

SOCIAL NETWORKS AS A RESPONSE ON CHANGING BUSINESS ENVIRONMENT AND THEIR APPLICATION ON MANAGERIAL COMMUNICATION

— ABSTRACT —

Senka Borovac Zekan

University Centre for Professional Studies
21000 Split, Livanjska 5
Phone: ++ 38521329304
E-mail: sborovac@oss.unist.hr

Andrea Russo

University Centre for Professional Studies
21000 Split, Livanjska 5
Phone: ++ 38521329304
E-mail: arusso@oss.unist.hr

Katja Rakušić

University Centre for Professional Studies
21000 Split, Livanjska 5
Phone: ++ 38521329304
E-mail: krakusic@oss.unist.hr

Jagoda Ćukušić

Student
E-mail: jcukusic@erstebank.hr

Key words: *social networks, knowledge management system (KMS), changing business environment*

ABSTRACT

Networking facilitates knowledge transfer. It is considered as the systematic and continuous activity between two or more people associated in the group with the intention of achieving common goals. The benefits of the networking are multiple; the groups have a greater effect than the sum of individual effects, groups can reach more complex and far-reaching goals than individual projects and development of information technology allows the networking of individuals regardless of time, place and number of participants (virtual network). Organizations that succeeded to build effective networks are able to take advantage of new knowledge more successful than organizations that do not use these kinds of networks. Social networks are already becoming a part of most Knowledge Management functions in recent years. Knowledge managers are learning what makes social networks successful and how to manage this new kind of communication tool in achieving organizational goals. The article discusses the possibility of using the social networks pattern in helping knowledge managers improving communication among employees and knowledge sharing at all levels within the organizational structure.

1. INTRODUCTION

Rapid developments in Information Communication Technology during the last two decades have changed the way of doing business. The human being as a social existence cannot live without interacting with the others in their social environment. Today, modern organizations consist of large number of interacting individuals. Network ties create opportunities for the actors to communicate faster and more frequent.

This survey will explore possibilities of improvement in the field of communication management by implementing basic rules of social interactions. Our attention will be focused on the possibility of implementing connections and relationships that exist in social networks on formal links and relationships that exist within the company. In this article we have tried to give a new perspective on communication between individuals in the company due to the changes that occur in the field of technology that affects the way individuals behave.

The main idea is to help managers, but not only them, but to all employees in the company and at all levels in the organization, to improve the process of mutual communication.

We organize the paper as follows. The first chapter after introduction is dedicated to overview of contemporary theories in the communication field, social networks, the reasons for their creation and theories that derived from it.

The second chapter intends to explain some basic issues connected to social networks and to emphasize importance of their implementation in every organization. It brings a deeper analysis of social networks and the benefits provided by those groups and companies which apply them.

Third chapter will serve us to consolidate basic postulates and findings regarding formal and informal networks and their impact on organization design.

The basic communication variables will be identified in the fourth chapter and finally we will withdraw some implications and conclusions that derive from our theoretical overview.

2. THEORY REVIEW

There are many definitions of social networks in the literature, but we will use the one which defines the term “*social network*” to represent interpersonal connections between individuals, business units, or organizations. These links are not hierarchically influenced and they include information and knowledge flows. We can extract two overarching goals of networking. The first is to *transfer knowledge* and the second is to *facilitate* it. Social networks are already a part of most Knowledge Management (KM) functions these days. Knowledge managers have yet to learn what makes social networks successful and how to manage and leverage them to achieve organizational value. A large number of researchers interested in network relationships have recognized the knowledge dimension of networks and its link with competitive success (e.g., Dyer & Nobeoka, 2000, Bau; Calabrese, & Silverman, 2000; Gupta & Govindarajan, 2000; Nishiguchi, 1994). They believe that, through membership in a network and the resulting repeated and enduring exchange relationships, the potential for knowledge acquisition by the network members is created. Our interest is in communication, knowledge acquisition, how knowledge transfer between network members occurs, and what role social networks play in the transfer. Some authors (Gulati, Nohria, & Zaheer, 2000; Uzzi

