....	119
4.2.3 Market Demand	119
i. Acceptance of Technology Innovations.....	120
Table 4.4: IIIP Confidence Index (from Most Confident Nation to Least).....	120
ii. UK Shuns New Services for Voice & Text.....	121
iii. Consumers Crave Customised Adverts	121
iv. GPS Preferred to Mobile Web in U.S.....	121
v. LBS: Developers' View	122
vi. Mobile Web Access a Key Feature in Handset Replacement.....	122
4.3 Business Models Options.....	122
4.3.1 Revenue Generation	122
i. Advertisement-Based	123
ii. Transaction-Based.....	123
iii. Infomediary.....	123
iv. Licence-Based.....	123
v. Subscription-Based.....	123
4.3.2 On-Portal (and On-Device Portal).....	123
i. On-Device Portal (ODP).....	123
ii. On Portal (aka On-Net Portal).....	124
4.3.3 Off Portal/Direct to Consumer (D2C)	124
4.4 Mobile Advertising	125
4.4.1 Mobile Web for Free?.....	125
4.4.2 Targeted Advertising Opportunity.....	126
4.4.3 Advertising Categories	126
i. Classifieds.....	127
ii. Display Adverts.....	127
iii. Search Engine Advertising [see also 4.2.2].....	127
4.4.4 Cost Models.....	127
i. Cost-per-Click (CPC)	127
ii. Cost-per-Thousand (CPM)	127
iii. Cost-per-Action/Acquisition.....	128
iv. Cost-per-Lead (CPL).....	128
4.4.5 Demand.....	128
4.5 Mobile Marketing.....	128
Figure 4.4: The Mobile Channel Value-Chain (Strategic Network).	129
4.5.1 Western Europe Markets Mobile Attitude & Usage Study.....	129
4.5.2 Delivery Mediums	130
i. Bluetooth and Infrared.....	130
ii. Common Short Code (CSC).....	130
iii. MMS	130
iv. Side-Load Delivery.....	130

- v. SMS 130
- vi. WAP Pull 130
- vii. Viral Marketing 131
- 4.5.3 Mobile Search 131
- 4.6 Mobile IM (Instant Messaging) 131
- 4.6.1 Market Fragmentation 132
 - Figure 4.5: The Evolving New Generation Mobile IM Market 132
- 4.6.2 Commercial Choices 132
 - i. Mobile IM (Web-Based) 132
 - ii. SMS+/SMS 2.0/Super SMS (On-Net)..... 133
- 4.6.3 Pricing 133
 - Table 4.5: Mobile Instant Messaging. Cost per Month. Regional Forecast 2008-2013..... 134
- 4.6.4 The SMS Cannibalisation Myth 134

5. Strategies

- 5.1 Introduction 137
- 5.2 MNOs..... 137
 - 5.2.1. Orange..... 137
 - i. Hybrid Solution 138
 - ii. Adapting to Mobile Web 2.0..... 138
 - 5.2.2. Telstra..... 139
 - i. Building Perceived Value 139
 - 5.2.3. Vodafone Group..... 140
 - i. An Evolving Business..... 141
 - Figure 5.1: The Vodafone Mobile Internet Handset Strategy. 141
 - ii. Importance of Mobile Advertising..... 141
- 5.3 Mobile Web 2.0 Application Providers 142
 - 5.3.1 Social Networking & User Generated Content (UGC) 142
 - i. Case Study: BuzzCity's myGamma..... 142
 - a. Mobile Social Networking for 'Blue Collar' Users 142
 - b. Monetising the Mobile Social Web..... 143
 - Figure 5.2: BuzzCity Content Value Chain 143
 - Figure 5.3: BuzzCity Advertising Value Chain..... 144
 - ii. Case Study: trutap 144
 - Figure 5.4: Multi-IM Conversations via the trutap Client. 145
 - c. Exploring the Revenue Opportunities 145
 - iii. bluepulse..... 146
 - Figure 5.5: bluepulse Mobile Client. 146
 - iv. ComVu PocketCaster..... 147
 - Figure 5.6: ComVu's PocketCaster Offers One-button Live Video-Streaming. 147
 - v. itsmy.com 148
 - vi. Juice Wireless..... 148
 - Figure 5.7: JuiceCaster's Mobile Client..... 149
 - vii. mig33 149
 - viii. Mobicomp..... 149
 - Figure 5.8: Active mTicker Architecture..... 150
 - ix. MyFoodPhone 150
 - x. Peperoni Mobile & Internet Software GmbH..... 151
 - Figure 5.9: Peperoni's Mobile Site Building Platform. 152
 - xi. phling!..... 152
 - xii. PixPulse..... 153
 - xiii. Reporo..... 153
 - xiv. twitter 154
 - xv. VoxSurf..... 154
 - 5.3.2 Mobile Search..... 154
 - i. Case Study: JumpTap 155
 - a. A Viable Search Alternative 155
 - ii. Case Study: Yahoo! Go & oneSearch..... 155
 - a. Matching the Web Search Experience..... 156

