



Trust as a predictor of innovation network ties in project teams

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Abstract

We examine the influence of trust on the formation of social network ties for the idea generation and idea realisation stages of innovation. Drawing on data from 153 employees working in project teams at two firms, we find two dimensions of trustworthiness, Ability and Benevolence, predict tie formation for both idea generation and idea realisation, whereas Integrity predicts tie formation for idea generation only. Moderation analyses across both firms and stages of innovation reveal that a lack of benevolence makes ability largely irrelevant as a criterion for choosing a partner for innovation activities, whereas high benevolence increases the extent to which ability influences partner choice. Additionally, a lack of integrity makes ability either irrelevant or a negative criterion for partner selection. Overall the results suggest that people need to perceive others as benevolent and not lacking in integrity in order to seek out their skills and knowledge for innovation in project teams.

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1. Introduction

Innovation can be conceptualized as a process made up of various linked stages from the generation of ideas to the implementation of new products and services (for review see [Garud et al., 2013](#); [Janssen et al., 1997](#)). Each stage of the innovation process has unique challenges which require the alignment and integration of cognitive, structural and social resources residing in different domains ([Amabile, 1988](#); [Hargadon, 2002](#)). Coordination of these resources allows organisations to deal with the many challenges of innovation including the generation and refinement of ideas ([Hargadon, 2002](#); [Hargadon and Douglas, 2001](#)), their coordination and production across the organisation ([Axtell et al., 2000](#)), the minimization of risks

([Berardo and Scholz, 2010](#)) and initiation of market uptake. The theory of social capital explains the motives for coordination and advice seeking in innovation ([Agneessens and Wittek, 2012](#); [Nahapiet and Ghoshal, 1997, 1998](#)). Two elements of social capital are the structural patterns of the communication networks (i.e. social networks), and the relational aspect of the ties within those networks, which includes trust ([Nahapiet and Ghoshal, 1998, pp. 250–251](#)).

The structural patterns of communications in an organisation can be quantified using social network analysis ([Marsden, 1990](#); [Tichy et al., 1979](#)). This approach traces employees' informal social ties and has recently been applied in innovation research to highlight the social side of idea development. Research in this vein has shown how social network structure influences innovation and its supportive elements in project teams and organisations ([Axtell et al., 2000](#); [Kastelle and Steen, 2010](#); [Kijkuit and van den Ende, 2010](#); [Madjar et al., 2002](#); [Simon and Tellier, 2011](#); [Steen et al., 2008](#)).

The relational element of trust is also understood to be a fundamental driver of the formation of network ties ([Burt, 2005](#); [Granovetter, 1973, 1983](#)). Tie formation is dependent not only on

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people identifying desired resources that reside in others, but also on people perceiving that the interaction will bring benefits. This perception of others’ trustworthiness consists of three dimensions: Ability, Benevolence, and Integrity (Mayer et al., 1995). Ability refers to the cognitive beliefs about the other party’s skills, competencies, and expertise that enable him or her to have influence in a particular domain. Benevolence captures the perception that the other person has genuine care and concern for the trustor and wants to do the right thing by them, including aspects of emotional attachment and positive orientation (pp. 717–719). Integrity relates to the perception that the other party adheres to a set of principles and values that the trustor finds acceptable, such as delivering on promises.

Psychometrically-valid measures of trust and its antecedents have rarely been utilised in network research (McEvily and Tortoriello, 2011), with researchers instead using global proxy indicators (e.g. Bijlsma-Frankema et al., 2008; van de Bunt et al., 2005, for recent exception see Yakovleva et al., 2010). Yet, recent research implies that there may be complex interactions between the various dimensions of trust in social networks. The collective work of Casciaro and Lobo (2005, 2008) showed how interpersonal affect (e.g. liking another) moderates the impact of competence on the formation of task-related ties. Extending this finding to trust in social networks, we propose that employees in project teams tasked with innovation need to perceive that a potential work partner is trustworthy, before seeking out the task resources that reside in that partner. This leads to an important yet largely unaddressed question (Ferrin et al., 2006): how does trust and its related dimensions influence the formation of social network ties in innovation processes? To our knowledge, there have been no attempts to examine this question, or the role of unique dimensions of trust in predicting social networks formed for different stages of the innovation process.

