

Organizational Learning by 'Segmented Networks': Breeding Variations and Similarities Together - What is Optimum?

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EXECUTIVE SUMMARY

Researchers have long argued that a 'right' degree of closeness among team members is necessary for innovation. At unhealthy extremes, while closeness leads to cloning and copycat attitude, increased distance can result in incompatibility and dissonance. Hence, actually building teams that possess 'creative-tension' is easier said than done. This paper develops specific factors that conceptualize an 'optimum' distance (vis-à-vis closeness) in teams and later extends the factors to argue for a novel organizational form, the 'segmented network'.

INTRODUCTION:

Organizations have increasingly realized the need to build knowledge base through available and *potential* resources. The importance of maintaining a *right balance* between exploiting the existing and exploring new knowledge base for innovation has been well realized (Cox, 1993; Jackson et al., 1995). However, in practice, achieving right 'variation' in teams is not so easy.

We begin by sharing our broad research concern: Which types of organizational forms would support greater innovation in future? Here, we have two specific objectives: One, to conceptualize the notion of 'balanced variation' in management teams. Two, to identify the important factors that define the *degree* of balance. Our objectives have been well captured through a humorous quote in sociology: 'If two people always *agree*, then one is useless and if they always *disagree*, then both are useless'! Finally, in this paper we shall focus on the potential sources for enhancing innovation and suggest new organizational forms.

1. REFLECTIONS FROM PAST RESEARCH

Concomitant to the globalization of industry over the past decade, there has been a proliferation of strategic linkages. Almost all empirical analyses of inter-organizational networks focus on inter-organizational groupings (Pfeffer & Salancik, 1974; Van De Ven & Walker, 1984). Here, we accept the definition due to Andersen et al. (1994), who define a business network as a set of two or more connected business relationships. The authors claim that the parties in networks (traditionally) come from the same industry. Another reason for and dimension of network is synergy (Ansoff, 1965), which is based on the economies of scale (especially true for the large MNCs). Please note that our concern here is to investigate the conditions in teams that enhance innovation (in learning). This essentially takes a view beyond scale-based synergies.

Research on networks has been primarily concerned with knowledge creation at organizational levels. For example, Kogut and Zander (1992) examine the transformation of personal knowledge into organizational knowledge and Nonaka et al. (1994) have studied the knowledge creation in firms. Organizational learning gained currency when collecting and interpreting market information ahead of competitors was found to be a potential source of competitive advantage (DeGeus, 1988; Dickson, 1992). The importance of market forces (and hence an 'external' orientation) is stressed by several researchers (Shapiro, 1988; Deshpande & Webster, 1989; Day, 1990, 1992). Argyris (1977) stresses the need to practice 'double loop learning', while Senge (1990) recommends

'generative learning'. Both these pioneers have attempted to enhance innovation in management teams. Since managers mostly work in teams, there is a need to transfer the individual knowledge at a company level (Hedlund, 1994). Most theorists also agree that organizations ultimately learn through individuals (Senge, 1990; Kim, 1993; Dodgson, 1993).

2. COMMENTS ON PAST RESEARCH

In spite of pioneering attempts to conceptualize organizational learning, several researchers have expressed concerns lately. Ritcher (1998) remarks that the current literature does not adequately explore the micro dynamics of learning process. Although DeGues (1988), Stata (1989), Senge (1990a), Nonaka (1991), among others have underlined the need for 'creative tension' in teams, they have, since then struggled to concretely theorize and experiment with the notion of 'strategic balance'. In fact, Nonaka et al. (1995) claim:

"...There is very little research on how knowledge is actually created and hence there is a need to understand the dynamics of knowledge creation." (italics added).

Alter and Hage (1993) and Hamel et al (1988) have argued that new theories be developed that can encompass knowledge creation as a result of inter-firm collaboration. Such an ambition demands novelty in theorizing, that captures knowledge creation more broadly (than merely understanding it as the result of social discourse within an organization). Further, the contemporary theories on organizational learning have not considered the possibility of a firm influencing its environment (Hamel, Doz and Prahalad, 1988). Follett (1942) suggested the importance of variation among the decision-makers by stressing the need to look inside and outside the firm quite early. Echoing similar views, Macdonald (1995) claims that the current theories have neglected the external-to-firm factors. This is especially surprising after the importance of market forces have been well studied in the past (Shapiro, 1988; Deshpande & Webster, 1989; Day, 1990, 1992). Incorporating market forces in the current theories on organizational learning becomes even more important with D'Aveni's (1995) work on hypercompetition. The author argues that competition, if understood in traditional sense, can be grossly misleading because the industries are now marked by new sources of competitive (dis)advantages. Consequently, firms need breakthrough innovations through industry-directed learning to outsmart competition. Nonaka (1994) stresses that the underlying focus in all learning activities should be to actually enhance innovation and not merely learning (for the sake of it). To sum up the dis-satisfaction with the

existing literature on organizational learning, we are challenged by three concerns:

1. Unclear conceptualization of 'optimum distance' among the team members.
2. Weak research linking team dynamics (and team composition) with innovation.
3. Finally, a missing unified theory of organizational learning that simultaneously encompasses and links internal and external-to-firm factors.

Taking some of the key points from the above concerns, in this paper we shall limit ourselves to developing a theory that incorporates internal and external (to firm) factors and links 'optimum distance' in teams with their ability to innovate.

3. HOW MUCH VARIATION IS 'ENOUGH'?

With increasing market uncertainties, firms need to continually explore newer means of accessing, processing and applying knowledge. Several researchers argue that a 'right' degree of variation in teams breeds conditions for innovation (Stata; 1989; Senge, 1990a etc.). While the notion of 'optimum difference' among the members is well recognized, two issues deserve greater attention:

- How much variation among members can result in an 'optimum distance'?
- What factors lead to 'strategic dissonance'?

Lack of a comprehensive theory linking team-composition with managerial innovation makes the absence of the above-mentioned issues little less surprising.

3.1 Member Distance

Understanding 'distance' that the team members experience from each other is key to defining 'balanced variation'. By 'distance' we mean differences among the members, based on objective factors such as previous work experiences, education, professional training and more subjective issues as values-at-work and personality. Inkpen (1988) argues that in intra-industry and inter-firm teams, substantial mutual distrust among members of each firm (who perceive each other as potential competitors) inhibits an atmosphere of 'openness', that is essential for learning. Extending the approach of Inkpen (1988) of classifying members based on the type of firm and industry, we conceptualize four types of teams:

1. Between managers of same industry and same type of firms (typically between the head-on competitors, discussed by Inkpen, 1988);
2. Between the managers of same industry, but different firms (typically the complementors or indirect competitors);
3. Between the managers of different industry, but same type of firm. Example includes retailers' associations in different industries (indirect complementors).
4. Between managers of completely unrelated firms.

We now develop two generic constructs that help us investigate the above-mentioned teams for their ability to initiate, sustain and exploit 'creative tension'. In the following space we conceptualize the factors constituting 'member distance'.

3.1.1 Knowledge Distance (KD)

At a broad level, companies in different industries demand specific knowledge. While the managers in an investment bank need to know well volatility, risk evaluation, etc., those in consumer goods need the knowledge of consumer psychology. Similar companies within the same industry usually possess common knowledge (complementors are exception, as they may operate at different value-added 'levels', even in the same industry). By 'similar companies within an industry', we mean companies that focus

within the same scope of value chain based on the primary activities (Porter, 1985). Hence, KD conceptualizes the degree of industry-relatedness in terms of primary activities. Based on these arguments, we propose:

P1: There exists a set of knowledge requirements in different industries, which leads to the presence of knowledge distance (or difference) across various industries (at a broad level).

3.1.2 Professional Distance (PD)

Goffee and Jones (1996) argue that various departments within the same firm can influence managers' personalities (and hence their 'perceived distance'). The way in which a prolonged (and specialized) work experience influences the managers is similar to the way in which culture conditions people (many times, even without their consciousness). The process in which different (and changing) work responsibilities influence a manager's personality is elaborately documented by the noted Harvard social scientist, Shoshana Zuboff (1988), based on years of observations and interviews in firms that underwent change (notably with increasing automation). We refer to such a job-specific, personality difference as Professional Distance (PD). PD is affected by the intensity of workload and/or prolonged work experience with specialized responsibilities. Based on these arguments, we propose:

P2: There exists a set of (intuitive) personality requirements (leading to personality differences) across different departments.

