

Analyzing Users' Requirements

Goal: understand users' current activities well enough to reason about technology-based enhancements

- Understanding the work being done now
 - so as to offer function that meets real needs
- As well as learning about the people themselves
 - so as to offer function in a way that is convenient and satisfying

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Analyzing Work

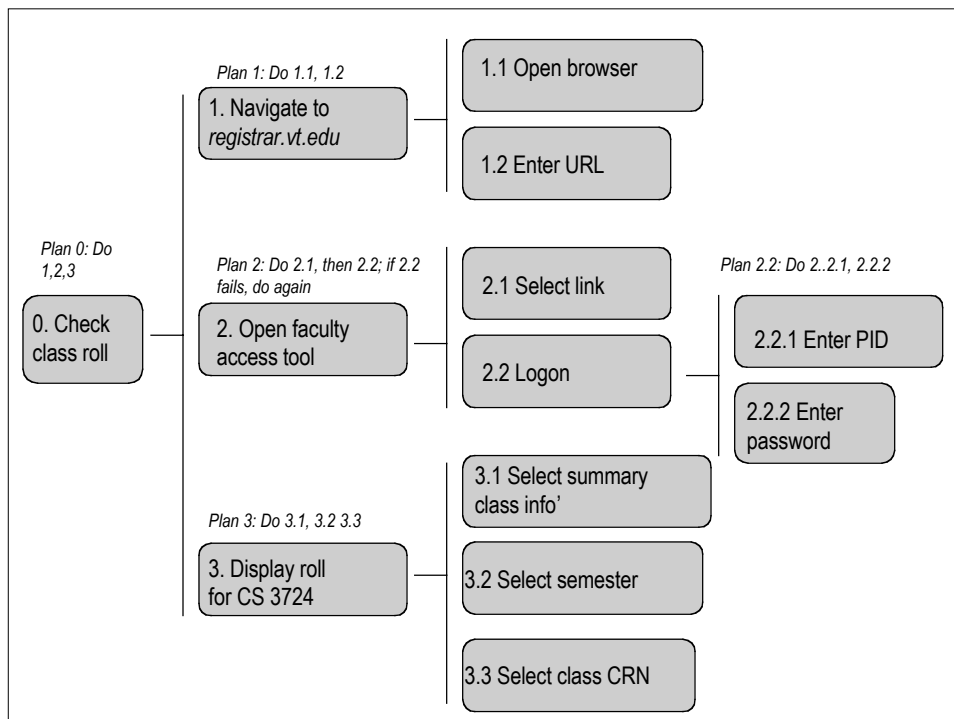
- Observe and describe people's activities
 - what goals do they pursue, how?
 - what errors do they make? what frustrates them?
 - how do they learn?
- Collect and study artifacts used in these activities
 - tools, documents, features of the work setting
 - artifacts support activity, but also constrain it
- Capture the social context of the work
 - groups and organizations, roles and relationships
 - how do different people/groups coordinate work?

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Hierarchical Task Analysis (HTA)

