

Mobile CSCW: Towards mobile, flexible and ubiquitous cooperation processes

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Abstract. The prevalence and maturity of today's mobile technologies allow for a mobilization of cooperative work on a large scale. While there is a plethora of technologies offering mobile cooperation support in the field, there still is a need for a methodological reflection on the mobilization of cooperative processes: ultimately, the field of CSCW needs to develop a framework for the analysis and design of mobile cooperation. The full day workshop on Mobile CSCW contributes to this goal by addressing three pivotal questions from a joint perspective of research and practice: When and how can processes of cooperation be mobilized adequately, which opportunities and barriers arise and how does cooperation change through mobile access to cooperation support? Aiming at knowledge exchange and co-production, the workshop invites both researchers and practitioners and incorporates presentations of participants' work and interactive sessions.

Keywords: Cooperation, CSCW, Mobile devices, Mobile work, Mobile business processes

Living in a time in which communication, cooperation and work in general becomes more and more detached from traditional workplaces and location-bound environments (e.g. (Grudin 2010; Sundar et al. 2010)), support for cooperation processes needs to adapt to these realities and provide solutions for supporting workers ubiquitously, enabling transitions between media and devices, providing access to information and communication channels everywhere and enabling fluent cooperation and communication independent of the location partners are in. This is the vision of the workshop proposed here. In this vision, the workshop foremost aims at discussing approaches and insights with immediate applicability and a potentially short time to market. However, it also welcomes theories, frameworks and general insights supporting the implementation of mobile cooperation support.

There is already a wealth of work related to the area of the workshop both in practice and science. In practice, people currently explore the possibilities of mobile workflows and mobile applications, but oftentimes focus on aspects such as communication support or mobile access to data. For the broader context of mobile cooperation (processes), there are hardly any successful examples known. In science,

relevant work is dealing with aspects such mobile HCI, user experience with mobile devices, usability of interaction support on mobiles and many more – recent proceedings of CSCW and CHI conferences as well as journals in these areas contain a lot of approaches in these areas. However, most of this work has to be considered as related and inspiring, but as not sufficient for a vision of mobile CSCW: While it paves the way towards this vision, it is not focused on systematically supporting mobile cooperation by mobilizing cooperation processes and their support. Therefore, it is easy to see that mobile CSCW builds on these insights, but transcends them. However, there are also promising contributions on mobility in CSCW (e.g. Herskovic et al. 2011; Westerlund et al. 2011), but in practice and science, mobile CSCW is still more of a vision than a reality.

The review of the state of research in mobile CSCW shows that designers of cooperation systems and processes are not adequately supported by a framework or theory of dealing with mobile cooperation. In order to enable mobile CSCW in the way described above, we need an answer to (at least) the three following questions:

1. **Support for mobile cooperation processes: When and how can processes of cooperation be mobilized, how does a mobile process look like and how can these processes be supported adequately?** Before starting to consider mobile cooperation support, we need to ask under which circumstances cooperation can be done in mobile way. This includes analyzing the characteristics of cooperation processes according to their suitability for mobile support and assessing the (business) value of mobilization, as the benefits of mobile cooperation come at a price: mobility always induces new organizational and infrastructural requirements that have to be fulfilled, e.g. business processes have to be analyzed and restructured, regulatory compliance has to be assured and mobile devices and applications have to be embedded into the organizations system landscape in a secure, reliable and efficient way. In addition, we need to know the characteristics of mobile cooperation processes in order to design their support.
2. **Opportunities and barriers: Which opportunities arise from current findings and technologies for mobile cooperation support, which barriers remain?** Current developments in technologies (e.g. mobile phones, tablets and smart devices) as well as findings from research (mobile device usage and adoption, mobile HCI etc.) support changes in the way cooperation can be supported. Practitioners need to be aware of these developments as well as of the opportunities, changes and risks that come along with mobility. For example, as Greengard (2011) reminds, mobile communication support not only improves our lives, but in certain aspects also cuts social interaction. Therefore, insights on opportunities and barriers in mobile cooperation support should be based on analyses of mobile cooperation support and mobile processes in the field. Answers to the question on opportunities and barriers should describe qualitative changes to cooperation support as well as problems remaining in the match between needs, potentials and available support options.

3. **Influence of mobile technology support and processes: How does cooperation change through mobile access to cooperation support? How does mobility shape new technologies for cooperation?** Undoubtedly, the availability and pervasiveness of mobile devices affects the way people work together. Likewise, changes in modern societies such as mobility of life and work also impose needs for proper communication and cooperation support. Therefore, the question is whether we are witnessing a fundamental, qualitative change to the way we cooperate or if the difference between CSCW and mobile CSCW can best be described as a matter of screen size. Answers to this question need to describe frameworks for or insights from the application of mobile cooperation support and an analysis of the effects stemming from such support.