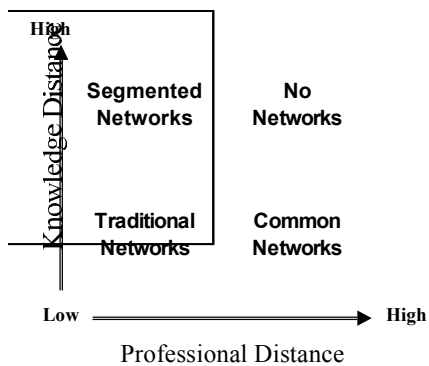
Note that the above proposition is especially true for the MNCs, which are marked by greater number of more highly specialized divisions.

3.2 Using KD and PD to conceptualize 'conditions' for innovative learning:

In this section, we delve deeper into KD and PD to investigate their joint effects. From the arguments presented earlier, we can conceptualize various divisions of an MNC as (micro) 'personality domains' (based on PD) and the MNCs themselves, as macro 'knowledge domains' (based on KD). It is a common observation in many firms that the sales managers work more closely with product managers than with the production managers. Why so? We believe that this is due to higher degree, directness and ease of the compatibility between the sales and product development (compared to sales and production department) based on their competencies. We now summarize some of the key arguments presented in the paper:

1. While KD captures (dis)similarities existing among managers due to external-to-firm knowledge-specific differences, PD conceptualizes the department-specific, internal-to-firm behavior-related (dis)similarities. This addresses the concerns of Follett (1942) and Hamel et al. (1988), as stated earlier.
2. KD captures the 'member-distance' based on objective and more formal knowledge-based competencies, at a macro (industry) level. PD, on the other hand, represents subjective and relatively more complex (personality-based) differences at a micro (department) level.
3. At the cost of repetition, it should be noted that based on past research, we inferred that managers' overall job-related knowledge is a function of company's line of business (or its 'position' in the industry). Similarly, a manager's personality is argued to depend on the degree of specialization and length of job (while the effects of social discourse, family life cycle, etc. were ignored for simplicity).
4. Finally, the unit of analysis when using PD is a manager (or department) and in the case of KD, the unit of analysis is the firm.

We believe that KD and PD, taken together, hold the poten-



tial to define teams with 'optimum distance'. Based on various combinations of PD and KD, we have developed a simple 2 by 2 matrix that shows different teams based on varying levels of KD and PD.

It is evident that the traditional networks occur when both KD and PD are low. These are typically the intra-firm, intra-department teams. An example includes the periodic department meeting in a company (between the head and his/ her employees). Since such meetings are found in all the firms, we refer to them as the traditional internal 'networks' of managers. However, as the need for integrating knowledge across the departments, within a firm is realized, managers from different departments have started to work together. We refer to such teams as the common internal 'networks' (more commonly known as 'cross-functional' teams). As their name indicates, they are found in many companies. Note that if managers are poor in managing intra-department teams, it would be immature to develop cross-functional teams.

When both KD and PD are high, we believe that no teams can (and should) be formed. Hence, we do not investigate such teams further. A team with high KD and PD is not merely ineffective, but also difficult to manage. Ease of managing a team is an important practical consideration that must be borne in mind. The notion of 'optimum distance', by its definition demands that least one of the factors (constituting 'distance') should have an opposing effect, thereby resulting in a sort of 'balance'. This obviously rules out teams where both KD and PD are high (or low).

Perhaps, the most interesting case arises when the members experience low PD and high KD. We refer to such a team as a 'Segmented network'. Varying (knowledge-based) competencies and similar personalities mark the conditions in such a team. Past research provides ample proof on how job specialization can influence manager's personality (Zuboff, 1988; Goffee and Jones, 1996). Consequently, the members can more easily 'empathize' with each other, while rooting their differences in knowledge based, more factual interpretations. A segmented network, by its definition (and composition) encourages managers to look at learning possibilities outside their firm.

3.3 Anatomy of 'Segmented Networks'

Each division of an MNC, due to specialization usually has one or set of highly related activities. We illustrate this by stating the 'key' activities in a Marketing division in different industries (managers from which can constitute a 'segmented network'):

- a) Selling image (brand management);
- b) Hard selling (door-to-door sales for introductory products and services);
- c) Selling care (customer support);
- d) Selling ideas (creating demand, negotiating deals or price discounts with retailers etc.);
- e) Selling a character (building customers' confidence);
- f) Selling an atmosphere (customer services);

- g) Selling relationships (relationship marketing) etc.