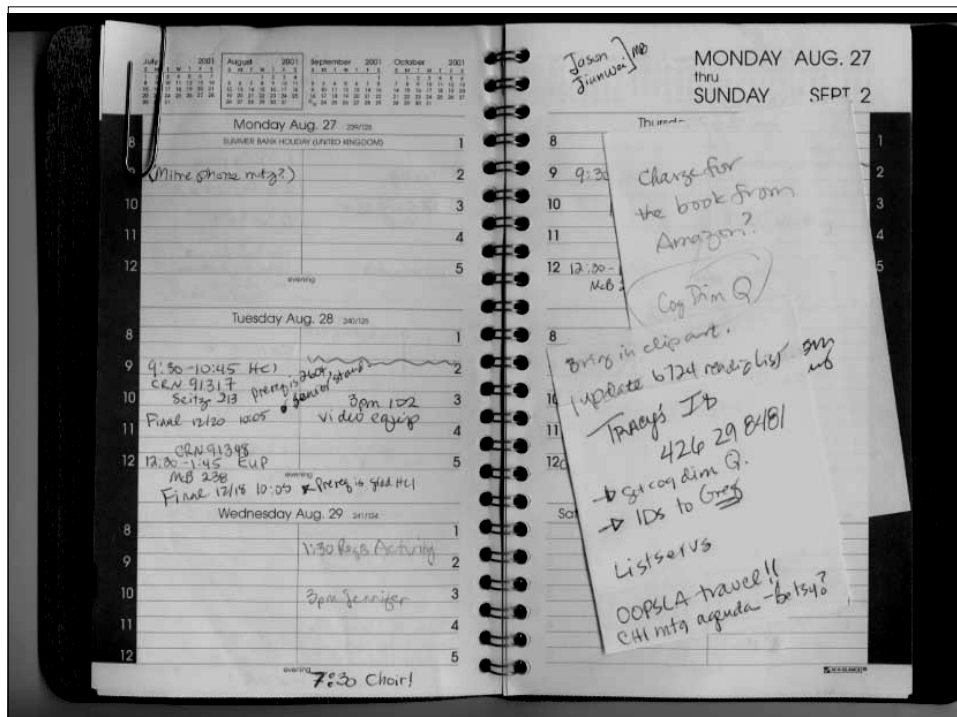
- Decomposition of complex activity
 - goals and subgoals, with control logic
 - documents how things are ‘supposed’ to work
 - (much like an algorithm or program for the task)
- Then can carefully study the implications
 - does task really happen this way? If not, why?
 - what are sources of complexity, bottlenecks, breakdowns, work arounds?

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Examining an Artifact

- What does it tell you about the task it supports?
 - if at all possible, observe it *in use*
 - (objects are not always used as intended :-)
- Try to extract task information and procedures
 - what task attributes are apparent or can be inferred?
 - what action sequences are required or possible?
 - what seems likely to be simple or difficult to do?
- Practice on some familiar examples:
 - ex: appointment book, wristwatch, badge

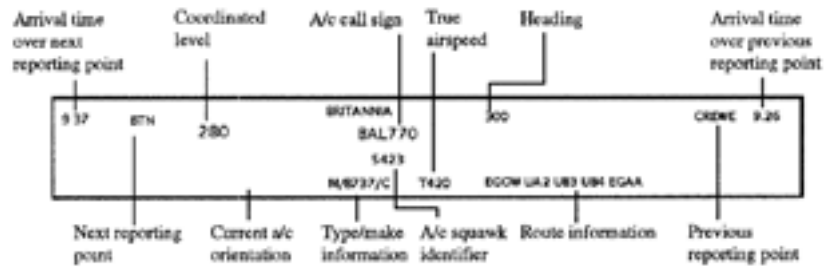




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Artifacts and Use

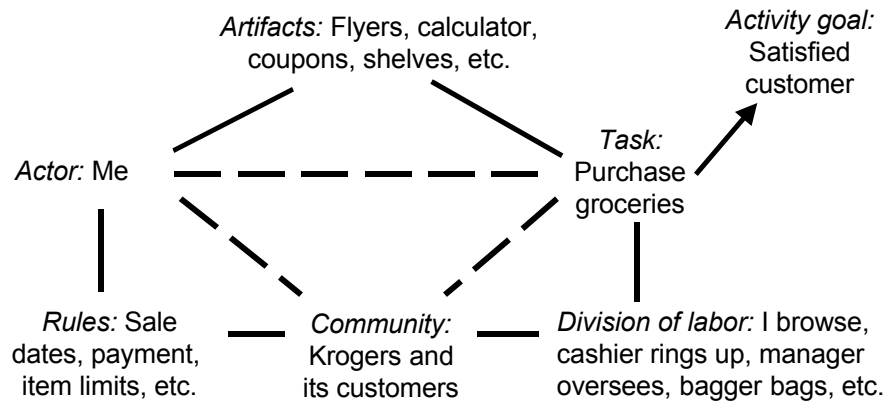
- Ethnographic observation of a control room
 - status slips served as rich “work sites”
 - critical attribute is that they were *shared* objects