iii. Case Study: mInfo	156
a. Strength of Natural Language Search	157
iv. Google and China Mobile.....	157
v. m-Spatial.....	157
a. On- & Off-Portal Search.....	158
vi. Orascom & Onkosh	158
vii. T-Mobile & Medio Systems	158
Figure 5.10: Medio's ODP on T-Mobile.....	159
5.3.3 LBS (Location-Based Services)	159
Figure 5.11: Telmap's Two-Axis LBS System Based on Accuracy and Frequency.....	160
i. Case Study: MobiLuck.....	161
a. A People Radar.....	161
ii. Ask.com.....	161
iii. Buzzd & Helio	162
iv. Garmin 'PeerPoints'	162
v. loopt.....	162
Figure 5.12: loopt Displays Buddies' Locations on a Map.....	163
vi. Networks In Motion (NIM)	163
5.3.4 Mobile IM (Instant Messaging)	164
i. Case Study: IXI Mobile & Ogo	164
Figure 5.13: Ogo Devices are Optimised to Enhance Web 2.0 Usability.....	165
a. The Upside Potential.....	165
Table 5.1: The Upside Potential	166
b. Mobile IM to Supersede SMS	166
ii. Case Study: Miyowa.....	166
Figure 5.14: An overview of the Miyowa Move Multimedia Platform Architecture.....	167
ISVs Nurture D2C.....	167
iii. Colibria.....	167
Figure 5.15: The Colibria Elevate Platform.	168
iv. Converse	169
v. eBuddy.....	169
Figure 5.16: ebuddy Users by Region (Dec. 2007).....	170
vi. EQO.....	170
a. Charging a Premium.....	170
Figure 5.17: EQO Users by Region.....	171
vii. InceSoft.....	171
viii. JiveTalk	172
ix. Jumbuck.....	172
x. MXit.....	172
xi. OZ Communications	173
xii. PICA.....	173
xiii. QuickIM	173
xiv. Tencent QQ.....	174
xv. Danger.....	174
5.4 Portals and Other Players.....	175
5.4.1. AOL Mobile.....	175
i. Portal Revamped	176
ii. AIM (AOL Instant Messenger)	176
5.4.2. Google Mobile	176
i. Google AdSense	177
ii. Android	177
iii. Google Talk.....	178
5.4.3. MSN & Windows Live for Windows Mobile	178
i. Windows Live for Mobile Strategy.....	179
ii. Windows Live Messenger.....	179
5.4.4. Yahoo! Mobile	180

6. Challenges, 2.0 Approaches & Service Enablers

6.1 Introduction	181
6.2 The Challenges	181
6.2.1 Mobile Technology Fragmentation	182
i. Asynchronous (Web 2.0) vs. Synchronous (Web 1.0).....	182
ii. Need for Consistency.....	182
iii. Trust Model	183
6.2.2 Privacy & Regulation	183
i. EU Privacy Requirements.....	184
ii. Censorship and Surveillance.....	184
a. Not so World Wide Web	184
iii. Security	185
iv. Compliance	185
a. Australia.....	185
b. EC Directive Regulations 2002	186
c. Location Data.....	186
d. Privacy and Electronic Communications (EC Directive) Regulations 2003.....	186
- Text, Picture and Video Messaging.....	186
- Location Data.....	186
6.2.3 Social Networking/UGC.....	186
i. Addressing Privacy.....	187
a. Social Networking/UGC Compliance Guidelines.....	187
6.2.4 Mobile Advertising	187
i. High Cost/Low Reach	188
ii. Making it Relevant.....	188
iii. Getting the Figures Right	188
6.2.5 Mobile Search.....	189
Table 6.1: Mobile Phone Limitations Compared to PCs for Mobile Search.....	189
i. Mobile Search Advertising	189
ii. Moving Targets and Variables	190
iii. Wisdom of Crowds	190
6.2.6 Location-Based Services (LBS).....	190
i. Potential to be Fulfilled.....	191
ii. Navigation not Location	191
6.2.7 Mobile Instant Messaging.....	191
Table 6.2: Number of Mobile Users who use Mobile IM Services (m). Regional Forecast 2008-2013.....	192
i. Route to Market	192
ii. Service Positioning.....	192
iii. User Interface (UI)	193
6.2.8 Value Chain Disruption.....	193
Figure 6.1: Value Chain Disruption	194
i. A Limited Window of Opportunity?	194
Table 6.3: Mobile Web 2.0 Value Proposition	194
6.2.9 Walled or Open Gardens?	195
6.3 '2.0' Approaches.....	196
6.3.1 The Telco Advantage.....	196
6.3.2 Billing 2.0.....	196
6.3.3 Blending Mobile & Web via Messaging.....	197
6.3.4 Telco 2.0.....	198
Figure 6.2: How to Move to Telco 2.0	198
i. Network Mashups	199
a. Connected Services Sandbox.....	199
b. Connected Services Framework.....	199
c. IP Multimedia Subsystem (IMS) & Service Delivery Platform (SDP).....	200
6.3.5 Enterprise 2.0.....	200
i. Enterprise Mobile IM.....	201
ii. Software as a Service (SaaS) Mashups	201
6.4 Enablers.....	202
6.4.1 Aggregators/Brands and Direct to Consumer (D2C).....	202

