Leading Open Innovation and Cooperation: A Global Challenge to Managerial Responsiveness

IFSAM 2006: Panel

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Abstract

Innovation research and organizational practice often focus on R&D investments and activities carried out in designated departments and controlled processes. Anecdotal evidence tells us, however, that this centralized and formalistic approach to innovation is often insufficient. A significant number of radical but profitable innovations have their origin outside of the boundaries of R&D departments, and a significant number are created in later stages of value creation that were not intended to produce innovations. Only a few successful companies seem to be able to identify and build upon these "peripheral" innovation activities from unexpected locations. However, in an increasingly global world it is more and more important to learn how to manage innovations from many sources, i.e. through global cooperation.

This panel emphasizes the leadership requirements for innovation and cooperation in global corporations. It will discuss the antecedents and consequences of a firm's ability to draw innovation from many globally distributed players, not only in the organizational pipeline but beyond organizational control. The speakers in the panel will consider four specific aspects of this problem: 1) Local leadership of innovation, 2) Corporate leadership systems, 3) Absorptive capacity, 4) Leading and working in global cooperation. We hope the panel will spur conversation about leading innovation and cooperation in a global context, and more specifically encourage additional empirical research on how organizations can marshal the enormous potential of globally distributed sources of innovation.

We want to acknowledge that we have submitted a proposal from an earlier stage of this project for the August 2006 Academy of Management meetings in Atlanta. Our IFSAM proposal draws on the earlier submission but develops it further. The AOM proposal emphasizes the concept of 'centripetal capacity' for integrating external and internal innovations; this panel considers important aspects of external cooperation with external contacts.

Overview of the Panel

It is clear that innovation is important (Kilroy, 1999; Roberts, 1999); research has demonstrated in particular how new products facilitate the survival of firms and contribute to broader social welfare (Chaney & Devine 1992; Debruyne et al. 2002). Still, a lot of firms fail in their attempts to innovate. As Peter Drucker says: "Today no one needs to be convinced that innovation is important – intense competition, along with fast changing markets and technologies, has made sure of that. How to innovate is the key question" (Drucker 1988, p. 149).

"Democratizing innovation" (von Hippel, 2005) has recently been proposed as the answer to this key question. This new model is a radical departure from past practices of centralized research and development in which the innovative genii is sought in separate organizational units, project management designs and incentive systems. One important drawback of the centralized approach is that breakthrough innovations do not always originate in the R&D unit of the organization (Johnson & Huff, 1998; Robinson & Stern, 1998). Examples include the development of the ulcer medication Losec which corporate innovation managers at the pharmaceutical giant Astra (today AstraZeneca) tried to stop (Östholm et al, 1996), but which grew to became one of the world's most successful prescribed medications.

This example shows that management is part of the reason why innovations that are created at the periphery are not recognized in the core of an organization. When innovation is expected to happen in an officially designated place, the signal is that only a tiny fraction of the organization is meant to be inventive, and few outside innovations occur or survive (Chesbrough, 2003). Furthermore, when corporate innovation systems are centralized, the practices, values, and incentive systems that might pick up dispersed innovations are not in place. As markets become more global and competitive, the loss is increasingly important. All organizations must learn how to be more globally innovative, i.e. globally cooperative.

A second critical issue is that centralized innovation practices often focus on product innovations. But successful products are increasingly embedded in complementary services and customer experiences which are supported by a variety of activities. Service quality and innovation relies on employee involvement (White & Schneider, 2004). As globally distributed customers are rapidly coming to expect attention to the experience of engaging with a product/service (Cagan & Vogel, 2002), the points of required innovation and contact are even more widely dispersed. Centralized innovation management practices can not develop the necessary reach. The people closest to this growing complexity are important sources of information and breakthrough.

Several scholars have recently highlighted the benefits of opening up the innovation process (see, e.g., Chesbrough, 2003; Piller, 2005; von Hippel, 2005). The central insight is that by encouraging and considering the ideas and solution knowledge of a large number of individuals, new creativity can be brought into the organization. This observation also fits with other conversations about the human resource benefits of designing *democratic enterprises* (Gratton, 2003) and drawing on employees' tacit knowledge (Nonaka & Takeuchi, 1995).

