

Wireless Personal Communications: How Not Rely on Wires

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Goal for this presentation

- The aim is to give a short overview of wireless personal communication systems and categorize many interrelated issues.
- At the end of this you should:
 - Have a big picture - where we are
 - Know what to expect - technology roadmap

Wireless Communications at the beginning of the 20th Century

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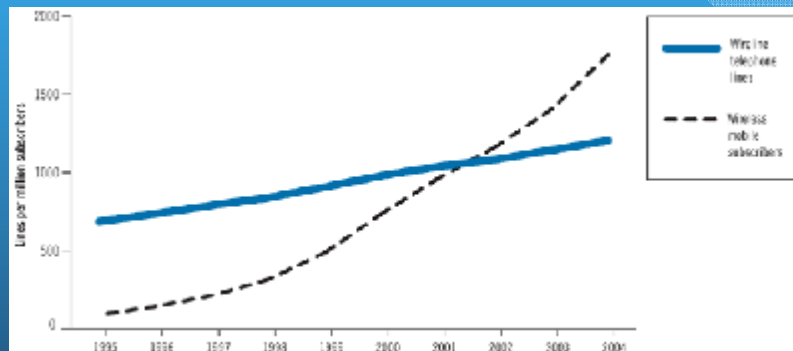


1924: First mobile radio telephone



World Wireline and Mobile Wireless Subscribers

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Source: International Telecommunication Union website database:
<http://www.itu.int/ITU-D/ict/statistics/>

Typical Applications

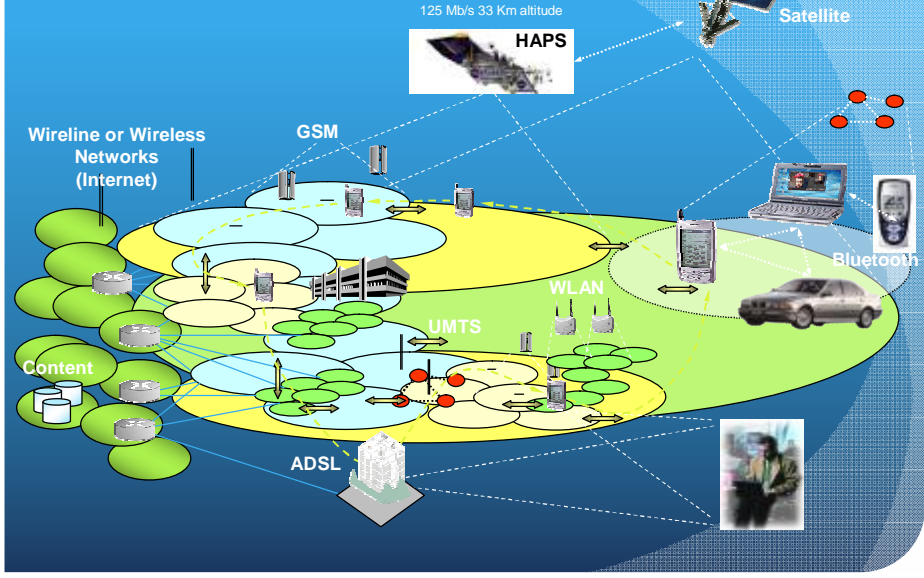
- Email
- Messaging
- Voice applications
- Multimedia
- Surveillance
- Etc.

Wireless Advantages

- Convenience
- Mobility (anytime)
- Coverage (anywhere)
- New applications potential (services)
- Improved quality of life (people with disabilities)

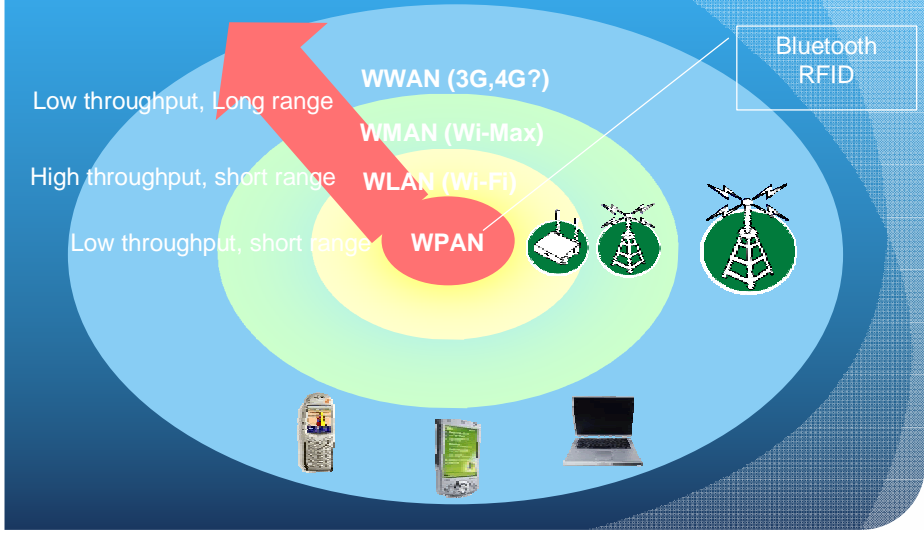
Wireless Access: Heterogeneity

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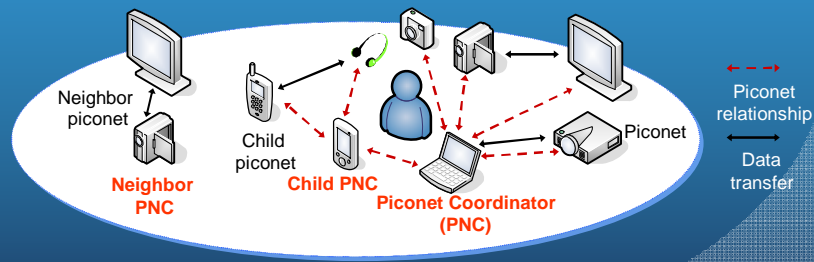
Ubiquitous Coverage

