Rapid Scout Kayaking System

Requirements Analysis

Studies (page 443, Figure 3)

- Domain artifact examination
- Field Studies
  - 3 Field trips to observe paddlers
  - Rafted river themselves
  - Watched guides teach others
- Incident interviews
- Knowledge elicitation: in-dept interview with experts
- Newsgroup probes & surveys

Root Concept

- High-level Vision: Information system for kayaker that provides real-time, context-sensitive information on routes and real-time communication between kayakers.
- Basic rationale: Kayaking is a sport that needs accurate real-time information for changing conditions on the river. This would improve safety.

Root Concept- cont.

- Stakeholder Groups & benefits
  - Kayakers (Novice & Casual): improved safety
  - Kayakers (Expert): improved safety & fun
  - Guides: improved safety, shared knowledge, teaching tool
  - Rescue workers: improved safety, faster rescue
  - Park rangers: reduced information load, increased access to rivers

Root Concept- cont.

- Starting Assumptions that were wrong (Naïve Folk Model, p. 444)
  - Paddlers are either thrill-seekers or back-to-nature types who wouldn't want decision aids
  - Back-to-nature types wouldn't want technology
  - Paddlers depend on individual skill
  - Tempo of paddling would not allow interaction with computer aid

Root Concept- cont.

- Revised Starting Assumptions (p. 444)
  - Paddlers are a community. Existing resources are published guide books, water gauges, & local knowledge about rivers known by guides or other kayakers who have run the river—can be made available through computer technology
  - Environment changes quickly and radically—need real-time, context-sensitive information
  - System will have to work in wet (submerged) conditions. Paddler has many opportunities to interact with a computer aid.
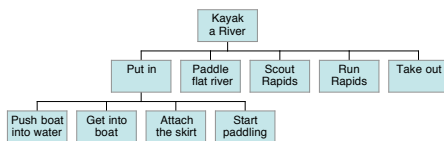
Stakeholder Profiles (p. 446)

- Kayakers & Canoeists: Novice, casual or expert; want to have fun and be safe; novices & casual want to improve skills
- Guides: Lead/teach groups of kayakers & canoeists; write guidebooks; want safety
- Rescue workers: Rescue people without endangering themselves; usually expert kayakers
- Park rangers: Job is to help people enjoy the rivers; information resource; coordination of groups; regulation of people's behavior

Tasks

- Overall tasks (p. 444)
  - Putting in
  - Paddling flat water sections
  - Scouting rapids
  - Running rapids
  - Taking out

Hierarchical Task Analysis of 'Putting-in'

Scenario: Scouting the Rapids

- Setting: McKenzie River, Oregon
- People involved
  - Sarah & Marie: middle-aged, casual kayakers, don't know this river
- Task Goals, expectations, plans
  - Run the rapids: have fun, be safe
- Events
  - Water level lower than description in guidebook
- Artifacts
  - Guidebook for McKenzie River

Scenario: Scouting the Rapids

- Using the guidebook, Sarah realizes that a difficult rapid is coming up at mile 16.3. The book says class III rapid with high water, but they know water levels on the river are quite low. Sarah yells to Marie that they will need to scout the rapid. They pull their kayaks over to the bank and climb up so they can see the river. They compare the guidebook drawing and discover several rocks are now visible which aren't in the book. They discuss a route to take to have the most fun in the rapid but avoid the rocks and possible holes. They get back in their kayaks and paddle off.

Scenarios used by the Rapid Scout Developers (p. 448)

- Expert explaining route to novice before & after expert runs it
- Instructor teaching a class on how to run a rapid
- 20 person paddling club with interchanging subgroups
- Non-routine: when people become separated, equipment lost, parts of device fail, person injured