& Gillespie, 2002) have an area of their research in understanding how the social context in which firms are embedded influences their behavior and performance. Further, in various academic (e.g., Adler & Kwon, 2002; Gargiulo & Benassi, 2000; Nahapiet & Ghoshal, 1998) and practitioner-oriented publications (e.g., Anand, Glick, & Manz, 2002; Baker, 2000), researchers recently have argued that access to new sources of knowledge is one of the most important direct benefits of social networks. Moreover, there is evidence suggesting that knowledge transfer is facilitated by intensive social interactions of organizational actors (Lane & Lubatkin, 1998; Yli-Renko, Autio, & Sapienza, 2000; Zahra, Ireland, & Hitt, 2000). As emphasized by Miles and Snow (1986), two major outcomes of the search for new competitive approaches are already apparent¹:

First, the search is producing a new organizational form—a unique combination of strategy, structure, and management processes that we refer to as the *dynamic network*. The new form is both a cause and a result of today's competitive environment.

Second, as is always the case, the new organizational form is forcing the development of new concepts and language to explain its features and functions and, in the process, is providing new insights into the workings of existing strategies and structures. Networks provide firms with access to knowledge, resources, markets, or technologies.

Managers make strategic choices based on their perceptions of the environment and of their organizations' capabilities. Saying all of this in different language, ways of doing business traditionally have been highly contingent on ways of organizing, and major competitive breakthroughs have been achieved by firms that invented, or were quick to apply, new forms of organization and management². New organizational forms arise to cope with new environmental conditions. However, no new means of organizing or managing arrives full-blown; usually it results from a variety of experimental actions taken by innovative companies.

2.1. SOCIAL NETWORKS RESEARCH AND ANALYSIS

Networks can be found in every aspect of professional activities. The network follows a set of underlying principles that guide the transfer of responsibilities, information and outcomes between members through the developed interconnections. The visualization of the relationships and the identification of network weaknesses can be easily done by graph measures such as density of communication and nodal distances. The concepts of cohesion, density, distances, and relationships have been applied by researchers in many diverse and distinct domains. Classic Social Network Analyses (SNA) research is focused on sociological networks which involve individuals in the workplace and their exchange of information to complete tasks (Krebs 2004). Ability to recognize these connections and relationships and to graphically map them is crucial for network researchers. Further, using a visual expression of these connections and relationships allows researchers to isolate relationships, visualize network principles such as dominance, centrality, and egocentricity, and graphically present results that were previously limited to mathematical matrices (Hanneman and Riddle 2005).

Every organization is conceived of as a bounded social system in which there is a relatively stable network of interpersonal linkages through which messages flow and which affect the

¹ Raymond E. Miles, Charles C. Snow (1986), The Regents of the University of California Organizations: New Concepts for New Forms, California Management Review Volume XXVIII, Number 3, Spring 1986.

² Raymond E. Miles, Charles C. Snow, (1984), "Fit, Failure, and the Hall of Fame," California Management Review, Vol. XXVI (Spring 1984): 10-28.

productivity and maintenance of the system (Schuler, 1975). From this perspective, one way to study organizational phenomena is to examine the formal and informal ties that connect groups and individuals within a firm. Social network analysis principally involves the study of both information exchange and influence of the relationships. It involves the comparison of prescribed group structures (such as work teams, departments, or divisions) and emergent group structures (such as informal cliques and friendships). Finally, it facilitates the characterization of groups in terms of the number and types of individual role players (stars, liaisons, and isolates) and the frequency, direction, and compatibility of intergroup communications.

There are several group structural properties that have been studied most frequently in prior research which can be categorized as descriptive of the group or descriptive of individuals within a group. Properties that are descriptive of the group include³:

1. Connectedness—the extents to which group members identify with the goals of other members of their groups; it is a measure of group cohesiveness (O'Reilly & Roberts, 1977).
2. Centrality—the degree to which relations are guided by the formal hierarchy (Tichy et al., 1979).
3. Reciprocity—the degree to which there is two-way communication in a workgroup (Newcomb, 1979).
4. Vertical differentiation—the degree to which different organizational hierarchy levels are represented in a given work group network (O'Reilly & Roberts, 1977).
5. Horizontal differentiation—the degree to which different job areas are represented in a given work group network (Mohr, 1979).
6. Coalitions—perceived linkages among several individuals who believe that their ability to dominate organizational relationships is greater as a group than as individuals (Thibaut & Kelley, 1959). Coalitions also can be used as individual descriptors when the analysis focuses on a person's membership or non membership in specific emergent groups.
7. Group structural properties that are descriptive of individuals who serve specific communications functions for a group include:
8. Stars—individuals who are seen as having a great deal of influence on the jobs of most group members and who are the focus of most communication within the group (Tichy & Fombrun, 1979).
9. Isolates—individuals who are seen as involved in almost no communication within the group and as being uncoupled from the network (Tichy et al., 1979).
10. Liaisons—individuals who serve as intermediaries among various emergent work groups within a department (Schwartz & Jacobson, 1977).

