Chapter 11

Collective Construction of Meaning and System for an Inclusive Social Network

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ABSTRACT

Information and Communication Technology has the potential of benefiting citizens, allowing access to knowledge, communication and collaboration, and thus promoting the process of constitution of a fairer society. The design of systems that make sense to the users' community and that respect their diversity demands socio-technical views and an in-depth analysis of the involved parties. The authors have adopted Organizational Semiotics and Participatory Design as theoretical and methodological frames of reference to face this challenge in the design of an Inclusive Social Network System for the Brazilian context. This paper presents the use of some artifacts adapted from Problem Articulation Method to clarify concepts and prospect solutions. Results of this clarification fed the Semantic Analysis Method from which this paper presents and discusses an Ontology Chart for the domain and the first signs of the inclusive social network system.

INTRODUCTION

In the process of exercising citizenship, communication is a fundamental component. Organized groups and communities have a proper way to spread news among participants, share information and exchange knowledge. In this context, tools for communication and expression should provide all users - in their vast variety of gender, age, abilities and disabilities - with an opportunity to establish a digital culture making the system part of their social life.

In Brazil we face a situation characterized by vast differences with regard to socio-economics, culture, and geographical region differences as well as access to technology and knowledge. Social indicators presented by the Committee of Entities Combating Hunger and for Life (COEP in its Portuguese acronym) show 30.1% (approximately 52.5 million) of the population live below the poverty line (minimum annual level of income deemed necessary to achieve an adequate standard of living). Furthermore, according to the 2008 National Survey by Household Sample, 11.2% of the population are considered illiterate (approximately 14.2 million). Moreover, the census of 2000 found that 24.6 million Brazilians or 14.5% of the population have impairments.

In this scenario, Information and Communication Technology (ICT) represents a hope for benefiting citizens, allowing access to knowledge, communication and collaboration, and thus promoting the process of constitution of a fairer society. Within this context, it is necessary to investigate how to design systems that consider the diversity of users taking also the digitally excluded into account. Although there are many computational systems developed to support people in activities of communication and cooperation - known as social networks, they were built for the digitally literate. They do not address the demands of people with different interaction abilities, including inexpert users, elderly, illiterates, people with disabilities and others. A review about 14 current systems that support social networks shows that the resources that social networks make available today are not enough to allow access to the variety of users cited above (Santana *et al.*, 2009).

Hendler *et al.* (2008) have pointed out that social applications cannot be specified, designed and built based on the software engineering traditional practices. They argue in favor of a combined view that allows the study of the social phenomenon and the engineering process and emphasize the importance of knowing and considering the pro-

tocols involved in the interaction among users in society.

The design of systems that make sense to the users' community and that respect their diversity demands socio-technical views and an in-depth analysis of the involved parties. As far as we know, there is a lack in methodological and technical solutions to support this design process. The research challenge of formalizing new techniques and methods that allow a holistic view of the problem, considering the individuals and their relations in society and with technology are being addressed in the *e-Cidadania* Project (e-Cidadania, 2008)..

In this sense, as a frame of reference for problem understanding, modeling of the organizational context, as well as gathering of user and system requirements we based our approach in Organizational Semiotics – OS (Stamper *et al.*, 1988; Liu, 2000) and some of its methods and artifacts, adapted to participatory practices. Participatory Design – PD (Schuler & Namioka, 1993) inspires our practice to investigate the users' interaction needs through their voices during the design process.

This paper aims at presenting an approach to designing systems that consider the social relations and the meanings that the involved parties share about the domain. The object of study was the problem of designing an Inclusive Social Network (ISN) system. Our results are based on the Stakeholder Analysis (Kolkman, 1993) and the Evaluation Framing (Baranauskas *et al.*, 2005) artifacts. Also a Semantic Analysis (Liu, 2000) was conducted from which we present and discuss an Ontology Chart for the domain.

This paper is organized as follows: the Second section presents some related works; the Third section summarizes the methodological references; the Fourth section describes how the participatory activities were conducted; the Fifth section presents the main results; Sixth section presents how the results were materialized and the Seventh section discusses them; last Section concludes.

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