Applying Patterns of Cooperative Interaction to Work (Re)Design: E-Government and Planning

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Overview

- Patterns Background
- The Presentation Framework
- Applying Patterns in a Council Planning Department for Work & Technology Redesign
  - Work redesign goals, working with interruptions, configuring the customer, receptionist as a hub
- Conclusions & Future Directions

Introduction

- Ethnographic corpus
  - ~~'Studies of real world real time work'~~
- Problem: comparing, abstracting, re-using findings
  - Access to relevant studies, making ethnographer's experience visible, use for design?
- Architecture patterns, Christopher Alexander
  - Design relevant physical and social characteristics
  - A pattern is a solution to a problem in context
- Contrast with other patterns in computing
  - Reusable templates, solution oriented

Patterns of Cooperative Interaction

- Derived through re-examination of previous studies
- Documenting, describing, communicating common interactional arrangements/phenomena
- Patterns as comparable fieldwork vignettes from different studies
- General principles, notes on design implications alongside specific vignette instantiations
- Dual purpose: access to findings and a resource for design

The Presentation Framework

- *Title, Essence of the pattern, Design for dependability, Access to studies*
- *Cooperative arrangement:* setting, people, computers, artefacts, activity
- *Representation of activity:* how, where, why
- *Ecological arrangement:* affordances of layout and artefacts
- *Coordination techniques:* methods of activity achievement
- *Community of use:* user group

Pattern Examples

- Artefact as an audit trail
- Multiple representations of information
- Use of a public artefact
- Accounting for an unseen artefact
- Dealing with interruptions
- Forms of co-located teamwork
- Receptionist as a hub
- Doing a walkabout
- Overlapping responsibilities
- Career trajectory through different roles
- Configuring the customer (seed pattern)

Applying Patterns to New Settings

- Patterns as a ***pragmatic design resource***
- Patterns as an ***analytic*** aid
- The particulars of the solution must be worked out for that case
- Draw on previous experience… help understand current situation, design problems
- Characterising newly encountered and described phenomena….design concepts
- Envisage possible design solutions, other work arrangements, technologies, support

Council Planning Department: Setting & Methods

- Local council planning department
  - Process and assess planning applications
- 5 day 'quick and dirty' ethnography
  - Observation, shadowing, unstructured interviews

Patterns for the Council Department

- Working with interruptions
  - How interruptions in the workplace are managed/recorded
- Configuring the customer
  - Integrating the client into organisational process
- Receptionist as a hub
  - Receptionist as coordinator, mediator, filter

Current Departmental Projects

- E-Government
  - Provide 100% of services electronically by 2005
- Best Value
  - Market ethos: efficient and effective services
- Access to Services
  - Equal access possibilities for all constituents
- Solutions should seek to satisfy all projects
  - E.g. cannot simply seek to migrate clients to cheaper electronic channels if this compromises access for some constituents

The Application Process

- Basic process stages:
  - Receipt, Validation, Site Visit/Appraisal, Constraint Assessment, Negotiation, Planning Committee
  - Planning applications can be complicated
- Focus on correspondence/interaction between applicant, the council and outside organisations during this process
- Correspondence/interactions involve:
  - Missing details, plans, forms, letters, various re-work tasks as applications are amended and reconfigured and explanations and information provision

Interruption Examples

- Sitting with an area administration assistant (AAA)….The phone rings, an architect is seeking info on sewers in area N. He has talked to the water board but is seeking further info. Phone message passed to the technician.
- Following phone call, planning officer (1).. *"Do you know if Tony ** dropped off some bricks - farmhouse red".* PO (2) joins her in looking for the sample and pulls one up but PO (1) states that this is the wrong one. PO (2) says *"was this last Thursday"*. PO (3) joins in, showing the correct sample and stating *"these"*. She then provides PO (1) with details of the site and whether the bricks have the 'right' qualities.

‘Classifying’ Interruptions

- Basic classification: internal or external source
- Internal
  - Generally positive, facilitate work achievement, group cooperation, sharing of knowledge and experience, negotiated
- External
  - More negative impact on work, unregulated, can be inappropriate, immediate timing, requirement to interleave with other work, unrecorded

Interruptions

- The Small Office (Rouncefield et al. 1994)
- Bank Help Desk (Martin, 2000)
- 'Working With Interruptions' as a design theme
- Provide relevant sensitivities concerning management and recording of interruptions
  - E.g. assess what work items are/are not interruptible
  - Possibilities of restricting access levels/times to allow workers uninterrupted time for some tasks
  - Time overheads and MI ambiguity associated with recording and classifying interruptions
  - Restrict/charge for certain services

Council: Work Redesign Goals

- **External interruptions:** minimise, manage, stop more channels = more interruptions
- E-Government, Access to Services, Best Value
  - Increase efficiency, provide electronic channels BUT maintain access levels
- Reduce amount
  - Reduce service access criteria/availability times
- Reduce timing unpredictability and need for immediate response
  - Service migration while no decrease in access to services

Council: Work Redesign Goals

- Ensure appropriateness and direct to ‘correct’ staff member
  - Screening/filtering, management through the reception
  - IVR (note: careful design required)

Reduce need and streamline interaction by 'Configuring the Customer'

- Ideas derived from banking studies
- Integrate customer into organisational process
  - Decrease translation work, support requirements and 'transaction' times
- Gear in and migrate regular, technically able agents to remote electronic channels
- BUT must consider mediator/translator role of planning personnel when designing these

Use ‘Receptionist as a Hub’ to screen and filter inquiries

- Erickson’s report on Belotti and Bly’s ethnography of a consultancy firm
- Planning
  - Distributed hub, less of a coordination role, size of organisation and diversity of business
  - Expertise, knowledge of business
  - Increasing personnel, training, IVR
- All this information serves as a design resource
- Further work may be determined depending on e.g. stakeholder design meetings

Conclusions & Future Directions

- Expand patterns collection to 15 by July
- Add references, papers, reports
- Integrate with DIRC
- Future design projects?

Website Address

- Special thanks to Jo Mackie!
- www.comp.lancs.ac.uk/computing/research/cseg/projects/pointer/patterns.html
- Site finally has a reasonable amount of content delayed by my 4 month lay off with a broken arm!