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A literature review on markets for ideas: Emerging characteristics and unanswered questions



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ABSTRACT

Markets for ideas (MFIs) are virtual marketplaces connecting individuals and organizations selling their ideas (namely knowledge owners) to companies in search for specific innovative solutions (namely knowledge seekers). This phenomenon finds its root in the open innovation paradigm and empirical data clearly demonstrate how its economic importance is constantly growing, as well as the interest paid by academics. Nevertheless, despite their increasing relevance, it remains unclear which are the main dynamics and characteristics of these markets. Therefore, the present paper aims at providing an overview of this specific topic by reviewing and discussing the main findings available in the scientific literature. The analysis of the literature is structured around three main market dimensions – ideas, knowledge owners, and knowledge seekers. In addition, actual examples of MFIs are reported in order to strengthen literature's results. The contribution of this review is threefold. First, it provides an insight into the literature on MFIs, by collecting and describing the main features of ideas, knowledge owners, and knowledge seekers. Second, it presents propositions inferred by the characteristics emerging from the review. Finally, it spots literature gaps and traces new research directions. Hence, the study sheds new light on the main characteristics of MFIs, pointing out several research questions that need to be further addressed by scholars.

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1. Introduction

Organizations often face R&D problems that they can solve by acquiring the necessary competences and capabilities from external sources of knowledge (Chen et al., 2011; Tapscott and Williams, 2006). This trend has assumed an increasing relevance in last few years (Bianchi et al., 2011) and finds its root in the open innovation paradigm introduced by Chesbrough (2003), who discussed the importance for firms of employing in their innovative processes knowledge generated both inside and outside their organizational boundaries. Open innovation is receiving remarkable attention by scholars (see Dahlander and Gann, 2010; Huizingh, 2011; Lichtenthaler, 2011) and a number of different approaches have been proposed and discussed in the literature to sustain this strategy (e.g., Alexy et al., 2013; Bianchi et al., 2011; Mortara and Minshall, 2011; Wang et al., 2012). Specifically, particular attention has been paid to the growing phenomenon of markets for ideas (MFIs) (Arora and Gambardella, 2010; Lichtenthaler, 2011), defined as virtual marketplaces where individuals and organizations may sell their ideas, inventions, and competencies to a number of different companies searching for innovative solutions.

The relevance assumed by MFIs in the actual economic scenario, as witnessed by both academics and practitioners, makes this phenomenon as particularly interesting to be investigated, due to its propensity to deeply modify organizations' innovative behavior. In fact, the use of these markets is consistent with the increasing tendency to decompose the whole innovation process into distinct phases (Dahlander and Gann, 2010; Gassmann and Enkel, 2004). Hence, MFIs are also significantly reshaping the methods and approaches to innovate, exploiting the benefits in opening organizations' innovation processes originated by globalization and digitization processes (Dahlander and Piezunka, in press), and tracing new open innovation patterns (Linton, 2012).

Nevertheless, even though the number of studies focusing on MFIs is growing (Fosfuri and Giarratana, 2010), a satisfying conceptualization of the topic is still missing, as well as a systematized discussion of MFIs' main dynamics and characteristics, which may instead increase the appreciation of the costs and benefits going along with the participation in these markets and support scholars in identifying novel research directions. Thus, the present study aims at reviewing the existing literature on MFIs, in the attempt to deepen our understanding of this emerging topic. Specifically, the contribution of this study is threefold: (i) we critically review the extant literature in order to provide an integrative framework to discuss previous studies, (ii) we discuss the key scientific contributions emerging from the literature in order to infer

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propositions, and (iii) we spot gaps in the literature and trace directions for future research.

The remainder of the paper is structured as follows. [Section 2](#) introduces the concept of MFIs and proposes the conceptual framework for the analysis. Then, in [Section 3](#) we examine the key scientific contributions emerged from the literature review, according to the proposed framework, thus identifying the main dynamics and features of MFIs. Next, in [Section 4](#), we discuss the emerging characteristics of these markets in order to develop propositions regarding those managerial approaches that may make MFIs more efficient and more effective for both owners and seekers, representing the supply and the demand side, respectively. Finally, in [Section 5](#), we conclude the study by highlighting the main gaps emerged during the literature analysis and suggesting directions for future research.

2. Markets for ideas

Organizations are increasing their awareness about the importance of exploring and acquiring knowledge from external sources to sustain and increase innovativeness and competitiveness ([Barney, 1991](#); [Grant, 1996](#)), as a result of the significant social and economic changes in working patterns and knowledge circulation ([Dahlander and Gann, 2010](#)). This is the basic idea underlying the open innovation paradigm proposed by [Chesbrough \(2003\)](#), which assumes that firms “can and should use external ideas as well as internal ones, and internal and external paths to market” to make the most out of their technologies ([Chesbrough, 2003](#), p. 24). This model is based on the recognition that innovation partly depends on firm-specific knowledge resources, while strongly depends on determinants that are external to the firms, because these are often specialized in one field of knowledge and rarely have all the required resources internally ([Christensen et al., 2005](#); [Vanhaverbeke, 2006](#)). In fact, to innovate, firms need to span multiple and heterogeneous technological domains, geographic locations, epistemic communities, and legal regimes (e.g., [Dahlander and Frederiksen, 2012](#); [Phene et al., 2006](#)). By opening towards external sources, organizations may span their boundaries to explore new knowledge ([Andersen et al., 2013](#)), thus enhancing their innovative capability and increasing the likelihood of developing breakthrough innovations ([Wu and Shanley, 2009](#)), which in turn favor business growth and new business development ([Burgelman, 1983](#)). Exploration, in fact, expands the search scope of an organization ([Katila and Ahuja, 2002](#)), hence providing new pieces of knowledge to be recombined ([Fleming, 2001](#)). Furthermore, exploration increases the heterogeneity of organizations' knowledge base, hence making them more able to create influential and radical innovations ([Rosenkopf and Nerkar, 2001](#)). Finally, exploration supports organizations in avoiding competency traps and core rigidities by refreshing knowledge opportunities ([Ahuja and Lampert, 2001](#); [Levinthal and March, 1993](#)).

