Corporate Open Innovation: Learning from Longitudinal Exploratory Research

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ABSTRACT

Corporate open innovation builds on the involvement of three types of innovators: those members of an organization who have “innovation”, “research” or “development” as an official task in their job description (“core inside innovators”), those external actors who get involved in the innovation processes of an organization often, via open innovation platforms, while not being part of the organization itself (“outside innovators”) and – last, but not least – those employees across all functions, levels, and units of an organization who innovate without being “official innovators” by job description (“peripheral inside innovators”). This special issue presents longitudinal in-depth research on open innovation within the firm by focusing on the involvement of the peripheral inside innovators. It sheds light on the phenomenon from different disciplinary perspectives and suggests additional directions for future research.

Keywords: Corporate Open Innovation, Innovation Community, Innovation Strategy, Open-I, Piloting, Prototyping, Exploratory Research

CORPORATE VERSUS EMERGENT OPEN INNOVATION

In a world of increasing performance demands, open innovation expands the solution space for new products and processes, services and solutions. As a consequence, interest in open innovation is currently equally high in research and practice. Open innovation approaches, however, have different starting points, follow different paradigms, use different toolsets and thus are quite distinct. Two fundamentally different perspectives can be distinguished. First, inspired by the open source world of software development, open innovation is seen as an emerging phenomenon of largely self-organized and self-motivated, internet-based, dispersed but collaborative actors. Research
and practice focus on independent participants and emphasize their open interactive collaboration.

The broadcasting of problems and potential solutions to potentially unknown participants is a defining element of open innovation from this perspective (Lakhani et al., 2007). Some even ignore or reject the role of organizations to coordinate joint activities. Eric von Hippel (MIT in Cambridge) postulates in his visionary deliberations that organizations as institutions and the importance of management for implementation of innovations could become obsolete (von Hippel, 2005). This vision of dissolving organizations is inspiring and breaks with established thinking. Put into perspective, the concept of “Democratizing innovation” outlines one possible extreme: the perspective of “emergent open innovation”.

An alternative view, described by Chesbrough (2006), sees open innovation as the antithesis of often hermetically separated R&D departments, so called “closed innovation”. Traditionally, organizations bundle innovation activities in separate units, employ highly educated experts, entrust them with sophisticated innovation tasks, protect their intellectual property and rarely look outside for other solutions (Chesbrough, 2006). Going in hand with the professionalization of functional organizational departments in the last decades, innovation from this perspective reflects a general preference for internal expertise and solutions, and a distinctive “not-invented-here” mentality towards external stimuli. Too often these characteristics become amplified into a “vicious circle”. Open innovation then becomes a way of challenging the status quo to search for, find, develop and exchange ideas, concepts and innovations in all areas of concern. The possibilities for corporate innovation are enhanced by Web 2.0 and social software that facilitate collectively evaluating and selecting, and even perhaps implementing and merchandizing new goods and services around the world.

Both perspectives have become a reality in global innovation activities. Emergent open innovation as a largely self-organized and self-motivated, dispersed and collaborative innovation effort, while corporate open innovation as a strategic process of opening up firm-sponsored innovation activities across organizational boundaries (Möslein, 2009).

This special issue focuses on the perspective of corporate open innovation. Given the range of special issues on open innovation already published, e.g., R&D Management (2006, 2009, 2010), Zeitschrift für Betriebswirtschaft (2007), International Journal of Technology Management (2010), or under review, e.g., European Journal of Innovation Management, International Journal of Entrepreneurship and Innovation Management, International Journal of Services Sciences, this special issue sets a clear and unique focus: it sheds light on open innovation within the firm. The rationale is first and foremost needs-driven. Many organizations, especially research-driven manufacturing firms, have for a long time learned to innovate through highly professional R&D departments and to support employees who have the official task to innovate as part of their job description. Following Neyer et al. (2009) we call these actors core-inside innovators.

As a next step, many organizations, including the growing number of service firms that dominate economic activity in many contexts, have become increasingly involved in open innovation with outsiders, e.g., customers, users, lead users, partners, suppliers or simply the anonymous mass outside the organization. Following Neyer et al. (2009) we call them outside innovators.

