



MANAGING RISKS OF CROWDSOURCING INNOVATION: A METHODOLOGY

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KEYWORDS

Risk Management, Crowdsourcing, Open Innovation.

ABSTRACT

This paper presents an action-research in progress aimed at deepening scientific knowledge about the management of the risks associated with crowdsourcing innovation. This research work will produce a methodological tool to manage risks in brokering services specialized in the innovation needs of technology-based SMEs. We have started by systemizing and categorizing the main risks factors identified in a literature review and in interviews to managers of SMEs. We have also identified risk management models already implemented in other business activity areas in order to develop a draft model that best suits the crowdsourcing innovation activity carried out by brokers. As deliverables of the research, we will produce a methodology to manage risks associated with crowdsourcing innovation and will define the functional and informational requirements of a software tool to support risk management and empower managers to prevent and / or to mitigate the materialization of risks.

THE CROWDSOURCING INNOVATION STRATEGY

Recent studies of innovation have pointed to the growing relevance of external sources of innovation and the firm's necessity to involve a wide range of internal and external actors and sources to help achieving and sustaining its business strategy. However, every innovation effort brings risks with it. If innovation requires business or organizational change, the risks are even greater because innovation implies newness and uncertainty. Managing risks is crucial to innovation, but there aren't relevant scientific or empirical studies explaining how to effectively manage the risks of innovation, and even less information about risks affecting the successful implementation of open innovation.

Steady progress has been made over the last few years by many authors (Aiello, et al., 2003; Chesbrough, 2003; Chesbrough, 2004; Henkel, 2006; Kirschbaum, 2005) in establishing an understanding of open innovation strategy. Their work has provided overall guidelines to apply the open innovation strategy as well

as theoretical frameworks to understand how firms can benefit from accessing external knowledge in order to support internal R&D processes. There are several forms of open innovation. One of them is crowdsourcing innovation, the focus of this work.

The term crowdsourcing was introduced by Jeff Howe and Mark Robinson in the June 2006 issue of Wired magazine (Howe, 2006); it describes a new web-based business model that harnesses the creative solutions of a distributed network of individuals through what amounts to an open call for proposals.

Araki and Lang (2007) identified two kinds of hybrid models: (a) Hybrids that favor proprietary ownership by appropriating most of the value that is generated by the user network and (b) Hybrids that favor collective ownership by sharing most of the benefit with the user community. According with them there are key factors that determine when firms should consider opening their business to user collaboration: (1) Investment Risk; (2) Development Risk; (3) Coordination Risk; (4) Motivation Risk; (5) Control Risk; (6) Security Risk; (7) Governance Risk and (8) Culture Risk. It is very important that managers identify the risks associated with innovation projects and with the integration of project results, new processes or technologies, in the business model of the company or group of companies.

Howe (2008) breaks crowdsourcing into four models: collective intelligence, crowd creation, crowd voting and crowd funding, laying out examples that businesses can tailor to their own circumstances. Not all these four models imply innovation. Crowd voting is not related with innovation and crowd funding may indirectly be related with innovation when micro loans are provided to enable the development of innovative ideas. Collective intelligence and crowd creation are the models that support crowdsourcing innovation. It involves many risks that must be carefully managed.

MANAGING CROWDSOURCING RISKS

Risk and uncertainty are inherent in innovation activities where objectives are path generation, e.g. breaking away from path dependencies to create new markets with pioneering technologies (Ahuja, et al., 2001). The learning associated with the risk management approach is implicitly addressed in the innovation literature. Byrd and Brown (2003), in their book, provided a comprehensive approach to innovation risk management.

