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Leveraging collective intelligence: How to design and manage crowd-based business models

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Abstract Advances in digital technologies have increased the possibilities for outsourcing business activities to crowds of independent contributors. Using the collective intelligence of a crowd opens a new range of business opportunities. In fact, crowdsourcing has led to the emergence of entirely new business models. Such crowd-based business models (CBBMs) can lead to an important competitive advantage while simultaneously presenting new challenges to entrepreneurs and executives. This article identifies and discusses three key challenges in designing and managing CBBMs: determining (1) the crowd's value to the firm, (2) how to create superior value for the crowd, and (3) how to capture value from the crowd effectively. Building on the crowd capital perspective and an analysis of the tactics and practices of successful CBBMs, this article offers propositions on how to overcome these challenges and manage such business models effectively. The identified practices can inspire decision makers when designing innovative CBBMs for their industries. Finally, the article concludes with a framework with the key decisions and tactics for effectively managing CBBMs.

1. Crowds as value creators: New possibilities

Practitioners and researchers increasingly have identified crowdsourcing as a viable strategy to gather creative ideas and solutions, make decisions, and outsource small tasks (Prpić, Shukla, Kietzmann, & McCarthy, 2015). So far, the focus has been primarily on how firms can capture the aggregated wisdom of the crowd (Surowiecki, 2005) for their business challenges. Over recent years, however, firms from different industries have started to develop new business models that fundamentally integrate crowds in value creation logic. The emergence of these crowd-based business models is both driven by advances in internet-based

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technologies (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011) and a shift in the role of consumers toward becoming so-called 'prosumers' (Ritzer, 2014).

Crowd-based business models (CBBMs) are generally characterized by (1) the integration of contributors from outside the traditional firm boundaries, (2) the exploitation of technologies such as digital peer-to-peer platforms, and (3) the transfer of value creating activities to a crowd (Kohler, 2015). This requires the firm to open certain resources and processes to external contributors, often resulting in a strong interaction with these contributors and their resources. The activity of these contributors can range from conducting microtasks to creating and delivering entire products and services to the firm's customers. In this sense, CBBMs place even more importance on the crowd than traditional forms of crowdsourcing (Kohler, 2015).

Due to their inherent value co-creation with crowds, CBBMs can lead to novel and superior value propositions. Wikipedia is a case in point. Originally considered a lower-cost and lower-quality alternative to established encyclopedias, the founding team has built effective systems to engage and use a crowd of content contributors to review and update its articles constantly. As such, the platform soon developed into an exclusively comprehensive and up-to-date source of information. The rise of Wikipedia provided an initial confirmation of the power of collective intelligence for crowd-based value creation. Lévy (1997, p. 13) defines collective intelligence as:

> A form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills.. . The basis and goal of collective intelligence is mutual recognition and enrichment of individuals rather than the cult of fetishized or hypostatized communities.

In simple terms, the concept of collective intelligence builds on the idea that "[n]o one knows everything, everyone knows something" (Lévy, 1997, p. 13). As Wikipedia and other examples have shown, there exists a large potential for organizations to leverage the intelligence of individuals outside their boundaries. Or, as Sun Microsystem's co-founder Bill Joy aptly formulated in what is now known as Joy's Law: "No matter who you are, most of the smartest people work for someone else" (Lakhani & Panetta, 2007, p. 2).

Several new ventures have sensed this opportunity and developed business models that capitalize on individual contributors to create and/or deliver value based on their specific expertise. Take the example of Skillshare, a technology venture founded in 2011. Skillshare provides a digital platform that offers thousands of live classes on a broad variety of topics. Yet, instead of employees teaching these classes, the platform uses a crowd of independent experts to teach classes related to their expertise and interests. To gain access to the entire range of classes, individual learners pay a monthly fee to the firm. Convinced by the variety and relevance of the crowd-created content, businesses like Twitter or Adobe have adopted the service to train their employees. As a reward for their contributions, Skillshare pays a royalty to its crowd members depending on the number of students they can attract to their live classes. Such business models fulfill the original definition of crowdsourcing as the "outsourcing of an organizational function to a strategically defined network of human and non-human actors in the form of an open call" (Kietzmann, 2017, p. 3). Firms building a CBBM further have to integrate the crowd into the firm's general logic of creating value and transforming this value into revenues and profits. Business models generally raise and answer questions about how an organization creates and delivers value to its customers and transforms this value into revenues and profits (Teece, 2010). Developing a CBBM requires additional answers to the following three questions:

1. How can a firm assess the crowd's value for the firm?

2. How can a firm create superior value for the crowd?

3. How can a firm capture more value from the crowd?

Little knowledge exists regarding how firms approach these questions and solve specific challenges to successfully develop and manage CBBMs. Hence, in this article I aim to support managers in designing and managing these methods.

Each of the following three sections addresses one of the aforementioned questions to identify the relevant decision criteria and strategies of managers in successfully designing and running CBBMs. Section 2 presents criteria that executives can use to determine the value of a crowd for their business and decide whether they should attract more individuals to their crowd. Section 3 illustrates business practices to create superior value for crowds, allowing firms to compete with other crowd-based businesses. Section 4 discusses tactics to capture more value from the crowd by effectively leveraging