

Social Networks and Absorptive Capacity

Rachelle Bosua and Nina Evans

Abstract—The resource-based view of the firm regards knowledge as one of the most important organizational assets and a key strategic resource that contributes unique value to organizations. The acquisition, absorption and internalization of external knowledge are central to an organization's innovative capabilities. This ability to evaluate, acquire and integrate new knowledge from its environment is referred to as a firm's absorptive capacity (AC). This research in progress paper explores the link between inter-organizational Social Networks (SNs) and a firm's Absorptive Capacity (AC). Based on an in-depth literature survey of both concepts, four propositions are proposed that explain the link between AC and SNs. These propositions suggest that SNs are key to a firm's AC. A qualitative research method is proposed to test the set of propositions in the next stage of this research.

Keywords—Knowledge, Innovation, Absorptive Capacity, Social Networks

I. INTRODUCTION

THE resource-based view of the firm regards knowledge as one of the most important organizational assets [1], [2]. Grant [3], extends Barney's [1]-[2] work by proposing the knowledge-based view of the firm and emphasizes the considerable importance of knowledge as a key strategic resource that contributes unique value to organizations. As a result, the ability of a firm to create organizational knowledge in the form of new products, services, structures and processes is challenging. Therefore organizations need to carefully acquire and manage knowledge in appropriate ways to achieve sustained competitive advantage.

Innovation requires 1) creative thinking, 2) development and advancement of best practices, and 3) the ability to foster organizational learning and ultimately 4) ways to synthesize and apply ideas and knowledge from a variety of sources into new forms and situations. Firms can improve its knowledge and innovative capabilities by leveraging the skills of others through the transfer of knowledge within and across the firm's boundaries. Therefore, gathering information and knowledge from a variety of sources in a firm's external environment is central to innovation. The capability of a firm to recognize, acquire, transform and integrate new knowledge from the environment is referred to as a firm's Absorptive Capacity (AC) [4]-[5].

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Innovation in organizations is dependent on humans' ability to create and share new knowledge. A number of authors acknowledge the importance of teamwork in this regard [6]-[9]. Newell, Robertson & Scarborough [10] contend that knowledge creation is not typically an individual activity but the result of individuals collaborating in teams to bring together knowledge through sharing and negotiating ideas and perspectives. Social Networks (SNs) have been defined as key organizational structures for effective and efficient knowledge sharing and transfer in teams and workgroups [11]. Such a personal network consists of the set of people with whom an individual maintains contact, such as partners, customers, suppliers, bankers and family members [12]. A large part of the research on social networks is of a quantitative nature and is limited to structural aspects of these networks. Additionally, previous research on SNs focused mostly on the ways in which these structures support the internal transfer of knowledge within the boundaries of organizations (intra-organizational). There is a lack of research on ways in which SNs support the acquisition and transfer of external knowledge into a firm and exploiting this knowledge to enhance innovation, performance and competitive advantage. More specifically, literature that explains the impact of inter-organizational SNs on the AC of firms is limited. As a result, the following research question to be answered in this study is: *What is the role of Social Networks (SNs) on the Absorptive Capacity (AC) of organizations?* The sub-question is: *What is the role of inter-organizational SNs in acquiring and assimilating external knowledge?* In this paper we will focus on the sub-question.

This research in progress forms part of a larger study that focuses on the link between SNs and AC. In order to answer the preceding research question, this paper describes and combines two streams of literature namely literature on SNs and AC, and proposes four key propositions for this study that will be tested in a subsequent phase. The remaining part of this paper is structured as follows: Section 2 explores key literature on Absorptive Capacity (AC) and Social Networks (SNs) followed by Section 3 that presents four key propositions. The proposed research methodology is described in Section 4, following by limitations in Section 5 and a Conclusion and Summary in Section 6.

II. LITERATURE REVIEW

A. Knowledge and Innovation for Competitive Advantage

Barney [1]-[2] and Grant [3] describe knowledge as one of the most important building blocks of innovation in organizations. Innovation is a complex activity in which new knowledge is applied to commercial ends. The ability to exploit knowledge is a critical component of innovative capabilities. In a dynamic and turbulent environment,

knowledge - and therefore innovation - is critical for the creation of value and a sustained competitive advantage. Research indicates that firms can build innovation capacity by tapping into external knowledge sources such as contracts, licensing, inter-firm relationships, R&D collaborations, knowledge-driven acquisitions, joint ventures and inter-organizational relationships [13]-[14]. Given the greater availability of external knowledge sources in modern economies, a dynamic capability to target, absorb and deploy external knowledge to feed internal innovation processes in organizations becomes a crucial source of competitive advantage. This ability to deal with external knowledge is referred to as a firm's *Absorptive Capacity* [13].

