



Open Up to Billions of Possibilities

Bluetooth Technology for Today & Tomorrow

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AGENDA

- *Bluetooth* technology in the world around us
- *Bluetooth* updated: version 2.1 + EDR
- The expansion of *Bluetooth* technology
- Closing/Questions



BLUETOOTH TECHNOLOGY

A Little Less Conversation – A Little More Action

BLUETOOTH TECHNOLOGY @ HOME

Bluetooth enabled GPS

“What a Bluetooth enabled GPS system does for a blind person is not what people expect.

It’s not guiding them so much as it is an orientation aid. What it does is let you ‘read’ a map.”



BLUETOOTH TECHNOLOGY @ HEART

Walk Aide System



“The device is unobtrusive, and patients are fascinated that WalkAide employs the same technology connecting their wireless phones with headsets.”

“Bluetooth technology is much more than a device for a hands free phone.”

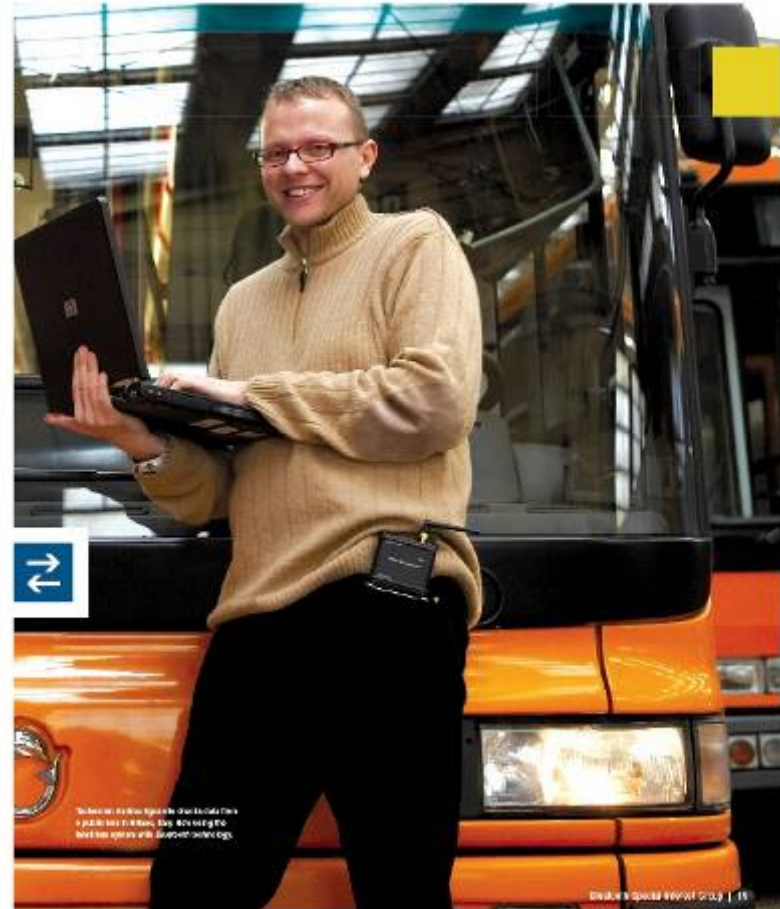


BLUETOOTH TECHNOLOGY @ WORK

Intellibus System

“It allows us to collect a tremendous amount of information to discover or predict potential failures.”

“(Its) all ready to be downloaded via the Bluetooth wireless module upon arriving at the depot.”