Scholars have discussed and analyzed a number of different approaches firms may adopt to open their innovation process and explore new and external sources of knowledge ([Chesbrough, 2006b](#)), such as the formation of alliances (e.g., [Chesbrough, 2006b](#)), the involvement of lead users in product development (e.g., [Franke and Shah, 2003](#); [von Hippel, 2005](#)), and the definition of mergers and acquisition agreements to source external knowledge (e.g., [Cassiman and Colombo, 2006](#)). Among these various strategic approaches, participation in MFIs is recently attracting the attention of both researchers and practitioners as a key option in fostering and sustaining firms' openness ([Afuah and Tucci, 2012](#)). In fact, MFIs act as virtual marketplaces, facilitating the listing, searching, and exchange of knowledge assets of potential economic value, such as patents and business plans, among

individuals and organizations ([Bakos, 1998](#); [Enkel et al., 2009](#); [Verona et al., 2006](#)), hence allowing firms to perform both the outside-in and the inside-out process, generally recognized as fundamental aspects of an open innovation strategy ([Chesbrough, 2006a](#); [Enkel et al., 2009](#); [Gassmann and Enkel, 2004](#); [Hung and Chou, 2013](#)). As pointed out by [Tapscott and Williams \(2006\)](#), MFIs put capabilities, knowledge, scientific expertise, and inventions around the planet into connection with innovating companies. The intangible nature of the exchanged goods, as well as the specific logics and dynamics, make these markets deeply different from past practices ([Dushnitsky and Klueter, 2011](#)), hence calling for ad hoc investigations into their main constituents.

Since the pioneering study of [Arora et al. \(2001\)](#), MFIs have been considered an effective channel for knowledge exchange and acquisition, where organizations may find the best solutions fitting their needs and expectations. In last decades, MFIs sensitively grew. [Arora et al. \(2001\)](#), by focusing on technological innovation, revealed that in the mid-1990s the size of global MFIs was \$35–50 billion. More recently, [Athreya and Cantwell \(2007\)](#), analyzing the international trends in royalty and licensing revenues between 1950 and 2003, reported a global value of \$55–60 billion in the mid-1990s and more than \$75 billion in 2000. Additionally, the current trend is showing a significant shift towards online marketplaces that allow the reduction of both search and transaction costs ([Dushnitsky and Klueter, 2011](#)), as well as to broaden the demand and supply of knowledge. Moreover, MFIs often operate by following the rules characterizing R&D contests ([Morgan and Wang, 2010](#); [Tapscott and Williams, 2006](#); [Terwiesch and Xu, 2008](#)), which represent competitions where individuals submit their projects to a firm that calls for the contest ([Che and Gale, 2003](#); [Mortara et al., 2013](#); [Taylor, 1995](#); [Terwiesch and Xu, 2008](#)). Consistently with this trend, the increasing importance of MFIs is demonstrated even by a memorandum of the Executive Office of the President of the United States of America – Barack Obama – which encourages national agencies to utilize contests as tools to spur innovation, thus highlighting the benefits of these practices ([Zients, 2010](#)).

Using contests to find innovative solutions for specific problems outside the organizational boundaries has been revealed as a successful practice also by several historical cases reported in the literature (e.g., [Che and Gale, 2003](#); [Taylor, 1995](#)). Clear examples are represented by the contest, promoted in 1418 by the Opera del Duomo of Florence and won by Filippo Brunelleschi, to build the dome of the Santa Maria del Fiore's cathedral ([Boudreau et al., 2011](#); [King, 2001](#)), the 1714 contest by the British Parliament to design a method to determine the longitude at sea ([Che and Gale, 2003](#); [Jeppesen and Lakhani, 2010](#)), and the contest by the U.S. Defense Advanced Research Project Agency for autonomous robotic vehicles ([Terwiesch and Ulrich, 2009](#)). Despite the differences between these contests and the dynamics of current MFIs, as their one-time nature and the involvement of a single organization aiming at retrieving ideas, all these cases clearly show the relevance of designing ad hoc contests, regulated by market mechanisms, to favor the match between innovation demand and supply, thus sustaining the translation of valuable ideas into novel products or processes.

[Lichtenthaler and Ernst \(2008b\)](#) discussed the emergence of MFIs, explaining their rise as the consequence of the increasing number of organizations searching for knowledge externally and licensing their knowledge to gain revenues, as well as of the diffusion of web-based marketplaces. Furthermore, MFIs can be considered as innovation intermediaries, that is, service providers in innovation markets created to support the match between innovation needs and solutions, providing a valuable price structure for sellers and complementary services for buyers ([Howells, 2006](#); [Huston and Sakkab, 2006](#); [Lichtenthaler and Ernst, 2008a](#),

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