It is evident that a common thread (of 'selling') runs throughout these activities. Hence, the marketing executives in different industries have the potential to share this 'primary knowledge around selling'. They can complement each other's knowledge bases about the consumer behavior. Different firms in a given region serve the same client-base. This argument is violated in two cases: One, when the firms have different end-users (business clients versus private consumers). Two, at department level, when managers from different sides operate at different 'levels' of value chains in different industries for e.g., managers from accounting department in a bank and those from sales in a consumer good firm. Note carefully that a segmented network is team of two (or more) similar 'departments' from two (or more) companies, essentially in different industries and builds on the notion of 'strategic balance' among its members. Obviously, making such teams demands flexibility and delegation from the senior management, who should encourage the departments identify respective 'key' activities and then develop 'Strategic Learning Partnerships' (SLPs).

While a segmented network incorporates the idea of 'co-optation', it is still averse to making SLPs with head-on competitors (problems of which are well noted by Inkpen (1988)). We firmly believe that there is a need to 'calculate well' before opening up to new learning possibilities from external players. Learning from external players has become critical, especially with the proliferation of network products (Arthur, 1994).

Our argument that the presence of high KD (as in a segmented network) can create conditions for better decisions (in terms of quality and innovativeness) draws support from past research. Schweiger et al. (1986) and Sandberg et al. (1989) show that the quality of decisions is proportional to the number of 'task' oriented conflicts. Further, in line research on hypercompetition (D'Aveni, 1995), segmented networks can support conditions for 'non-linear learning', since it is based on the assumption that the 'fateful signals' can come up in any quarter of the industry. As most of the companies still exploit traditional and common networks, it is strategic to experiment with newer types of teams. In fact, Achrol (1991), Dickson (1992) and Kanter (1989) agree that the primary focus of market orientation is based on knowledge derived from customer and competitor analysis and a firm must be careful not to underestimate the contributions of 'external' sources.

4 KEY MANAGERIAL IMPLICATIONS

The contemporary literature linking competitive strategy and knowledge creation stresses on learning faster than competitors (DeGeus, 1988; Dickson, 1992). We depart from this view and suggest that in future learning smarter would be more important. Segmented networks present not only the opportunities, but also the conditions for smarter learning. They can prove to be particularly useful in the following situations:

1. *When firms internationalize:* Here there is a need to understand the consumer 'as completely as possible'. Segmented networks would prove helpful, as they comprise managers from selected 'departments' from various industries (serving a 'common client base', discussed earlier).
2. *When markets change:* This happens when new competitors enter and/ or the consumers' demands shift. A more 'complete' understanding of consumer behavior would be helpful. Here we challenge the future researchers with a proposition:
P3: For a firm operating in competitive environment, knowledge of the 'complete consumer' is more important than a 'complete product'.
3. *Placing the 'right' person in the 'right chair':* This is a com-

mon policy guiding the human resources activities in the companies. We argue that such a practice falls in line with our theory as the underlying objective here (in our language) is matching KD and PD.

4. A FINAL NOTE

The paper attempted to capture the potential link between team composition and managerial innovation. We argued that at professional levels, it is more difficult to manage teams with greater personality differences than those with greater knowledge differences. Segmented networks appeal well beyond their current theoretical domains and offer a practical solution for making innovative teams in the future. A working proposition throughout this research was to link grounded (and rather static) theoretical descriptions with practical and dynamic prescriptions. We now identify some of the key limitations and highlighting directions for future research.

While we attempted to conceptualize PD and KD, it remains challenge as how to theoretically measure and actually report them (in firms). Another challenge is to identify the 'key value-adding' activity common to a department 'across' the major industries (illustrated only for Marketing here). Further, thinking in terms of 'discrete' activity has the limitation in network industries (for e.g., Telecom and Banking), which are marked by overlaps in value-creating activities (Stabell et al., 1998). This implies the presence of (and need for) an overlap in managers' knowledge and even personalities. Accepting a dichotomized classification of managerial innovation (due to Schein et al (1970)) as 'role innovation' (new definitions of roles, approaches, coordination etc.) and 'content innovation' (new products and services), we admit that our study remained limited to 'role innovation'. Again, the influence of hierarchy in team dynamics and innovation was not considered for simplicity.

Will segmented networks be easy to manage? Honestly, we don't know. However, if the implications from past research are to be believed, we are optimistic. Finally, leading such a team would demand greater managerial competence at result-orientation, due to the existing knowledge distance among managers.

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