

# Chapter 47

## Collaboration within Social Dimension of Computing: Theoretical Background, Empirical Findings and Practical Development

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### ABSTRACT

*A proper development of computing which penetrate our society more thoroughly with the availability of broadband services is provided by varied cooperative networks. However, the success of social dimension of computing requires collaboration within a multicultural environment to be considered. Aim of the following chapter is to analyze collaboration within the social dimension of computing on the pedagogical discourse. The meaning of the key concepts of social dimension of computing, collaboration and its factors is studied within the search for the success of social dimension. The manuscript introduces the study conducted within the Baltic Summer School Technical Informatics and Information Technology in 2009. The conducted explorative research comprises four stages: exploration of the contexts of collaboration, analysis of the students' needs (content analysis), data processing, analysis and data interpretation, and analysis of the results and elaboration of conclusions and hypothesis for further studies.*

### INTRODUCTION

Social dimension of computing offers potential solutions for the quality, maintenance and sustainable development of public services, social-security

and health-care systems. Synergies between the dimensions of computing are created through active collaboration, where the increased data exchange within the network is no longer a limiting parameter with the current developments in the infrastructure.

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Undoubtedly, the Information Technology has ushered in a new era, allowing the use of these technologies for individual, organizational and professional needs such as interactive video conferencing, telemedicine and teleradiology that benefit a high standard of living.

With current developments such as Web 2.0 and beyond, information can be exchanged in both directions. Applications such as Facebook and MySpace are classical examples and have found widespread acceptance in the community, where with the current developments in the web infrastructure, users of e-collaboration technologies not only draw information from the Web, but also add information to it (Vossen, 2009). Aim of the following chapter is to analyze collaboration within the social dimension of computing on the pedagogical discourse. The search for the success of social dimension of computing involves a process of analyzing the meaning of key concepts, namely, *social dimension of computing, collaboration and its factors*. The study would show a potential model for development indicating how the steps of the process are related following a logical chain: defining social dimension of computing → collaboration within the social dimension → factor definition → factors forming collaboration → the system of criteria, indicators, levels and methods of gathering data → questionnaire → empirical study of key factors affecting the use of e-collaboration technologies within a multicultural environment.

The remaining part of this chapter is organized as follows: The introductory state-of-the-art section demonstrates the authors' position on the topic of the research. The following part of the chapter involves nine sections. Section 1 introduces the social dimension of computing. Collaboration within the social dimension is studied in section 2. Factors forming collaboration will be presented in section 3 and 4. The system of criteria and indicators, levels and methods of gathering data are analyzed in section 5. The associated results are presented and interpreted in section 6 and 7

followed by issues, controversies and their solutions. Afterwards, a short outlook on interesting topics for further work is given in section 8. Finally, some concluding remarks are provided in section 9.

### **STATE-OF-THE-ART**

The modern issues of global developmental trends emphasize “a prime importance in sustainable development that is to meet the needs of the present without compromising the ability of future generations to meet their own needs” (Zimmermann, 2003, p. 9). Thus, sustainable personality, and, consequently, computer user, is “a person who sees relationships and inter-relationships between nature, society and the economy” (Rohweder, 2007, p. 24). In other words, this is a person who is able to develop the system of external and internal perspectives, and in turn this system development becomes a main condition for the sustainable computer user to develop. For instance, the concern of the European Union, namely, to become “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion” (European Commission, 2004, p. 2) demonstrates the significance of developing the system of external and internal perspectives for the development of humans, institutions, society and mankind. Thus, the life necessity to develop the system of two perspectives, namely, external and internal, determines the research methodology of collaboration within the social dimension of computing, as highlighted in Figure 1.

However, in real life sustainable computer user is often realized from one of the perspectives:

- from the internal perspective accentuating cognition (Vossen, 2009, p. 33),

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