The potential contribution of social network analysis thus is as a means to address important unanswered questions regarding the design-performance relationship in organizations because it explicitly focuses on interpersonal processes and is capable of linking macro and group level approaches to the study of organizations (Crozier, 1972; Fombrun, 1982; Tichy & Fombrun, 1979; Tichy et al., 1979).

³ Fred R. David, John A. Pearce (1983) Social Network Approach to Organizational Design-Performance, II University of South Carolina, Mississippi State University, Academy of Management Review. 1983. Vol. 8. No. 436-444.

2.2. SOCIAL NETWORKS AND THEIR IMPACT ON ORGANIZATION

The influences of the organizational design on the organization performance were the subject of many studies and theories (Dalton, Todor, Spadolini, Fielding, & Porter, 1980; Lawrence & Lorsch, 1969; Pennings, 1975). Although it is now clear that variations in design do affect performance (Dalton et al., 1980; Ivancevich & Donnelly, 1975; Van de Ven, Delbecq, & Koenig, 1976), there is a continued reason for interest. Specifically, the nature of the relationship between the two variables has yet to be defined. Macro level organizational design characteristics do not directly influence group performance as indicated by Tushman, Tichy, and Fombrun (1979), but, instead, their influence on performance is moderated by group level characteristics. As Tichy et al. suggest, organizational design may impact group performance principally because of its effects on communication (i.e., information) flow. Such effects may either augment or retard the information processing capability of the

organization and ultimately impact the performance of individual groups (MacCrimmon, 1974; Mears, 1974; Pelz & Andrews, 1966). Thus, though organizational design may indeed influence group performance, its impact may be mediated by group structural properties that mask the underlying significance of the design-performance relationship.

In an effort to advance the study of this perspective, this paper presents a conceptualization of social network and communication effectiveness. Social network analysis shows us who communicates with whom, and similarly, where there are gaps. Thus, we can consider a variety of networks: communication overall, who is turned to whom for help, and on-going assessment of which people turn to with new ideas. The analysis technique highlights relationships that may not show up on formal organization charts. Sometimes, where we think links should exist-they don't. Employees usually use these links either for short assignments or for providing coaching on collaboration. The aim is to achieve the goal, but to help the participants involved in the communication to communicate in the fastest possible way but not to be overburdened. There cannot be change done in just one thing in the organizations to take advantage of new technologies; it generally requires a combination of technology and adjustments to organizational practice.

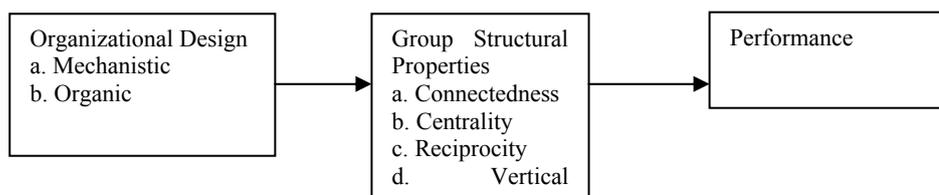
2.3. FORMAL AND INFORMAL SOCIAL NETWORKS

In reality, it is clear that knowledge shared between the formal and informal groups is not the same knowledge. There is a clear difference in the knowledge that is shared between the two groups. Some researchers like Burns and Stalker (1961) distinguished the 'formal structure' of the organization which is well-defined by management systems and structures from the 'informal structure' or 'private organization which is processed by individuals who communicate on issues not directly laid down and governed by management.

