Outline

• Introduction
• Conversational Systems & GALAXY
• WebGALAXY
• Video tape
• Conclusion
Information Nirvana?

- Vast amounts of information and services available online
- Huge market opportunity for providers
- Nirvana for users?
Or Information Overload…

• User interfaces have remained primitive
  – Point, click, type
  – Keyword search engines
• Valuable cognitive capacities wasted in tracking links and web space geography
Conversational Access

- Virtues: natural, flexible, efficient, economical
- Beyond “speakable links”
  - Extend the user interface paradigm with systems that understand
- Particularly useful when
  - Information space is broad and complex
  - Concepts are complicated
  - Users are technically naive

- Flexible: hands and eyes busy
• Architecture for work in conversational systems
• Understood three application domains: city guide, air travel, and weather
• Framework for research in: speech recognition, NL understanding, NL generation, etc.
• Two tier client-server architecture: servers handle compute and knowledge intensive functions
• Extensible: can add new servers incrementally
Universal Access with WebGALAXY

- **GALAXY**
  - Employed specialized protocols and technology, impeding mass availability

- **Web browsers**
  - Ubiquitous
  - Familiar interface
  - Widespread availability of web centric technologies

- **WebGALAXY**: Make conversational technology available to a universal audience
  - Move to feather-weight clients (fewer resources)
  - Adopt web standards to leverage browser penetration and technologies’ capabilities

- Leveraging the technology: e.g., Unicode for multilingual displays
**Client**
- Java applet lives in browser
- Uses telephone system for spoken interaction

**Hub**
- Mediates communications between multiple servers and clients
- Maintains discourse state
- Frees clients from having to deal with multiple servers, multiple protocols, etc.

**Servers**
- Handle compute and knowledge intensive functions
Client

- Runs in any Java enabled browser
  - Netscape Navigator, Microsoft Internet Explorer, etc.
- Centered around a Java applet
  - Communicates with hub
  - Allows hub to push new replies to client
- Uses standard browser capabilities for graphical user interface
- Also have forms based version for more light-weight environments (e.g., PDAs)
Video

- Video tape...
Conclusions

• Trend towards enhancing point-and-click with richer, more flexible and intuitive models of user interaction
• Increasingly custom tailored presentations of information rather than static displays
• Conversation can be a major contributor
• WebGALAXY
  – Adoption of thin client and web standards increases audience of technology
  – Introduction of three-tier architecture makes thin client possible
The Road Ahead

• More universal access: Goal of any time, anyone, anywhere
  – Internet telephony (one wire): Initial proof-of-concept experiments promising
  – Displayless systems (only a telephone required):
    * e.g., Jupiter (which you can call here at EuroSpeech ’97)

• More information accessible via conversational systems
  – Rapid application domain prototyping
  – Information extraction tools and new content organizations, e.g., metacontent