The important groups of employees across all organizational units, who do not have innovation in their official job description, but still have a core interest in the organization and knowledge about the organization, its products, processes, services, systems and solutions, have widely been neglected in open innovation initiatives. From an innovation perspective they are at the organization’s periphery and following Neyer et al. (2009) we call them peripheral inside innovators. Employee suggestion systems, implemented
in organizations since the nineteenth century to capture constructive ideas from employees for improving various aspects of company operations, services, or products are still widely accepted as state-of-the-art. While these systems can be a catalyst for the innovative spirit of employees within organizations, and typically do invite virtually all employees to be involved (Fairbank & Williams, 2001), they are mainly a means for getting ideas on continuous improvement or the professionalization of organizational processes. Otherwise, the potential of peripheral inside innovators has long been neglected. This overlooks creative potential, weakens an organization’s absorptive capacity, and otherwise reduces its overall innovation performance.

From a corporate open innovation perspective, all three types of innovators turn out to be equally important for innovation processes. Figure 1 shows the three types of innovators in the organizational innovation context: The traditional focus in open innovation is set on outside innovators. This gives the best and broadest access to a new and traditionally untapped pool of innovators. However, it neglects the importance of creating an open innovation culture inside the firm and overlooks a large innovation potential inside the firm: the innovation capacity, motivation and knowledge of employees across all functions, levels and units of an organization outside the R&D department. How to tap into this innovation pool in organizations is at the core of this special issue.

**BACKGROUND TO THIS SPECIAL ISSUE**

The papers presented in this volume are the outgrowth of a multi-disciplinary research workshop held at the University of Erlangen-Nuremberg on 28th June 2010. The workshop involved researchers from multiple disciplines, including strategic management, psychology, information systems, and computer science, who were involved in a large-scale research project on “Open Innovation within the Firm.”

*Figure 1. Three types of innovators: core inside innovators, peripheral inside innovators and outside innovators*
This project – in short called “Open-I” – involved a 2-year preparatory phase and then ran from January 2008 to June 2011 in an intense phase of collaborative design, development, prototyping, and piloting of open innovation communities within different corporations.

Research partners were associated with HHL – Leipzig Graduate School of Management, the University of Erlangen-Nuremberg, and TU Munich. The corporate partners were all respected as innovation leaders in their field. They range from organizations with traditional R&D departments with a legacy of closed innovation to service organizations with a different trajectory of innovation development. As part of the project, all firms decided to implement open innovation with a focus on peripheral inside innovators. Their initiatives to implement open innovation within the boundaries of the firm, however, deliberately took different paths and allowed for in-depth research throughout all phases of the project. In all organizations, top-level leaders were highly involved and fully supported the piloting and implementation process. An open community platform, jointly developed by the research partners, was piloted in all organizations. The prototype allowed for different firm-specific adaptations, for the setting of alternative research stimuli and for seamless data collection in line with the firm’s confidentiality agreements. In addition, the organizations provided access for in-depth interviews over the research time-period, allowed for video-taping and full-text transcription of workshop sessions, along with synchronous as well as asynchronous distributed community activities. On behalf of all researchers involved, we express gratitude to all corporate partners involved. They are listed by name at the end of this issue overview.

PAPERS IN THIS SPECIAL ISSUE

This special issue presents six papers that highlight different facets of the Open-I project. They represent different methodological approaches, different disciplinary lenses, and different research foci. Together, however, they provide a coherent set of studies on internal corporate innovation that benefit significantly from collaboration with our corporate partners. Starting from the general issue of how to integrate innovation communities in corporations, researchers and corporate partners considered questions of how to motivate innovators to contribute and how to support creativity with corporate IT-based open innovation platform, before the content and context issue of open collaborative innovation development were addressed. Next, a new evaluation method for innovation ideas was designed, developed and assessed. Finally, an inductively developed and empirically evaluated maturity model was introduced to support the introduction of open innovation in organizations from a process perspective. We introduce the six papers summarizing these efforts here as a basis for suggesting further investigations by researchers and practitioners.

Anchoring Corporate Innovation Communities in Organizations: A Taxonomy

Open innovation is typically community-based. A natural step for firms that move towards open innovation within the organization is therefore to set up intra-organizational (online) innovation communities or to transform existing corporate cross-functional communities for open innovation goals. The paper by Bansemir, Neyer, and Möslein focuses on the question of how to anchor and integrate corporate innovation communities in organizations. It sheds light on (1) aspects of cultural and structural integration, and (2) transition strategies to alter organizational integration. By doing so, it offers insight on antecedents, transition processes and outcomes of corporate innovation communities in the context of open innovation.
**Task-Related Incentives as Motivators in Open Innovation Communities**

A central question for all firms that build on corporate innovation communities for the open creation and collection of ideas and innovation concepts is the question: What motivates individuals to participate? This question is especially challenging in environments where individuals participate voluntarily and without monetary rewards. Schattke, Seeliger, Schiepe-Tiska, and Kehr present results from two studies of platform-based open collaborative innovation. Study 1 took place in a corporate setting, while study 2 was designed as an experiment with university students. Both studies – while small in size – clearly point towards the key role of achievement-related incentives for general motivation and flow experience in open innovation settings.

