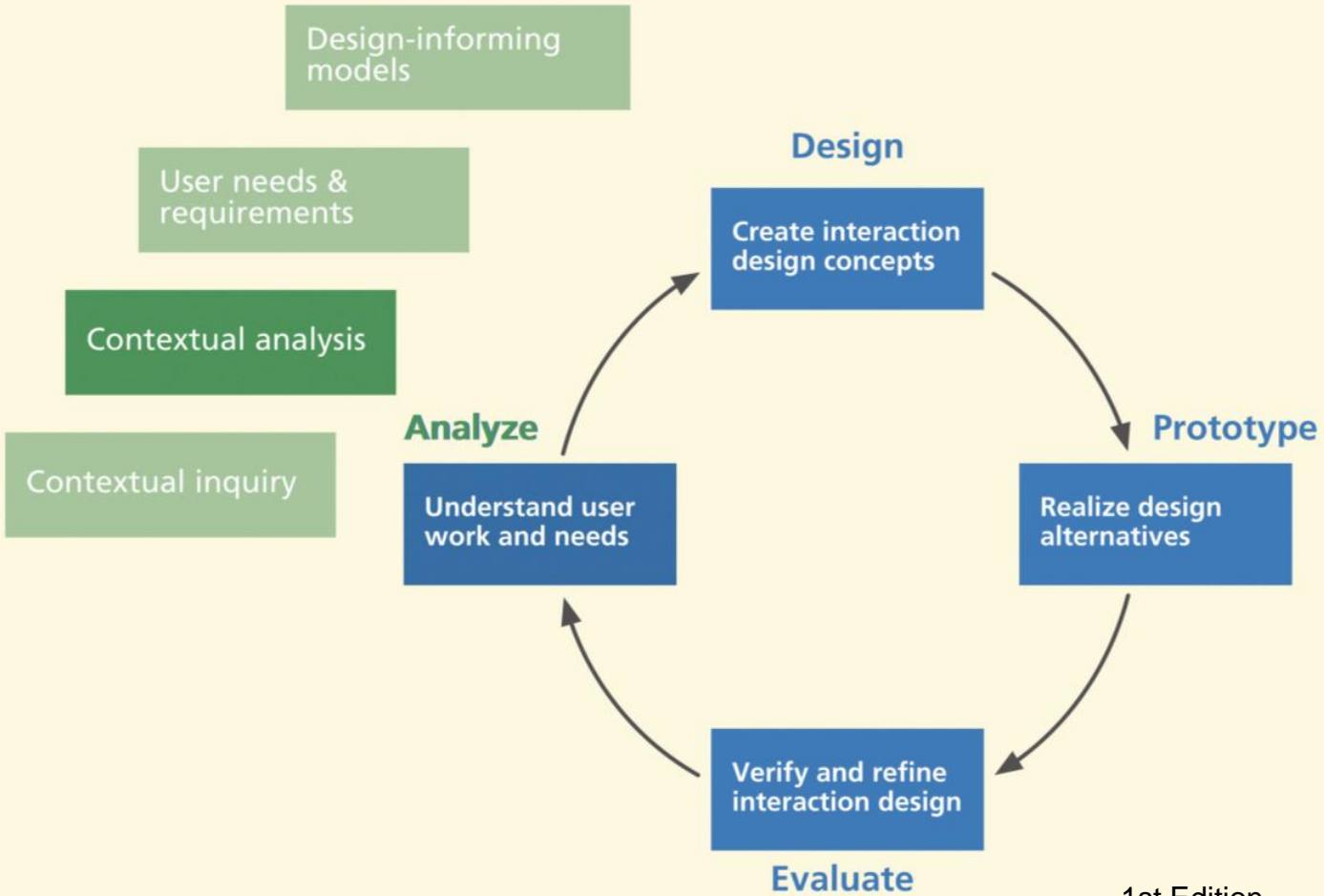


Contextual Analysis

SWEN-444



1st Edition

Contextual Analysis

- **Systematic analysis** of contextual **inquiry 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
- Review and refine results to via team 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

- Obvious work roles: Ticket seller and ticket buyer
- Event manager: works with external stakeholders to book events and venues
- Financial manager: accounting and payment issues
- Advertising manager: multi-media advertising

