Multimedia on PDA
Hardware Limitations 1

- Example System: iPAQ 3630 – 1,5 years old
- CPU
  - 203MHz RISC StrongARM processor
  - No dedicated sound or video processors
- Memory
  - 32 or 64 MB RAM for programs and data storage
  - Up to 1GB via CompactFlash or 5GB via PCMCIA
- Screen
  - 4096 colours
  - 240x320 pixels resolution in portrait mode
Hardware Limitations 2

- **Audio**
  - Built-in speaker is incapable of reproducing low pitch sound
  - Limitations of the microphone’s dynamic range

- **Power**
  - High CPU activity drains power
    - 10 hours according to specs
    - 5 hours of battery life at CPU unintensive use, e.g. text editing
    - 1.5 hour of battery life at peak performance, e.g. video
  - Auxiliary devices drain power
  - Backlight
Video

- Support for several popular formats
- Windows Media Player, PocketDivX, PocketTV
  - DivX ;-) , WMF, AVI, MPEG 1 and 2, QuickTime
  - Direct streaming of MPEG
- Main limitation is the insufficient CPU power to decode several streams
- Limited number of colours produces distorted output
Audio

- Good playback of MP3, OGG Vorbis, WAV, MIDI
- Program for MOD playback – format similar in concept to MIDI
- Storage limitations
- Possibility for direct streaming of MP3 and OGG
- Long playback possible if the screen is turned off
- Several applications take in use microphone to act as a tuning device
Presentations

- Several applications which converts PowerPoint presentations to PDA-friendly format:
  - iPresentation, CNetX Pocket Slideshow, iFocus
- Possibility to incorporate synchronised video and voice into presentations
- Projector connectivity add-ons
- The main limitation is storage capacity
Voice Recognition

- An attempt to control a PDA via voice commands
- Heavily limited by CPU speed
- Few possibilities for training limited by storage capacity
- Noise sensitive
- Currently more a toy than a practical application
Games

- A wide variety of new and old games, such as DOOM, Quake, SimCity 2000
- Types of games as seen on late 486 and early Pentium computers
- Battery life is the main issue
Today’s systems

- HP iPAQ H5450
  - 400 Mhz X-Scale processor
  - 3.8” 240 x 320 16-bit colour screen (65,536 colours)
  - Longer battery life & external batteries
- The X-Scale based products are marketed as specially designed for multimedia applications
- More info on
  - http://www.idedata.no/