Chapter 17
Recognizing Innovation through Social Network Analysis:
The Case of the Virtual eBMS Project

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ABSTRACT

Advances in communication technologies have enabled organizations to develop and operate decentralized organizational structures by supporting coordination among workers in different locations. Such developments have lessened formality in control structures and replaced formal channels of communication with less formal social networks. The chapter describes the development and application of a 'Social Network Scorecard' (SNS) managerial tool to monitor social interchanges and relationships within and across organizations in order to assess the effectiveness of knowledge networks. In this chapter, a project team made up of individuals from academia and industry collaboratively implemented an integrated technological platform for KM, e-Learning, e-Business, and project management disciplines in a higher education environment. This VeBMS platform, consisting of a collaborative working environment within the University of Salento, Italy, was used as a 'test bed' to evaluate the validity of the scorecard in practice. The chapter describes how the SNS tool can help in monitoring the evolution of an organizational community, recognizing creative roles and initiatives, and tracing the connections between such initiatives and innovative outcomes. Looking at trends at individual, team, inter-organizational, and organizational levels, researchers identified the most innovative phases within the team's life cycle using network indicators like density and degree centrality. The SNS provided feedback on the effectiveness of the team and helped discover the phases in which the team acted in a manner conducive to innovation. The Virtual eBMS project team followed the typical structure of an innovative knowledge network where learning networks and innovation networks co-exist with a more sparse interest network.

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INTRODUCTION

Looking at tacit knowledge as the key competitive factor, the discipline of Knowledge Management is going towards a new phase focused not just on knowledge codification (building databases, installing technologies, collecting and disseminating information). In what has been recognized as the "new wave of Knowledge Management" (Cross *et al*., 2006), managerial efforts are put in exploiting tacit knowledge built in social capital, searching for techniques to foster organizational learning and knowledge creation. Network-based competition requires new types of "business scorecard" for managers to understand the reliance and limitations of resource exchange in social networks. The utilization of network metrics to monitor the evolution of an organizational or inter-organizational network provides advantages for managers in terms of business intelligence and ability to recognize the emergence of innovation. Although managers recognize the importance of fostering collaborative networks inside and across organization's boundaries, there is still a lack of methods and tools to assess and support links among people, and nurture the most promising relationships that might lead to innovation.

In this contribution we propose a Social Network Scorecard applied to an innovative project aimed to design and implement a technological platform integrating Knowledge Management, e-Learning, e-Business and Project Management. The platform - called "Virtual eBMS" - is a collaborative working environment enabling knowledge sharing and learning processes within a higher education institution (eBMS). The e-Business Management Section (eBMS) is a department of Scuola Superiore ISUFI, an advanced education institute of University of Salento, in Italy. In this research we have applied a methodology, that we call Social Network Scorecard, to monitor and discover the hidden phases and individual roles that are associated to the emergence of innovation. The innovation we are referring to is represented by the components of a technological platform whose success (described later) is based on the ability of a small team to create a high level of connection within and across university boundaries.

The main research question leading our study is: *How to use a social network scorecard to recognize the emergence of innovation in a project team?* To answer this question, we illustrate the case of a team that successfully worked to design an innovative platform, the Virtual eBMS. To understand the hidden dynamics behind this successful collaboration pattern, we used the Network Scorecard as a methodological guideline to monitor the evolution of the individual and group dynamics. The team in charge of the Virtual eBMS project was composed by members of an international business school and a multinational consulting company (hereafter "partner company") specialized in providing ICT-based solutions. We applied this scorecard to identify the innovation roles and the members' contribution degree, matching actors' *formal roles* within the team and the *informal roles* emerging from the analysis. The main goal was to identify "*in fieri*" the network properties able to give suggestions on how to better support the team in the efforts towards the creation of an innovative platform.

LITERATURE REVIEW

Within the aim of this chapter, we focus our literature review on three interdependent domains related to innovation management field: the knowledge management systems (KMS), the intellectual capital management (ICM) and the Social Network Analysis (SNA). These three research fields are briefly presented and introduced by highlighting the concept of "relation" as a key success factor for creating value.