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Evaluation of co-creation perspective in networked collaboration platforms☆

Monika Mačiulienė [a,*], Aelita Skaržauskienė [b]

[a] Institute of Digital Technologies, Mykolas Romeris University, Ateities st. 20, Vilnius, Lithuania
[b] Mykolas Romeris University, Ateities st. 20, Vilnius, Lithuania

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ABSTRACT

This study addresses a specific challenge of non-utilized benefits from the potential of networked structures, design, and technological solutions in collaboration platforms as a source for improving and stimulating internal and external co-creation opportunities. The organization of the collaboration between diverse set of actors in sharing knowledge and resources results in fragmented value co-creation processes of networked platforms (online communities, social networks, networks of practice, etc.). Collaboration platforms may differ in terms of users or purpose, but they all seem to share a number of common characteristics such as mass participation in online interactions, inclusion of information communication technologies (ICT) together with people in knowledge creation and aggregation, etc. The article evaluates the readiness of networked platforms to generate intended co-creation value by conducting a qualitative research on 30 collaboration platforms in Lithuania using a Social Indices calculation methodology (Skaržauskienė & Gudelytė, 2015). The study assesses the platforms with the use of three integrated indicators, namely, capacity for creativity, capacity for aggregating knowledge, and capacity for decision making. The research results provide valuable information on the trends in managing collaboration platforms, distilled best practices, and opened up opportunities for scientific reasoning to design engagement strategies.

1. Introduction

Increased connectivity, low-cost mobile devices, and the use of social media have radically changed users' behavior everywhere and have the potential to affect the development of products and services. The shift of customer role in the value creation process inspires many authors (e.g., Baron, Patterson, & Harris, 2006; Cova & Dalli, 2008; Gummesson, Lusch, & Vargo, 2010; Prahalad & Ramaswamy, 2004a, 2004b) to analyze the meaning and nature of such processes. In a very basic sense, co-creation is the process of involvement of end-users in the development of services and products (Allen, Tanev & Bailetti, 2009). In a broader sense, co-creation relates to the growing discussion and the urge of civic participation in social and political processes (Alves, 2013; Magno & Cassia, 2015; Nambisan & Nambisan, 2013; Wise, Paton, & Gegenhuber, 2012). The concept of co-creation relates with many other existing conceptualizations such as open innovation (Chesbrough, 2006), collective intelligence (Malone, Laubacher, & Dellarocas, 2010), crowdsourcing (Howe, 2008), wisdom of crowds (Surowiecki, 2004), wikinomics (Tapscott & Williams, 2006), and service-dominant logic (Vargo & Lusch, 2008). Exploitation of online media potential to leverage connectivity, responsiveness, creativity, and innovation and co-creation with stakeholders is common for these paradigms (Wise et al., 2012).

The new channels of communication and information flow enable innovative involvement of broader groups of people in collaborative activities in shorter amounts of time. The growing amount of literature dedicated to the discussion of co-creation frameworks, instruments, and processes (Allen, Bailetti & Tanev, 2009; Devasirvatham, 2012; Frow & Payne, 2012; Hakanen & Jaakkola, 2012; Kohler, Fueller, Matzler, & Stieger, 2011; Saarijärvi, Kannan, & Kuusela, 2013) highlights the trend. Nowadays, researchers regard co-creation as an organization-curated platform enabling participation and providing opportunities for customers and businesses to create experiences. The science community highlights the need for research methodology that combines different research approaches for studying the nature of co-creation in different contexts. As Gouillart (2012, p. 2) argues, "the problem is that this co-creation requires some a priori conceptualization of which internal and external people need to work together, what they want to do together, and what value they will create as a new community."

This study provides the first attempt to establish a theoretical framework for Co-creation Index methodology. The use of a theoretical study of the literature on co-creation and empirical analysis of collaboration platforms in Lithuania lead to the development of set of dimensions and indicators associated with preconditions for co-creation. Determination of mathematical values for index dimensions allows the analysis

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* Corresponding author.
E-mail addresses: maciuliene@mruni.eu (M. Mačiulienė), aelita@mruni.eu (A. Skaržauskienė).

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and comparison of collaboration platforms. The evaluation results provide information about the limits of CI system and delimit the actions imperative to overcome these limitations.

2. Theoretical insights on co-creation in online collaboration platforms

Online platforms are ideal environments for creation to emerge due to the involvement of both people and IT in value creation. Online communities have several drawbacks (e.g. lack of direct contact) but partake the advantage of more efficient operational capabilities than those of traditional communities due to enhanced abilities of information exchange, storage, and processing. In addition, the use of social media tools allows development of new knowledge aggregation methods such as prediction markets (Bothos, Apostolou, & Mentzas, 2009) or data visualization (Chen & Hsiang, 2007). Innovative strategies (i.e., gamification, competition, collaborative work) promote engagement and subsequently bring change in behavior (Piccolo, Alani, De Liddo, & Baranauskas, 2014). This behavior, which Preece and Shneiderman (2009) define as "Technology-Mediated Social Participation," opens up possibilities for masses to achieve common goals – "goals that no single individual or organization could achieve alone" (Leimeister, 2010, p. 245) – through participation and collaboration on Web.

