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Wi-Fi, WiMAX and 802.20

review pack

Dear Colleague

Thank you for requesting this review pack. We hope it will answer all the important questions you may have about *Wi-Fi, WiMAX and 802-20 – The Disruptive Potential of Wireless Broadband* and help you with your purchasing decision.

Putting together a review pack is a tricky business. We want to give you a flavour of what's in the report and let you judge the quality of our research for yourself. At the same time, if we were to give away our key findings, customers who have used up valuable budget to purchase this report would be understandably miffed!

Therefore, what you will find in this pack is no more than a small taste of what to expect if you decide to order. The pages we have included do not attempt to provide a briefing of a particular topic or market segment. They are just snapshots of a comprehensive report which takes you through all the key issues affecting the market outlook for broadband wireless access technologies.

Of course, if you have any specific questions that have not been answered by this review pack, please don't hesitate to contact us and we will do our best to help.

Best regards

Eileen Fisher

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question one

Will 'Wi-Fi, WiMAX and 802.20' help me make sense of this market opportunity?

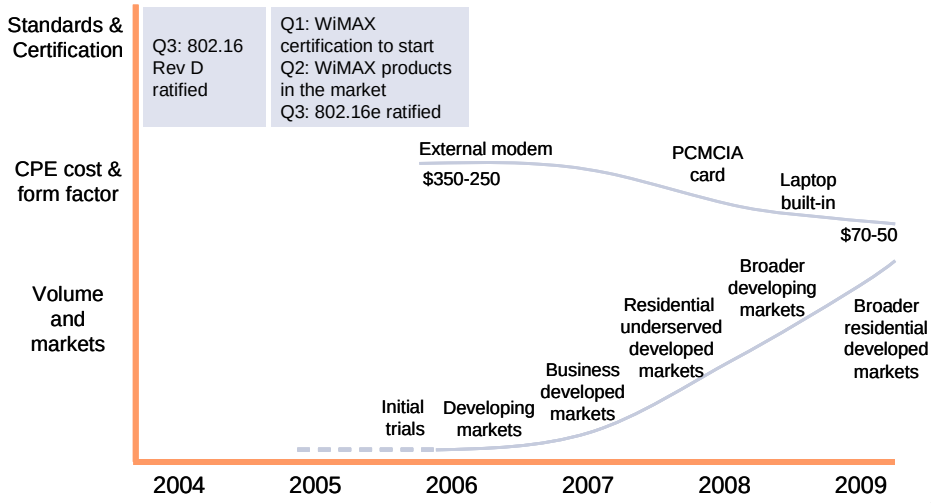
4.3 The mobility premium

It is expected that subscribers will be willing to pay more for mobile or portable services than they do for fixed services. Similarly, subscribers accept that mobile voice minutes cost more than fixed ones. How much more are users willing to pay for mobile access? To tackle this question, we have looked at how the mobility premium relates to fixed and mobile use and what the implications are for wireless mobile access fees.

One of the assumptions we made in the demand forecast is that fixed services will have to match wired alternatives (and notably DSL and cable modem where available), with a small premium in low density areas. Our estimate is that the average price of the service will decrease from US$39 in 2005 to US$35 in 2009 (compare Table 4.2 earlier in this chapter).

For mobile services, we estimate that by 2009 charges for mobile data subscriptions will be US$24 and US$22 for business and consumer users, respectively, in addition to existing charges for fixed access. This is a monthly fee which is quite low by comparison with current prices in

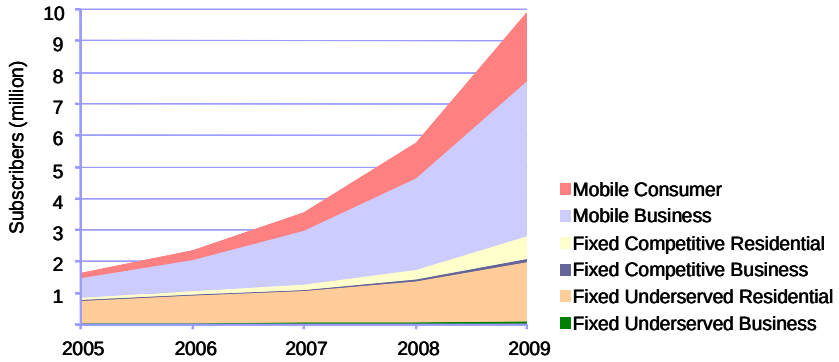
Figure 5.2 Timeline for WiMAX market development



question two

Will ‘Wi-Fi, WiMAX and 802.20’ tell me anything new?

Figure 4.1 Forecast of BWA users (2005-2009) in the US



Most of the subscriptions in 2005 represent pre-WiMAX/802.20 technologies. At this stage, fixed subscriptions will be dominated by MMDS, LMDS, proprietary solutions like Navini or IPWireless, or Wi-Fi; while mobile subscriptions will be dominated by Wi-Fi and EV-DO. Through the following years, the relative role of these technologies will decrease as WiMAX and 802.20 products become available.

