Coordination mechanisms

CS4458
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Outline

- What is coordination?
- Examples of coordination mechanisms
- Mutual awareness
- The dual character of work
What is coordination?

- Co-ordination is the act of organizing, making different people or things work together for a goal or effect to fulfill desired goals in an organization.
The role of computer applications in supporting coordination

- The gap in CSCW:
  - systems that restrict coordinative interaction to a priori models or to a set of narrow metaphors (ex: workflows).
  - radically flexible systems that leaves it to the users to cope with the complexity of coordinating their activities (ex: wikis).

- In cooperative work in the real word, both strategies are used interchangeably.
Ex: Human Resources workflow

Source: http://www.hersheytech.com/Solutions/WorkflowBPM.aspx
The Apache OpenOffice Documentation Project

This project creates and maintains documentation in English for OpenOffice.org and Apache OpenOffice. Documentation can include user guides, FAQs, How Tos, examples, user templates, the Apache OpenOffice FAQs and How Tos, and many other related materials. The project has a home page on the web as well.

If you cannot find what you're looking for, check out the OpenOffice User Forum.

This is a wiki, so feel free to contribute to OpenOffice.org documentation. Here is the project's dashboard, where contributors coordinate their work.

What's New

- November, 2016 - OpenOffice.org Migration Guide is being updated and development has started on a new version
- January, 2016 - Apache OpenOffice User Guides are in development.

Searching/Downloading

- Search and download documents through the Documentation Website.
- Or, type here to search the Documentation Wiki:

Installation Guide for OpenOffice.org 3.x

- PDF - 2010-08-06 (June 6) - 470 kb
- ODT - 2010-08-06 (June 6) - 300 kb

Developers/SysAdmin Guides

- Administration Guide
- BASIC Programmer's Guide
The seamlessness of articulation work

- Articulation: “To prevent interdependent and yet distributed activities from degenerating into chaos, the cooperative effort must be coordinated, aligned, integrated, meshed – in short: articulated”

- The fundamental way to articulate distributed activities is to facilitate the generation of mutual awareness.
Articulation work – Mutual awareness

- Exploiting what is there for the taking” in a non-intrusive fashion (as opposed to asking, negotiating, ordering)
- A change of the common field of work emits signals that may be perceived by other actors. They may also be able to perceive the field of work in its entirety.
- From her/his awareness, one may develop a rudimentary awareness on others activities, and maybe infer the plans and intentions of colleagues.
- When sharing the same (physical or media) space, they may also perceive each other’s bodily conduct.
- Activities through which they align their activities may be perceived in the same way.
Example:
The challenges of embedded knowledge

- Client: Norwegian subsidiary of company with 13,000 employees located across Europe (headquarters in Finland, primary Nordic focus, providing consultancy services on business systems)
- Activity: redesign of a payroll management system used by nearly 11,000 small and medium-sized companies in Norway
- Vendor: Russian company (St. Petersburg, 110 employees, part of the Fort Ross Consortium)
- Interesting aspects: trust, domain knowledge, language barrier, project management, lack of formal specifications.

1999 – negotiations started
Norwegian PM appointed
Russian reps visiting Oslo
Russians working on an estimate
Estimate: 6 months -
Contract signed

After 5 months: near-breakdown

After 9 months, Norwegians visiting Russia
After 14 months, 7/8 done

no specs
no internal knowledge
no common language
no direct communication
hidden costs
lack of embedded knowledge

sailors working abroad
foreigners working in Norway
people living in Northern Norway

Delphi -> MySQL
15 Mb
Lessons learned

- “Don’t outsource your problems!”
- The importance of trust, informal relationships, social networking
- The enthusiasm on the vendor side – learning Norwegian, willing to find out more about the Norwegian culture
- The importance of context – understanding the Norwegian pay & taxation system – “embedded knowledge”
- Captive knowledge – Russians the only ones who knew the system – possible joint venture
Research on mutual awareness has established that:

- In a joint effort, actors typically modulate their own activities to provide their colleagues with cues and information pertinent to their being aware of these activities.

- Actors continually monitor or scan the activities of others.
Example: Air Traffic Controllers

Source: http://nbcfae.clubexpress.com/
Coordinative artifacts and protocols

- Artifacts for coordination and protocols for how these artifacts are to be used.
- Artifacts:
  - templates (specify properties of the result)
  - maps (specify interdependencies)
  - scripts (specify a protocol of interaction)
- Protocols:
  - offer a limited, predetermined set of actions that are considered safe, secure, advisable, etc.
  - excluding actions that are considered unsafe, etc.
  - they reduce the complexity of coordinating activities.
Coordinative artifacts and protocols

- Protocols are deliberately under-specified to:
  - factors that are immaterial to the purpose
  - factors that can be more efficiently be left unspecified.
- “No representation of the world is either complete or permanent”.

