Social Capital and IS Leadership

By

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Abstract

The value of information technology and how it is effectively managed is an important area of research. Social capital, as a relatively new concept, has yet to be applied to the specific issues affecting IS management. A model for the impact on social capital development of the “system of knowing” of the IS leader and specific characteristics of the IS leader is proposed.
The 2007 economic downturn initiated multiple waves of change for IT management with cost cutting and IT investment scrutiny pushing companies into the mode of doing more with less. Additional challenges are seen in 2009 with "mindsets ... shifting away from how to cut IT costs to how to help the business grow" (Bednarz, 2010, p. 14). With the decrease in IT investments coupled with higher strategic advantage expectations for the IT investments being made, it becomes increasingly critical to be able to explain why and how certain information technology (IT) investments are competitively successful and others are not. One explanation is linked to the use of superior IT managerial skills (Mata et al., 1995; Bharadwaj, 2000; Byrd&Turner, 2001). These skills comprise one form of human capital, i.e. the category of capital that deals with the skills and capabilities of individuals in an organization that are used to enable individuals to act in new ways (Coleman, 1990). Even though IT managerial skills have been identified as important assets for firms in their pursuit of successful competition, those skills may not translate into successful action for the organization without the appropriate communication network. Burt (1997) pointed out "while human capital is surely necessary to success, it is useless without the social capital of opportunities in which to apply it" (p.339).

Although social capital has always been a part of the fabric of organizational life, until recently the term "social capital" has been associated with and used to explore individuals and social groups such as communities and nations. Cohen and Prusak (2001) attributed this focus to the mechanistic nature of organizations which hid the social aspects. Social capital research has grown
since its introduction, encompassing such dependent variables as career success (Seibert and Liden, 2001), employment practices, creation of human capital (Coleman, 1988) and occupational status (Flap and DeGraaf, 1989). While its application in the information systems (IS) research area has touched on portions of the social capital concept such as (social) networking and power (Applegate and Elam, 1992), partnering relationships between IT and business unit relationships (Ross, et al., 1996), and interpersonal skills (Byrd&Turner, 2001), it has not been studied as the comprehensive, specific conceptualization envisaged by contemporary social science researchers, such as Cohen and Prusak (2001), Coleman (1990), and Lin (2001).

An obvious question is, if social capital has always been a part of organizations, why is it important to pay explicit attention to it now? "What in the past could be taken for granted and sometimes even minimized can no longer be ignored or left to chance. This is true in part because organizations in a changing highly competitive global economy need to make the most of their assets, of which social capital is key" (Cohen & Prusak, 2001, p.16). This imperative leads to the proposal that utilizing the concept of social capital to analyze the impact of IS leaders on their organizations would lend valuable insight into how IT is effectively managed in organizations. The theory development framework is based on the following research questions:

1. Does the formal position of the IS leader in an organization's structure affect the social capital the IS leader is able to create?
2. Do the IS leader's qualities affect the social capital the IS leader is able to create?

3. Does the social capital held by the IS leader in a firm significantly influence the outcomes of social capital for the IS leader?

Researchers and practitioners continue to debate the value of IT in today's organization, trying to find antecedents for successful IT investments. One of those antecedents might be the social capital the IS leader creates which could enable the IS human capital to be more effective and productive.

Social Capital

Basic Concept

There are many definitions of social capital and an equally diverse group of benefits (see Table 1). While they all have their foundation in social relations, different views develop from the different perspectives and levels of analysis followed. It is proposed that there is no one right approach when analyzing social capital relative to IT investment success. Thus, an overview of the concept including the main approaches is appropriate.

Social capital can be defined as that part of social structure that adds value and facilitates the actions of the individuals within that structure (Coleman, 1990). This concept parallels the concepts of physical capital facilitating production and human capital facilitating an individuals effectiveness through changes to their individual skills and capabilities (Coleman, 1990) Cohen and
Prusak (2001) looked to an organizational setting context, particularly to explore investments in and returns from social capital:

*Social capital consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible. (p.4)*

Thus, investments in and returns from social capital can be seen as separate and distinct from other capital investments. While social capital is distinct from human capital, it has been recognized as being contextually complementary. Social capital predicts that human capital investments such as intelligence and seniority, and their returns depend to some degree on the location of the person in a particular hierarchy’s social structure (Burt, 1997). Relating this definition to the IS leader role and context the goal of cooperative action is the focus. Like a chief executive officer (CEO), the top IS leader has responsibility of successfully enabling processes across functions, departments and geography. However, unlike the CEO, the top IS leader might not have direct authority over the management involved with using the information technology. Therefore, strengthening and maintaining the social capital that makes cooperative action possible becomes important.