B. Absorptive Capacity (AC) Defined

The AC concept is one of the most important constructs to emerge in organizational research in recent decades [15]. Kedia and Bhagat [16] were the first to introduce the term "absorptive capacity", although the contribution by Cohen and Levinthal [17] is generally accepted as the founding paper in describing this concept. These authors initially defined AC as "the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends" [17, p. 128], and later more simply referred to it as the ability to exploit new technological developments [17]. Lane *et al.* [15] give a simpler definition of AC by describing it as a two-part process of acquiring external knowledge to the firm and assimilating this knowledge by incorporating it into a firm's knowledge base. Zahra and George [14, p. 186] claim that AC consists of four processes by defining it as "a set or organizational routines and processes by which firms acquire, assimilate, transform and exploit knowledge to produce a dynamic organizational capability". This ability is critical to the innovative capabilities of commercial organizations [20], [5] and it is believed that firms with higher levels of absorptive capacity are able to extract greater benefits from external knowledge, obtain larger shares of their sales from new or improved products and therefore outperform rivals in their innovation activity [13].

It is widely accepted that critical knowledge is not always easily available through external sources, and that knowledge also needs to be created internally [21]. However, rapidly changing environments, technologies and rules of competitiveness prevent organizations to create all knowledge internally. Camison [22] states that organizations with an inward looking approach to knowledge creation - i.e. that rely purely on its own resources - will miss out on the dynamic effects of interaction between internal and external knowledge. Although the creation of knowledge is important, the conversion of this knowledge into new products is actually the basis of superior performance. With respect to both modes of knowledge sourcing, the capacity to *absorb* knowledge has therefore become crucial [5].

C. The Importance of Learning in Organizations

There is a close link between learning, knowledge creation and innovation. As a result the literature on organizational

learning forms an important basis for AC [23]-[24]. It is commonly believed that individuals absorb new knowledge more easily if they have attained certain levels of learning in the form of expertise, training or any other form of background knowledge. Volberda, Foss and Lyles [5] confirm this by stating that AC depends primarily on prior related knowledge as well as investments in Research and Development. The ability of a firm to learn through gathering external knowledge (which forms part of AC) and internal learning (which involves knowledge creation), both influence a firm's innovation capacity, and ultimately determines its innovative performance.

Learning in organizations involves reciprocal processes either at the individual, group or organizational level and is considered to be a dynamic process [25]. Organizational learning is based on direct experiences and occurs through the embedding of individual and group learning in organizational routines, structures, processes, databases and systems [26]-[28]. Crossan, Lane and White [28] present a '4I framework' of organizational learning that involves strategic renewal. These four processes involve intuition, interpretation, integration and institutionalization that occur either at the individual, group or organizational level. These processes closely link to an organization's ability to acquire, assimilate, transform and exploit knowledge.

D. Social Capital and Social Networks (SNs)

The notion of Social Capital (SC) has informed a number of areas such as society and human behavior, education and organization and more recently knowledge sharing and collaborative behavior [29]-[30]. Nahapiet and Ghoshal [31] define Social Capital as the "...networks of relationships that constitute a valuable resource for the conduct of social affairs". Social capital is present in the social relations that exists between people and facilitates productivity by providing information that in turn facilitates action [32]. Social Networks (SNs) form essential structures or networks of relationships that SC relies on.

A SN is more formally defined as a structure that consists of a collection of *nodes* and *ties*. Nodes represent the people in the network and ties represent the type of links that exists between the nodes. Ties can be classified as either 'weak' or 'strong' with strong ties representing frequent communication between nodes and weak ties indicating more distant relationships with nodes that are not as frequently visited [29], [33]. Resources in the form of knowledge and information, is made available in a SN through the contacts or connections in the network. As a result people in the network can use the strength of weak ties and 'friends of friends' to source information or knowledge in a SN that has not been available before [34], [32].

Over the last few years there has been an increased research focus on a variety of aspects that relate to SNs in organizations. In particular, a number of authors have explored the value of strong and weak ties to assess their effect on aspects such as learning, centrality, viscosity and density in networks, structural aspects and type of knowledge contributions in SNs [29], [33]. However, a large part of this

research is of a quantitative nature that focuses mostly on algorithms that quantitatively measure structural aspects of SNs.

A number of studies indicate that SNs are invaluable in supporting the flow and sharing of organizational knowledge specifically to solve complex problems, drive and plan innovation, foster learning and source information [35], [11], [36]. Hansen [36] reports that strong ties in SNs are more effective for the transfer of tacit knowledge, whereas weak ties are more effective to transfer explicit knowledge. The next section summarizes key characteristics of SNs in terms of support for knowledge sharing/transfer.