The central idea of recent proponents for open or globally distributed innovation systems is to utilize the energy, creative input and solution knowledge of large numbers of individuals. We feel it is important to study and expand upon early efforts to incorporate this radical new design philosophy,

which has the capability of significantly disrupting organizations and organizational networks thus being rejected (Christensen & Raynor, 2003). Research is needed that focuses on the ideas and inputs of members at the periphery of an organization, i.e. outside the institutionalized corporate R&D and the innovation management function of a firm. More specifically, once a firm acknowledges the potential for peripheral innovations, there is an increased need for leadership that can relate globally distributed innovations to overall objectives, and make them grow to the point where they can affect overall organizational competitiveness.

To deepen our understanding for conceptualization and analysis, we propose two theoretical perspectives - social network theory and the resource based view of the firm:

(1) Research in the domain of *social network theory* (Granovetter 1973, 1982) tells us that there is a "social side of creativity" and innovation. One focus of theory in this area is on how individuals' positions in social networks can explain their innovative behaviour. Of particular interest to us is the observation that individual creativity flows from "embeddedness" that cuts across diverse social networks (Granovetter, 1985). Furthermore, employees located in the *network periphery* are proposed to be in an especially favorable position to contribute to radical innovations because of their links to outside networks (Perry-Smith & Shalley, 2003).

This argument is consistent with von Hippel's observation that the locus of innovations is often close to where the need for innovative arises (von Hippel, 1988). Leifer et al. phrase it more dramatically: "You need a great team of people with diverse skills to perform a symphony well, but no team has ever written a great symphony! While cross-functional teams are key players in defining and implementing incremental innovation projects, cross-functional disruptive individuals tend to be key players in defining radical innovation projects" (Leifer et al. 2000). We find this quote an important backup for the idea that the R&D function can no longer be expected to be the sole source of innovation, and an important guide to seeking globally distributed, loosely connected, innovation teams. The network perspective suggests focusing network positions and connections rather than innovation content.

Managerial practices in the areas of global leadership, human resources and innovation can shape opportunities to interact differentially depending on employees' positions in hierarchies and task structures. For example, people who have held many positions in different organizations are more likely to develop social capital that spans several organizations (Greve & Salaff, 2001). Because their contacts cross organizations they are particularly valuable collaborators on joint projects. Corporate social capital has been studied with respect to embedded positions that are specific to firms (Nahapiet & Ghoshal, 1998; Gabbay & Leenders, 1999). The increasing need for open innovation requires broadening that concept to a global, interorganizational level of analysis.

The concept of nested systems is important when studying the management of innovation from this theoretical perspective. As described above, we want to study how leadership can influence cooperation at organizational, functional and individual levels, considering the nested systems of relations where conditions from each of these levels affect innovative behaviour on lower levels. Drawing on literature in social network theory, we will propose models explaining how structures enhancing creativity and innovations evolve and can be managed.

(2) We also expect to find a useful theoretical foundation in the *resource-based view* of the firm (Barney, 1991). This perspective has developed understanding of how firm *capabilities* (Amit & Schoemaker, 1993) are related to overall organizational performance. The term "capability" refers to an organization's ability to use organizational processes to marshal its resources and achieve desired objectives. Capabilities are firm-specific, information-based processes that are developed over time through complex interactions amongst the organization's resources, while "dynamic capabilities" are defined as "the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" and enable proactive agility, learning and innovation (Teece et al., 1997).

Several authors have drawn on this literature to think about innovation. The term “innovation capability” was used by Burgelman, Kosnik and van den Poel (1998, p. 36) to describe the “… comprehensive set of characteristics of an organization that facilitate and support its innovation strategies”. Similar concepts are the “capacity to innovate” (Burns & Stalker, 1961); the ability of an organization to successfully adopt and implement new ideas, processes or products; and “absorptive capacity” (Cohen & Levinthal, 1990), the ability to access, value, and utilize external resources and knowledge for innovation purposes. Whilst these constructs refer to successful implementation of innovations, “*innovativeness*” more specifically refers to openness to new ideas and sources of innovation as an aspect of a firm’s culture (Zaltman, Duncan, & Holbeck, 1973).

This second area of research helps us to further define and operationalize our central concept of leading open innovation. We want to identify causal relationships that link existing explanatory factors of innovation success with the demands of a changing – globalised - institutional and economic landscape.

Panel Format & Questions for Discussion

We hope to engage the audience in this new and important topic. Four speakers will each provide a distinctive disciplinary perspective on leading open innovation and cooperation and explore different aspects of managerial practices at different organizational levels that can spur and leverage innovation activities across the organization (10-15 min. presentations).

