Whither Platforms

- Vastly increased numbers
  - Multiple cooperating per “user”
  - Vastly varying capabilities
- Shifting configurations
  - Local constellations
  - Shifting constituencies
  - Resource “borrowing”
- Multiple contexts
  - Home, business, ad hoc collections
  - Conventional network access, local sensor access
- Multi network capabilities
  - Multi radio, wired connections, . . .
Scenarios

- Laptop + PDA + "phone" + Camera + . . .
- Share resources within constellation
- At Home: control house, be home phone, use home resources
- In car: connect to supply content, be car phone, use car resources
- At work: be in corporate security domains, access corporate servers, . . .
- At airport: connect to info services, check in, be phone, . . .
Capabilities

- Fast roaming across networks
- Cross-modality roaming and handoff
- Constellation gatewaying, personal routing, management and configuration
- Multi-homing? Data vs streaming and costs
  - Simultaneous connection via very different access points
  - Possible different connections for different services
- Existence in multiple security domains (fixed, ad hoc, local)
- Ad hoc network creation
- Location relative addressing
- Issues of identity maintenance
- Cross layer optimizations – wide varieties of physical net capabilities
**Example Issues**

- Services that are immune to topology issues
  - E.g., Push to talk
- Creating peer class nets (ad hoc, mesh, etc) that grow organically yet remain secure
- What is addressing?
  - Sensors: collective with limited individual needs
  - Entities: “My” constellation of devices
  - Location relative vs. topological
  - Service based (the video stream, the phone call)
- How to handoff from wired corporate connection to wide area voice net for voice and separate data net for other services based on costs