**Origins of Social Capital**

There have been multiple origins of social capital presented in literature. Portes (1998) provides one view of history in his discussion of the origins of social capital and its applications in the field of sociology. Portes (1998) credits Bourdieu (1985) with the first systematic contemporary approach and makes
mention of Loury (1977, 1981) as a second source that was extended by Coleman (1990). Bourdieu (1985) defines the concept as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (p. 248). This approach to social capital is based on the social relationship that gives individuals access to resources which other individuals possess and acknowledges differentials in the quantity and quality of those resources (Portes, 1998).

Loury (1977, 1981) applied the term social capital as part of his critique of racial income inequality as a basis for explaining the lack of network and information about job opportunities for a young black workers in the labor market which helped to perpetuate racial inequality (Portes, 1998). According to Portes (1998), Coleman extended Loury's brief acknowledgment of social capital, explicating the role of social capital in the creation of human capital.

Coleman's conceptualization of social capital started with Granovetter's (1973) strength of weak tie (SWT) theory. Granovetter presented the concept of a distinction between the strong ties of a social clique and the weak ties of acquaintances or contacts that reach outside one's close social network. He showed that in a job search better information came from the weak ties than the strong ties. This was due to the differences in information sharing processes between the two groups. Strong tie groups are dense, making it more likely that new information is shared quickly and information redundancy is highly likely, whereas weak ties are interconnections between the strong tie groups which
provide intermittent unique information. This view introduced the importance of networking to produce relevant, perhaps critical resources in the form of new, sometimes unique information.

Another approach to social capital is Burt's (1997) structural hole theory which "describes how social capital is a function of brokerage opportunities in a network" (p.339). The theory is based on the concept that some people act as brokers of information as they are connected to individuals that others are not connected to. Between the people that are not connected there is a hole in the social structure. The people that can bridge the hole act as brokers. The position of the people that act as brokers can be an asset in and of itself, called social capital. Here, social capital is defined "in terms of the information and control advantages of being the broker in relations between people otherwise disconnected in social structure...[and] an opportunity to ... control the form of projects that bring together people from opposite sides of the hole" (Burt, 1997, p.340).

A third major theoretical origin of social capital is known as the social resources theory (Lin et al., 1981) which focused on the social resources that are part of the individual's network. They defined social resources as "the wealth, status, power as well as social ties of those persons who are directly or indirectly linked to the individual" (Lin et al., 1981). Two components of social resources are identified. They are social relations, which are delineated by social control processes as defined by Goode (1978, p. 2-4 as cited in Lin et al., 1981, p.395) such as friendship, love, affection, and the resources embedded in positions
reached through the social relations. The emphasis here is on the resources that can be reached through the social ties such that the individual is more likely to reach someone with the resources needed to obtain a particular objective (Seibert and Liden, 2001).

**Focus of Conceptualization**

There are two opposing, yet complementary foci underlying social capital – internal versus external. The internal focus is primarily concerned with the relationships that an individual maintains with other individuals and the resources available within the network established. With the internal focus density is a key attribute of the network. Coleman (1990) exemplifies this view, emphasizing the collectivity of the network that will facilitate the collective goals, which has been termed the “bonding: forms of social capital (Adler & Kwon, 2002). The external focus illuminates the span of relations in the network, looking at those resources that an individual would not be able to reach by themselves without a “bridge”, i.e. another individual with the connection to those resources (Adler & Kwon, 2002). Following the external focus Burt (1997), Bourdieu (1985), and Lin (1981, 2001) look to outward access of resources through a social network. Since these foci are not mutually exclusive and to a large degree dependent on the perspective and level of analysis, there are approaches that utilize both views (Adler & Kwon, 2002). Nahapet and Goshal (1998) approach social capital utilizing this duality to develop a theory of social capital creation and its impact on intellectual capital development.
Level of Analysis

