

## Chapter 13

# An Integrated Methodology to Detect the Evolution of Virtual Organizational Communities

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### ABSTRACT

*This chapter describes an integrated methodology developed to combine two analytical approaches, social network analysis and content analysis, to investigate the organizational mechanisms responsible for the emergence of social capital within virtual communities. This integration is proposed to overcome the main limitation of social network analysis: the analysis of the content of the information flows and the organizational and cultural aspects of their exchanges.*

*We propose a methodology applied to virtual communities operating in an organizational context. We aim to demonstrate how such an integrated approach may help understanding the way new ideas spread within and across networks, helping to recognize the emergence of informal roles, community phases and the network structure.*

*The proposed methodology has the potential to enable the analysis of virtual communities' overall composition, evolution and social structure, characteristics and organizational behavior of the "project related sub-communities", informal members' roles and their contribution to the development of project's task.*

DOI: 10.4018/978-1-4666-1601-1.ch013

## INTRODUCTION

As the focus of competition moves from the firm to the network, and from rigid organizational structures to informal networks, communities are presented in literature as the most flexible governance model to build a value-creating organization. New organizational forms – such as communities of practice, communities of innovation, industry consortia, knowledge-sharing networks - are now emerging in response to new environmental forces that call for new organizational and managerial capabilities (Dyer, 2000). The success of these new organizational forms depends on the ability to behave as integrated networks, where different stakeholders gather in an open and flexible interaction, inside and outside the company boundaries (Ghoshal and Bartlett, 1997).

The diffusion of the Internet allowed communities to benefit from virtual networking, and delocalization, and to become more capable to afford the challenges of a more complex business environment (Cothrel and Williams, 1999; Hildreth et al., 2000). The effectiveness of these new forms of collaboration and knowledge creation explains the growing interest of scholars and managers to understand how communities really work, how they organize internally, how they produce value (Schultz et al., 2003; Mitchell, 2002; Burt, 2000).

The main contribution of the present work is to map the subject matter of the information flows within virtual communities, to match the community's social structure with the emerging ideas or topics. It also provides empirical evidence from the application of the integrated methodology to a "longitudinal study" looking for the organizational facets of a global, dispersed community.

A case study analysis has been conducted on a large Virtual Community developed at a global scale, involving a high number of members and a wide range of different organizations located all over the world.

The achievement of the presented goal has been conducted under the guide of the following question: *How to detect the evolutionary structure of a virtual community by following the diffusion pattern of a new project idea?*

The main limitation of the Social Network Analysis, that is to treat all the connections in the same way, without differentiating the topics of discussion, might represent an obstacle in the analysis of large communities. It would be hard to understand communications referred to friendly personal ties or projects-related ones. This can prevent the development of a more comprehensive picture of the community, making it difficult to disentangle the web of many interactions, 5431 in our case, that can provide no meaning and possibly lead to misinterpretations.

While SNA was able to point the "who" and the "how" of the social capital structural dimension, the integration with the Content Analysis revealed the "who", "how" and "what" of the social capital overall dimensions, structural, cognitive and relational. The integrated methodology provided a more complete picture of the Community, useful to improve the understanding and the monitoring of such "hidden organizations", and to offer useful insights for their management.

The main managerial implications of the outcomes of this research can be classified following some key managerial processes, related to the organizations' capability to better:

1. Understand Communities: the application of the integrated methodology showed its suitability to describe the main characteristics of a project-oriented community, identifying several aspects such as: the topics associated to emergent sub-communities, the role of the original core group in leading all the projects; the impact of a strong leadership built around few coordinators.
2. Analyze and Monitor Communities: the use of the methodology as a monitoring system able to detect and map:

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