i. Case Study: Bango.....	202
a. Bango's Business.....	203
ii. AdMob and iPhone	203
iii. AIS and Celltick	204
iv. Winksite.....	204
6.4.2 Platform Providers.....	205
i. AdaptiveMobile.....	205
Figure 6.3: AdaptiveMobile's Policy Control Framework	205
ii. GetJar.....	206
Figure 6.4: Application Monetisation Models.....	207
iii. GyPSii.....	207
Table 6.4: GyPSii Service Platform Applications	208
Figure 6.5: GyPSii Platform Architecture.....	208
iv. InfoGin.....	209
Table 6.5: Challenges in Mobile Web Delivery.....	209
v. ShoZu	210
Figure 6.6: The ShoZu Mobile Phone Client can be Embedded or Downloaded.....	211
a. Built to be Interrupted.....	211
b. Mobile Advertising Solution	211
6.4.3 Devices.....	212
i. Impact on Value Chain	212
ii. iPhone.....	212
Figure 6.7 Apple iPhone – a Game-Changing Device?	213
a. Market Progress.....	213
b. Game-Changing?	214
iii. Technology and User Interface (UI).....	214
a. Touch-Sensitive Displays.....	215
Figure 6.8: LG Prada – an iPhone Rival?.....	215
Figure 6.9: Nokia N95 Features a '2-Way Slide' Concept.....	216
b. The Voice of Social Networking.....	216
iv. UMPCs & MIDs	216
Figure 6.10: Datawind's PocketSurfer2 Allows Browsing in Original HTML Layout.....	217
v. Case Study: Social Networking and Blackberry (Research In Motion).....	217

7. Forecasts

7.1 Forecast Definitions and Methodology.....	219
7.1.1 Forecast Definitions	219
7.1.2 Forecast Methodology	220
Figure: 7.1 Forecast Methodology.....	220
7.2 The Global Market for Mobile Web 2.0.....	221
Table 7.1: Percentage of Mobile Users who Use Mobile Internet Services. Regional Forecast 2008-2013	221
Figure 7.2: Number of Mobile Internet Users (m). Regional Forecast 2008-2013.....	222
7.2.1 Market Drivers and Constraints.....	223
i. Market Drivers	223
a. Advertising	223
Table 7.2: Market for Mobile Advertising (\$bn) Global Forecast, 2008-2013.....	223
Table 7.3: Advertising Categories in the Mobile Domain.....	224
- Mobile Marketing	224
b. Anywhere, Anytime Accessibility.....	224
c. Converging Worlds of Mobile & Web.....	224
d. Changing User Behaviour	225
e. Flat-Rate Data Pricing	225
f. Increasing Mobile and 3G Penetration	225
g. Improving End-User Experience.....	225
h. New Revenue Opportunities.....	225
i. Off-Portal Services.....	226
j. Value-chain Disruption	226
ii. Market Constraints.....	226