To put the results in context, fixed wireless connections by 2009 will represent 3.6% of broadband connections, up from 1.8% in 2005. Mobile

WiMAX is a very promising technology that meets the key requirements for BWA services, but its success in the market, although loudly predicted by its most vocal supporters like Intel, is far from certain. Some of the key elements that will determine the success of WiMAX include:

- **Performance.** So far, the specifications for WiMAX are still on paper, as there is no commercial product certified by the Forum and the final version of 802.16a/RevD has not yet been approved. It is possible that the certification process will prove more arduous than expected (many products still fail to meet the specifications of the Wi-Fi Alliance certification programme, even though the standard is more narrowly defined and therefore compliance is easier to achieve). There is also a possibility that real life performance does not meet the expectations, especially with regard to coverage range and CPE form factor, cost, and ease of installation.
- **Split of WiMAX into multiple semi-proprietary solutions.** 802.16a and the expected 802.16e standards could complement each other, providing subscribers with a mix of fixed and mobile access

question three

Could we save money by doing this research ourselves?

1.1.1 What they are saying

During the course of our interviews, we identified a few recurrent themes on which there was a wide consensus and a few areas where opinions are still divergent.

Here is a summary of what we were told:

- **Excitement about WiMAX.** WiMAX comes at the end of a difficult period for BWA vendors and it promises to address most of the difficulties encountered by MMDS and other proprietary wireless technologies. WiMAX is seen as a major opportunity to bring BWA to the masses and Intel's massive PR intervention is seen as key to making this possible. Excitement and hope have meant that (for the time being) vendors have been willing to put aside competition among themselves to ensure that 802.16d will be ratified on time.
- **CPE costs.** Perhaps the most widely cited crucial ingredient in ensuring WiMAX success is the cost of the CPE. With CPE priced at over US$300, WiMAX will not emerge out of the current BWA niche market. There is agreement that the initial price of CPE will be high, about US$350-250, and that it will drop to cable

Products and market strategy

Atheros strongly believes in the complementary roles of Wi-Fi and WiMAX. Alex Liu, Business Development Manager at Atheros, believes that WiMAX will address some of the limitations of Wi-Fi such as range, but that Wi-Fi will still be the prevalent interface to mobile clients, as it is cheaper and, more importantly, already has a wide market share

Aditya Agrawal, senior marketing manager at Fujitsu Microelectronics America, expects WiMAX to provide competition in the fixed broadband market to cable and DSL, but believes that portability and, with 802.16e, mobility will also be important to the success of WiMAX. He does not see the US as leading the adoption of WiMAX: China, India, Australia, New Zealand and Europe are more likely to be the early adopters of the

Would your competitors tell you what they told us?

About BWCS

BWCS is the publisher of this report. Other recent market reports include *Railway W-LAN Services*, which is part of BWCS's online subscription service *W-LAN Continuum* (also available separately); *Mobile Proximity Payment Services*; and *I-Mode 2007* by Lee S Allen. We also publish a series of expert handbooks for the telecoms industry, including *Service Design, Implementation and Management* by Paul Whitlock and Chris Wright; *Achieving Excellent Customer Relationships* by Philip Grant; *OSS Guide for Telecom Service Providers and ISPs* by Dr Tony Judge; *Interconnect Costing* by Peter Cartwright; and *Carrier Services Contracts* and *Global Telecommunications Contracts: A Handbook for Customers and Suppliers* by David W. Bartell.

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Bring new technologies to market	Analysing how they will be received by customers. Analysing how they fit with other technologies and in the marketing mix
Know more about your competitors	Performing detailed competitor analyses
Prospect for new business	Profiling individual customers and markets, plus lead generation and lead qualification
Understand user requirements and attitudes	Designing and managing market research programmes
Put together your business plan	Developing revenue and market share models, opex and capex models, performing sensitivity analyses, and valuing your business or project on discounted cash flows
Measure customer satisfaction	Designing and managing market research programmes, interviewing individual customers
Learn about principles of interconnection costing	Providing interconnect costing training courses

About Senza Fili Consulting

Senza Fili Consulting (www.senza-fili.com) provides advisory support in wireless data technologies and services, including Wi-Fi, cellular, satellite, and wireless broadband. Founded in July 2003, at Senza Fili we have in-depth expertise in financial modeling, market forecasts and research, white paper preparation, business plan support, due diligence, and evaluation of end-user interface requirements. Clients include service providers, manufacturers, and developers of solutions for wireless technologies.

Monica Paolini is the founder of Senza Fili Consulting. She is an expert in wireless technologies and has helped clients worldwide to understand technology and customer requirements, evaluate business plan opportunities, market their services, and estimate the market size and revenue opportunity of specific services. She has frequently been invited to give presentations at conferences, has written several reports and white papers, and her work on Wi-Fi is often quoted in the press. She can be contacted at monica.paolini@senza-fili.com.

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