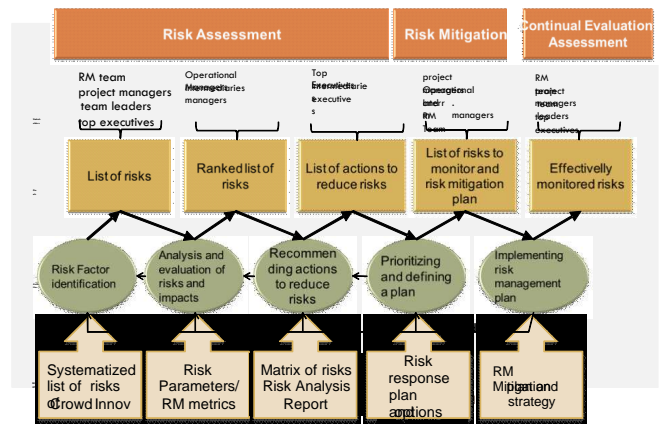


Research Question guiding the study

The goal of the research and the final thesis is to answer the key question of “*How to manage risks of crowdsourcing innovation for technology-based SMEs?*” The research question can be further clarified by the following sub-questions: 1) What are the risks associated with crowdsourcing innovation intermediation as implemented by an internal service of an organization or a service externally available to which the organizations can outsource all or part of their innovation process? 2) What should be the risk management model for crowdsourcing innovation? 3) What are the functional and informational requirements of an information system that effectively support the risk management in crowdsourcing innovation? This study is focused on producing a methodology to manage risks associated with crowdsourcing innovation, delivered by internal or external brokers, and on defining the functional and informational requirements of an information system to support risk management to empower managers preventing and / or mitigating the materialization of risks of brokering services specialized in the innovation needs of SMEs.

The methodology comprises three phases (Figure 1). Each phase is interlinked and designed to build support and trust as the collaboration develops. Managing risk is central to crowdsourcing innovation strategy, but there aren't relevant scientific or empirical studies explaining the relationship between them. We will apply an action research at the Board of Tax Appeals – CARF (<http://www.carf.fazenda.gov.br>). CARF resulted from the unification of the administrative structure of the First, Second and Third Council of Taxpayers in a single body, maintaining the same nature and purpose of the Councils of the collegiate body, joint, part of the structure of the Ministry of Finance, in order to judge features craft and voluntary decision of first instance, and the resources of a special nature, that concern the implementation of legislation relating to taxes administered by the Internal Revenue Service of Brazil.

Results of this study have both scientific and professional implications. The scientific contribution of this research is a better understanding of the crowdsourcing innovation strategy and the risks that are associated with it. The professional contribution of the research is the development of a methodological and a technological tool to guide and support innovation leaders in preventing and / or mitigating the materialization of risks associated with crowdsourcing innovation.



Figures 1: RM methodology for crowdsourcing innovation

REFERENCES

- Ahuja, G., & Lampert, C. M. (2001). Entrepreneurship in the large corporation: a longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, 22, pp. 521- 543.
- Aiello, F., & Cardamone, P. (2003). R & D Spillovers and Productivity Growth: evidence from Italian Manufacturing Microdata. *Applied Economic Letters*, 12, pp. 625-631.
- Arajki, R. Y., & Lang, K. R. (2007, Nov). The virtual cathedral and the virtual bazaar. *The Data Base for Advances in Information Systems*, 38, pp. 33-39.
- Byrd, J., & Brown, L. (2003). *The innovation equation: Building creativity and risk taking in your organization*. San Francisco: Jossey-Bass/Pfeiffer.
- Chesbrough, H. (2004, JAN-FEB). Managing open innovation. *Research-Technology Management*, 47, pp. 23-26.
- Chesbrough, H. W. (2003, SPR). The logic of open innovation: Managing intellectual property. *California Management Review*, 45, pp. 33-+.
- Henkel, J. (2006, SEP). Selective revealing in open innovation processes: the case of embedded Linux. *Research Policy*, 35, pp. 953-969.
- Howe, J. (2006, jun). The Rise of Crowdsourcing. *Wired*, 14.
- Howe, Jeff. 2008. *Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business*. USA: Crown Business, 2008.
- Kirschbaum, R. (2005, JUL-AGO). Open innovation in practice. *Research-Technology Management*, 48, pp. 24-28.

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