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Analyzing the Larger Context

Using an approach like activity theory to examine relations among tasks, artifacts, conventions, and shared goals of a community



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Getting Users Involved

- Usually there will be multiple “stakeholders”
 - e.g., workers, but also support staff, management
 - each with knowledge, preferences, perspectives
- Observe and/or interview representatives from all relevant groups
 - discuss their typical tasks, their role in the organization
 - as well as technology background and expectations
- *Participatory analysis*: videotapes or other records of activities that participants view and discuss
 - Virtual school requirements

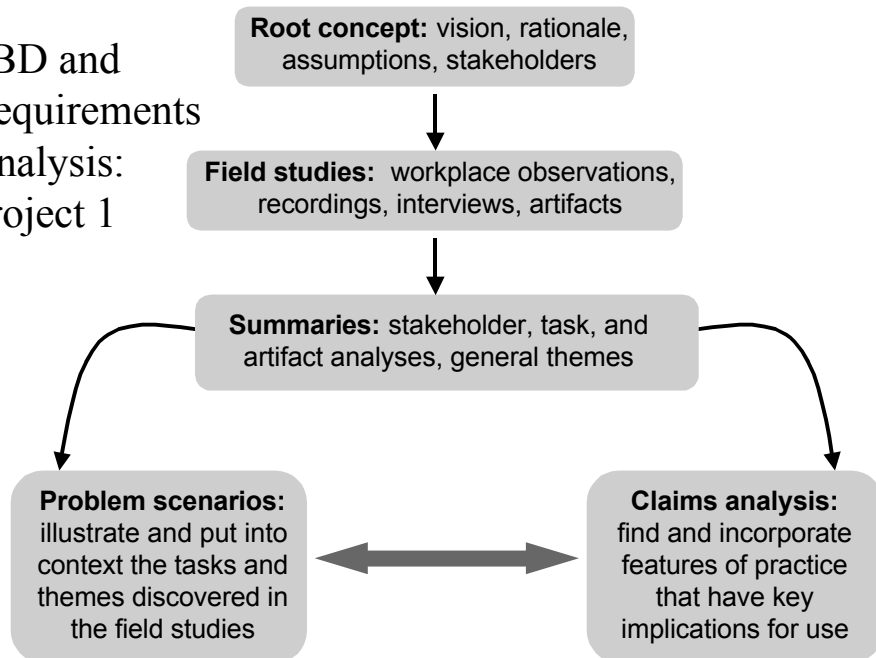
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People Know More than They Can Say

- Trouble Ticketing System (TTS)
 - database for tracking telephone line problems
 - relieve need for personal follow-up by staff members
- But, personal follow-up played a key role
 - details of problem filled in, organizational knowledge
 - TTS led to ‘workarounds’, with phone contact made as usual, but TTS used just to document jobs later
- *Tacit knowledge*: engineers were not aware how critical this social exchange was to their jobs

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SBD and Requirements Analysis: Project 1



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Group Project: Phase 1

First, read VSF example carefully, use as a model

- Organize as a group, develop root concept
- Observe activities, gather artifacts (at store)
- Interview at least 3 stakeholders (e.g., a professor, a student, a departmental staff member)
- Create summary diagrams and tables
- Express understanding in problem scenarios
 - develop hypothetical stakeholders to use as actors
 - integrate concerns and opportunities discovered in a believable usage context
- Extend scenario analysis with claims

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garden.com homework due - Thursday

- Before Thursday, spend 20-30 minutes browsing case study
 - complete (for class participation credit) online survey
 - we are evaluating usefulness, usability of browser
- In class you will break into small groups to carry out a requirements-related activity

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