The concept of *social networks* as the essential structures upon which both formal and informal communication and knowledge transfer are based was introduced by Burns and Stalker, (1961) and Chandler (1962). They define formal social networks as those that are prescribed and forcibly generated by management, usually directed according to corporate strategy and mission. In contrast, *informal social networks*, or emergent networks, are unsanctioned and ungoverned organic structures connecting a potentially unbounded group of individuals (Mintzberg, 1973; Tichy, 1981). On the other hand, in the context of the firm, these informal networks extend not only internally but also externally across organizational boundaries. They include the working relationships, collaborations and exchanges of

knowledge between individuals which are not found in organizational structures, but are the result of the personal initiative of employees (Cross and Parker, 2004). Critically, they observe that the patterns of collaboration and communication revealed in informal networks are significantly different from the formal organizational structures implemented by managers. Thus, formal organizational structures fail to reflect accurately the true nature of social relationships and the dynamics and dependencies between staff. This can be to the detriment of efficient knowledge exchange within the firm (Cross et al., 2002b).

Figure 1. A Conceptualization of the Design Performance Relationship



Source: Jonathon N. Cummings and Rob Cross, Structural properties of work groups and their consequences for performance, *Social Networks*, Volume 25, Issue 3, July 2003, Pages 197-210

The authors who have succeeded in an attempt to summarize all the research to date are Cross and Parker (2004). Briefly, studies of informal relationships using social network analysis have revealed critical disconnections between business groups or individuals, the often unexpected locations of key individuals; who act to facilitate communication and link disparate groups, and significant instances of important personnel failing in their formal task of enabling and supporting collaboration. Previous studies reveal that senior managers play a key role in the formation of informal groups. Equally, those who are found at the hub of an informal network are frequently individuals who otherwise go unrecognized, and therefore unsupported in the firm.

Finally, the real value of the analysis of social networks within companies' lies in obtaining a realistic picture of relationships within the organization, regardless of formally defined relationships. Cross and Parker (2004) have stressed the importance of understanding informal networks because of their impact on organization performance.

3. CORPORATE SOCIAL NETWORKS

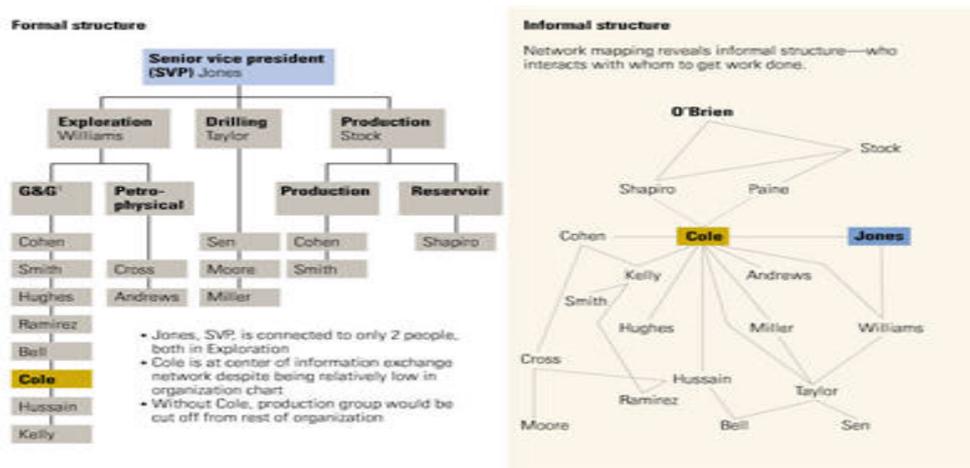
The old saying "If you can't measure it, you can't improve it" gets its full meaning when it comes to social networks within an organization. Improving workplace communication is a battle that every organization faces. Whether the issue is the loss of tacit knowledge as an aging workforce retires, information silos among different divisions, or the lack of conversation between multiple offices, communication issues impact every organization.

Today, all communication between employees is mostly done digitally so it can be monitored and measured. This allows for the detailed measurement of information shared inside the network. Corporate social networks capture information and data that was always there inside

a company, but now it's in a tangible place, and information can be measured concretely with less manpower required. At the same time, behavioral data and "invisible work" can be captured and measured, neither of which can be measured by people. Collecting data of

internal communication is not something new. Before the digital age, information about communication among employees was collected manually which took significant time and caused additional expenses. These “measurement” tools were based on self-reporting and possibly biased collection methods. Now that streams of data flow through an enterprise via its social network, actual information and its impact on corporate communications can be measured.

