

Wireless 101

Technologies and Applications

Wireless SIG Presentation

August 28, 2001

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Overview

- Define wireless. Why have a SIG?
- Wireless technologies – transmission, markup languages, devices
- Challenges
- Applications – current and future

Wireless defined

- Simply put, wireless technology is any technology that communicates through the air, without cables.
- In our SIG though, we are referring more to the technologies that enable mobile applications, rather than those used for say analog voice communication.

What is so great about this? Why have a SIG?

- This has the potential to completely change how, when, and where we use applications. It is freedom! It brings the apps or data outside of the work place or home, out into our world at large.
- Revolutionary, has the potential to greatly change our lives. Imagine being able to access schedules, product reviews, locate nearby retailers, access corporate info, ... anywhere at anytime

Wireless technologies – transmission

- **1G** = 1st generation cellular technology (analog, aka AMPS)
- **2G** = 2nd gen. (digital voice centric technologies including TDMA, CDMA, GSM)
- **2.5G** = 2G with upgrades for speed, packet focus (GPRS layered on top of GSM, SMS)
- **3G** = 3rd gen., data-centric, packet based tech. optimized for high bandwidth (WCDMA and UMTS)
- **802.11b, Bluetooth, HomeRF**

Wireless technologies – markup languages

- **HDML** (subset of HTML 1.0 with extensions)
- **WAP/WML** (suite of specs, XML based(WML), in the US it has the most momentum of all the markup langs.)
- **I-Mode C-HTML** (20 million users in Japan, coming to US)
- **XHTML** (XML based, WAP 2.0, C-HTML, HTML all converging towards XHTML)
- **VoiceXML, SyncML**

Wireless technologies – devices

- **Phones** (Digital or PCS, Java enabled, WAP enabled)
- **PDA** (Palm, Pocket PC)
- **Smart pagers** (RIM's Blackberry, Motorola Weblink)
- **Wireless LAN cards** (notebooks, PC's)

Challenges

- **Device limitations** - Small screens, limited input capabilities, small memory, minimal persistent storage
- **Usability** – critical, must be easy to use without help, broad consumer targeting
- **Personalization** – required, can't keep reentering data, reduce bandwidth, remember prefs
- **Adapts to environment** – interface and functionality change based on environment, time of day, ...

Applications – current

- **Adopted from the web** – Investing, scores, news, price shopping, reviews, weather, map information, flight info, shopping, banking, auctions
- **Location based** – locating nearest shops, movies, restaurants, traffic info, ATMs
- **Messaging** – email, paging, chat, alerts
- **Intranet** – current reports, sales data, contacts, schedules, notes, tasks, time critical information
- **Entertainment** – music, games, video

Applications – future

- **Same but better** – Making the above much more powerful and easier to use
- **GPS embedded** – better location based services, directions, nearby services
- **WLANS** – Hotels, airports, conferences, sports venues, Starbucks, classrooms
- **Bluetooth** – parking meters, vending, impromptu peer to peer, use local resources such as printers
- **Higher bandwidth** – more possibilities

Summary

- Defined wireless, why it is important
- Technologies – transmission, markup, devices
- Some applications
- The best is yet to come, beginning of a new era. Remember the challenges and think different, think outside of the box. Enjoy the freedom to get out!

References

Wireless 101

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