2nd International Workshop on Pervasive Participation

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ABSTRACT
The proposed workshop envisions the idea of *Pervasive Participation*, forms of advanced citizen e-participation based on the pervasive computing paradigm utilizing latest mobile technology such as feature-rich smartphones and appliances embedded in today's technically enriched urban surroundings. Opportunities reach from using today's sensing, communication and display features of smartphones, wearable gadgets including smartwatches and glasses, up to instrumented environments with interactive walls. *Pervasive Participation* is an inherently interdisciplinary research endeavor requiring expertise from disciplines such as pervasive and mobile computing, human-computer interaction, social sciences as well as political sciences. We will select participants based on submitted position papers describing their research on advanced citizen e-participation. Together with them, we seek to discuss the requirements, opportunities, challenges and impact of such novel citizen e-participation concepts.

This workshop is planned as a one-day workshop containing presentation sessions and an interactive brainstorming session and breakout activity for identifying relevant issues and upcoming research challenges. Based on the collected contributions, we will try to create a research roadmap for *Pervasive Participation* and to explore opportunities for future work and collaborations.

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H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

INTRODUCTION
Governments around the world are trying to improve methods how to integrate citizens in the public decision making processes [12]. They aim to introduce new methods to broaden the scope of involved citizens as well as to encourage those previously less eager to participate, such as younger generations. Easy and attractive to use ubiquitous applications making use of up-to-date technical devices can help achieve these aims.

In governing urban development, participation has been long encouraged and organized especially related to urban planning (cf. [2]). Especially in that field, the penetration of mobile devices with their manifold features to interact with real-world surroundings [4] provides new opportunities to collect citizen input directly from particular sites and on the go. The technology enables for instance location-based polls with maps, pictures and augmented reality applications (e.g. [1, 10]) to represent and visualize issues on portable devices for people to react and comment when they are momentarily on those sites. However, the majority of available traditional applications do not exploit this potential by far [5, 6, 7]. Only recently, the mobile and ubiquitous computing community has identified public screens as one new channel for enabling citizen participation and has been starting to investigate new suitable interaction techniques, corresponding privacy requirements, and general user acceptance [3, 4, 9, 13, 14, 15, 16].

The proposed workshop seeks to discuss the various requirements, opportunities, challenges and impact of novel concepts for advanced citizen e-participation based on the pervasive computing paradigm utilizing latest mobile

technology such as feature-rich smartphones and wearables and appliances embedded in today's technically enriched urban surroundings. We aim to work towards a vision of *Pervasive Participation* which enables, engages and empowers citizens in decision-making processes with the ultimate goal to realize a continuous dialogue between a city and its citizens through ubiquitous contemporary and upcoming technology.

WORKSHOP GOALS AND THEMES

This workshop is conceived as a follow-up of the Pervasive Participation workshop at the Communities &Technologies 2013 conference in Munich, which raised awareness for the topic, analyzed the state of the art of existing mobile eParticipation approaches and experiences, and it enabled a first interdisciplinary discussion forum for researchers from social sciences and technology disciplines. This workshop edition will now go beyond this inventory of the field, by drawing more specifically on innovations and reflections from the UbiComp research community.

Researchers and practitioners who are active in the fields related to ubiquitous computing and human-computer interaction will be asked for creative and provocative contributions, such as design concepts or even prototypes. We plan to publish the accepted position papers in the ACM Digital Library. In the workshop, these will then be critically discussed from various angles to uncover interdisciplinary challenges for the goal of creating feasible, efficient, and user-accepted Pervasive Participation methods.

We will invite contributions on topics including but not limited to

- Novel pervasive and mobile e-participation concepts and prototypes
- Innovative user interfaces and interaction techniques facilitating Pervasive Participation
- Exploitation of social media platforms on pervasive devices for citizen e-participation
- Approaches to attract and encourage different citizen groups to take part in decision-making processes using pervasive technology
- Privacy and security issues in Pervasive Participation and approaches to overcome them
- Integration of Pervasive Participation in traditional decision-making processes
- Methodologies for evaluating novel pervasive forms of citizen e-participation or assessing their impact
- Experiences from planning, conducting, and evaluating field trials and living labs in the fields of mobile and pervasive citizen e-participation

BEFORE THE WORKSHOP

We will invite academics and practitioners interested in pervasive forms of citizen e-participation to submit relevant position papers. The respective call for papers will be distributed by email to the organizers' network and suitable scientific email lists. Further, we will make use of social media to reach potential participants. To make information about the workshop publicly available, we will set up a website which will serve as communication platform amongst organizers and participants. On this website we will inform about organizational news and the final agenda.

Potential participants will be asked to submit a position paper in the SIGCHI Extended Abstract format with a length of up to 6 pages. The selection procedure for participants will be based upon the acceptance of these short papers. As reviewers we will select and invite a proficient program committee consisting of multiple experts from several relevant fields covering the interdisciplinary character of the topic.