The presenters are an international group working with both qualitative and quantitative methodologies to provide insight into three specific questions that will anchor panel presentations:

1. How can managers from different organizational levels with different responsibilities spur and leverage globally distributed innovations?
2. What managerial practices contribute to a firm's innovation capacity – the ability to draw innovations occurring at various distributed locations into a coherent agenda?
3. How the results of insider/outsider activity can be combined to improve economic performance?

To answer these questions we will provide ideas about:

a. The kind of innovations now being generated outside of centralized R&D efforts in large organizations.
b. What happens to them over time as they are or are not managed.
c. The corporate systems that can promote absorption and increase the impact of innovation that originate outside of established R&D processes.
d. The suggestions managers and other employees have for increasing a firm's global innovation capacity.
e. Hybrid models of corporate innovation that describe the relationships that link open innovation to more conventional R&D.

We hope discussion will shed further insight on these important issues.

Synopsis of Presentations

Introduction to the Panel

Anne Huff & Ralf Reichwald, Technische Universität München, Germany

The promise of 'open' or 'dispersed' innovation will be reviewed by Anne Huff. She will argue for the importance of formulating and empirically testing models that emphasize the leadership of a firm's global innovation capacity, as outlined above. Open innovation will be described as a potential organizational resource that benefits from being seen in the light of social network theory. To explain globally distributed innovative behaviour by individuals, variables from the increasingly important domain of social network theory will be identified in combination with other existing psychological explanations of work place innovations (e.g. Scott & Bruce, 1994).

Systematic and proactive leadership of innovative and cooperative behaviour will be described by Ralf Reichwald. Again the focus is on description at different levels, from individual initiation and motivation to organizational (and inter-organizational) integration and exploitation. Professor Reichwald will describe firms that use open innovation effectively. Antecedents and consequences of a firm's global innovation capacity are part of the framework he will develop. Antecedents include leadership style, commitment and incentives in favour of innovation. These factors, when positive, can lead managers to implement practices generating strong innovation capacity. Consequences include how innovation capacity contributes to global corporate innovativeness and the overall capacity to innovate; factors that have been shown to positively impact economic performance. To isolate the contribution of effectively leading globally distributed innovations to a firm's overall capacity to innovate, functional competencies related to designated R&D and innovation activities will be highlighted (e.g. overall, technical, marketing and managerial excellence and formalization in the

innovation process – see Pavlou & El Sawy 2005 for a similar categorization). Variance due to industry and firm size will also be considered.

Local Leadership Practices that Foster a Firm's Capacity to Innovate and Cooperate

Tobias Fredberg - Chalmers University of Technology, Sweden

Recent research clearly shows that a proper understanding of management demands that the focus is put not on the individual leader, but on the relationship between the leader and his/her local context (House & Aditya 1997; Gronn 2002; Hiller 2002). This new perspective suggests that managers on all levels, from the CEO to the shop floor manager, share the problem of making the groups for which they are responsible work more innovatively. Furthermore, the new paradigm shatters older descriptions of innovation that concentrated on single factors leading to innovative work (for example, motivation, creativity management or stress management).

Tobias Fredberg will describe how innovation is created on the local level, and what the local manager does to encourage innovative co-workers. This topic has been addressed in other research streams, but needs to be addressed from the perspective of open innovation in global companies. The idea that innovation is a manageable process and that management therefore also itself is subject to innovation has gained increasing support in the academic literature (Hatchuel, 2001; Tidd, Bessant, & Pavitt, 2001; von Hippel, Thomke, & Sonnack, 1999). Innovations are needed because change processes are hard on employees in terms of insecurity, stress-related disease and inability to be creative. Management innovations focus on both how products are created and processes that support sustainability. Figure 1 is a first tentative model to identify research streams that address these and other issues relevant to managing in the local context.

One view is that innovation can only be achieved by providing institutional arrangements for it to take place (e.g. provision for organizational slack). Re-thinking systems of control, a classic focus of

corporate leadership systems, is particularly important. An important question is how fields in Figure 1 (are expected to lead to more innovation, according to the academic literature) can be monitored and supported. We want to understand how managerial activity in these areas facilitates innovative processes. Perhaps more importantly, if improved way of working to take place, innovations in management have been developed and implemented. We are beginning to identify these innovations. Innovation is an elusive term, however, and is difficult to measure (Fitzgibbon, 2000; Tidd et al., 2001). It is easier to show in hindsight that an organisation has been innovative (e.g. market success) than to actually show what activities and practices within the organisation lead to innovation. It is even more difficult to find proper measurements and methods to increase the local innovation capacity.

