

TABLE OF CONTENTS

1	Executive Summary
2	WiMAX Introduction
3	Technical Aspects
3.1	WiMAX Standards
3.1.1	The IEEE 802.16
3.1.2	The WiMAX Forum
3.1.3	The IETF
3.2	WiMAX Spectrum
3.2.1	Overview
3.2.2	2.3 GHz
3.2.3	2.4 GHz ISM
3.2.4	2.5 GHz
3.2.5	3.5 GHz
3.2.6	5 GHz
3.2.7	Other frequency bands
3.2.8	Regulatory limitations
3.3	WiMAX Physical Layer
3.3.1	OFDM
3.3.2	Duplexing
3.3.3	Power Control
3.3.4	Channel Coding
3.3.5	MIMO and other multi-antenna systems
3.3.6	Modulation Schemes
3.4	802.16 Protocols
3.5	Interference
3.6	WiMAX Range
3.7	WiMAX Handovers
3.7.1	Handovers in the physical layer
3.7.2	Handovers in the transport layer
3.7.3	Handovers - Conclusion
3.8	WiMAX deployment scenarios
3.9	WiMAX Data Rates
3.10	WiBro
3.11	System Profiles
3.11.1	Fixed WiMAX Profiles
3.11.2	Mobile WiMAX Profiles
4	Commercial Aspects
4.1	Two Paths to Wireless Broadband
4.2	Prospective WiMAX operators
4.2.1	Challenger Operators
4.2.2	GSM-only Operators
4.2.3	Operators in Developing Countries
4.2.4	Large Market Leader Mobile Operators
4.3	WiMAX – supporters and opponents
4.3.1	WiMAX Supporters
4.3.1.1	Intel
4.3.1.2	Motorola
4.3.1.3	Airspan, Alvarion, and Aperto
4.3.1.4	Alcatel-Lucent, Nokia, and Samsung
4.3.1.5	BT
4.3.1.6	KDDI
4.3.1.7	KT Telecom
4.3.1.8	Sprint-Nextel

- 4.3.1.9 Other companies
 - 4.3.2 WiMAX Opponents
 - 4.3.2.1 Ericsson
 - 4.3.2.2 Qualcomm
 - 4.3.2.3 3G Operators
 - 4.3.2.4 China
 - 4.3.3 Countries
 - 4.3.3.1 Australia
 - 4.3.3.2 Brazil
 - 4.3.3.3 India
 - 4.3.3.4 Italy
 - 4.3.3.5 Japan
 - 4.3.3.6 Pakistan
 - 4.3.3.7 Russia
 - 4.3.3.8 The UK
- 4.4 Competition from other standards
 - 4.4.1 The IEEE 802.11 (WiFi)
 - 4.4.1.1 WiFi as a Hotspot technology
 - 4.4.2 The IEEE 802.20 (MBWA)
 - 4.4.3 The IEEE 802.22 (WRAN)
 - 4.4.4 HiperMAN and HiperLAN
 - 4.4.5 Wired broadband technologies
 - 4.4.6 Broadband satellite
 - 4.4.7 Cellular Systems
 - 4.4.7.1 Factors for Cellular
 - 4.4.7.2 Factors for WiMAX
 - 4.4.7.3 Discussion
- 4.5 Cost
 - 4.5.1 Equipment costs
 - 4.5.2 Spectrum costs
 - 4.5.3 Backhaul and fibre costs
- 4.6 WiMAX prospects
- 4.7 Summary
 - 4.7.1 Fixed WiMAX
 - 4.7.2 Mobile WiMAX

5

Case Sprint-Clearwire

- 5.1 Why WiMAX?
- 5.2 Risks for Sprint
 - 5.2.1 WiMAX – An untried technology
 - 5.2.2 Too many technologies within Sprint?
 - 5.2.3 T-Mobile
- 5.3 Spreading the Risk
- 5.4 Sprint's Deployment Plans
- 5.5 Business Model

6

WiMAX Future Upgrades

7

Conclusions

- 7.1 The Outlook
- 7.2 Subscriber numbers
- 7.3 Mobile WiMAX and cellular operators
- 7.4 The Verdict
 - 7.4.1 Developed country – urban areas
 - 7.4.2 Developed country – countryside
 - 7.4.3 Developing country – urban areas
 - 7.4.4 Developing country – countryside

8

Country Reviews

- 8.1 Australia
- 8.2 Austria
- 8.3 Belgium
- 8.4 Brazil
- 8.5 Canada
- 8.6 China
 - 8.6.1 McWiLL
- 8.7 Denmark
- 8.8 Finland
- 8.9 France
- 8.10 Germany
- 8.11 Hong Kong
- 8.12 India
- 8.13 Ireland
- 8.14 Italy
- 8.15 Japan
- 8.16 Korea
- 8.17 Netherlands
- 8.18 New Zealand
- 8.19 Norway
- 8.20 Pakistan
- 8.21 Poland
- 8.22 Russia
- 8.23 Spain
- 8.24 Sweden
- 8.25 Switzerland
- 8.26 United Kingdom
- 8.27 The United States