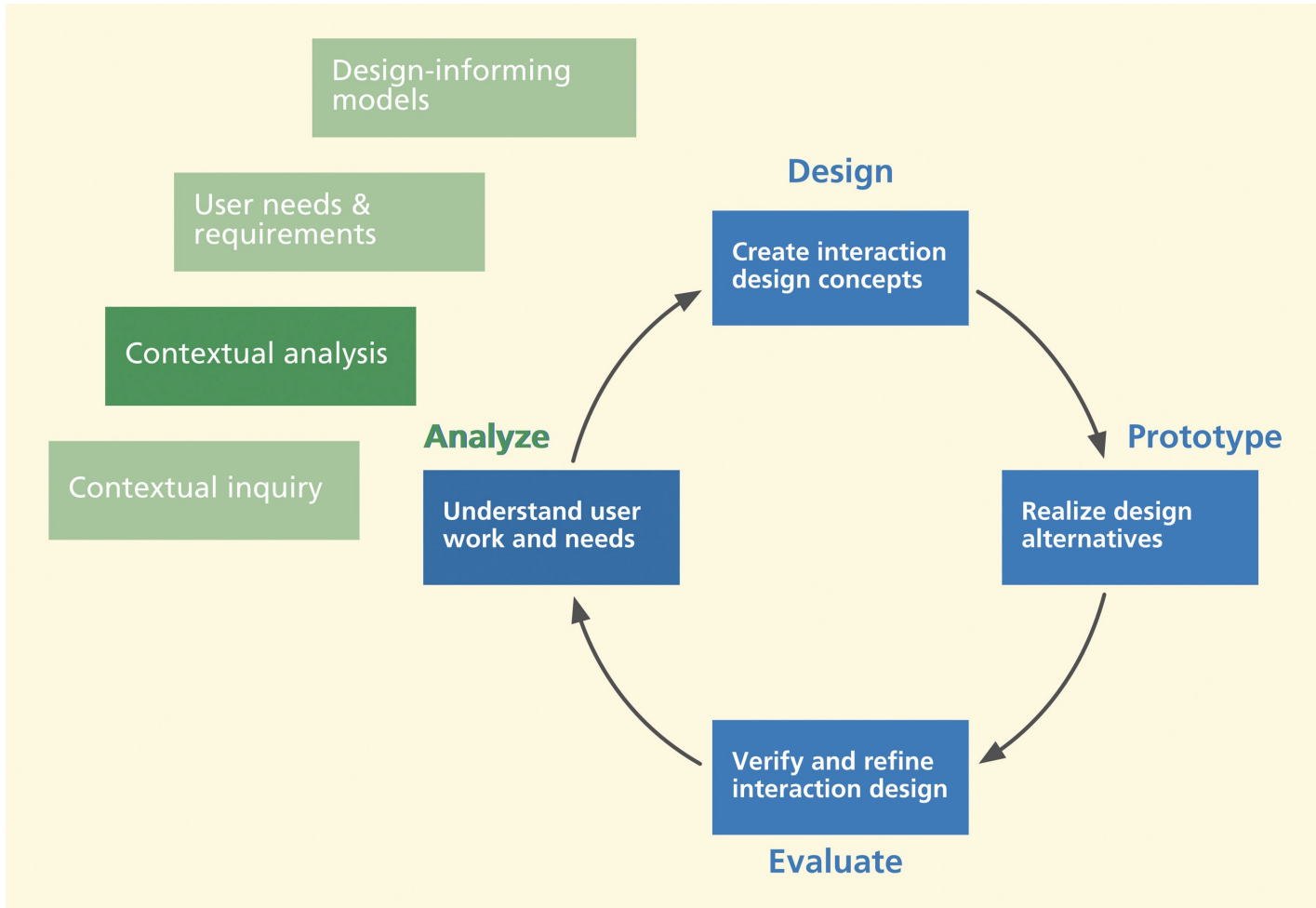


Contextual Analysis

SWEN-444





Contextual analysis

Systematic analysis of contextual user work activity data

Identification, sorting, organization, interpretation, consolidation, and communication

For purpose of understanding work context for new system to be designed

Contextual analysis does not directly yield either requirements or design

How to do contextual analysis

- Identify work roles
- Build initial flow model
- Synthesize work activity notes
- Build work activity affinity diagram (WAAD) from work activity notes
- Communicate results to team via walkthroughs



Work Roles

- **Work roles – collection of job responsibilities** that accomplish some portion of the work
 - **User role**, actor
 - Class **profile** – name, personal characteristics, abilities
- Represent the **direct relationship between users and the system as roles**



Example: Initial Work Role Identification in MUTTS

- The two obvious work roles in MUTTS are the ticket seller and ticket buyer.
- The event manager interacts with external event sponsors and venue managers to book events for which they sell tickets.
- The financial manager is responsible for accounting and credit card issues.
- The advertising manager interacts with outside sponsors to arrange for advertising, for example, ads printed on the back of tickets, posted on bulletin boards, and on the Website.