Modeling Work Roles

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

How to do contextual analysis

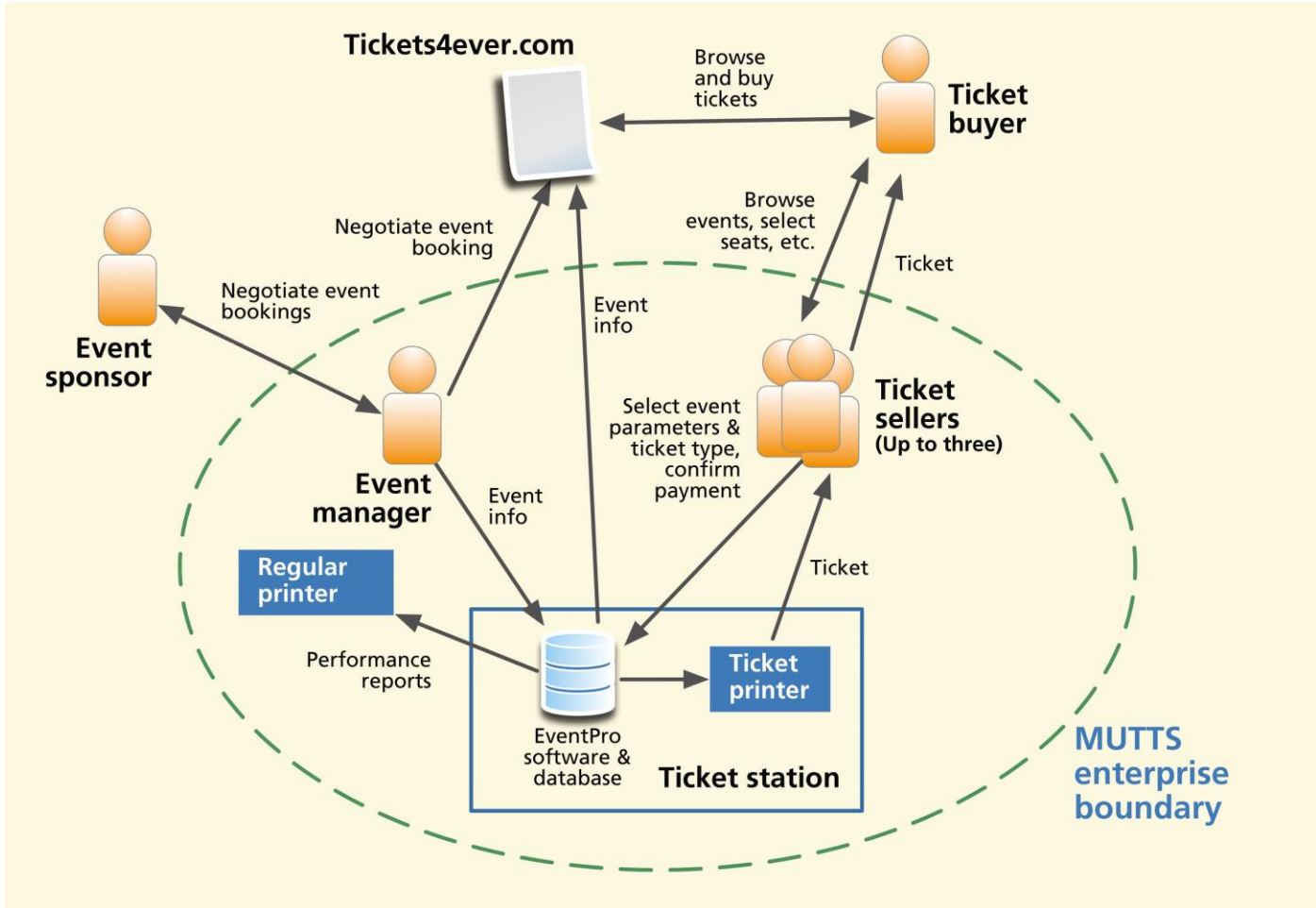
- Identify work roles
- **Build initial flow model**
- Synthesize work activity notes
- Build work activity affinity diagram (WAAD) from work activity notes
- Communicate results to team via walkthroughs

Flow Model

- A “big picture” diagram of work domain
 - Shows interconnections among components of work domain
 - Work and 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
 - Work environment boundaries

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
- Communicate results to team via walkthroughs

What is a Work Activity Note?