Motivation, for example, has been explored primarily in psychology (often with student subjects). In management research, motivation has been addressed as an area of creativity management, with intrinsic motivation factors identified as especially important for creativity. However, past research on motivation raises a number of problematic issues that need to be further researched to understand their significance. Similar conceptual issues arise in other areas in local leadership practices for innovation. Fredberg suggests how further research can distinguish factors that are particularly important for open innovation.

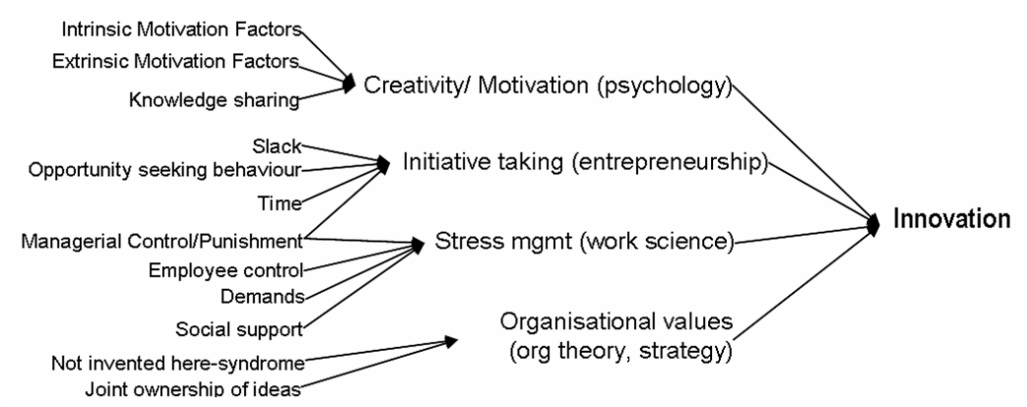

Figure 1: Tentative model of managerial areas of influence in local innovation capacity

Corporate Leadership Systems that Foster a Firm's Capacity to Innovate and Cooperate

Kathrin Moeslein: HHL-Leipzig Graduate School of Management, Germany

To create organizational contexts that support innovation of different degrees of novelty, originating from different sources and locations, can be seen as one of the key leadership challenges for innovation. Kathrin Moeslein proposes that developing the capacity to innovate and cooperate in large organizations requires going beyond the individual leader. Innovation and cooperation is impacted by leadership systems, structures, processes, culture, competencies and networks (Munshi et al., 2005). Professor Moeslein's presentation will focus on the role of these leadership systems and explore how current corporate leadership systems affect the ability of a firm to draw on globally distributed innovation The intent is to isolate design principles for innovation-oriented systems and derive contextual predictors for the generation of distributed innovation capacity in corporate settings.

This presentation will draw on a series of interviews in large multinational organizations. The company panel covered a broad range of industries, including automobile (BMW, DaimlerChrysler), IT, electronics and software (e.g. Cisco Systems, HP, IBM, Philips, SAP), energy (e.g. Chevron Texaco, E.On), risk, insurance and financial services (e.g. Allianz, Deutsche Bank, JP Morgan Chase, Liberty Mutual, Marsh, Munich Re), systems and solutions (e.g. BAE Systems, Siemens) or travel and tourism (e.g. Lufthansa, TUI). Several reports of this project are now available (Huff & Möslein, 2004; Möslein, 2004, 2005; Reichwald, 2005; Reichwald, Möslein, Siebert, & Kalbitzer, 2003). Research data from this study is summarized for insight into how leadership systems can leverage corporate innovation capacity. The focus is on the antecedents and consequences of the centripetal force that leadership systems create for corporate innovation.

Building Absorptive Capacity for Fostering Innovation and Cooperation

Frank Piller: MIT Sloan School of Management & TUM Business School

The notion that firms have to absorb external knowledge and innovative input, including inputs from the firm's customers, is a very strong theme in Dr. Piller's work. Various means, such as the lead user workshop methodology (Herstatt & von Hippel, 1992; von Hippel, 1986; von Hippel, Thomke & Sonnack, 1999) and toolkits for innovation (Franke & Piller, 2004; von Hippel & Katz, 2002), have been shown to make absorption more efficient. These efforts are important starting points for the discussion of absorbing innovation in this presentation.