Examples: UL Map

Source: OpenStreetMap.org
Examples: UL Map

Source: www.ul.ie
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Protocol: Admissions Appeal Process

Supporting Procedures

These pages document set out the supporting procedures for the Admissions Appeals Process that was adopted by Academic Council at its meeting of 30 March 2008. A copy of the Appeal Process is appended.

1. The Admissions Appeals Process may be availed of by a direct entry applicant who seeks admission to a programme of study and/or research offered by the University. "Direct entry applicant" refers to an applicant who seeks admission to the University by a non-CAO route. The "relevant Admissions Office" (section 11 of the Admissions Appeals Procedure) includes, but is not limited to, the following: the Undergraduate Admissions Office; the Postgraduate Admissions Office; Access Office; International Education Division; Lifelong Learning and Outreach.

2. The Admissions Appeal Committee established by the VPA&R shall comprise of three faculty members who were not directly involved in the decision that is under appeal. Where practicable, at least one such member shall be an expert in the discipline or disciplines that make up the programme to which the applicant has sought admission.

3. The Admissions Appeal Committee shall consider the grounds of appeal advanced by the applicant in his or her letter of appeal together with the reasons given for not admitting him or her. The Admissions Appeal Committee shall meet not later than one calendar month from receipt of the written appeal and it shall provide a reasoned decision to the applicant and the relevant Admissions Office.

4. Where an applicant appeals a decision of the Admissions Appeal Committee the President will appoint an external independent person to adjudicate the appeal. Where practicable, the external independent person shall hold an academic position and shall be an expert discipline or disciplines that make up the programme to which the applicant sought admission.

5. Where practicable, the appeal process should be concluded in a timely manner such that an applicant who is successful will be in a position to commence his or her studies when the programme is next offered. To this end, the University shall endeavour to initiate its admissions processes in a manner that will allow sufficient time to exhaust the Admissions Appeal Process. In the event that it is not possible or practicable for a successful applicant to commence his or her studies when the programme is next offered a place shall be reserved for him or her on that programme in the following academic year.
Articulation work is seamless

- The situated activity inherent in protocol execution requires actors’ mutual awareness with respect to the state of the field of work, of the cooperating ensemble, of the protocol itself and of intersecting protocols.

- The combined use of coordinative protocols and mutual awareness allows for ‘precomputation’ without imposing undue rigidity to the flow of actions.
References


The dual character of work
The double level nature of work

- Core work activity and work about the work
- Formal (visible performance of the work) and informal work
- Action or work process, and interactional processes (Strauss 1993)
- The distinction is useful, but again there is a danger of simplifying things
Primary and secondary work

- "organizational models in CSCW applications should be conceived of as resources for competent and responsible workers. That is, the system should make the underlying model accessible to users and, indeed, support users in interpreting the procedure, evaluate its rationale and implications. It should support users in applying and adapting the model to the situation at hand. It should allow users to tamper with the way it is instantiated in the current situation, execute it or circumvent it, etc.
- The system should even support users in modifying the underlying model and creating new models in accordance with the changing organizational realities and needs.
- The system should support the documentation and communication of decisions to adapt, circumvent, execute, modify etc. the underlying model. In all this, the system should support the process of negotiating the interpretation of the underlying model, annotate the model or aspects of it, etc.”
- "a common information space encompasses the artifacts that are accessible to a cooperative ensemble as well as the meaning attributed to these artifacts by the actors.”
- (Taking CSCW Seriously- Schmidt and Bannon, 1992)
Articulation work

- as observed by Gerson and Star (1986: 266), being nothing but local and temporary closures, these mechanisms themselves require articulation work:

- “Articulation consists of all the tasks involved in assembling, scheduling, monitoring, and coordinating all of the steps necessary to complete a production task.

- It is impossible, both in practice and in theory, to anticipate and provide for every contingency which might arise in carrying out a series of tasks. No formal description of a system (or plan for its work) can thus be complete. Moreover, there is no way of guaranteeing that some contingency arising in the world will not be inconsistent with a formal description or plan for the system. […]”
How do things happen in reality?

- Seamless transitions between formal and informal work, between individual and cooperative work, synchronous and asynchronous;
- all work is actually socially organised!
Articulation work on Facebook?!

Source: http://searchengineland.com/4-key-recommendations-for-social-media-execution-in-the-industrial-sector-117880
References