- a. Adjusting to New Partnerships & Business Models226
- b. Channel Dominance227
 - On Portal versus Off Portal/Direct to Consumer (D2C)227
- c. Cost of Mobile Data Services228
- d. Enterprise Sector228
- e. Fear of Bit Pipe Scenario228
- f. Industry Structure228
- g. Lack of Metrics228
- h. Privacy & Regulation228
- i. Technology Fragmentation229
 - Mobile IM & Silo Communities229
- j. Further Market Constraints230
 - Table 7.4: Summary of Further Market Constraints230
- 7.2.2 Total Global Revenues for Mobile Web 2.0231
 - Figure 7.3: Total Global Revenues (\$m) for Mobile Web 2.0 by Application, 2008-2013 ..231
 - Table 7.5: Total Global Revenues (\$m) for Mobile Web 2.0 by Application, 2008-2013 ...232
 - Figure 7.4: Total Global Mobile Web 2.0 Revenues (\$m), by Type (Service, Data & Advertising) . 2008-2013.232
 - Table 7.6: Total Global Mobile Web 2.0 Revenues (\$m), by Type. 2008-2013.....233
- 7.3 Mobile Web 2.0 Product Sector Forecasts233
 - 7.3.1 SNS/UGC233
 - Figure 7.5: Total Social Networking Sites/User Generated Content Revenues (\$m), by Type (Service, Data & Advertising) 2008-2013.....234
 - Table 7.7: Total Social Networking/UGC Revenues (\$m), by Type, 2008-2013.....234
 - Figure 7.6: Total Social Networking/UGC Revenues (\$m), by Region, 2008-2013235
 - Table 7.8: Total Social Networking/UGC Revenues (\$m), by Region, 2008-2013235
 - 7.3.2 Mobile Search.....236
 - Figure 7.7: Total Mobile Search Revenues (\$m), by Type, 2008-2013237
 - Table 7.9: Total Mobile Search Revenues (\$m), by Type, 2008-2013237
 - Figure 7.8: Total Mobile Search Revenues (\$m), by Region, 2008-2013238
 - Table 7.10: Total Mobile Search Revenues (\$m), by Region, 2008-2013.....238
 - 7.3.3 Mobile IM238
 - Table 7.11: Number of Mobile Users (m) that Use Mobile Instant Messaging, Regional Forecast 2008-2013239
 - Figure 7.9: Total Mobile Instant Messaging Revenues (\$m), by Revenue Type, 2008-2013 240
 - Table 7.12: Total Mobile Instant Messaging Revenues (\$m), by Revenue Type, 2008-2013240
 - Figure 7.10: Total Mobile Instant Messaging Revenues (\$m), by Region, 2008-2013241
 - Table 7.13: Total Mobile Instant Messaging Revenues (\$m), by Region, 2008-2013241
- 7.4 Mobile Web 2.0 Regional Forecasts242
 - Figure 7.11: Total Revenues (\$m) for Mobile Web 2.0, by Region, 2008-2013242
 - Table 7.14: Total Mobile Web 2.0 Revenues (\$m), by Region, 2008-2013243
 - 7.4.1 North America.....243
 - Figure 7.12: North American Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013243
 - Table: 7.15: North American Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013244
 - 7.4.2 South America.....244
 - Figure 7.13: South American Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013245
 - Table 7.16: South American Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013245
 - 7.4.3 Western Europe.....246
 - Figure 7.14: Western European Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013246
 - Table 7.16: Western European Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013247
 - 7.4.4 Eastern Europe.....247
 - Figure 7.15: Eastern European Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013247

Table 7.18: Eastern European Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013.....	248
7.4.5 The Far East & China	248
Figure 7.16: Far East & China Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013.....	249
Table 7.19: Far East & China Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013.....	249
7.4.6 Indian Sub Continent.....	249
Figure 7.17: Indian Sub Continent Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013	250
Table 7.20: Indian Sub Continent Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013	250
7.4.7 Rest of Asia Pacific.....	251
Figure 7.18: Rest of Asia Pacific Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013	251
Table 7.21: Rest of Asia Pacific Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013.....	252
7.4.8 Africa & Middle East.....	252
Figure 7.19: Africa & Middle East Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013	252
Table 7.22: Africa & Middle East Total Mobile Web 2.0 Revenues (\$m), by Application, 2008-2013	253

8. Conclusion & Recommendations

8.1 Conclusion	255
Figure 8.1: Business Model Evolution	255
8.2 Recommendations.....	256
8.2.1 MNOs:.....	256
i. Brand & Loyalty	256
ii. Content Adaptation.....	257
iii. Off-Deck Opportunity	257
iv. Partnerships.....	257
v. PC, Mobile & Web Integration.....	257
vi. Policies.....	258
vii. SWOT Analysis	258
Table 8.1: MNO' SWOT Analysis.....	259
8.2.2 Other Members of the Value Chain	259
Table 8.2: SWOT for Other Mobile Web 2.0 Players	260
8.3 Application Recommendations.....	262
8.3.1 Social Networking & User Generated Content (UGC).....	262
8.3.2 Mobile Search	263
Table 8.3: Search Engine User Interface Considerations.	263
8.3.3 Mobile IM.....	263
Table 8.4: Mobile IM & Business Model Considerations for MNOs.....	264
8.3.4 LBS.....	265