BLUETOOTH TECHNOLOGY @ PLAY

Nintendo Wii



Hug Shirt

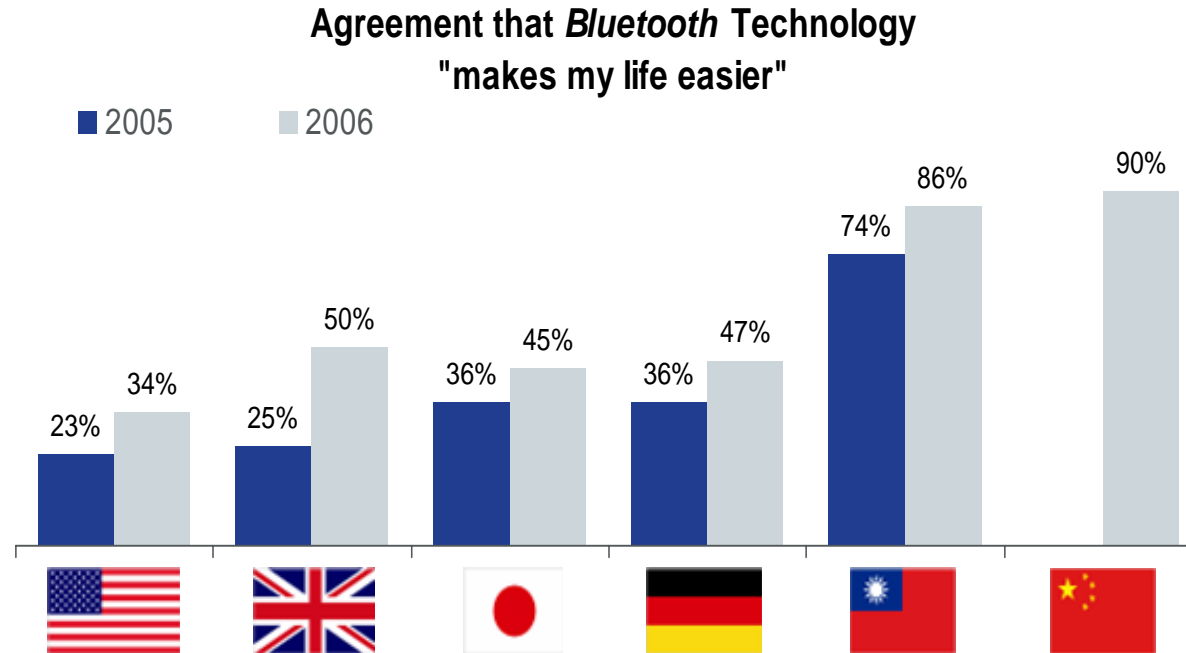


LEGO Mindstorm



ONE BILLION *BLUETOOTH* DEVICES

- Announced the 1 billionth *Bluetooth* wireless device in 2006
- With volume comes brand awareness and recognition



POPULAR APPLICATIONS TODAY

HEADSET 



PRINT 



TRANSFER 



MUSIC 



INPUT 





Bluetooth updated: version 2.1 + EDR

Utilizing Near Field Communications (NFC) for Improved Pairing

***BLUETOOTH* VERSION 2.1 + EDR UPDATE**

- Version 2.1 + EDR Introduces New Enhancements
 - Answers member and consumer demand for simplified pairing and increased battery life for devices
 - Developed by specialized working group including usability, technical, security and marketing experts
 - V2.1 + EDR continues to offer backwards compatibility to previous *Bluetooth* specifications

IMPROVED PAIRING

- Consistent and Intuitive Pairing
 - Easier interface for finding devices
 - Faster authentication of devices
 - NFC can be utilized for short-range, quick pairing
- Adding a device is easy...
 - Choose "Add Device" & select the device
 - Enter PIN or auto generated passkey
 - Confirm
- Connections are authenticated and encrypted



"This new version makes pairing *Bluetooth* devices easy for anyone to do."

- Michael Foley, Ph.D.,
Executive Director,
Bluetooth SIG



SIMPLY CONNECTING BLUETOOTH DEVICES

- *BLUETOOTH* VERSION 2.1 + EDR DEMO



ENHANCED POWER OPTIMIZATION

- Reduces Power Consumption up to 5X
 - Sniff Subrating increases battery life
 - Allows peak performance from devices
 - Mice
 - Keyboards
 - Watches
 - Home sensor networks
 - Medical devices





The Expansion of *Bluetooth* technology

High Speed and Ultra Low Power

UNITING WIRELESS UNDER ONE UMBRELLA



WIBREE ADDED TO BLUETOOTH UMBRELLA

- Wibree forum merged with the Bluetooth SIG in June to become part of the *Bluetooth* specification
- Wibree rounds out *Bluetooth* technology Personal Area Networking (PAN)
- *Bluetooth* technology in the sensor market opens up new possibilities to interact/connect to billions of devices already using *Bluetooth* wireless technology