The workshop proposed here strives to find answers to the questions explained above, leading to a conception of mobile CSCW now and in future. For this, we invite researchers dealing with aspects of mobile cooperation support to submit their work to the workshop and work with us on an agenda to realize it in practice. We strongly encourage partners or tandems from research and practice (just as the organizers) to present their work of implementing mobile CSCW in real contexts, as we particularly appreciate examples of mobile communication and cooperation support for the workshop. However, we also invite researchers and practitioners to contribute their work without a partner present. Topics for the workshop include, but are not limited to the following:

Studies on mobile cooperation processes

- Analysis of cooperation processes and their (potential for) mobility
- Mobile work and its affordances
- Mobility of cooperation processes and their parts
- Communication in mobile cooperation
- Advantages and disadvantages of mobile and mobilization of cooperation

Experiences with mobile technologies for cooperation support

- Adoption and adaption of mobile technology in cooperation
- (Positive and negative) Effects of mobile technology on communication and cooperation
- Integration of mobile devices into existing IT and process infrastructures
- Usage patterns of mobile cooperation support, including personalization

Theories, frameworks and design approaches supporting mobile cooperation support

- Constraints, needs and benefits of mobile cooperation
- Mappings between technology and mobile needs
- Insights into the way (mobile) technologies change (mobile) cooperation
- Design of mobile cooperation processes and technologies
- Modeling of mobile business processes – patterns and procedures to depict mobility, its opportunities and to conduct the necessary steps of transformation.

Course of the workshop

The workshop is planned for one full day and will combine presentations of participants' work and interactive sessions, aiming at knowledge exchange and co-production. The goal is to advance the state of the art and current knowledge on mobile cooperation support. Focusing on implementation and research, desired outcomes include an agenda for establishing mobile cooperation support and concrete means to support this task, including methods suitable for cooperation process analysis, mobilization and fertilization by mobile technology.

Recruiting of workshop participants

We will use our scientific networks to disseminate the call, which will include direct acquisition of colleagues working on respective topics and a variety of mailing lists in CSCW, HCI and business information system contexts.

In addition, adesso will support the recruiting of participants by addressing practitioners from the field directly and by announcing its participation in the workshop publicly, i.e. by publishing press releases. The company's widespread network guarantees for a significant level of awareness in relevant practitioner networks.

Publication of results

Depending on the participation in the workshop and the quality of the contributions, the organizers will contact magazines or journals in order to publish the results – options include a common paper of the participants and chosen papers in a special issue. Besides this, results will be published on the workshop homepage.

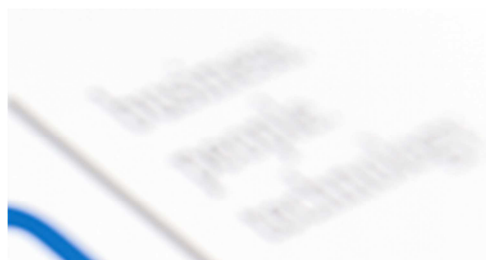
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Appendix: Company profile adesso

Fact Sheet

Formation:	1997 in Dortmund
Locations:	Berlin, Dortmund, Frankfurt, Hamburg, Cologne, Munich, Stralsund, Stuttgart, Vienna, Zurich
Members of staff:	more than 800 in adesso Group, dated 30 September 2011
Management:	<p>Michael Kenfenheuer (year of birth: 1958), Co-CEO, responsible for Consulting & Sales</p> <p>Dr. Rüdiger Striemer (year of birth: 1968), Co-CEO, responsible for Software Development & Corporate Communications</p> <p>Christoph Junge (year of birth: 1970), Member of the Executive Board, responsible for Finance, Human Resources, Administration and Legal Affairs</p>
Chairperson of the Supervisory Board:	Prof. Dr. Volker Gruhn (year of birth: 1963), Head of Software Engineering Department at the University of Duisburg-Essen
Shareholdings:	<p>adesso Schweiz AG, Zurich (100%)</p> <p>adesso Austria GmbH, Vienna (100%)</p> <p>e-Spirit AG, Dortmund (100%)</p> <p>adesso mobile solutions GmbH, Dortmund (100%)</p> <p>percision GmbH (100%)</p> <p>gativ GmbH, Much (61%)</p> <p>evut.it GmbH Dortmund, (60%)</p>