We plan to select papers according to their relevance to the themes of the workshop, the originality of the described work and ideas, the quality of presentation as well as the potential for lively discussion since we target an interactive productive event. Further, we will carefully select participants with varying backgrounds to cover the manifold aspects of Pervasive Participation..

Workshop Plan

The proposed workshop on Pervasive Participation is planned to be a one-day workshop with the following format:

1. **Opening**
   At the beginning, we will present the agenda for the day and start with sketching the vision of *Pervasive Participation*. Further, the organizers and participants will briefly introduce themselves.
2. **Presentation session I**
   We will then have the first presentations of position papers by the participants. Dependent on the number of accepted submissions, we target 5-10 minutes slots.
3. **Coffee break**
4. **Presentation session II**
   After a coffee break, we will continue with the second round of presentations.
5. **Lunch break**
   We plan to have a joint lunch break helping the participants to get to know each other better and to foster informal discussions and knowledge exchange.
6. **Brainstorming session**
   Having completed the presentation sessions, we plan to have an interactive brainstorming session to highlight the most important current research issues and results and to identify scientific challenges for realizing and enhancing *Pervasive Participation* (probably by writing, sorting and grouping post-it notes).
7. **Breakout Activity**
   Dependent on the number of workshop participants, we will include a breakout activity for discussing identified

relevant research issues and prototyping novel concepts in smaller groups. We target diverse groups with approximately four participants. The workshop organizers will provide writing, design and prototyping materials for this session.

8. **Group presentation and discussion**
   Finally, the groups will present their outcomes. Based on the results of the brainstorming session and the breakout activity, the participants will derive a research roadmap for *Pervasive Participation* and jointly reflect on key ideas, possibilities for future work and collaborations.
9. **Wrap-up and closing**
   Finally, the organizers will wrap-up the main outcomes of the workshop and close the event.

EXPECTED OUTCOMES AND IMPACT

Due to the highly interdisciplinary research efforts required to achieve successful novel e-participation forms, we see the proposed workshop as an ideal forum for enabling discussion and debate amongst researchers and practitioners from various relevant disciplines. The event will serve as meeting point for experts with different backgrounds who investigate special aspects of *Pervasive Participation* and will thereby facilitate networking and community building for this highly topical field of research.

From the submitted and presented works, we expect the workshop participants to gain a latest overview of recent activities in the field, discover complementing research aspects and activities and explore opportunities for collaboration. In this multidisciplinary setting, we will then try to jointly identify the challenges for realizing the vision of *Pervasive Participation* and draft a research roadmap for the upcoming years.

ORGANIZERS

The multidisciplinary organizing team consists of experts with long-standing complementary expertise in research fields relevant for understanding and realizing the concept of *Pervasive Participation*: ubiquitous computing and media informatics, (mobile) human-computer interaction, and urban social studies.

In April 2013, three of the organizers (Peter Fröhlich, Matthias Baldauf, and Sampo Ruoppila) kicked-off the 3-years project *b-Part* (*Building Pervasive Participation*) funded by the European Commission's Joint Programming Initiative *Urban Europe*. *b-Part* investigates, prototypes and evaluates novel concepts and solutions for mobile and pervasive citizen e-participation.

The organizing team consists of the following persons:

Peter Fröhlich is a Senior Scientist at AIT, where he leads a team of researchers dealing with Personal Value-enhancing Experiences. His research interests include user experience and mobile spatial interaction, as well as persuasive technologies for sustainable and privacy-aware behavior. Peter holds a master's degree in Psychology from the University of Salzburg (2001) and a PhD in Applied Psychology from the University of Vienna (2007). He has authored more than 70 peer-reviewed scientific papers, and he is a regular organizer, editor and reviewer for renowned conferences and journals, such as the Journal of Personal and Ubiquitous Computing, Mobile HCI, Automotive UI, and CHI.

Matthias Baldauf is a senior researcher and lecturer at Vienna Technical University in the research group for Industrial Software (INSO). Matthias has about 10 years of experience in the field of mobile and pervasive computing research. He holds master degrees in economic computer science and software engineering from University of Vienna and Vienna Technical University and a PhD degree in computer science from Vienna Technical University. In his dissertation he investigated novel mobile interaction methods and mobile visualization techniques for spatial information. His research interests include novel pervasive user interfaces and innovative interaction techniques. Matthias has authored more than 50 peer-reviewed publications at conferences and in journals and is a frequent speaker at international scientific conferences.

Florian Alt is an assistant professor in the Group for Media Informatics at the University of Munich. His research interest is at the crossroads of ubiquitous computing and HCI. He is interested in open pervasive displays, particularly in how people can be enticed to interact in public spaces, how novel interaction techniques can be created, and how benefits could be created for the stakeholders. In addition, Florian works on usable privacy and security. Specifically, he focuses on novel authentication mechanisms that address common threats in public spaces, such as shoulder surfing and smudge attacks. Prior to his appointment, we worked at the University of Stuttgart (2011-2013) and at the University of Duisburg-Essen (2008-2011) with Albrecht Schmidt.