In addition to the many theoretical approaches to social capital there is the
dimension of level of analysis that varies among models. Social capital has been
used to describe worldwide strategy application, organizational application and
individual level application. In a worldwide application social capital has been
leveraged and used for a poverty reduction strategy (Grootaert and Van
Bastelaer, 2002). In organizational use social capital may focus on concerns
such as employment practices (Leana and Van Buren III, 1999), intrafirm
resource exchange (Tsai & Goshal, 1998), or the creation of intellectual capital
(Nahapiet & Goshal, 1998). Applying social capital concepts at the individual
level has included career success (Podolny & Baron, 1997; Seibert and Liden,
2001), workers finding jobs (Granovetter, 1973), and executive compensation
(Belliveau et al., 1996). Leana and Van Buren III (1999) note that the multilevel
nature of social capital has lead to two patterns emerging, public goods and
private goods. When the focus is on public goods researchers concentrate on
the macro level and the micro or individual level is secondary. Thus, social
capital is considered more of a social unit attribute whereby the benefits and
costs accrue to the social unit and the individual is only indirectly involved. When
the private goods focus is used the benefits and costs become individual
advantages, leading to such outcomes as higher career success. Although
social capital is multilevel, it is considered to be a resource that is jointly owned
and therefore some models, such as the organizational social capital model, may
include both the public good and private good perspective (Leana and Van Buren III, 1999).

Benefits of Social Capital

Like the concept of social capital, there are multiple perspectives of its benefits. In this model the goal is to have success with IT investments, therefore both foci – internal and external – are included.

Social capital, as defined by Coleman (1990), is internally focused, standing for any part of a social structure that creates value and facilitates the actions of the individuals within that social structure. Its elementary foundation includes the creation of obligations and expectations, potential for enhanced information acquisition and the transfer of authority or rights of control (Coleman, 1990). In particular, the transfer of authority or rights of control to an IS leader could help to span the organizational hierarchy when dealing with the IT investment in various functions outside their formal line of authority.

Burt (1997) utilizes an external focus identifying three benefits of information exchange for a manager – access, timing and referrals. Access refers to the information through the network that could not be otherwise gained because the source of the information is beyond the direct reach of a manager. Timing is the advantage of receiving the information earlier through a network than a manager would receive through a direct contact. Referrals deals with the benefit of legitimizing the interests of a manager as the information is presented “in a positive light, at the right time, and in the right places” (p. 340). The action of
legitimizing through social capital is particularly important for the IS leader as they are frequently responsible for IT throughout the corporation (Applegate and Elam, 1992), but typically do not have authoritative control throughout the corporation. This dimension echoes the benefits derived from the transfer of authority or rights of control identified by Coleman (1990), as previously discussed.

Social capital is like the more tangible financial and physical capital in that it can be “demonstrated, analyzed, invested in, worked with and made to yield benefits” (Cohen & Prusak, 2001, p.9). Like the other forms of capital it “accumulates when used productively” (Fountain, 1998). Unlike the other intangible forms of capital known as human capital and intellectual capital, social capital may have an advantage in the way it accumulates. Lin (2001) posits that social capital is accumulated exponentially, whereas human capital is considered to be additive. This occurs because social capital is derived through relational ties with another individual would give access to the other individual’s ties in addition to the direct relation. In addition to specific advantages of social capital, Adler and Kwon (2002) propose the benefits to include: 1. Enhanced access to information and improved information quality, relevance, and timeliness; 2. Increased influence, control and power; and 3. Solidarity of the social network. These benefits could be used to support the goal of leveraging the IT investments. Understanding the structures of the social capital investment in relationship to IT would provide a foundation for working with and developing the benefits of social capital.
IS Leadership and Social Capital

When the term Chief Information Officer (CIO) was first introduced by Synott and Gruber (1981) it was recognized that “the role of the information systems manager has evolved in twenty years from that of a technician managing a relatively unimportant service function into that of a vice presidential-level, general manager whose department can substantially impact the entire organization” (Ives & Olson, 1981, p. 49). That role continues to evolve and grow as the needs of businesses change. One view of the CIO’s function is as a bridge over the gap between an organization’s strategy and its use of IT (Stephens et al., 1992). Acting as a bridge between IT, the functional areas and external areas (Stephens et al., 1992) exemplifies the social capital brokerage function that is the foundation of Burt’s (1997) structural hole theory. The function is fulfilled, in part, when the CIO is an active participant in the organization’s strategy planning (Stephens et al., 1992).

For an IS leader to be effective, it has been suggested that they must be very aggressive in establishing and maintaining a large network of resources (Applegate and Elam, 1992). Success factors for IT have been proposed to include relationship building and partnering with business users (Applegate and Elam, 1992; Willcocks & Stykes, 2000; Bharadwaj, 2000; Ross et al., 1996), communication with top management, functional managers and end users (Passino, 1988), managerial IT skills including the ability to work with functional managers, suppliers, and customers (Mata et al., 1995), the Chief Information
Officer's (CIO's) participation in the top management team (Armstrong and Sambamurthy, 1999) and the "system of knowing" for the Chief Financial Officer (CFO) and top management team (Armstrong & Sambamurthy, 1999). These success factors are all based on social relations, i.e. the creation of social capital.