E. Characteristics of SNs

Considering the importance of nodes and ties in a SN there are four characteristics of SNs that are important in terms of knowledge management:

- *Facilitating knowledge transfer* – SNs are considered to be useful structures that facilitate intra- and inter-organizational knowledge sharing/transfer [10], [11]. Pertinent roles such as knowledge brokers and knowledge advocates contribute to the efficiency of knowledge transfer in SNs. Knowledge brokers act on the periphery of a SN and link nodes and SNs with each other based on a demand for knowledge. Knowledge advocates are renowned for spreading current and new information in SNs and across SNs [11].

- *Facilitating learning* – SNs are considered to be useful structures that encourage learning. Novices learn by becoming part of informal and formal SNs and through the sharing of knowledge in a SN. Borgatti and Cross [37] confirm the importance of relationships in SNs for knowledge acquisition and learning to occur.

- *Creation of a Social Identity* – SNs engenders a feeling of belonging or identity, which exerts a positive effect on users to share with others what they know [10]. Consequently people in a SN know ‘who-knows-what’ and ‘who-can-be-consulted-for-what’ which influences lines of communication and knowledge transfer. Additionally SNs create a feeling of ‘oneness’, which evokes feelings of similarity in a SN [31], [33].

- *Development of Trust* – trust emerges more strongly in SNs through interactions between different nodes. Two types of trust are particularly important namely goodwill trust which involves trusting that another person will not act counter to your interests, and competence trust which involves trusting another person’s skills and expertise [10]. These types of trust are identified as important for the transfer of best practices.

III. PROPOSITIONS OF THE LINK BETWEEN AC AND SNS

In this section four key propositions that relate to the acquisition and assimilation of knowledge is proposed.

A variety of studies emphasize the importance of supportive networks for intra-organizational knowledge sharing and transfers [36], [10]. Overall, SNs contribute to more effective and efficient knowledge transfer in organizations [11].

Proposition 1: Social Networks (SNs) are important structures that play a significant role in enhancing an organization’s AC.

Knowledge sharing requires specific supportive human roles, in particular people that have the ability to link people within and across SNs. Such ability requires an awareness of specific contexts of knowledge and ‘who knows what’.

Proposition 2: Knowledge brokers with a deep understanding of existing firm capabilities are required to acquire external knowledge through brokering activities.

Weak ties are considered to be an important source of innovation and new ideas as they allow the linking of people to information external to existing SNs [33].

Proposition 3: Weak ties in SNs need to be identified and harnessed to acquire external knowledge.

The presence of ‘gatekeepers’ as contributing to AC, was originally proposed by Cohen and Levinthal [17]. These are individuals who provide the specialized interface between the internal system and external knowledge sources, as knowledge transfer demands that knowledge is articulated in a way that knowledge recipients can easily understand it.

Propositions 4: The assimilation of new external knowledge requires gatekeeping roles to articulate acquired knowledge in a way that recipients can easily understand it.

IV. RESEARCH METHODOLOGY

Since this research is exploratory in nature, a qualitative research methodology with interviews and focus groups as the key data collection instruments are proposed. We are interested in the experiences and opinions of experts on how employees harness their Social Networks (SNs) to acquire and assimilate external knowledge for innovation [38]. An initial series of interviews will be held during Dec 2011 & Jan 2012 in Adelaide and Melbourne, Australia respectively. Between 10 and 12 participants (senior managers) will be interviewed from a variety of industries including manufacturing, banking, education and telecommunications. Two focus group meetings will follow (in Adelaide and Melbourne respectively) to discuss key and verify the propositions. Each focus group will involve between 6 and 10 participants, as this number is the suggested triangulation optimum size for a focus group discussion. Interview and focus group data will be audio-recorded, transcribed and analyzed using relevant qualitative data analysis techniques [39].

V. LIMITATION

The limitation of this research is that it presents only the early conceptual design in the form of propositions in this paper. As a result no data has been collected yet to test the propositions. The next phase will comprise actual data collection through a series of interviews and focus group meetings. Once data has been collected a deeper analysis of the data may confirm the propositions and direct the study. These results may further scope this research and identify areas that require deeper analysis.

VI. SUMMARY AND CONCLUSIONS

This research in progress aims to explore the link between SNs and AC by focusing on the acquisition and assimilation of external knowledge. It highlights the importance of SNs, in particular key roles such as knowledge brokering and gatekeeping in the acquisition and assimilation of external knowledge respectively. Four key propositions pertinent to these two functions to harness external knowledge towards innovation, are proposed. We believe that this study might highlight the supportive and enabling role of SNs in supporting AC and ultimately innovation in organizations.

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