Modeling Work Roles

- Model what is learned from interviewing and observing (primary) users
- Identify roles
 - Name
 - Description
- Profile each role ...
 - Context of use – personal motivation (goals), problems and frustrations, frequency of use, type of work and system interaction, social/physical/technical environment
 - Abilities – education, level of expertise, skills, physical disabilities
 - Personal – e.g., age, gender, cultural ethnicity



How to do contextual analysis

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- **Build initial flow model**
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Flow Model

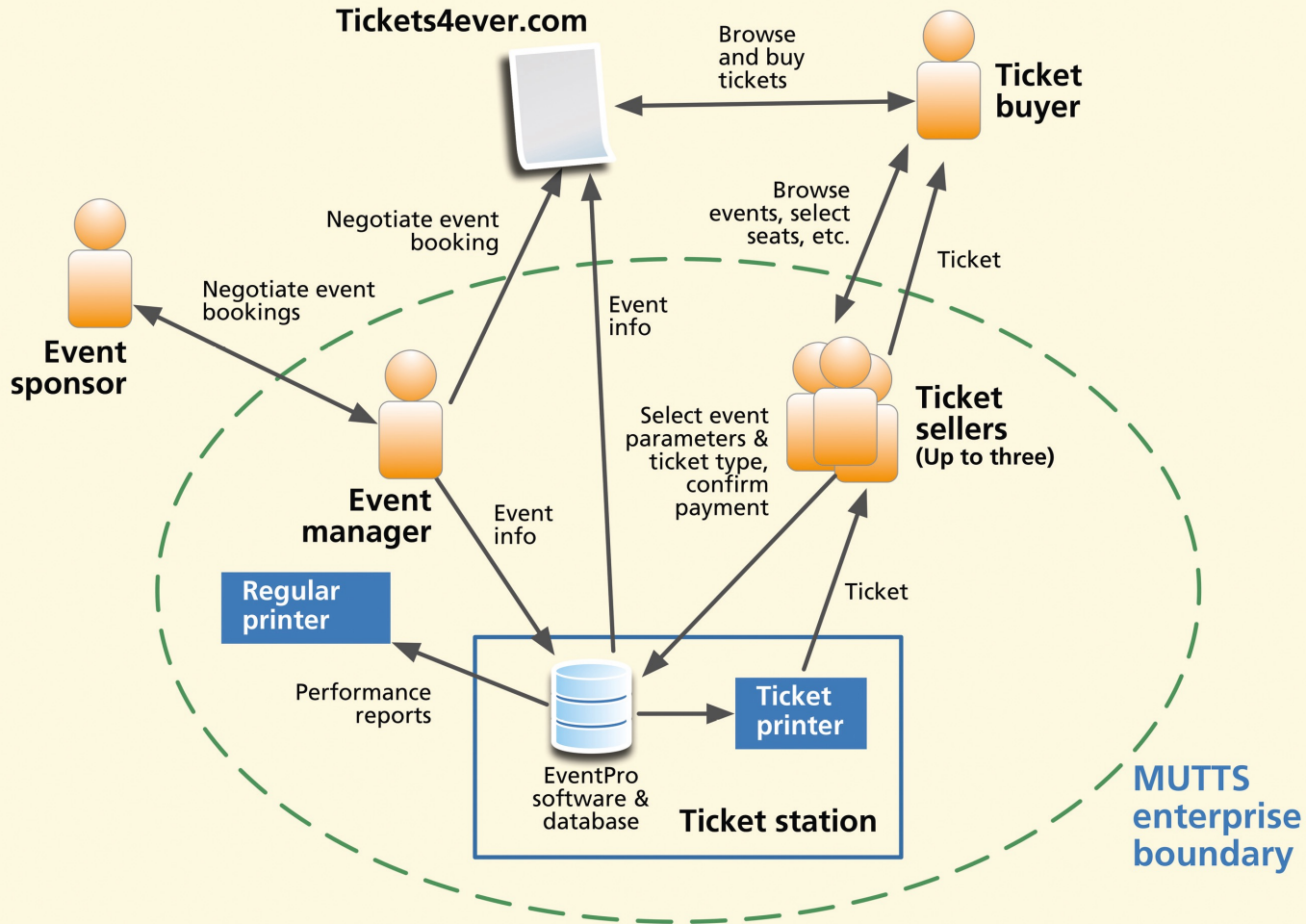
- A “big picture” diagram of work domain
 - Shows interconnections among components of work domain
 - Information flow among components
 - Components include key work roles and machine roles (e.g., central database)
 - In essence, shows how things get done in domain, how entities communicate



Sketch initial flow model

- Draw nodes of diagram to represent work roles
 - Label nodes with work role names
 - Add additional labeled nodes for other entities (e.g., a database)
- Add arcs indicating flow
 - Label with what flows (e.g., order information)
 - Include flow outside system and label with flow channel (e.g., phone, email)