Manfred Tscheligi has been working in the area of Interactive Systems, Human Computer Interaction, Usability Engineering, User Interface Design and User Experience Research for more than 20 years. He is pioneer in establishing this field in Austria, author of several publications and distinguished speaker at conferences. He successfully managed numerous research and industrial projects and was responsible in establishing national and international initiatives. Since August 2013 Manfred Tscheligi is Head of the Business Unit Technology Experience at AIT. He is also founder of the research organization CURE and Full Professor for Human-Computer Interaction & Usability at the University of Salzburg (Center for Advanced Studies and Research in Information and Communication Technologies & Society). Further, he is leading the Christian Doppler Laboratory for Contextual Interfaces at the University of Salzburg.

Sampo Ruoppila is Research Director (urban studies) at the University of Turku. He is a director of Turku Urban Research Programme – a joint initiative between the City of Turku and universities – that seeks to promote academically relevant urban research which may provide policy advice. Dr. Ruoppila is a specialist of urban policies and planning issues. He has more than 50 academic and professional publications. Before joining University of Turku, Ruoppila worked as project director in public policy consultant company Net Effect Ltd, researcher at University of Helsinki, and project researcher at the City of Helsinki's urban research office. Ruoppila received his PhD in social and public policy, with a specialization in urban studies, from University of Helsinki.

REFERENCES

1. Allen, M., Regenbrecht, H., and Abbott, M. 2011. Smart-phone augmented reality for public participation in urban planning. In Proceedings of the 23rd Australian Computer-Human Interaction Conference (OzCHI '11). ACM, New York, NY, USA, 11-20.
2. Åström, J., Granberg, M., and Khakee, A. 2011. Apple Pie - Spinach Metaphor: Shall E-democracy make Participatory Planning More Wholesome? Planning Practice and Research, 26:5, 571-586.
3. Baldauf, M. and Holger Schnädelbach. How to Raise the Voice Anytime Anywhere: Technological Fundamentals for Enabling Pervasive Participation. In Proceedings PerPart 2013
4. Baldauf, M., Suette, S., Fröhlich, P., and Lehner U. Interactive Opinion Polls on Public Displays - Studying Privacy Requirements in the Wild. In Proceedings of the 16th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), 2014.
5. Desouza, K.C. and Bhagwatwar, A. 2012. Citizen apps to solve complex urban problems, Journal of Urban Technology, 19 (3), 2012. DOI: 10.1080/10630732.2012.673056.
6. Ertiö, T. and Ruoppila, S. 2014. Supporting 'Participation' in Mobile Participation. Electronic Government and Electronic Participation (Innovation and the Public Sector, vol. 21). Amsterdam: IOS Press, 3-12. doi: 10.3233/978-1-61499-429-9-3
7. Ertiö, T. and Ruoppila, S. 2014. Contributing on-the-go: Participatory Planning Apps. European Urban Research Association Conference 2013.
8. Fröhlich, P., Oulasvirta, A., Baldauf, M., and Nurminen, A. 2011. On the move, wirelessly connected to the world. Communications of the ACM, 54(1), 132-138, 2011.
9. Hosio, S., Kostakos, V., Kukka, H., Jurmu,M., Riekki, J. and Ojala, T. 2012. From school food to skate parks in a few clicks: using public displays to bootstrap civic engagement of the young. In Proceedings of the 10th international conference on Pervasive Computing (Pervasive'12), 425-442.
10. Korn, M. Situating Engagement: Ubiquitous Infrastructures for In-Situ Civic Engagement. PhD thesis, Aarhus University, 2013.
11. Lehner, U., Baldauf, M., Eranti, V., Reitberger, W., and Fröhlich, P. 2014. Civic Engagement Meets Pervasive Gaming: Towards Long-term Mobile Participation. In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems, Toronto, Canada, 2014.
12. Michels, A. 2011. Innovations in democratic governance: how does citizen participation contribute to a better democracy? International Review of Administrative Sciences 77, 275-293.
13. Schiavo, G., Milano, M., Saldivar, J., Nasir, T., Zancanaro, M., and Convertino, G. 2013. Agora2.0: enhancing civic participation through a public display. In Proceedings of the 6th International Conference on Communities and Technologies (C&T '13). ACM, New York, NY, USA, 46-54.
14. Steinberger, F., Foth, M., and Alt, F. 2014. Vote With Your Feet: Local Community Polling on Urban Screens. In Proceedings of The International Symposium on Pervasive Displays (PerDis '14).
15. Taylor, N., Marshall, J., Blum-Ross, A., Mills, J., Egglestone, P, Frohlich, D., Wright, P., and Olivier, P. 2012. Viewpoint: empowering communities with situated voting devices. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12). ACM, New York, NY, USA, 1361-1370.
16. Valkanova, N., Robert Walter, R., Vande Moere, A., and Müller, J. 2014. MyPosition: sparking civic discourse by a public interactive poll visualization. In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (CSCW '14). ACM, New York, NY, USA, 1323-1332.