

UMTS/IMT-2000 vs. WLAN

Competitive or complementary?

Jean-Pierre Bienaimé

Chairman, UMTS Forum

www.ums-forum.org



ITU-BDT Sub-Regional Seminar on IMT-2000 for CEE
and Baltic States, Ljubljana 1-3 December 2003

UMTS: The benefits to operators



Network Optimisation

- UMTS builds on investments in GSM providing a network optimisation opportunity for operators. Operators can retain legacy 2G core network, IT and service platforms; can also re-use existing sites and implement site sharing

Cheaper Additional Capacity

- UMTS gives operators additional capacity compared with 2G to support more subscribers (especially in urban centres) as well as greater speeds and ability to support new multimedia services including video...
- UMTS allows operators to add additional network capacity at a cost up to 8 times lower than providing incremental 2G capacity. This gives operators the opportunity to reduce the proportion of investments in relation to total turnover

Medium to Long-term Increase in Revenues

- UMTS may not in itself significantly increase ARPU in the short term, but it will provide an opportunity for operators to strengthen their free cash flows
- UMTS will generate new revenues in the medium/long term when all actors (clients, operators, service providers, media/content developers,...) have assimilated this new technology



ITU-BDT Sub-Regional Seminar on IMT-2000 for CEE and Baltic States, Ljubljana 1-3 December 2003

The UMTS Proposition

UMTS: Designed as a complete, end-to-end mobile SYSTEM



- UMTS offers cost efficient, WIDE AREA network coverage
- UMTS is universally standardised via 3GPP, using licensed radio spectrum, globally harmonised in common bands (paired and unpaired)
- UMTS offers user bit rates up to 384 kbps in high mobility situations / 2 Mbps stationary, with a roadmap to >10 Mbps for low mobility/indoor use
- UMTS supports a rich choice of services and applications optimised for fully mobile environments
- UMTS supports international roaming, with a wide range of handheld terminals
- UMTS offers integrated charging and billing functions
- UMTS offers integral security



The WLAN Proposition

WLAN = Low mobility, high speed wireless access to public and private networks

- WLAN serves as a wire-free access to existing data networks (intranet, extranet, LAN) with limited mobility (~100m) around “hot spots”
- WLAN offers theoretical access speeds of 11 Mbps >>> 54 Mbps (average expected 5.5>>>30 Mbps) shared between users: actual user data rates reduce with increasing distance from access point
- Currently uses license exempt radio spectrum shared with other applications and users
- WLAN currently optimised for IT industry models – bridge/hub network infrastructure, laptop PC/PDA clients and embedded OS (Win XP) support – rather than dedicated mobile devices
- Choice of affordable WLAN hardware – including PC cards, routers etc – available from a wide range of vendors



WLAN: complementary to UMTS

WLAN gives “hot spot” coverage; UMTS gives full mobility

- UMTS offers benefits of wide area coverage, full mobility, integral security, roaming, full integration with charging/billing systems
- WLAN is a useful technology for high-speed Internet access for low mobility & stationary users (especially corporate / enterprise)
- WLAN coverage of a major city (e.g. Paris, London) may require typically approx 100:1 as many access points compared with number of UMTS base stations for equivalent coverage
- WLAN also requires substantial investment in backhaul capacity
- Concerns regarding WLAN performance when hot spot capacity is shared by a large number of simultaneous users

WLAN complements rather than competes with the overall UMTS market proposition for operators



The issues for 3G mobile operators



- Can WLAN be integrated easily with operators' current charging and billing models?
- WLAN standardisation is still evolving: compare with UMTS standardisation roadmap (e.g. WLAN/UMTS interworking included in 3GPP Release 6)
- Will outstanding concerns regarding WLAN security be addressed in a timely manner?
- Can voice (i.e. VoIP...) be integrated into a WLAN offering?
- Will end-users feel comfortable with using WLAN in preference to the familiarity of mobile telephony?
- Are Quality of Service, radio interference and other issues sufficiently well addressed to support a mass market for media-rich services and applications that will characterise tomorrow's mobile data market?



ITU-BDT Sub-Regional Seminar on IMT-2000 for CEE and Baltic States, Ljubljana 1-3 December 2003

Conclusions

UMTS offers advantages over a large network of interconnected WLAN hot spots in terms of...

- **deployment and operational costs**
- **area coverage**
- **overall suitability**

...for delivering TRUE 3G mobile services and applications

HOWEVER...

Many mobile operators are examining WLAN as a part of their service portfolio, enabling them to add additional capacity for high speed Internet access in dense urban areas



For further information...

Relative Assessment of UMTS TDD and WLAN technologies

UMTS Forum Report 28, March 2003

- Market survey covering industry activities and views on TDD - provides a high-level overview of UMTS TDD technology, including traffic capacity. Provides a comparison of UMTS TDD and WLAN technology from a deployment scenario perspective.

WLAN Spectrum Report

UMTS Forum Report 25, updated May 2003

- Provides information relating to the current availability of frequency bands for the implementation of WLANs, including license-exemption status and technical conditions applicable to WLAN devices using these bands.

Impact & Opportunity: Public Wireless LANs and 3G Business Revenues

UMTS Forum Report 22, July 2002

- Explores the perceived impact of WLAN on projected UMTS/3G business revenues. Concludes that UMTS and WLAN are complementary technologies

Visit us at www.ums-forum.org



ITU-BDT Sub-Regional Seminar on IMT-2000 for CEE and Baltic States, Ljubljana 1-3 December 2003