- A **statement** relating to some one concept/idea/fact/topic **about work practice**
- **Synthesized** from raw **contextual inquiry data**
- Brief, clear, concise; document a **single point**

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**
 - Don't 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
- **Reference 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)

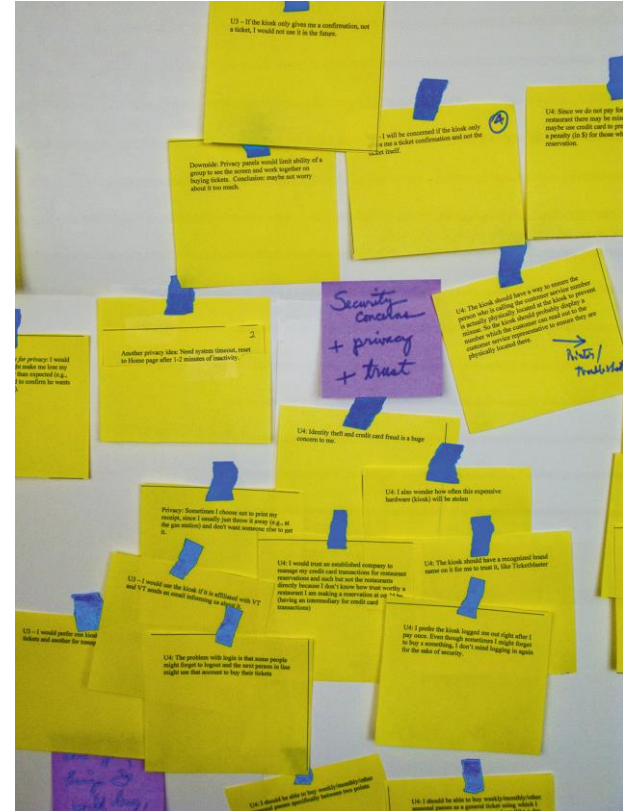
- A work activity affinity diagram is a way to sort data into categories and sub-categories when you don't know in advance what the categories will be

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 (chart paper/digital workspace)
 - 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 (whole that is perceived as more than the sum of its parts)
 - Avoid having to re-read notes to know what cluster is about



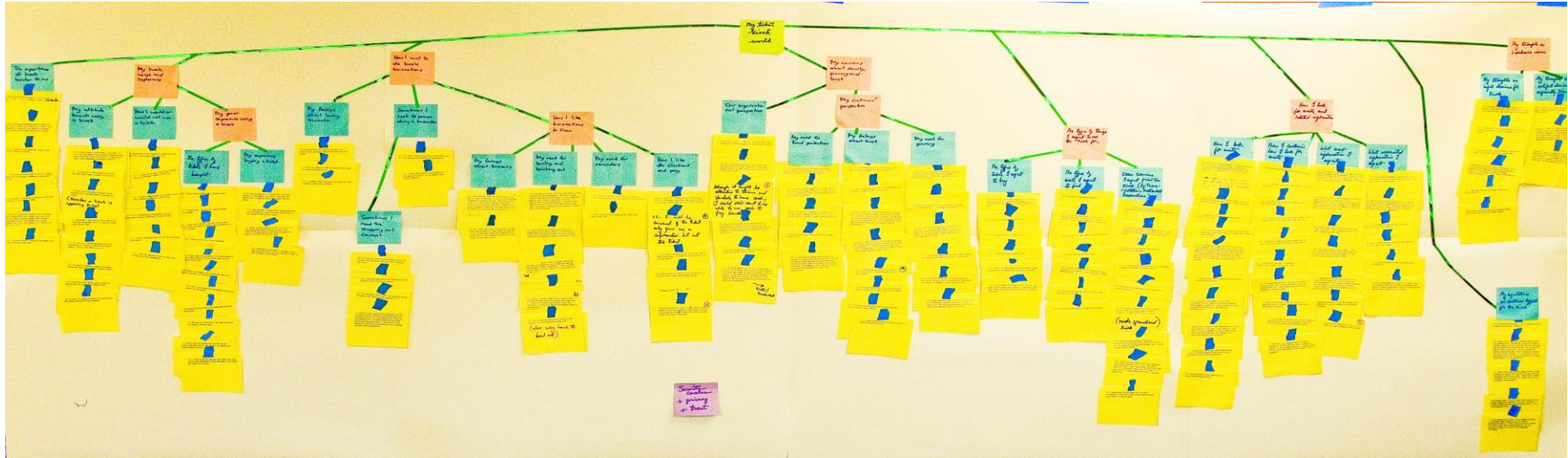
Prepare to construct WAAD

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

Example: Team studying clusters to form groups



Example, WAAD for MUTTS



Team Activity

Three parts, see the “Class Activities” document for details

1. Work roles and work flow model diagram
2. Synthesize work activity notes
3. Build a work activity affinity diagram