back to Scriven’s matrix:
—evaluating an existing situation—

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objectives, technology, schedule
——from the perspective of a usability engineer——

◆ characterizing the usability “status quo”
  – e.g., learning required, user populations addressed, known problems or successes (empirical if able)
  – look for (demand!) usability objectives as consequence

◆ constant re-emphasis on problem, not the solution
  – devil’s advocate when technology assumptions made

◆ “squeaky wheel” regarding iteration and flexibility
  – user input/testing early and throughout
  – drawing attention to process implications of tools, platforms, policies
building a root definition
—from Soft Systems Methodology, Checkland (1981)—

◆ critical initial activity is to identify stakeholders
  – focus groups, discussions among interested parties
  – emphasis is on expressing purpose of the system, which may or may not be contradictory

◆ then integrate diverse perspectives in root definition:
  ✓ Clients: those who will benefit or suffer
  ✓ Actors: those who are involved (interact) with system
  ✓ Transformation: the system’s basic purpose
  ✓ Weltanshauung: the perspective underlying definition
  ✓ Owners: those commissioning/authorizing work
  ✓ Environment: social or physical factors and constraints
hypothetical example: a Virtual Science Fair

Stakeholders?

Clients:

Actors:

Transformation:

Weltanschauung:

 Owners:

Environment:
activity theory
(after Engestrom, 1987)

Activities are “minimal meaningful context” for understanding (and thus supporting) individual actions; they are collective phenomena and are interconnected through shared elements.

—> what goes in each node, are connections in place, working?
example: a science fair project
the tool component: operations, actions, activities

activity: developing a design specification

action: adding a comment to existing document

operation: opening an email client

action: sending email to request a new meeting

operation: specifying the email recipients

Activities work best when tools are “transparent” such that operations do not intrude into consciousness
activity theory —> pay-off evaluation

◆ gather data about **breakdowns and contradictions**
  – ex: alias for a work group is not updated automatically when members join/depart (*breakdown*: forces users to think about what the alias refers to in every case)
  – ex: work culture relies on email communication but client expects formal letter (*contradiction*: users forced to maintain redundant channels, possible inconsistencies)

◆ interpret, prioritize, resolve in activity framework
  – consider subject, object, tool, community, etc.
  – can any/some/all of these evolve or be reconceived to address breakdowns or contradictions?
ethnography in requirements analysis

◆ comes from field methods in anthropology
  – naturalistic observation of subjects at work, and doing this work in their own context
  – traditionally requires observer’s immersion in practice
  – data collection is extensive: field notes and tapes, artifacts, interviews with subjects

◆ goal is to produce a “rich description”— narrative that describes themes or patterns of behavior
  – traditionally presented as a monograph
  – sometimes analyzed at more abstract level: categories and relationships, sometimes language-based analyses
varying roles for ethnography

◆ concurrent: ongoing studies throughout development
◆ quick and dirty: brief but intensive study of the problem domain
  – best characterization of group project phase 1
◆ evaluative: focused study of one or more features of interest, typically later in the process
◆ integrative: compare, contrast, combine analyses of other problem settings
  – dependent on literature available (or analyst experience)
phase 1 of group project

◆ brainstorm broad focus, ie general system idea for project

◆ modest observational study
  – find 3-4 individuals involved in problem domain, trying to include representatives of “roles” if relevant
  – observe for about an hour: tasks worked on, technology used, other people involved, problems that arise

◆ group discussion of observation sessions
  – summarize tasks observed, including where technology used (or not), work flow, similarities and differences among sessions, relationships among individuals and their co-workers if any
  – develop follow-up questions to probe more deeply

◆ interview subjects about activities observed
  – semi-structured, but expand as relevant, also request copies or descriptions of relevant artifacts
workplace observation

◆ create broad focus by brainstorming questions, system ideas, assumptions as a group *before* beginning observations

◆ take special care with “entry” into workplace setting
  – permission to be there, to observe, to take notes
  – explicitly non-judgemental, goal is to “be invisible”
  – subject is helping you, a partner in your design project

◆ plan for note-taking in advance (i.e., during brainstorming)
  – if two observers, coordinate observations to increase completeness
  – stay focused: temporal log of activity with “interest” annotations

◆ afterwards, process *as a team* as soon as possible
  – have each (set of) observer give overview of session
  – relate each to starting focus: what relevant info was found? what needs follow-up to clarify?
  – look for similarities, differences...can you explain them? why?
You may want to produce some sort of “context map” ...

- Prior knowledge (of tasks or of technology)
- Computer-based tools or artifacts
- Non-computerized tools, data, etc.
- Specific skills of individuals
- Individual roles
- Formal procedures
- General policies
- Physical environment
- Problems, interruptions, exceptions
work artifact collection

◆ brainstorm the types of artifacts likely to be found in the work situation you will be observing
  – e.g., forms, printed documents/manuals, folders, reports, ...
  – also consider possible technology artifacts like telephone, fax, printers, computer packages, databases, ...

◆ when observing, look for these in use, include in notes
  – also note how they are used, especially if problematic

◆ arrange to get copies or descriptions of key artifacts
  – careful attention to permission, privacy concerns (prepare to be satisfied with a description)

◆ as a team discuss structure of artifacts and implications
  – prioritize data and technology vis-a-vis importance to task
  – analyze distinctions (implicit & explicit), affordances, rules of use
interviewing users about their work

◆ familiarity with work setting is critical (from observations)
  - increases apparent understanding/rapport as well as enabling intelligent follow-up/expansion questions
  - BUT must be careful not to lead or bias subject’s answers

◆ begin with warm-up questions, then get more detailed
  - background and experience, followed by a “tour” of activities
  - use prepared probes developed from observation analysis: more detail on tasks, opinions about artifacts & procedures, etc.
  - focus on info about current situation, don’t expect solutions

◆ work hard to be an *active* listener
  - means processing on the fly, not just writing it down (have a team member with you to do this, or use a tape recorder)
  - sensible follow-up questions shows you are listening, interested

◆ more brainstorming with results, adding to prior analyses