In the next section, we elaborate on the role of social networks and trust at the various stages of the innovation process, and describe our hypotheses.

2. Networks, trust and the innovation process

2.1. Stages of the innovation process

Innovation is a process made up of divergent and convergent phases which includes research and development and its associated activities (see review by Garud et al., 2013; OECD and Eurostat, 2005). Several models of the innovation process exist, and a review of these models suggests two dominant stages (Garud et al., 2013): idea generation (IG) and idea implementation or realisation (IR). Research on Innovative Work Behaviours (IWBs; De Jong and Den Hartog, 2010; Ramamoorthy et al., 2005) captures the distinct behaviours and activities at each stage. IG is defined by behaviours that help create new ideas for difficult issues, the search for new work methods and the generation of original solutions. In contrast, IR is defined by behaviours that transform innovative ideas into useful applications, evaluate the utility of novel ideas and introduce innovative work systems systematically into a work environment (p. 150). Fig. 1 illustrates the specific stages of the

innovation process, the links between them (Janssen et al., 1997) and the associated IWBs.

2.2. Social capital as contributor to innovation

Social capital theory is based on the principle that ties to others provide access to resources (Portes, 1998). That is, employees invest in social relationships by establishing and sustaining ties with others who are perceived to bring benefits. This study focuses on two distinct but inter-related aspects of social capital: the structural and relational elements. The interplay between these elements brings about benefits to the individuals, as well as their organisations (Burt, 2005; Nahapiet and Ghoshal, 1997).

2.3. Social networks as a structural contributor to innovation

Social networks explain how certain network structures of project teams bring advantages to the project. Research suggests that high-density structures support data accuracy (Ibarra, 1995), shared norm development (Nahapiet and Ghoshal, 1998; Obstfeld, 2005) and trust (Coleman, 1988; Reagans and McEvily, 2003). In contrast, sparse networks bring different benefits, namely facilitating diverse information from various domains to combine to create novel ideas (Burt, 1992; Burt et al., 2013; Coleman, 1990), enabling contingencies (Mizruchi and Stearns, 2001), and supporting collective action and synchronization (Burt, 2004; Obstfeld, 2005). Through network relationships, opportunities are created for information sharing and coordinated action to mutually reinforce and accumulate over time (Burt, 1997). Networks can facilitate not only cooperation to pursue opportunities (Podolny and Baron, 1997) but also the transmission of a person’s trustworthiness and the corroboration of that reputation within the network (Ferrin et al., 2012).

Social network analysis treats each actor as a node in the network, and ties between the actors are denoted by lines between the nodes. The term *ego* and *alter* are used to denote the actors, with the ego being the focal person, and the alter being the actor approached. The nodes and lines create a graph

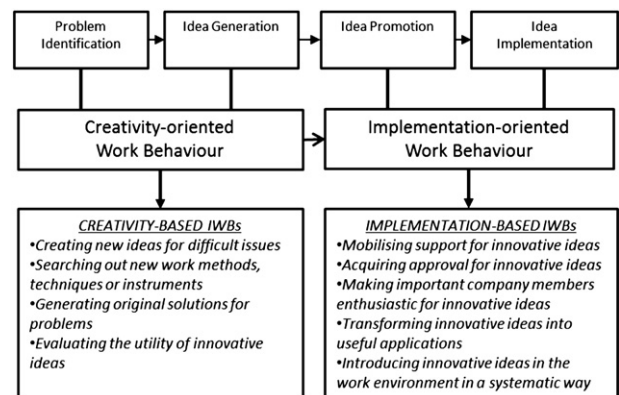


Fig. 1. The four stages of the innovation process. Adapted from Janssen et al. (1997).

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