NEW ULTRA LOW POWER *BLUETOOTH* USES



Sports & Fitness



Healthcare



Home & Entertainment



Office & Mobile Accessories



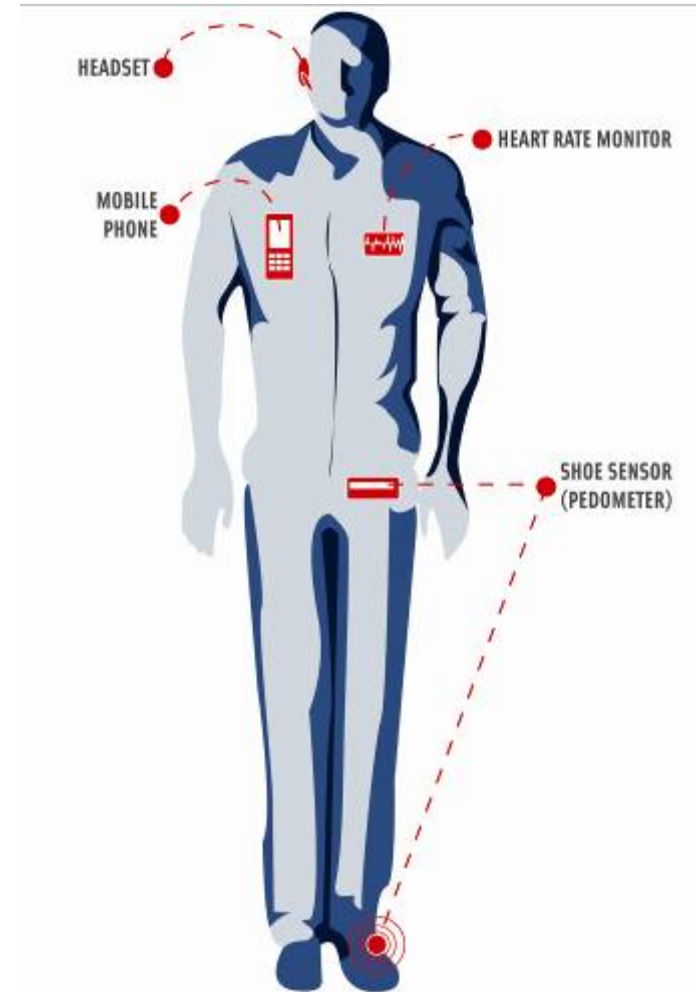
Automotive



Watch

PERSONAL FITNESS & SPORTS

- Mobile phones and fitness equipment act as hubs
- Hubs synchronize with PCs
- Wearable displays
- Sensors stream data
 - Heart rate
 - Calories consumed
 - Activity level or pace

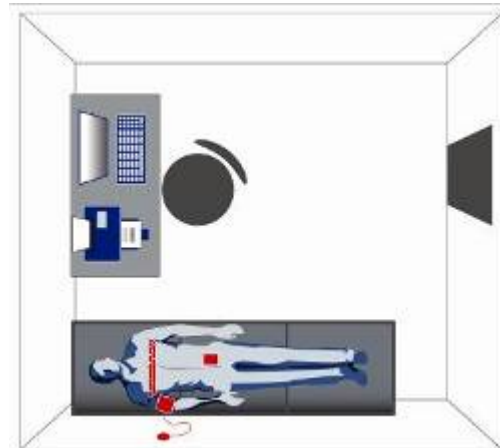
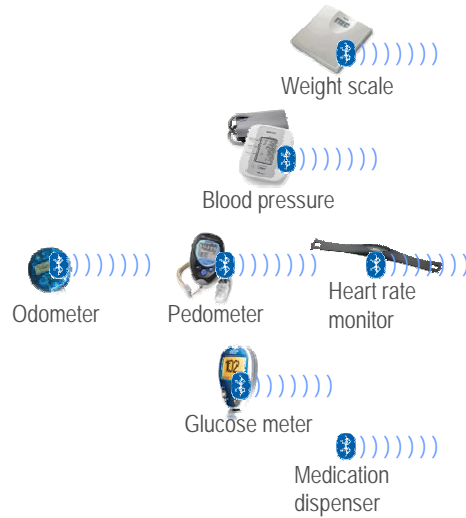