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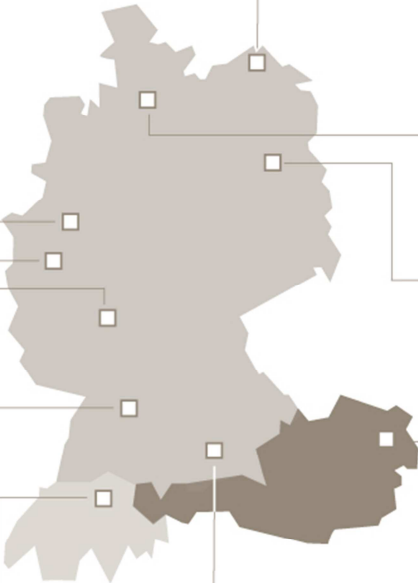
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70173 Stuttgart



Switzerland
Bahnhaldenstrasse 7
8052 Zürich



Stralsund
Zur Schwedenschanze 2
18435 Stralsund



Hamburg
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20359 Hamburg



Berlin
Rotherstraße 19
10245 Berlin



Austria
Floridsdorfer
Hauptstraße 1
1210 Vienna



Munich
Landsberger Str. 110
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Company History

adesso was founded by Prof. Dr. Volker Gruhn and Rainer Rudolf in 1997 – at a time when the internet started to develop into an innovative force for profound changes in economy and society. During the first years of operation, adesso sharpened the awareness of companies, primarily from traditional industries, as e.g. insurance or finance, for adapting their internal processes and workflows to the new “rules of the game”. Moreover, adesso directed the companies’ attention to offer new products and services and to establish shared business processes which are optimized for online business.

The company’s growth took place against the background of an integrated definition of the term „e-business“, i.e. the efficient design of business processes utilizing all possibilities of modern IT. Internet, Intranet and Extranet as well as mobile applications played an important role right from the beginning. Most decisive for having success is to apply the proper technologies in the context of effectively designed business processes, and to support these processes in an optimized way in order to ensure an immediate Return-on-Invest.

While during the late 1990s adesso set a mark in the insurance sector, the company was able to gain projects also in the lottery, reinsurance, healthcare and banks industries. The service portfolio that is based on a close linking of industry-specific know-how and technological competence is flanked by the traditional product offer which is sourced out into adesso subsidiaries. Moreover, adesso attaches high value to the cooperation with universities and research institutes, which among others is shown in long-term cooperation with the Department of Computer Science at Technical University of Dortmund and collaborations with University of Leipzig, University of Bochum or University of Duisburg-Essen.

The company has got ten premises in the German-speaking area. The share is listed at the regulated market. With continuous organic growth, selective acquisitions and strategic shareholdings, adesso became firmly established within the IT sector.

adesso increasingly operates on international scale. Further growth, the development of new industries, as the public sector for example, and the extension to international markets are the company's intended objectives during the upcoming years.

Service Portfolio

The adesso service spectrum comprises the consultancy on strategic and IT-specific levels as well as software development and software implementation. The portfolio is divided into several units which are, depending on the customer's requirements, individual entry points for projects:

- ▶ **Business Consulting (Strategy >> Process)**
in particular Strategy Development, Requirements Engineering, Tender Management, Process Management
- ▶ **IT Consulting (Process >> Architecture)**
in particular Software Architecture, Software Processes, Technology Selection, Test Management
- ▶ **Software Development (Architecture >> Application)**
Developing custom applications, Integrating and migrating existing legacy systems, Integrating and customizing standard software, Designing, building and consolidating complex portal landscapes
- ▶ **IT Management (Application >> Operation)**
Sustained reduction in total cost of ownership, Consolidation of complex infrastructures, Defining and introducing services and products for IT organisations, Supporting complex sourcing projects, Application management for complex application landscapes

Selected References:

- ▶ **Allianz**
- ▶ **AS Eesti Loto**
- ▶ **AWD**
- ▶ **BITMARCK Software GmbH (ehem. ISKV)**
- ▶ **Credit Suisse Private Banking**
- ▶ **DAK**
- ▶ **Deutsche BKK**
- ▶ **DEVK**
- ▶ **Gen Re**
- ▶ **Hannover Rück**
- ▶ **KKH-Allianz**
- ▶ **Lotto Hamburg**
- ▶ **Roche Diagnostics**
- ▶ **ROLAND Rechtsschutz**
- ▶ **Schufa**
- ▶ **Schweizerische Post**
- ▶ **Swiss Life**
- ▶ **SWISSLOS Interkantonale Landeslotterie**
- ▶ **Westdeutsche Lotterie**
- ▶ **Zurich Versicherung**

adesso Shareholdings

adesso Schweiz AG, Zurich



As a subsidiary of adesso AG, adesso Schweiz AG offers the consulting and software development portfolio to the Swiss market. With established project and industry experience based on long-term relationships with major customers in the insurance, banking public and industry sectors, adesso Schweiz is in great demand as a partner for major software-projects in Switzerland.