Mata et al. (1995) elaborated on the specifics of important IT managerial skills as the ability to understand and appreciate, work with, support and anticipate the future needs of functional managers, suppliers and customers. "That these managerial skills are valuable is almost self-evident. Without them, the full potential of IT for a firm will almost certainly not be realized" (Mata et al., 1995). Armstrong and Sambamurthy (1999) proposed that the quality of senior leadership, including the Chief Information Officer (CIO), the Chief Executive Officer (CEO), the Chief Operating Officer (COO), and the Chief Financial Officer (CFO), and their interactions were the fundamental factors influencing the IT assimilation form of IT success. Armstrong and Sambamurthy (1999) operationalized quality for the CIO as their level of business knowledge, IT knowledge and "systems of knowing". The "systems of knowing" refers to the structures of interaction among team members. The structures of interaction may take the form of hierarchical distance of the CIO from the CEO (Feeny et al., 1992; Watson, 1990) or the extent of the CIO's participation in the senior management team (Watson, 1990). Keen (1991) suggested that "dialogue is needed most right at the top of the firm. It is no exaggeration to say nothing will contribute more to a firm's ability to take charge of change related to or fueled by IT than to have the firm's business and IS leaders make the issues of economics
and integration a mutual priority” (p. 219)." Similarly, Nahapiet and Goshal (1998) propose that social capital facilitates the creation of new intellectual capital which leads to an organizational advantage of firms over markets.

The very nature of IT as a potentially boundariless resource acting as a conduit for information to flow between functions and levels in an organization makes its leading manager a unique and significant user of the social capital asset. The significance comes from the ubiquity of IT (Carr, 2003), the uniqueness comes from the cross-functional nature of the IT asset and its management. Both of these dimensions pose issues for the IT leader to overcome. For example, if territorial senior executives perceive a threat from IT in their domain, they may become obstacles for innovation (Feeny et al., 1992). Lind and Zmud (1991) discovered that rich interaction among technical and managerial personnel counteracted obstacles to innovation. Thus, it appears social interaction, i.e. creation of social capital, is a significant enabler for the IT leader to successfully traverse the organizational landscape.

As IT has changed from a support data processing function to a critical component for achieving corporate strategic objectives, the role of the IS leader has changed. The IS leader, who was traditionally weak in establishing networks, is being called upon to understand their organization’s strategic objectives and to effectively interact with corporate/business management to ensure that IT investments are aligned appropriately (Applegate and Elam, 1992).
CONCEPTUAL MODEL

Seibert et al. (2001) introduced a model for social capital theory of career success that looked at the effects of social resources and network benefits on the outcome of career success with the antecedents of network structure dimensions (See Figure 1). The model suggests that the outcome of the success of information technology can be looked at as career success for an organization’s IS leader. Thus, application of the model, with modifications for the specifics of the research areas of interest is proposed (see Figure 2).

Successful IS Leader Characteristics

"In the ‘information era’ of the 1990s [and beyond], a new and expanded set of responsibilities demands that the executive responsible for IT throughout the corporation also possess strong leadership skill, power, and business expertise" (Applegate and Elam, 1992). IT has grown in power and ubiquity, causing many companies to view it as more critical than ever regarding their success (Carr, 2003). While investments in IT have grown significantly, there is still a wide range of outcomes for how successful firms are at leveraging the business value of IT, making the impact of the top IS leader’s business and IT knowledge more evident than ever before. "CIOs with high levels of business and IT knowledge will be perceived as valuable players and be more easily accepted by the top management team" (Armstrong and Sambamurthy, 1999, p.308). The CIO has been considered to be the bridge in the organizational structure with participation in the strategic planning meetings being a key
establishing and maintaining that bridge (Stephens et al., 1992). The 
operationalization of the quality of IS leadership has included measures of their 
IT and business level knowledge, the informal interactions of the CIO with the 
senior management (Armstrong & Sambamurthy, 1999), and the extent of 
participation in top management including strategic planning meetings 

The recognition of the importance of the top IS leader’s integral 
importance in the firm and the strategic importance of the success of IT initiatives 
leads to the following proposition.

P1: The leadership characteristics exhibited by the top IS leader in an 
organization will have a significant impact on the development of the leader’s 
social capital.

