Cultures of Participation in the Digital Age: Coping with Information, Participation, and Collaboration Overload

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Abstract. The spread of social computing, cloud computing, Internet of Things, and co-creation tools pushes the use of technology toward a more social dimension and toward the creation of enormous quantity of data. Cultures of participation aims at providing end users that are not experts in computer science nor have the skills specific to the domain at hand, with tools to actively participate and solve problems that are personally meaningfully to them, without necessarily the intervention of skilled professionals. The CoPDA Workshop is in its third edition, after the first one that was held in 2013 during the International Symposium on End-User Development (IS-EUD) in Copenhagen (Denmark)[1] and the second one held in 2014 during the International Working Conference on Advanced Visual Interfaces (AVI) [2]. This edition focuses on problems, tools, techniques and strategies for coping with information, participation, and collaboration overload.

Keywords: Cultures of participation · Information overload · Participation overload · Collaboration overload · Internet of Things · End-User Development · Meta-design · Collaborative design · Collective intelligence · Co-creation · Makers culture

1 Introduction

Nowadays, advances in technology provide end users with access to a more virtual social dimension for interacting with others and enable their active participation in social computing, cloud computing, Internet of Things. This led to the creation of a great mole of data that on a day to day basis may lead the users to feel overwhelmed and, in the long run, may lead to disaffection toward the use of technologies – because it becomes too time consuming and not easy to visualize, analyze, and exploit. But

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information overload is not the only problem: participation and collaboration overload follows behind and may cause severe problems in communication. A high level of complexity in participation and collaboration may also cause consumption and engagement difficulties. Therefore, information, participation, and collaboration overload may emerge as unanticipated side effects when we design Web, mobile, wearable, and pervasive applications that enable collaborative user experiences through End-User Development (EUD) and co-creation approaches.

EUD (and specifically the required active engagement in cultures of participation) open up new and unique opportunities for mass collaboration and social production, but they are not without drawbacks. One such drawback is that humans may be forced to cope with the burden of being active contributors in personally irrelevant activities, leading to participation overload. "Do-it-yourself" societies empower humans with powerful tools, but those tools also force them to perform many tasks that were done previously by skilled domain workers, serving as agents and intermediaries. An example is in [3]. Although this shift of agency provides power, freedom, and control to customers, it also has urged people to act as contributors in contexts for which they lack the experience of skilled professionals. This is the case, for example, of public EUD, in which the outcome of end user participation, i.e., the EUD activity, is aimed to be shared with other end users [4]. More experience and assessment is required to determine the design trade-offs for specific contexts and application domains in which the advantages of cultures of participation (such as extensive coverage of information, creation of large numbers of artifacts, creative chaos by making all voices heard, reduced authority of expert opinions, and shared experience of social creativity) will outweigh the disadvantages (accumulation of irrelevant information, wasting human resources in large information spaces, and lack of coherent voices).

Co-creation is grounded on new forms of constructive interaction among all relevant stakeholders in a democratic society: academia, government at all levels, business, public science, the third sector, and citizenship. All these actors collaborate in creative processes of delivering innovation based on principles of participation, empowerment and mutual responsibility. Through engaging citizens to redesign and remake their environment and communities can lead to improved outcomes such as job creation, social cohesion and inclusion, quality of life, more efficient and effective public administrations, improved market functioning, open government, innovation capacity and cross-fertilization of all sectors.

The Copd@ 2015 workshop built on the two previous events [1], [2] which one of the main outcomes has been a special issue of the IxD&A Journal on "Culture of Participation in the Digital Age Empowering - End Users to Improve their Quality of Life" edited by the organizers [5]. This year's event will provide a forum to discuss the following research questions:

- Information overload is a widely recognized problem — which techniques (providing promises and pitfalls) are available and should be developed to cope with it?
- If information overload is a problem, are participation and collaboration overload (as consequences that people are engaged EUD activities) even more serious problems as they require more time and engagement?

- If more and more people can contribute, how do we assess the quality and reliability of the resulting artifacts? How can curator networks effectively increase the quality and reliability?
- What is the role of trust, empathy, altruism, and reciprocity in such an environment and how will these factors affect cultures of participation?

2 Organization and Organizers' Background

The workshop aimed to extend the research agenda initiated during its first two editions. The topics are likely to be of interest to several researches and studies in human-computer interaction, social computing, interaction design, and software engineering. The purpose of this interdisciplinary workshop was to bring together researchers and practitioners. Authors were invited to submit 4-5 pages position papers. The submissions were peer-reviewed for their quality, topic relevance, innovation, and potentials to foster discussion.
Organizers' background are in the following.

Barbara Rita Barricelli is Research Fellow at the Department of Computer Science of Università degli Studi di Milano (Italy) where she obtained her M.Sc. and PhD in Computer Science. Her research interests are Human-Computer Interaction, Computer Semiotics and Semiotic Engineering, Sociotechnical Design, End-User Development, and UX. She has been involved in several International and Italian projects in collaboration with universities, research institutes, and private companies.

Gerhard Fischer is Professor of Computer Science, Fellow of the Institute of Cognitive Science, and Director of the Center for Lifelong Learning and Design (L3D) at the University of Colorado at Boulder. He is a member of the Computer Human Interaction Academy (CHI) and a Fellow of the Association for Computing Machinery (ACM). His research is focused on: (1) learning, working, and collaborating with new media; (2) human-computer interaction; (3) cognitive science; (4) assistive technologies; and (5) transdisciplinary collaboration and education.

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Antonio Piccinno is assistant Professor at the Computer Science Department of University of Bari "Aldo Moro". He is member of the Interaction, Visualization, Usability & UX (IVU) Lab. Since July 2001, after he got his laurea degree in Computer Science, he has been working at the Department of Computer Science of University of Bari, with different positions: research collaborator, fixed term researcher, lecturer, and finally as assistant professor. He received the PhD in Computer Science at the University of Bari. His research interests are in Human-Computer Interaction,

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Stefano Valtolina is assistant Professor at the Computer Science (DI) Department of Università degli Studi di Milano. He obtained his PhD in Informatics from Università degli Studi di Milano and an MSc in Computer Science from the same university. His research interests include: Human-Computer Interaction (HCI), Creative Design, as well as studies in semantic, social and cultural aspects of information technologies with an emphasis on the application of this knowledge to interaction design. His research activity is directed toward the study of aspects of Human Computer Interaction and Database Management investigating methods, interactive systems, and tools for Knowledge Management and Fruition.

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