adesso Austria GmbH, Vienna



adesso Austria GmbH designs and develops innovative individual software solutions in high quality. The company's main focus is on employing modern IT for designing business processes to be more efficient, successful and faster as well as for realizing new business models. The adesso Austria experts possess the required know-how for the conception and implementation of such models from various complex projects for considerable major and middle-sized companies. They combine their long-term experience with the innovative thinking and the profound knowledge of IT and business experts. The consultancy at adesso Austria in finding suitable solutions is independent from producers, platforms and technologies.

e-Spirit AG, Dortmund



e-Spirit AG is the company behind the high-end content management system FirstSpirit™ and is a technological leader in its field in Europe. The company was founded in Dortmund in 1999 by former employees of the Fraunhofer Institute for Software and Systems Engineering (FhG ISST) working in tandem with the IT service provider adesso. Alongside its licensing business and the integration of FirstSpirit™, e-Spirit also handles all care and supervision aspects for complex internet and intranet projects. Experienced partner companies are yet one more benefit customers can look forward to during the consulting and implementation processes. FirstSpirit is in use at internationally operating customers as Airbus, Trelleborg Sealing Solutions, Robert Bosch GmbH, Commerzbank, OTTO and Schaeffler Gruppe and is constantly replacing the content management technologies of more and more major companies. Further locations are situated in Berlin, Cologne, Munich, Frankfurt, Hamburg, Stuttgart, Zurich, Vienna and London.

adesso mobile solutions GmbH, Dortmund



adesso mobile solutions GmbH is specialized in the development of mobile solutions as well as on the realization of mobile marketing activities. The company's core business includes the mobilization of internet and intranet portals on the basis of the product 'web in|MOTION' which renders an automated and end-device specific release of mobile contents. Numerous well-known customers are already relying on the services of adesso mobile solutions GmbH in order to acquire customers and to strengthen customer relations by offering the innovative mobile channel. These customers are for instance Allianz | Barmenia | Bayer | BIG direkt gesund | BLSK | Boehringer Ingelheim | D.A.S. | Daimler | DEW21 | Duesseldorf.de | DZ BANK | E.ON | Heise Adressbuch Verlag | GAD | GoLocal | GoYellow | Hamburg-Mannheimer | Haspa | HEXAL | Rabobank | Randstad | SCHUFA | Siemens-Electrogeräte | Škoda

| sueddeutsche.de | Ticket Online | Union Investment | VfB Stuttgart | Volksbanken
Raiffeisenbanken | WestLotto | ZEIT ONLINE

gadiv GmbH, Much



For more than 20 years now, gadiv GmbH, located in Much is specialised in information systems for the sector of Statutory Health Insurance (GKV). The gadiv experts combine profound industry-knowledge with distinct know-how of the system landscapes used by the Statutory Health Insurances. Beside the planning and realization of customized internet and intranet solutions, application development as well as the development and distribution of specialized products in addition to the standard applications of GKV, e.g. Morbi-DC, FB3BUC, KVKenn and AutoBUC are the company's main activities. The customer reference list of GADIV includes i.a. Deutsche BKK, Siemens BKK, Bayer BKK, Gemeinsame Kommunale Datenzentrale Siegburg and VdAK Siegburg.

percision GmbH, Cologne

percision.

percision GmbH places freelance IT specialists in temporary employments in IT projects. The company offers freelancers to conveniently profile their expertise by registering in an expert pool. percision uses its broad expertise network for placing freelancers in custom-fitting employments and secures the settlement of their work performances. Skilled project managers support enquiring companies in team staffing and in selecting qualified workers for the respective assignment. By managing all administrative activities, percision supports all involved persons in concentrating on their competencies and on each project's goal.

evu.it GmbH, Dortmund



Since 2001 evu.it GmbH is operating as a development and consulting company specialized in energy and water management. The company counts on the solutions of SAP AG. Its portfolio embraces consultancy services, second level support and the development of standardized software solutions. By consulting on business blueprints, implementations, migration and customizing and by giving specialized trainings, evu.it supports all relevant components of IT projects. With regard to the second level support, the company assists customers in their day-to-day business. The evu.it software solutions portfolio is marketed under the brand name „e-tools“.