Figure 2. Communication ties and connections in formal and informal organizational structure



Source: <http://www.adamsmithesq.com/archives/2007/10/partners-desks-and-the-im.html>

Nowadays there is software that allows us to monitor internal communication. There are a number of tools that give us different kind of information, such as the number of messages exchanged between individuals, the most contacted persons, the most influential person etc. By analyzing these metrics, community managers can help their companies understand how and why employees in the network are communicating. The bias in reporting has been eliminated, making the data that much more powerful. With strong supporting data, companies can make educated changes to their communication patterns. When organizations have data over a certain period of time, and can watch it change and vary under different conditions, they can continuously fine tune and adjust in order to improve communications. Successful management of change can be achieved only through systematic monitoring of changes, their analysis and adjustment.

3.1. COMMUNICATION VARIABLES

Analysis of social networks is based on the importance of communication within members of the organization. Trying to understand what affects the transfer of information between organizations and individuals, and improving this communication, is the subject of communication research. Hirokava (1980) has proposed a model which highlights the variables that affects success of communication. His research showed that a decisive influence on the success of some groups is not individual behavior during the discussion, but their behavior after the discussion and observed over a longer period of time. Specifically, the results suggest that not only do group members in effective groups produce more procedural statements than members of ineffective groups, but effective groups consistently spend more time interacting on procedural matters. The conclusion relevant to the proposed model is that

effective groups spend considerable time understanding the problem and how they are going to interact to solve the problem prior to putting forward suggested results.

An additional category of communications research is the role of communications within small groups. Similar to product development groups, project teams, and quality groups, construction teams are required to interact effectively to produce desired results quickly and efficiently. To this end, the factors that affect small group communications are a critical background component.⁴ The research in this area is well established and provides critical insights into the variables that impact this success. In early 50's researchers involved in researching communication within teams, determined that the communication within small groups is influenced by such things as communication patterns, role of communication and group perception (Bales 1950; Newcomb 1951; Fisher 1974). Within this original and continuing research, it has been found that all groups experience a similar set of linear communication stages during the development of task solutions (Fisher 1974). The groups that have the ability to understand this process and the variables that impact the stages have the greatest opportunity for effectiveness in a given task (Poole and Roth 1989). If projects can be viewed from a social collaboration perspective, then an increased emphasis will be placed on developing teams that have shared values and trust among the participants. As demonstrated earlier, teams that have this as a basis will focus on sharing knowledge to produce high-performance results.⁵

4. NETWORK EFFICIENCY AND EFFECTIVENESS

In order to optimize a network by capitalizing on structural holes, Burt (1992) claims that increasing network size (number of direct contacts) without considering the diversity reached

by the contacts makes the network inefficient in many ways. Therefore, the number of non redundant contacts is important to the extent that redundant contacts would lead to the same people and, hence, provide the same information benefits. The term effectiveness is used to denote the average number of people reached per primary contact; while the term efficiency concerns the total number of people of people reached with all primary contacts.

Hence, effectiveness is about the yield per primary contact, while efficiency is about the yield of the entire network. An effective network therefore regards the primary contacts as ports of access to diverse clusters (because of non redundancy), and therefore achieves the yield of the entire network. The term that Burt (1992) uses to denote effectiveness in networks is effective size. Ideally, the number of non redundant contacts should increase with the number of contacts to achieve optimal efficiency (i.e., 1). As one increases one's number of contacts and gradually starts to have a smaller number of non redundant contacts, the individual's network efficiency decreases. Conversely, as the number of non redundant contacts increases relative to the lower number of contacts, the individual's network efficiency increases. Network Constraint dictates the extent to which an individual's opportunities are limited by investing the bulk of his or her network time and energy in relationships that lead back to the single contact (Burt, 1992, p. 55). In other words, constraint measures the degree to which an individual's contacts are connected to each other and is therefore a proxy for redundancy of contacts. According to Hanneman (2001), constraint also measures the extent to which an ego