PERSONAL HEALTHCARE ECOSYSTEM

Ultra low power *Bluetooth* devices

Host devices

Services



MARKET DATA FOR MEDICAL SENSORS

- Key market drivers for *Bluetooth* include the increasing popularity of home healthcare
- Market for medical sensors was \$870M in 2004 and expected to grow to \$1.16 Billion in 2008

Total Medical Sensors Market: Revenue Forecasts And Growth By Product Type (World), 2004-2009

\$M	2004	2005	2006	2007	2008	2009	04-09 CAGR%
Pressure Sensor	581	618	662	714	775	848	8%
Flow Sensor	187	201	217	235	256	282	9%
Temperature Sensor	93.2	99.1	105.8	113.7	123.1	134.3	8%
Level Sensor	3	3	3	3	3	4	7%
Total	863	921	988	1,065	1,157	1,268	8%

Note: All figures are rounded; the base year is 2004.


Source: Frost & Sullivan, World Market for Sensor Opportunities in Medical Applications, June 2005 (via Thomson Business Intelligence)




HOME & ENTERTAINMENT ECOSYSTEM

Ultra low power *Bluetooth* devices


 Light switches

 Remote control in intelligent clothing (MP3 player etc.)

 Alarm sensors

 Remote control of mobile devices (camcorder, MP3 player etc.)


 
Remote control for home Media Center (TV, stereo, DVD etc.)

 Gaming sensors



Host devices


 Mobile phone



 Game console



 MP3 player



 Laptop/desktop


 Media Center

Services

Music stores 

Game stores 

Gaming communities 

AUTOMOTIVE MONITORING ECOSYSTEM

Ultra low power *Bluetooth* devices

Door Sensors



Remote control for in-car Media Center (TV, stereo, DVD etc.)

Vehicle Mechanical System Sensors

Tire Sensors

Digital Key and Alarm Remote

Vehicle Cabin Temperature Sensors



Host devices



Mobile phone

Onboard Computer and Alarm System

In-car Media Center (car stereo)

Services

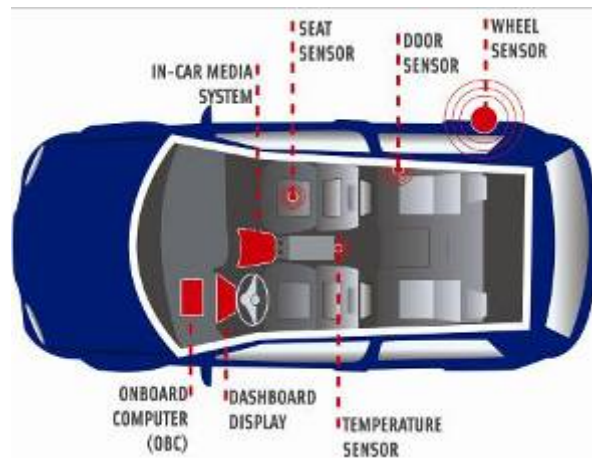
On-Star



Satellite TV



LoJack



REMOTE DISPLAYS

- Watch stays synchronized with your mobile phone
- Receive meeting requests
- Receive SMS messages & caller ID alerts
- Wake up to a meeting reminder alarm



HIGH SPEED *BLUETOOTH* APPLICATIONS



Imaging

Music Player
Synch

Large File Transfer

Video
Streaming

HIGH SPEED *BLUETOOTH* SCENARIOS



Automotive



Home Entertainment



LESS TALK – MORE ACTION

- The *Bluetooth* SIG will continue to embrace, adopt and expand
- New versions of the *Bluetooth* spec will continue the evolution of *Bluetooth* technology
- Enhancements to the *Bluetooth* spec will enable new scenarios, round out the wireless PAN and move *Bluetooth* technology into new markets





QUESTIONS?

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BLUETOOTH SPECIAL INTEREST GROUP (SIG)

- Incorporated in February 2001
- A privately-held, not-for-profit trade association
- Composed of more than 8,000 members
- Offices in Hong Kong, Sweden, and the USA