Hierarchical Positioning

“Hierarchy is an important dimension of social structure that indirectly 
influences social capital by shaping the structure of social relations” (Adler and 
Kwon, 2002). These social relations come in the form of interaction, formal and 
informal, and knowledge sharing. Interaction between the top IS leader, often 
named the chief information officer (CIO), and senior business executives 
resulting in strong partnerships have been found to positively affect key IT project 
success processes such as IT assimilation (Armstrong and Sambamurthy, 1999). 
The importance of the relationship is based on the argument that “IT successes 
generally reflect an effective relationship between business managers and
Information Services managers and their staffs” (Keen, 1991, p.215). Knowledge sharing can be accomplished *objective knowledge* which describes explicit knowledge that each individual team member has and *systems of knowing* that describe the shared perspectives and sharing of understanding (Nahapiet and Goshal, 1998). It is the systems of knowing that are related to the hierarchical positioning of the CIO in terms of the distance from the CEO in the hierarchy and the amount of the CIO’s participation in the top management team (Watson, 1990). The strong partnership between the CEO and CIO in terms of interaction were found to enable the sharing ideas and understanding of strategic business and IT issues (Armstrong and Sambamurthy, 1999), contribute to increased levels of IT innovativeness (Lind and Zmud, 1991) and influence the firms’ use of IT (Jarvenpaa and Ives, 1991). The hierarchical structure, as related to the social structure, is also important in terms of access to valuable resources, since “the higher positions have more information about the locations of valued resources in the hierarchy – where specific types and amounts of resources are embedded” (Lin, 2001).

Top management or senior leadership has been defined as “the CEO, COO, CIO and other senior business executives who are formal members of the top management team” (Armstrong and Sambamurthy, 1999). An individual’s vertical location in the authority hierarchy will determine their access to valued resources and define their relative rank ordering in the overall chain of command (Lin, 2001). Based on the importance of the partnership between the
CIO and the top management team in terms of access to information and strategic success of IT investments leads to the following proposition.

P2a: The CIO's system of knowing in terms of the extent of their participation in the top management team will have a positive relationship with the CIO's development of social capital.

P2b: The CIO's system of knowing in terms of their hierarchical position within an organization will have a significant effect on the CIO's development of social capital.

Outcomes of Social Capital Influences

As previously reviewed, the structural hole theory proposes that there are three information benefits from social capital: access to information and resources, advantageous timing to that information and/or resource and referrals (Burt, 1997). Lin (2001) defined a simple formal structure as "a hierarchical structure consisting of a set of positions linked in authority (legitimately coercive) relations (command chains) over the control and use of certain valued resources" (p.35). Thus, it is proposed that linking the two concepts results in the following propositions.

P3a: The amount of social capital available to the CIO based on the position of the CIO relative to the top management team will significantly affect the CIO's access to valued information and resources.
P3b: The amount of social capital available to the CIO based on the position of the CIO relative to the top management team will significantly affect the CIO's referral network.

P3c: The amount of social capital available to the CIO based on the position of the CIO relative to the top management team will significantly affect the CIO's timing of valued information.

CONCLUSION

IT managerial skills and a strong partnership between the IS leader and top management are two factors that have been identified as contributing to the success of an organization. The importance of these factors suggest value in understanding how they contribute to success so that academics can understand and practitioners can know how to leverage the IT investment. Social capital is a relatively new, yet recognizably important concept in the social science disciplines (Adler and Kwon, 2002) and a potentially critical component in the explanation of why some organizations are successful at implementing and leveraging their IT investments and others are not.
Figure 1: Hypothesized Model of Social Capital Effects on Career Success,

(Seibert, et al., 2001)
Figure 2: Proposed Conceptual Model
<table>
<thead>
<tr>
<th>Origin</th>
<th>Definition</th>
<th>Key Benefits</th>
<th>Focus</th>
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| Coleman (1990) | “Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure” (p.302). | • Enhanced information acquisition  
• Transfer of authority or rights of control | Internal |
| Bourdieu (1985) | “the aggregate of the actual or potential resources which are linked to possessions of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (p.248). | • Access to resources | External |
| Burt (1997) | “A function of brokerage opportunities in a network” (p.339) | • Access to information  
• Timing of information acquisition  
• Referrals | External |
| Lin (2001) | “investment in social relations with expected returns in the marketplace” (p.19) | • Access to Resources | External |
| Nahapiet & Goshal (1998) | “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (p. 243) | • Access to Resources | Both |
| Adler & Kwon (2002) | “The goodwill available to individuals or groups. Its source lies in the structure and content of the actor’s social relations. Its effects flow from the information, influence and solidarity it makes available to others” (p. 23). | • Enhanced access to information  
• Improved information quality, relevance, timeliness  
• Increased influence, control, power  
• Solidarity of the social network | Both |

Table 1: Definitions and Benefits of Social Capital
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