Technology for Inclusion and Participation

Introduction to the Special Thematic Session

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Abstract. This paper introduces to "Technology for Inclusion and Participation" and an STS of the "15th International Conference on Computers Helping People with Special Needs" (ICCHP), 13th–15th July 2016. It threads contributions of the STS topics along two strands: addressing technological developments and the embeddedness of technology in social settings, underpinning the need to address discriminating environments by social means. The paper reveals the insight, that both perspectives can't be seen without the other and blends both strands into the discourse on social innovation – the co-creation of innovative solutions for better tackling social needs.

Keywords: Assistive technology · Accessibility · Universal design · Social innovation

1 ICT: Paramount Potentials for Inclusion and Participation

The UN CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES has put a new perspective and reinforced emphasis on the full and equal enjoyment of all human rights and freedoms by all persons with disabilities. The use of available technologies is seen as a central precondition and tool towards the implementation of inclusion and participation. This requests the use of traditional rehabilitation technology, but also new media and new technology. The ICCHP with its 18 topics[1] suggests a thematic framework for needed research by combining technological challenges with a target group approach and contributes to the concept of the International Classification of Functioning, Disability and Health (ICF) of the World Health Organization (WHO), which highlights the role of technology for inclusion and participation.

In this context ICT for inclusion and participation seems to be an overarching perspective on inclusion, regardless of target groups. Questions on the embedding of technology in social settings have to be addressed: How can technology and

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[1] See: http://www.icchp.org/topics-16 .

non-technological assistance be linked, in which places and by which persons with which competences [1]? The function and power of social innovations [2] need more thorough research [3]. Multidisciplinary cooperation is needed that includes end users, target group representatives and intermediaries. Strands of action involve also policy advice, workshops and trainings and evaluation.

It is the basic understanding of the members of the TIP Cluster [4] and reflected in the session "Technology for Inclusion and Participation" that digital technology has paramount potentials for inclusion and empowerment as well in digital, as in physical spaces. This insight is framed by the finding that technology needs to be embedded in social support settings, aiming at improving the inclusiveness of environments [5]. A wide interdisciplinary perspective has to be taken which comprises technology, user experiences, user expertise [6] and user and society related research.

2 Technological and Social Innovations Need to Be Blended

The session TIP is blending two strands of research and development:

Firstly, latest findings and developments in technological innovations have to be identified and their role for inclusion and participation scrutinized. Technology is addressed in three ways: assistive technology, accessibility and universal design (design for all [7]). The focus in this thematic session is mainly on new media and digital technology while "traditional" technology is rarely addressed. In countries and situations where little has been made available policy and research need to cover up and improve. Highly developed countries and societies are requested to make use of the potential of technologies. Universal design is one of the concepts supporting inclusion. A valuable contribution is presented in [8] from the Norwegian practice. Cloud computing in inclusive education [9] is a closely related approach with high potential. The use of mobile apps at the workplace [10] or technology based speech interventions [11] constitute two examples if ICT based assistive technology. Many more can be found in the ICCHP proceedings.

Secondly, in order to create benefit for people beyond the mere technology, social aspects need attention. A most recent discourse on the way to change social settings has spun around the notion of civil society based initiatives, coined as "social innovations". This new paradigm is characterized by the innovation process opening up to society, a stronger role of civil society and stakeholders in co-creation processes and its orientation towards major societal challenges [4, 5]. Social innovations themselves are understood as intentional new configurations of social practices, exceeding traditional innovation concepts relying on technology as well as a normative understanding of innovations. Service delivery plays a major role in this context and new ways need to be found to reach out [12]. A global perspective like the GATE initiative of the WHO[2] of bridging the gap between available assistive technology and actual provision is needed. The STS presentation "Closing the gap between assistive technology need and provision: Towards a Global Research Agenda" tries to achieve progress here. Often

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[2] http://www.who.int/disabilities/technology/gate/en/ .

not in focus, but very relevant are standardization and standards [13]. Only through the interoperability of technologies and services and user orientation the full potential of technology can be exploited. For the implementation of the elements of the UNCRPD strategies to create and maintain accessible environments based on social communities are required, where an example from Germany is described in [14]. Research and innovation themselves need new user oriented approaches heading for inclusive research, e.g. co-creation [15] or the use of working prototypes in participatory design [16], or education towards inclusive mindedness [17].

Seeing these contributions from a bird's eye perspective, two insights are noticeable: Firstly, ICT seems to be a technology connected to high expectations from an inclusion point of view. On the other side, the progressing digitalization of developed countries' social systems urges people to use ICT in order to participate in social environments – with high expectations towards competences and equipment. Secondly, ICT is not seen as a pure technological artifact, but as socio-digital innovations, embedded in social environments. Needs of people with disabilities, impairments or disadvantages can only be addressed by a blended approach of technological and social innovation.

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