

# Chapter XLI

## An Analysis of the Socio–Technical Gap in Social Networking Sites

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### **ABSTRACT**

*This chapter views social networking sites as supporting social capital and the advantages which derive from it, namely emotional support, information exchange, and a capacity for concerted action. Social capital is subdivided in three types: relational, cognitive, and structural. The authors derive a number of social needs from these types of social capital and discuss how the social networking sites considered in this study support or fail to support these needs with technical features. The contributions of this chapter include the dimensionalisation of the socio-technical gap in social networking systems and a discussion of elements that reside in the gap.*

*It is hardly possible to overrate the value... of placing human beings in contact with persons dissimilar to themselves, and with the modes of thought and action unlike those with which they are familiar... Such communication has always been, and is peculiarly in the present age, one of the primary sources of progress.*

—John Stuart Mill (1848)

## INTRODUCTION

This paper investigates socio-technical systems. The constituents of these socio-technical systems are people and technology. More precisely, users pursue a certain goal and must therefore interact with others through technology. This introduces a social dimension in the system<sup>1</sup>. As the social interaction takes place through the technology, the technical dimension mediates the social dimension. The social dimension also influences the technical dimension, as the interactions between the users of the system create a number of social needs which the technical dimension must meet. If the social needs are not met, we refer to this discrepancy between social and technical dimensions as the socio-technical gap or, as Ackermann defines it:

*The social-technical gap is the divide between what we know we must support socially and what we can support technically.* (Ackerman 2000, p179)

As, in our perspective, the influence runs in both directions, between the social and the technical dimensions of the system, it can be said that the social and the technical component co-evolves.

We therefore propose to expand the definition offered by Ackermann of the socio-technical gap by stating that there are also social practices which emerge, based on the opportunities proposed by the technology. In the type of socio-technical system under study—internet technology and the interaction it supports—new technologies are appearing every day. Still, it is not always clear how social practices can adapt to the technical possibilities in order to better realize the social goals of the system's participants. Whereas this constitutes an interesting research theme in itself, this chapter only investigates the socio-technical gap regarding the way the technology meets the needs of the social component.

## SOCIAL NETWORKING SITES AS SOCIO-TECHNICAL SYSTEMS

In the last decade, social networking sites (e.g. Facebook, mySpace, linkedIn, Orkut, Xing, etc...) have become among the most popular internet applications. In a recent overview, Boyd & Ellison (2007) define them as:

*web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.* (Boyd & Ellison 2007, p 2)

This is a very basic definition, which to our knowledge is applicable to all existing social networking sites. Still, most sites provide much more than these 3 basic functions. Also, the definition does not point to the socio-technical nature of social networking sites, as there is no mention of the interaction which commonly takes place on these sites. We therefore propose to apply another definition:

*Social networking systems are web-based systems that aim to create and support specific types of relationships between people.* (Coenen 2006, p 75)

This definition alludes to social interactions, as this is necessary to create and maintain social relationships. While this definition seems more general than the one mentioned before, it more reflects the interactive nature of social networking systems.

In previous work, three functional subsystems have been distinguished that apply to social networking sites: the individual subsystem, the dyadic subsystem and the group subsystem (Coenen 2006, Coenen et al 2006). The *individual* subsystem contains the functionalities which pertain to the individual. This includes the way she presents herself to others and settings which the individual

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