

## **Doctoral Consortium Research Project Summary**

### Title:

Structure and Innovativeness: looking for balance

### Research Question:

What is the relationship between organizational structure and innovativeness?

### Rationale:

Innovation is a priority in almost every organization today. Organizational innovation allows firms to gain competitive advantages (Banbury & Mitchell, 1995), generate sustained superior profitability (Roberts, 1999), and is usually considered beneficial both to the organization and to society as a whole (Schumpeter, 1989). Organizational structure is a key element in explaining innovative performance (Baldrige & Burnham, 1975; Wolfe, 1994), and finding the most appropriate structure for innovation has produced a continuous stream of academic research over several decades (see Damanpour, 1991). In spite of this, it still remains unclear how organizational structure influences innovativeness (Gatignon, Tushman, Smith, & Anderson, 2002; Wolfe, 1994).

This research project can be divided into two interacting and complementary parts. The organisational innovativeness part considers the link between knowledge creation and innovation and as such reconceptualizes innovation as coming from the creation of new knowledge, which itself is dependent on knowledge exchange and recombination (Galunic & Rodan, 1998). When innovation is considered in this way, the perspective on the relationship between organisational structure and innovativeness evolves, as the dependent variable (innovativeness) changes from being a product output to an intangible concept linked to the creation of new knowledge. As such, social processes that facilitate or hinder the exchange and

recombination of knowledge should be included in a structural perspective in order to understand the innovative outcome of an organization.

Two main perspectives on structure have been used in studies analysing the relationship between structure and innovativeness, each highlighting a particular aspect of structure. The positional perspective on structure is looking at the formal structure (Donaldson, 2001; Pugh, Hickson, Hinings, & Turner, 1968) and the relationships of its dimensions to organisational innovativeness (see Damanpour, 1991). The relational perspective, on the other hand, considers mainly the informal structure of an organization (Burt, 2004; Perry-Smith & Shalley, 2003; Rodan & Galunic, 2004). The studies using the positional perspective have not produced consistent results; and this perspective has been criticized for being static, and as such unable to take into consideration the organisational processes that influence an organisational outcome such as innovativeness (Moch, Feather, & Fitzgibbons, 1983; Monge & Contractor, 2001). On the other hand, the need for a formal organisational structure is well established in the literature (Grant, 1996; Krackhardt, 1994; Nasrallah, Levitt, & Glynn, 2003; Roberts & O'Reilly III, 1978; Rudolph & Welker, 1998). Nevertheless, most studies using the relational perspective do not consider the formal structure behind the social networks. Therefore, both perspectives on structure have been related to organisational outcomes such as innovativeness, but with limitations or inconsistent results. However, these perspectives are not mutually exclusive.

Authors have discussed the interactions between formal and informal structure (Putnam, Phillips, & Chapman, 1996), and the question of whether formal structure precedes or is derived from informal structure (Monge & Eisenberg, 1987). These studies conclude that formal structure and informal structure exist concurrently and

that they interact. Additionally, some authors have attempted to relate the positional and relational perspectives and their conclusions emphasize the need to consider each in the light of the other (Blau, 1982; Monge & Eisenberg, 1987; Ranson, Hinings, & Greenwood, 1980). Finally, some empirical studies integrating social network and formal structure have suggested a relationship between the two (Shrader, Lincoln, & Hoffman, 1989; Tichy & Fombrun, 1979). Consequently, it appears that both dimensions of structure exist concurrently and that they influence each other. It is argued here that these two perspectives on structure represent two ends of a continuum and that an organization is composed by both informal and formal structure at the same time.

As a consequence, if both formal and informal structure coexist and influence each other, a different perspective, which combines informal and formal structure, could be proposed, in order to provide a better understanding of organizational innovativeness. Four new composite dimensions of structure (dispersion, polycentrism, integration, and participation) are derived from the extant literatures and their relationship to innovativeness is proposed.

#### Propositions:

##### **Dispersion**

Dispersion is conceptualized as the extent to which communications between employees follow the organizational structure. Dispersion integrates the positional construct of formalization with the relational construct of connectivity.

*Proposition 1: Dispersion will exhibit an inverted U-shaped relationship with innovativeness.*

##### **Polycentrism**

Polycentrism refers to the extent to which authority is distributed in different centers of authority across different units in the organization. It is operationalized as the existence and number of central individuals in each unit. Polycentrism therefore combines the effects of both formal and informal centralization

*Proposition 2: Polycentrism will exhibit an inverted U-shaped relationship with innovativeness.*

### **Integration**

The construct of integration combines horizontal differentiation and clustering. Both horizontal differentiation and clustering represent a similar notion – the extent to which an organization is divided into groups. These constructs are associated to represent the extent to which an organization is composed of groups (either formal or informal), which are separated one from the other.

*Proposition 3: Integration will exhibit an inverted U-shaped relationship with innovativeness.*

### **Participation**

Participation represents the notion that the division of hierarchy in layers (positional perspective) does not represent the actual structure of power inside the line of command, nor does it represent the way in which the hierarchy is used.

Proposition 4: Participation will exhibit a positive relationship with innovativeness.

### **Research Methods**

This exploratory study examines the relationship between these dimensions of organizational structure and innovativeness through a case study approach. Data about the innovativeness of the organization is collected through a survey and the patterns of interactions between individuals are measured by a proxy, e-mail communications.

The patterns of interactions are used to measure the four structural variables (dispersion, polycentrism, integration and participation). Data about e-mail communications is gathered via a software application placed on the server of the case study company. Additionally, a mathematical model will be built from the case study data in order to simulate the interactions between the different structural variables and to estimate their effects on innovativeness.

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