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Big Picture - WPAN's

- WPAN technologies - RFID, Bluetooth
- RFID used in tagging applications, restricted environments (supermarkets, institutions)
- 10 billion RFID tags to be sold by the end of 2008 (source: Deloitte & Touche)
- Bluetooth - technology has matured



Big Picture - WLAN's

- WLAN - based on WiFi (802.11x)
- Adoption rate increased worldwide
- European cities' infrastructure facilitates the adoption of WiFi against wired alternatives
 - Old buildings
 - High population density
 - Poor telecommunications infrastructure



Big Picture -WMAN's

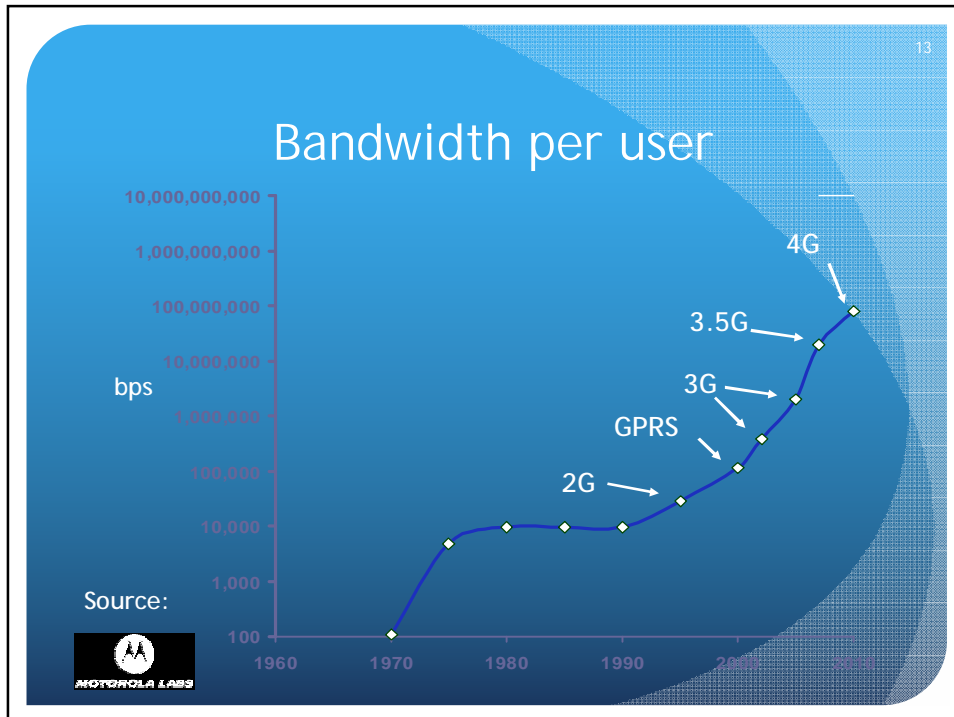


- WiMax (Worldwide Interoperability for Microwave Access)
- Standards-based technology
- Deployment of broadband wireless networks based on the IEEE 802.16 standard
- Enables the delivery of last mile wireless broadband access as an alternative to cable and DSL

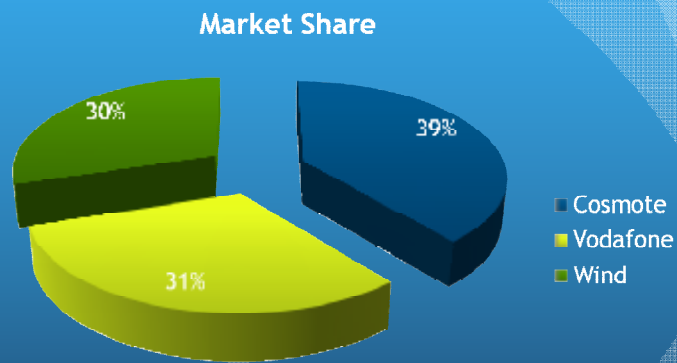
Big Picture - Cellular's



- A base station provides coverage (communication capabilities) to users on mobile phones within its coverage area.
- Users outside the coverage area receive/transmit signals with too low amplitude for reliable communications.
- Users within the coverage area transmit and receive signals from the base station.
- The base station itself is connected to the wired telephone network.



GSM Market Share in Greece



GSM operator revenues

- Continuous decrease in revenues from voice services.
- Average Revenue per User (ARPU)
 - Cosmote 24.2 € per subscriber / 183 min
 - Vodafone 22 € per subscriber / 144 min
 - Wind 19.9 € per subscriber / 125.5 min
- EET asks for decrease in access fees between phone companies

Telecom's Bet on 3G

- Mobile operators continue trying to get payback from 3G license costs but
 - Adverse legal environment
 - Capital market crisis affects Telecom sector
 - Subscribers willingness to pay for data is still being studied

What to expect : Pervasive Networks



"I think there is a world market for about five computers"
Thomas J. Watson, Chairman IBM, 1943

 *"Ubiquitous computing names the third wave in*

What to expect

—Using skin to transmit information

Jul 1st 2004

From *The Economist* print edition

IT SOUNDS like an April Fool's Day joke, but it isn't. Microsoft, that imperialist of the information-technology world, has actually succeeded in patenting the human body as a computer network. US Patent 6,754,472, issued to the company on June 22nd, is for a method and apparatus for transmitting power and data using the human body....

- A little paranoia is a good thing

Conclusions

- Technologies come and go - today is the age of the wireless network
- Difficult to predict how technology evolves
- The best we can do is have "informed guesses"

Contact

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