**Context-Aware Creativity Support for Corporate Open Innovation**

Creativity is a necessary ingredient for open innovation processes, but how can creativity be supported in corporate open innovation? Frieß, Groh, Reinhardt, Forster, and Schlichter address the challenge to support creativity for corporate open innovation with appropriate IT tools. The paper takes a design science approach (Hevner et al., 2004). It shows how to structure creative processes in an abstract process model then reports on a prototype support system for open collaborative processes using web-based and mobile interfaces as well as a tabletop-based interface. The discussion shows – based on a preliminary experimental evaluation – how these interfaces compare to non-IT contexts for corporate open innovation.

**Social Software Support for Collaborative Innovation Development within Organizations**

IT support for collaborative innovation development within organizations needs to address the content issue of knowledge aggregation as well as the context issue of a time- and space-independent common collaboration context. Reinhardt, Wiener, Frieß, Groh, and Amberg have chosen a design science approach to develop and test a social network-based platform prototype for open innovation within the firm. Their paper also reports evaluation results on the usability and usefulness of the software prototype for the collaborative development of innovations and elaborates on the specific need for platform support in the early stages of the corporate innovation process.

**Attributive Idea Evaluation: A New Idea Evaluation Method for Corporate Open Innovation Communities**

Innovation processes encompass phases of both creation and selection and therefore require equal support for the generation of new ideas and their evaluation. Schwarz and Bodendorf present a new idea evaluation method, called “Attributive Idea Evaluation” (AIE) that builds on twenty attributes characterizing an innovation idea. Numerical values that correspond to each of the attributes allow calculating scores for ideas that can be used as an indicator for the success potential of the idea. Their paper shows that AIE is not only well accepted and applicable in corporate innovation practice, but also leads to quicker evaluation processes and higher appreciation by the users – an aspect that is of utmost importance for peripheral inside innovators.

**Open Innovation Maturity**

Open innovation maturity is an organization’s excellence in the conduct of open innovation activities and in the integration of all three types of innovators. Habicht, Möslein, and Reichwald propose a management framework to support the development of open innovation maturity within organizations. Management categories and maturity levels are inductively identified. The resulting “Open Innovation
“Maturity Model” is based on insights from the 12 parallel case studies and two longitudinal open innovation pilots that were part of the Open-I project.

SUGGESTIONS FOR FURTHER DEVELOPMENTS IN PRACTICE AND RESEARCH

The research summarized in this special issue provides an overview of six important requirements for open innovation within corporations. In each area there is obviously more that might be done in both practice and research. We outline some of these opportunities while recognizing there are additional topics supporting internal open innovation that also might be considered in future studies.

Corporate structures and cultures that support collective use of individual creativity

At the moment, there are relatively few firms that have made internal open innovation a central part of their innovation endeavors. The lead paper by Bansemir, Neyer, and Möslein thus provides useful detail that should be of interest to organizations that want to take open innovation with employees seriously. With more and more public exemplars, such as Daimler’s Business Innovation Community, CISCO’s I-Zone or Siemens’s TechnoWeb, underlining the importance to integrate peripheral internal employees the notion of transition strategies, i.e., guidelines to increasingly anchor corporate innovation communities, are worth thinking about in greater detail. Each firm is unique however, and two important questions building on each other for further research are most pressing:

1. What are the “hallmarks” of internal open innovation in organizations that have learned how to significantly benefit from deeply involving employees across all levels and units in innovation projects? How did they emerge and how are they supported and/or eroded over time? What types of innovations resulted, e.g., radical vs. incremental innovations, service vs. product vs. process innovation?

2. What are the “pathways” towards these internal open innovation hallmarks that have been experienced with more or less success? How did they arise and which “turning points” significantly affected the successful integration of peripheral inside innovators?

Processes that motivate participants to become involved in open innovation projects.