⁴ P.Chinowsky, J.Dieckmann, V.Galotti; A Social Network model of construction, Journal of Construction Engineering and Management, Vol.134, No.10, October 1, 2008., p.806

⁵ Ibid, p.811.

is connected to others who are connected to one another. So if the ego has many connections to others, who in turn have many connections to still others, the ego is quite constrained. At organizational levels, individuals with high constraint indices are unable to conceive novel ideas because of the redundant nature of information that is sourced from a densely connected group of individuals. Previous research has consistently demonstrated that high-efficiency and low-constraint indices are useful indicators of an individual's ability to produce good ideas (Burt, 2004), to "get ahead" in terms of job performance and promotion (Burt, 1992, 2005), and to enjoy greater career mobility (Podolny & Baron, 1997). An individual in knowledge-intensive work with an efficient and low-constrained network structure is thus more likely to obtain useful knowledge from diverse and non redundant contacts, which has been linked to improved performance.⁶ Katzenbach and Smith (1993) pointed out that for the existence of an effective communication is necessary to build trust among team members. Without the existence of trust within the network, building successful teams becomes impossible. The key to knowledge exchange is a level of trust between the members of the team. The fundamental principle why the approach of building social networks within an organization has to be done that way is a higher level of trust among team members, improving the exchange of information and knowledge, which all has a positive impact on performance and higher results.

5. IMPLICATIONS

The final set of implications applies to managers, especially those in a position to redesign their organizations. Executives who perceive the network form as a competitive advantage for their companies now have an explicit model to guide their redesign efforts. On the other hand, some companies cannot or will not vertically disaggregate and completely adopt the new form. Nevertheless, these companies desire the benefits of the network approach. Managers of these companies need ideas for, and the means of, altering their existing organizations so as to simulate desirable features of the dynamic network. The dynamic network form, as indicated earlier, has appeared as a means of coping with the business environment of the seventies and eighties. The implications for managers are clear: through a better understanding of the informal organization, they can more successfully capture and exploit new ideas; more efficiently disseminate information throughout the function; and more effectively understand the working habits and activities of employees. Although senior managers in larger organizations are often aware of the existence of informal organizational connections and relationships, rarely, or almost never they try to understand their deeper meaning or try to manage them. The distinction between formal and informal networks is clearly less important in companies with few employees. Are the key individuals found in the informal networks those who would be expected to be in key positions? If not, do these individuals understand the organization's expectations of their roles, and do they need coaching to fulfill them better? Should individuals who have been unexpectedly found to be the key in the informal networks be more integrated into the formal networks?⁷

⁶ Kon Shing, Kenneth Chung, Measuring Performance of Knowledge-Intensive Workgroups Through Social Networks, Project Management Graduate Programme, University of Sydney, Australia, Project Management Journal, June 2009.

⁷ James Allen, Andrew D. James and Phil Gamlen; Formal versus informal knowledge networks in R&D: A case study using social network analysis, Manchester Business School, University of Manchester, R&D Management 37, 3, 2007.

6. CONCLUSION

Using the concept of social networks for business purposes in the future will surely have a huge impact on the development of communication channels within the organization. Future forms will all feature some of the properties of the dynamic network form, particularly heavy reliance on self-managed workgroups and a greater willingness to view organizational boundaries and membership as highly flexible. There is likely to be a significant difference between what managers presume to be occurring in terms of knowledge exchange, and what occurs in practice. In reality, there is a significant difference between the amount of knowledge that managers think that is exchanged between members of the organization and those who actually are being exchanged. Studying informal networks can also reveal

structural gaps and thereby provide insight for successfully implementing formalized networks. The answer to this challenge is the relationship between knowledge exchange and trust. The key to high performance is the recognition by the team that the success of the team is of primary importance and that this success is based on the individuals openly exchanging knowledge for the benefit of the solution. Specifically, the underlying concept of this relationship is that by achieving trust and shared values within the project network, the project team will increase the exchange of knowledge and information, which will result in high performance output. Through the digital communication in the workplace and its analysis, organizations are able to recognize both; the critical and the bright spots, and consequently access to their elimination or improvement. There are multiple benefits of using of Social Networks as a communication tool within organization members, like; easier solving business problems, stimulating local action, motivating new ways of work and legitimizing cross-boundary communication.

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