

Course Description

Cooperation Systems

The course Cooperation Systems provides a brief overview to the research discipline Computer Supported Collaborative Work (CSCW). It introduces concepts that allow to model and to discuss collaboration and deals with socio-technical systems that support such collaboration. These systems are based on web technology and support groups of people to work together whether they are collocated in an office space or distributed over the world. Cooperation Systems have existed since computers and the internet were invented, although they were thriving since the advent of Web 2.0 and became common and ubiquitous in daily life in private applications (Social Computing) as well as business applications (Enterprise 2.0).

The Big Idea

Based on the rise and growth of the internet and influenced by the growing integration of information and communication technologies, cooperation systems have rapidly developed over the last decades and connects today billions of users. Many people nowadays routinely use the computer and cooperation systems in their daily work routine, such as E-Mail, Shared Workspaces, Chats, Social Networks and Video Conferences. The intended use is becoming more and more blurred. On the one hand, professional systems like shared calendar and document sharing are becoming part of private life due to its falling prices and growing ease of use. On the other hand, leisure systems like chats and social networks find their way into professional business life because people are getting used to.

The spectrum of cooperation tools has broadened considerably and has become much more heterogeneous. Furthermore, the tool set is constantly growing and changing. The technological change has a strong influence on the way users work. However, technological trends and work trends are interdependent. The organization of many enterprises has been transformed from rather static structures in former times to rather dynamic structures nowadays, like agile processes, open spaces, and flat hierarchies. Therefore, the exchange of knowledge among professionals has become a far more important factor for success than elaborated management structures.

Within the scope of this course cooperation systems should be understood and discussed raising questions of organization structures, development processes, and social impacts.

Intended Learning Outcomes

After attending the course, students will be able to analyze and discuss collaboration scenarios and the potential for appropriate cooperation systems. The course learning objectives are:

- 1) Students are able to explain theoretical and technical concepts of socio-technical systems and are able to critically discuss these.

- 2) Students are able to make a qualified selection of a suitable system, based on the analysis of their cooperation scenarios and tasks.
- 3) Students are able to explain specific aspects of cooperation system, like awareness, customization and personalization, end-user development.

Structure of the Course

Theoretical foundations of socio-technical systems

The concept of socio-technical systems is introduced, and the properties of systems are discussed. The various models for classification, taxonomy, and description of cooperative systems are presented. The relevance of these concepts for the domain CSCW is analyzed. The scope and relevance of social units such as groups, teams, communities, organizations are defined and discussed.

Shared Information Spaces

A shared information space is a system that provides a group of users shared access to electronic objects such as office documents or multi-media objects. The system also offers management functions for group management and access control. A shared information space is mainly used to support asynchronous cooperation processes. Shared information spaces contain the management of files and folders, groups and people as well as their roles and access rights. In addition, the system creates the awareness of all group members for the work of others. We are going to discuss the properties and functions as well as the challenges and drawbacks of certain systems.

Online Communities & Social Networks

A community is a cohesive social grouping that includes, in varying degrees shared spatial relations, social conventions, a sense of membership and boundaries, and an ongoing rhythm of social interaction. An online community consists of people, a shared purpose, policies, as well as a computer system. Whereas a social network is a web-based service that allows individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system. We are going to discuss the properties and functions of such systems and identify the difference between online communities and social networks.

Video Conference & Media Spaces

A videoconference is a virtual meeting between two or more distributed partners, who can communicate in real-time via audio and video. A media space has the same electronic setting, in which groups of people can work together, even when they are not resident in the same place or

present at the same time. We are going to discuss the properties and functions of such systems and identify the difference between video conferences and media spaces.

Resources

Journals

- International Journal on Computer-Supported Cooperative Work (IJCSCW)
- Journal of Computer-Mediated Communication (JCMC)
- Information Technology & People
- Behavior and Information Technology
- International Journal on Cooperative Information Systems

Conferences

- ACM Computer-Supported Cooperative Work (CSCW)
- ACM Group
- Communities and Technologies
- European Conference on CSCW
- COOP
- CollaborateCom
- CRIWG
- i-Know

Books

- **Computer-Supported Cooperative Work.** Introduction to Distributed Applications. Borghoff, Uwe M., Schlichter, Johann H. 2000.
- **Computer-Supported Cooperative Work.** Gross, Tom / Koch, Michael. 2009.
- **CSCW-Kompodium.** Lehr- und Handbuch zum computerunterstützten kooperativen Arbeiten. Schwabe, Gerhard, Streitz, Norbert, Unland, Rainer (Hrsg.). 2001.
- **Enterprise 2.0:** Planung, Einführung Und Erfolgreicher Einsatz Von Social Software In Unternehmen. Michael Koch, Alexander Richter. 2009.

Papers

- Ellis, C.A., S. Gibbs, and G.L. Rein, Groupware - Some Issues and Experiences. Communications of the ACM, 1991. 34(1): p. 38-58. <https://www.lri.fr/~mbl/ENS/CSCW/2013/papers/Ellis-CACM-91.pdf>
- Jonathan Grudin. 1988. Why CSCW applications fail: problems in the design and evaluation of organizational interfaces. In Proceedings of the 1988 ACM conference on Computer-supported cooperative work (CSCW '88). ACM, New York, NY, USA, 85-93. DOI: <https://doi.org/10.1145/62266.62273>

- W. Appelt and U. Busbach, "The BSCW system: a WWW-based application to support cooperation of distributed groups, " 1996, pp. 304-309.
- Fuchs, L., U. Pankoke-Babatz, et al. (1995). Supporting Cooperative Awareness with Local Event Mechanisms: The GroupDesk System. Fourth European Conference on Computer-Supported Cooperative Work: ECSCW '95, Stockholm, Kluwer Academic Publishers, 247-262.
- E. Mynatt et al.: 'Design for network communities', CHI, 1997
- J. Preece: 'Online communities', 2000
- Boyd, D. M. and Ellison, N. B. (2008), Social Network Sites: Definition, History, and Scholarship. Journal of Computer-Mediated Communication, 13: 210–230. doi: 10.1111/j.1083- 6101.2007.00393.x
- Wendy E. Mackay, Media Spaces: Environments for Informal Multimedia Interaction, Computer Supported Cooperative Work, M. Beaudouin-Lafon (Ed.), 1999, John Wiley & Sons Ltd.
- Ishii, H., Kobayashi, M., and Grudin, J., "Integration of Inter-Personal Space and Shared Workspace: ClearBoard Design and Experiments," Proceedings of Conference on Computer-Supported Cooperative Work (CSCW '92), ACM, Toronto, 1-4 November 1992, pp. 33-42.
- Okada, K.-i., F. Maeda, Y. Ichikawa and Y. Matsushita, "Multiparty Videoconferencing at Virtual Social Distance: MAJIC Design", in Proc. of Conference on Computer Supported Cooperative Work, R. Furuta and C. Neuwirth eds., Chapel Hill, NC, USA, ACM Press, 1994, pp. 385-393.

Examination

Students submit a discussion paper by January 31st 2020. The paper should consist the documentation of a small study which characterizes a cooperation scenario within your daily work and critically discusses the used cooperation system based on your learnings of the course.

- 1) Briefly describe a cooperation scenario within your daily work.
- 2) Describe the system your company is using on a daily basis. Focus on the structure and functionality with regards to the theory you learned throughout the course.
- 3) Conduct a small survey, respectively interview study within your peer group, on how the system is used in general and critically discuss the assets and drawbacks of this system.
- 4) Summarize your findings in a research paper like format and be prepared to give a short presentation during the final workshop.