The challenge of identifying and transferring innovation wherever it occurs can be interpreted as an effort to enlarge organizational absorptive capacity (Cohen & Levinthal, 1990). The concept of absorptive capacity is a term closely connected to the resource dependence approach (Pfeffer & Salancik, 1978). This approach looks essentially outside the organization for explanations of the patterns through which firms allocate external resources to activities creating competitive advantage. Innovative inputs originating from loci outside of corporate management control can be interpreted as such an "external" resource that is increasingly critical for firms (Berger et al., 2005). Building on Zahra and George's (2002) structure of capabilities which compose a firm's absorptive capacity, Piller will identify four fields which define the ability to utilize periphery innovations:

- *Acquisition* is defined as the capability on the corporate level to identify and acquire innovative concepts and ideas from the periphery which are critical to its operations. The presentation will build on studies of cases where corporate innovation systems mirror innovation systems outside the organisational contexts, as reported for example by von Hippel (1988) for developments in the medical device and semiconductor industry.
- *Assimilation* describes routines allowing the organization to process, analyze, interpret and understand information from sources at its periphery. Common assimilation practices on the corporate level include supervision of the management of innovation projects, innovation diffusion

mechanisms, influence of strategy on innovation making (e.g. through resource allocation), the organisation of innovative work and creating spaces and slack for innovation (management principles, workshops etc.).

- *Transformation* is the capability to design and re-design the routines that facilitate combining existing knowledge and practices and the newly acquired and assimilated knowledge. We know from research on communities of practice (e.g. Swan *et al.*, 2002) that there are collaborations between local innovation groups that transfer innovative solutions. Pillar's focus is not on the knowledge created or the social mechanisms keeping innovators together (for a review of this field, see Piller 2005; von Hippel 2005), but on the arrangements and collaboration between such groups.
- *Exploitation* capability is based on the corporate routines that allow the organization to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations. Whenever initiatives to transfer innovations from the periphery to the corporate level are first implemented as pilot initiatives, but not as part of the standard routines of the organization, the key challenge is to exploit the initial learning process and the competencies acquired and to transform them into standard organizational routines for the larger organization.

How to become innovative? The challenges of global cooperation

Anne-Katrin Neyer: Advanced Institute of Management Research & London Business School

Dr. Neyer is interested in how individuals in multinational organizations cooperate to create innovation. The literature argues that all new resources, including the knowledge that potentially drives innovation, tend to be created through two generic processes. These are the processes of combination and exchange, either individually or collectively, of tacit and explicit knowledge and experience (Schumpeter, 1934; Leonard-Barton, 1995). While the conception of innovative ideas may be an individual achievement, innovation (i.e. inventing and implementing new ideas) is achieved through the cooperation of individuals (Van de Ven, 1986: 591). The abilities to recognize the value of new knowledge and information, and then assimilate it and use it, are vital factors in organizational learning and innovation. As Piller describes, they determine 'absorptive capacity' (Cohen and Levinthal, 1990).

Neyer will develop the idea that absorptive capacity does not reside in any single individual, but rather crucially depends on the cooperation of a mosaic of capabilities across organizations. Subramaniam & Youndt (2005: 459) show that "unless individual knowledge is networked, shared, and channeled through relationships, it provides little benefit to organizations in terms of innovative capabilities". Thus, in the support and facilitation of innovation, the cooperation between people, particularly those from disparate networks (i.e. functions, business, product lines, countries) is crucial (Kogut & Zander, 1992; Brown & Duguid, 1991).

Although a lot of research into a process so crucial to firm growth and competitiveness (e.g., Van de Ven, 1986) has been undertaken, key questions about the cooperative nature of the innovation process remain unanswered. These include issues about the specificity of global cooperation. Extending previous research, Neyer discusses the importance of culturally diverse groups that can synergistically

combine the efforts of individuals. She also looks at possibly process losses resulting in reduced performance (e.g., Hill, 1982; Maznevski & Peterson, 1997; Thomas, 2002). Building upon findings of the Cooperative Research Project at London Business School (led by Prof. Dr. Lynda Gratton) and her previous research on global teams, Neyer will describe how specific global corporations try to influence innovation capabilities. Neyer's key argument for this panel is that differences in culturally perspectives, interpretations, and approaches to work have to be integrated in order for global cooperation to create innovation.

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Participation Statement

I have received signed statements or emails from all intended participants formally agreeing to participate in the panel.

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