The paper by Schattke, Seeliger, Schiepeti, Tiska and Kehr in this special issue delivers a nuanced understanding of motivation in internal open innovation initiatives. It suggests that incentives related to intrinsic motives, such as achievements, abilities, altruism, drive motivation and flow leading to increased innovation success. These findings add to empirical investigations conducted in open source environments that focus on highly active participants (e.g., Bansemir, in press). While we support more research on the issue, at the same time it is interesting to ask:

1. How could participants who are not yet actively engaging in open innovation initiatives be activated to take over a vigorous role in such initiatives? What are major motivation hurdles to be overcome? When and where can extrinsic motives help to overcome these hurdles?

2. How does motivation emerge and how is motivation sustained over time or in other words how does motivation unfold dynamically? What motives particularly drive certain stages and how may these be stimulated with incentives?

Creativity-support in organizations within and beyond open innovation initiatives.

Creativity is seen as a key ingredient for innovation to be successful. Friese, Groh, Reinhardt, Forster, and Schlichter in their paper show a promising way forward on how to support creativity with IT tools. They ad-
dress the challenges and promises of different interfaces and approaches, and especially point to the importance of context-awareness. For organizations, their paper poses challenging questions that also might be addressed in future research.

1. How does creativity evolve and spread in organizations? How can collective creativity be supported without restricting the individual and how can individual creativity be leveraged across organizational boundaries esp. within the firm?

2. How can organizations seamlessly integrate new tools and interfaces in their overall tools landscape without creating new disruptions between existing processes, data pools or information hubs to make creativity an integral part of everyday work?

**IT platforms that support large scale participation in open innovation.**

Employee participation is important to open innovation because people are the direct interface with all organizational systems (Robinson & Stern, 1998). Recent developments concerning the provision of Social Software and Web 2.0 revolutionize the way people interact and collaborate. Public examples like Facebook and LinkedIn support this notion. However, for innovation purposes a nuanced and thoughtful use of these mechanisms seems to be crucial to ensure innovation success. The paper by Reinhardt, Wiener, Frieß, Groh, and Amberg in this special issue sheds light on this unsolved challenge. It provides a meaningful framework of key elements supporting open innovation within the firm. Specifically, the notion of IT-based innovation process support has considerable implication for the design of corporate innovation communities. In addition to issues that directly address system requirements, further questions might be asked:

1. Given that needed creative ideas often occur in the context of work itself, how can IT systems facilitate the seamless collection of new ideas within work processes? Can, and if so should, open innovation be more integrated with standard work processes or does innovation need a separate space to flourish?

2. Where is the productive balance between process support that fosters efficiency but may hinder creative development of innovations and overburdening freedom that may foster out-of-the box thinking but lacks any kind of guidance? Are there specific stages that need precise prior definition of processes and are there stages which need freedom to effectively support innovation development?

**Concepts and tools that facilitate the reduction of many contributions into a more manageable subset for further development.**

Most current open innovation initiatives still focus on the early stages of the innovation processes. Idea creation is often at the center stage. Still, the generation of large numbers of ideas just creates a new challenge: the reduction, clustering, bundling, and market-oriented selection of promising ideas and concepts prior to investment and further development. The paper by Schwarz and Bodendorf shows an appealing new approach: “Attributive Idea Evaluation”. However, it also opens a wide space of further research needs.

1. If organizations move to more open approaches in evaluating ideas, should they also democratize decisions about further development and investment? And what does this imply for the organization as a whole?

2. Are there balanced ways to bridge the tensions between expert-based filtering, investment decisions and community based approaches? Is there a strategic rationale for open approaches to evaluation (e.g., Haller, in press) within organizations? Or is open evaluation an approach for open community settings only?
Strategic oversight of the growing corporate ability to innovate using both internal and external contributors to innovation.

In order to advance knowledge about the strategic implementation of open innovation in organizations it seems fruitful, as the paper by Habicht, Möslein, and Reichwald suggests, looking more closely at the micro-foundations of open innovation. This also might help to extend our understanding of stakeholder relationships involved in the interaction processes of open collaborative innovation processes and to extend current implementation knowledge with a learning dimension. However, additional questions can also be asked:

1. On the way to overall open innovation maturity, organizations might look more closely at learning issues. The development of individual competences as well as process-oriented open innovation-related competences will be a necessary precondition for organizations to move up the maturity ladder.

2. Three types of innovators (core inside innovators, peripheral inside innovators and outside innovators) as well as multiple types of processes (outside-in, inside-out and coupled) are part of a mature open innovation system. But what does this tell us about the key stakeholders that have to be involved, about their prioritization and integration? More research is needed to shed light on the overall open innovation network of organizations and the interplay of the actors involved.

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