How to do contextual analysis

- Identify work roles
- Build initial flow model
- **Synthesize work activity notes**
- Build work activity affinity diagram (WAAD) from work activity notes
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Synthesizing work activity notes

- **IMPORTANT:** Doing this well is key to rest of contextual analysis
- Transcribe interview and observation recordings, if used
- Start with whole team session to get in sync
 - Review data
 - Each interviewer and note taker reviews notes with group



Synthesizing work activity notes

- Tag each work activity note with source ID
 - Unique identifier of person observed or interviewed
- Paraphrase and synthesize, instead of quoting raw data verbatim
- Make each work activity note a simple declarative point
 - Not quote interviewer's question plus user's answer
- Filter out all noise and fluff
- Be brief
 - Keep a note to one to three succinct sentences



Synthesizing work activity notes

- Disambiguate pronouns, references to context
- Refer to work roles rather than individual people
- Avoid repetition of same information in multiple places
- Sort by the CI categories, add or change categories
 - E.g., work role, work activity, environment, social interaction



Example, work activity notes for MUTTS

User (ticket buyer, id=u17) raw comment:

It is too difficult to get enough information about events from a ticket seller at the ticket window. For example, sometimes I want to see information about popular events that are showing downtown this week. I always get the feeling that there are other good events that I can choose from but I just do not know which ones are available and the ticket seller usually is not willing or able to help much, especially when the ticket window is busy.



Work activity notes for MUTTS

Break up raw comment:

It is too difficult to get enough information about events from a ticket seller at the ticket window. For example, sometimes I want to see information about popular events that are showing downtown this week.

Synthesize work activity notes:

(ticket buyer, id=u17) It is too difficult to get enough information about events from a ticket seller at the ticket window.

(ticket buyer, id=u17) I want to see information about current popular downtown events.



Work activity notes for MUTTS

Break up raw comment:

I always get the feeling that there are other good events that I can choose from but I just do not know which ones are available and the ticket seller usually is not willing or able to help much, especially when the ticket window is busy.

Synthesize work activity notes (with some interpretation and further discussion):

(ticket buyer, id=u17) I would like to be able to find my own events and not depend on the ticket seller to do all the browsing and searching.

(ticket buyer, id=u17) There are potential communication gaps because the ticket seller does not always understand my needs.



How to do contextual analysis

- Identify work roles
- Build initial flow model
- Synthesize work activity notes
- **Build work activity affinity diagram (WAAD) from work activity notes**
- Communicate results to team via walkthroughs



The work activity affinity diagram (WAAD)

- A work activity affinity diagram is a way to sort data into categories and sub-categories when you don't know in advance what the categories will be



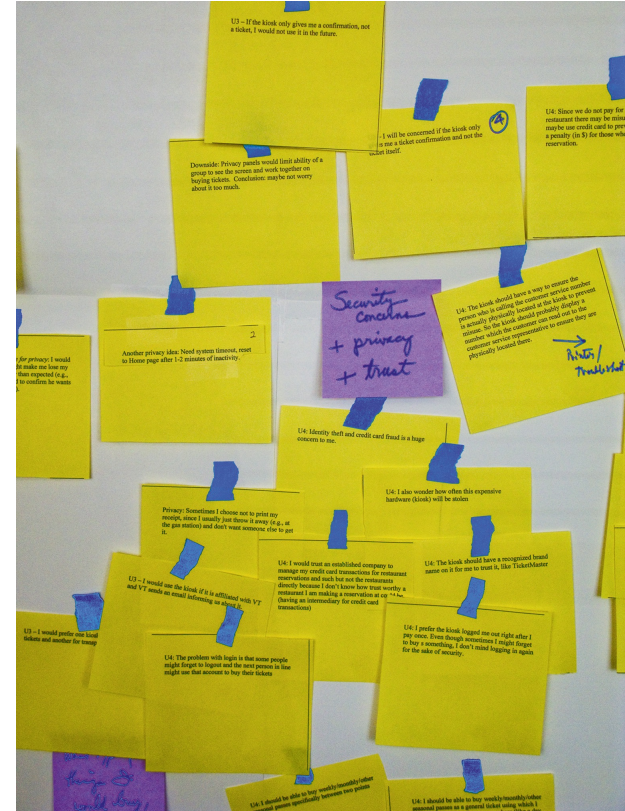
Prepare to construct WAAD

- Have in hand huge stack of work activity notes
- Need enough team members to make it go fast
- Shuffle the work activity notes, for variety
- Allow time to read notes
 - discuss, post on work space (butcher paper on wall)
 - If there is related note already posted
 - Post this note next to it



Prepare to construct WAAD

- Grow clusters of related work activity notes
- Label cluster temporarily
 - Capture gestalt
 - So don't have to re-read notes to know what cluster is about



Prepare to construct WAAD

- Democratic process
- Keep groups manageable
- Labels must have high descriptive power
- Make groups of groups



Example

Team studying clusters to form groups



Activity:

- For your project:
 - Identify work roles
 - Build initial flow model
 - Use the [Design Requirements template](#)

