Main Concepts for Cooperative Work Place Analysis

Selmin Nurcan

Université Paris 1 - Panthéon - Sorbonne
Centre de Recherche en Informatique (CRI)

Telecooperation Conference of the XV. IFIP World Computer Congress
31 August - 4 September 1998
Vienna - Budapest

A well-known categorisation of groupware

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>SAME</th>
<th>DIFFERENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAME</td>
<td>SAME</td>
<td>Face-to-face interaction</td>
<td>Asynchronous interaction</td>
</tr>
<tr>
<td>DIFFERENT</td>
<td>DIFFERENT</td>
<td>Synchronous distributed interaction</td>
<td>Asynchronous distributed interaction</td>
</tr>
</tbody>
</table>
Well-structured and ill-structured work processes coexist in organisations

Models dealing with cooperative work

<table>
<thead>
<tr>
<th>Models</th>
<th>Goal</th>
<th>Process</th>
<th>Task</th>
<th>Task flow</th>
<th>Task decomposition</th>
<th>Role/Actor</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICN [Ellis94]</td>
<td>Goal</td>
<td>Procedure</td>
<td>Activity</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>InConcert</td>
<td>No</td>
<td>Job</td>
<td>Task</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>[McCarthy93]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPL [Swenson93]</td>
<td>Goal</td>
<td>Plan</td>
<td>Stage</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>OSSAD [Dumas90]</td>
<td>Objective</td>
<td>Procedure</td>
<td>Operation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>I* [Yu94]</td>
<td>Goal</td>
<td>No</td>
<td>Task</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Enterprise</td>
<td>Goal</td>
<td>Process</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>models [Bubenko 94]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process meta-model [Rolland93]</td>
<td>Intention</td>
<td>Way of working</td>
<td>Action</td>
<td>Plan context</td>
<td>Plan/choice context</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
The Concept of Role

A role is the definition of an organisational intention shared by a collection of users, all of whom have the same privileges and obligations to a set of work processes in an organisation.

The Concept of Goal

Goals are high level objectives of the organisation and defines stable characteristics of the business that any organisation choice must respect.
The Concept of Process

Operationalisable goals are implemented using processes.

The Concept of Structured Process

The essential preoccupation of structured processes is the coordination of their component work steps.
**The Concept of Task**

A *task* represents a work step in a structured process.

**The Concept of Unstructured Process**

An *unstructured process* cannot be represented in terms of flow of tasks. The key concept of unstructured processes is the information and knowledge sharing in the work group.
Conclusion

Cooperative work processes can be either

- **structured** according to a partial order of work steps associated to roles and describe "how" the corresponding operationalisable goal could be fulfilled.
- **unstructured** and described in terms of roles and resources which are involved and goals to whom the process contributes.

The aim of cooperative work analysis is:

- to understand the nature of the studied work processes
- to find, in the case of well-structured processes, the relevant decomposition in tasks with their associated roles.
- to provide appropriate concepts to represent other social and organisational aspects

---

Workflow models

The Information Control Net model [Ellis 79, Ellis & Wainer 94]
Workflow models

The InConcert workflow model [McCarthy & Sarin 93]

Workflow models

The Visual Programming Language (VPL) model [Swenson 93]
Process Modelling

The I* models [Yu & Mylopoulos 94]

The process meta-model [Rolland et al. 93], [Nurcan & Rolland 97]
The OSSAD’s models [Dumas et al. 90]