

## Chapter 11 User support

- Issues
  - different types of support at different times
  - implementation and presentation both important
  - all need careful design
- Types of user support
  - quick reference, task specific help, full explanation, tutorial
- Provided by help and documentation
  - help - problem-oriented and specific
  - documentation - system-oriented and general
  - same design principles apply to both

## Requirements

- Availability
  - continuous access concurrent to main application
- Accuracy and completeness
  - help matches and covers actual system behaviour
- Consistency
  - between different parts of the help system and paper documentation
- Robustness
  - correct error handling and predictable behaviour
- Flexibility
  - allows user to interact in a way appropriate to experience and task
- Unobtrusiveness
  - does not prevent the user continuing with work

## Approaches to user support

- Command assistance
  - User requests help on particular command  
e.g., UNIX man, DOS help
  - Good for quick reference
  - Assumes user know what to look for
- Command prompts
  - Provide information about correct usage when an error occurs
  - Good for simple syntactic errors
  - Also assumes knowledge of the command

## Approaches to user support (ctd)

- Context sensitive help
  - help request interpreted according to context in which it occurs. e.g. tooltips
- On-line tutorials
  - user works through basics of application in a test environment.
  - can be useful but are often inflexible.
- On-line documentation
  - paper documentation is made available on computer.
  - continually available in common medium
  - can be difficult to browse
  - hypertext used to support browsing.

## wizards and assistants



- wizards
  - task specific tool leads the user through task, step by step, using user's answers to specific questions
  - example: résumé
  - useful for safe completion of complex or infrequent tasks
  - constrained task execution so limited flexibility
  - must allow user to go back
- assistants
  - monitor user behaviour and offer contextual advice
  - can be irritating e.g. MS paperclip
  - must be under user control e.g. XP smart tags

## Adaptive Help Systems

- Use knowledge of the context, individual user, task, domain and instruction to provide help adapted to user's needs.
- Problems
  - knowledge requirements considerable
  - who has control of the interaction?
  - what should be adapted?
  - what is the scope of the adaptation?

## Knowledge representation User modelling

- All help systems have a model of the user
  - single, generic user (non-intelligent)
  - user-configured model (adaptable)
  - system-configure model (adaptive)

## Approaches to user modelling

- Quantification
    - user moves between levels of expertise
    - based on quantitative measure of what he knows.
  - Stereotypes
    - user is classified into a particular category.
  - Overlay
    - idealized model of expert use is constructed
    - actual use compared to ideal
    - model may contain the commonality or difference
- Special case: user behaviour compared to known error catalogue

## Knowledge representation Domain and task modelling

- Covers
  - common errors and tasks
  - current task
- Usually involves analysis of command sequences.
- Problems
  - representing tasks
  - interleaved tasks
  - user intention

## Knowledge representation Advisory strategy

- involves choosing the correct style of advice for a given situation.  
e.g. reminder, tutorial, etc.
- few intelligent help systems model advisory strategy, but choice of strategy is still important.

## Techniques for knowledge representation

- rule based (e.g. logic, production rules)
  - knowledge presented as rules and facts
  - interpreted using inference mechanism
  - can be used in relatively large domains.
- frame based (e.g. semantic network)
  - knowledge stored in structures with slots to be filled
  - useful for a small domain.
- network based
  - knowledge represented as relationships between facts
  - can be used to link frames.
- example based
  - knowledge represented implicitly within decision structure
  - trained to classify rather than programmed with rules
  - requires little knowledge acquisition

## Problems with knowledge representation and modelling

- knowledge acquisition
- resources
- interpretation of user behaviour

## Issues in adaptive help

- Initiative
  - does the user retain control or can the system direct the interaction?
  - can the system interrupt the user to offer help?
- Effect
  - what is going to be adapted and what information is needed to do this?
  - only model what is needed.
- Scope
  - is modelling at application or system level?
  - latter more complex
    - e.g. expertise varies between applications.

## Designing user support

- User support is not an 'add on'
  - should be designed integrally with the system.
- Concentrate on content and context of help rather than technological issues.

## Presentation issues

- How is help requested?
  - command, button, function (on/off), separate application
- How is help displayed?
  - new window, whole screen, split screen,
  - pop-up boxes, hint icons
- Effective presentation requires
  - clear, familiar, consistent language
  - instructional rather than descriptive language
  - avoidance of blocks of text
  - clear indication of summary and example information

## Implementation issues

### Is help

- operating system command
- meta command
- application

### What resources are available?

- screen space
- memory capacity
- speed

### Structure of help data

- single file
- file hierarchy
- database

### Issues

- flexibility and extensibility
- hard copy
- browsing