rich work ecologies

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overview
• the problem
• phenomena of rich interaction
• ? socio-technical Church Turing Hypothesis ??

the problem
• task models
  – formal description
• situatedness
  – unique contexts
• ethnography
  – rich ecologies

option 1 – reject formalism

option 2 – enforce formalism

option 3 – expand and accept
phenomena

- collaboration
- information
- triggers
- artefacts
- placeholders
- situatedness
- intentional cycle
+ continuity & duration

collaboration

- already in several notations
  - e.g. CTT
- add artefacts too?

information

pre-planned cognitive model
  goal → action

situated action
  environment → action

control

- open loop control
  - no feedback
  - fragile

control

- open loop control
  - no feedback
  - fragile
- closed loop control
  - uses feedback
  - robust
adding information

0. pour tea
1. boil kettle
2. get out cups
3. make pot of tea
4. pour tea

Plan 0:
1 than 2
when kettle boils
3 then 4

how many cups?

triggers

process – what happens and order

get post from pigeon hole
bring post to desk
open post

triggers – when and why

first thing in the morning
holding post
at coffee time

artefacts

• ethnographic studies
• as shared representation
• as focus of activity
• act as triggers, information sources, etc.

placeholders

• knowing where you are in a process
  – like a program counter

• coding:
  – memory
  – explicit (e.g. to do list)
  – in artefacts

where are you?

__
step 1. choose new flight level
1. controller choose new flight level
2. controller tell pilot new flight level
3. pilot confirm new flight level
4. pilot ascend to new level
5. new flight level achieved

step 3. flight level confirmed
1. controller choose new flight level
2. controller tell pilot new flight level
3. pilot confirm new flight level
4. pilot ascend to new level
5. new flight level achieved

step 5. new flight level achieved
1. controller choose new flight level
2. controller tell pilot new flight level
3. pilot confirm new flight level
4. pilot ascend to new level
5. new flight level achieved

continuity & duration
• system models – event centric
• status–event analysis
  – continuous time (status) and discrete (events)
  – many generic issues and phenomena
• task models:
  – in the annotations and descriptions
  – concurrency – true or interleaved?

intentional cycle

the socio-organisational
Church–Turing hypothesis
the Church–Turing thesis

- the THEOREM
  - Church’s lambda calculus and Turing machines are ‘equivalent’

- the POSTULATE
  - all computation is ‘equivalent’

organisations

- are political, social, economic ...
  but are also ...

- information processing entities
  so ...
the socio-organisational Church-Turing hypothesis

similarities to computers and cognition
• computational power
• computational structure

the organisation as a computer

• computer: program and data
• organisation: process and data
  plus …
• computer data:
  LTM, STM, program counter
• organisation: ????
  files, papers … placeholders

parallels

<table>
<thead>
<tr>
<th>computer</th>
<th>cog sci</th>
<th>organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>process</td>
<td>program</td>
<td>procedural memory</td>
</tr>
<tr>
<td>data</td>
<td>data</td>
<td>LTM</td>
</tr>
<tr>
<td>placeholder</td>
<td>program</td>
<td>STM, location of artefacts</td>
</tr>
<tr>
<td>initiative</td>
<td>interrupts, stimuli</td>
<td>triggers</td>
</tr>
</tbody>
</table>

interprets people