Collaboration platforms differ in terms of users or purpose, but they all seem to share a number of common characteristics. Online platforms tend to be more dynamic and open—differentiating them from businesses, government bodies and other institutionalized organizations. More flexible and ambiguous boundaries of online communities allow individuals to join and leave them more freely. The plasticity results in the easier recruitment of new members and constant flow of new ideas. Online platforms also have decentralized structures and distributed leadership capabilities. According to Luo, Xia, Yoshida, and Wang (2009), the collective creation emerges in communities, which have transparent self-organization. The theoretical and empirical study by Dabbish, Stuart, Tsay, and Herbsleb (2012, p. 1278) suggests that "providing transparency of actions on shared artifacts supports cooperative work" and proposes a variety of ways that transparency can support innovation, knowledge sharing, and community building. However, Morozov (2014) advocates that distribution of information should occur in full awareness of the social and cultural complexity of the institutional environment in which information accumulates.

Transparency closely relates to the problem of independence. By developing the individual cognitive processes and transmitting them to others, member efforts lead to the collective cognitive processes of the communities (Lykourentzou, Vergados, Kapetanios, & Loumos, 2011). The study by Lorenz, Rauhut, Schweitzer, and Helbing (2011) reports impaired independence of thought by social influences in crowdsourcing platforms. Face-to-face group processes in the organizations often lead to the polarization when faced with the social influences (Isenberg, 1986; Janis, 1982). External pressures such as managerial influence and intolerance to mistakes (Zhou & Fink, 2003) can also damage independent expression. According to Norvaišas et al. (2011), in order to eliminate the negative social, psychological, and other subjective impacts (subjectivity), platform managers must guarantee anonymity of participants. Prahalad and Ramaswamy (2004a) propose a theoretical framework of the building blocks necessary to facilitate a co-creation environment. The interaction between the organization and their customers happens through the four main building blocks of co-creation: dialogue, access, risk, and transparency. Collaboration platforms integrate all of these elements. The process of co-creation is the subject of extensive research efforts. Table 1 outlines initial theoretical insights of the study on preconditions for co-creation in collaboration platforms, which is the basis for the framework for Co-creation Index methodology.

3. Research methodology

During the first observational stage, the study uses a set of criteria to compile a list of collaboration platforms and selects Lithuanian communities with identified specific goal (e.g., club of experts in solving environmental problems, think-tank on Lithuanian e-health system). Selected communities also have capabilities to involve a large number of members (critical mass of contributors). The platforms geographically originate in Lithuania but they all center on a common social goal and use innovative collaboration technologies. The preconditions that Lithuania has to become a networked society (i.e., relatively high level of the infrastructure of IT, high-level user accessibility, and high-quality Internet accessibility in both cities and rural areas, and small number of inhabitants) are the reason for selection of Lithuanian online communities as a test model for exploring co-creation. In addition, the Web's growth in reach and capability set the stage for the explosive growth of online communities in Lithuania. These criteria led to the selection of 30 collaboration platforms.

Table 1
Co-creation criteria.

Criteria	Theoretical reasoning
Openness and flexibility	The criteria describes "the differences in demographic, educational and cultural backgrounds and the ways that people represent and solve problems" (Hong & Page, 2004, p. 16385). Recruited new members bring in a fresh new source of ideas and knowledge. This constant flow is beneficial for knowledge innovation inside the community (Luo et al., 2009).
Diversity of engagement forms	The criteria describes the capacity for information-processing efficiency with which groups are able to solve problems (Goyal & Akhilesh, 2007). Two groups of decision making tasks are the generation of alternative solutions (closely related to idea generation) and evaluation (Riedl, Leimeister, & Kassel, 2010). Luo et al. (2009) suggests that communities should have the capability of intelligent problem solving which refers to the capability of utilizing the stored knowledge to solve problems.
Decentralization and self-organization	The community should contain a memory system that stores information and knowledge, and is analogous to the memory system in a human brain (Luo et al., 2009). Distributed memory facilitates communication and coordination between individuals.
Independence	Independence refers to a situation when the decisions of others do not influence individuals. According to Lorenz et al. (2011), even minor social influence results in the bias and inaccuracy of crowd. Bias is the tendency of individuals and groups to make systematically errors in the decision-making situations. Malone, Laubacher, and Dellarocas (2009) suggest that bias mostly arise in the situations where the initial participants influence those who join later, or due to insufficient diversity. Norvaišas et al. (2011) suggests for community managers to guarantee anonymity of the participants in order to eliminate bias, subjectivity, and negative social or psychological impacts. Anonymity also offers some drawbacks. Losing the control and feeling free to act without any responsibility, often may drive towards a violation of others' rights (Skaržauskienė, Pitrėnaitė-Žilėnienė, & Leichteris, 2013).
Transparency	Prahalad and Ramaswamy (2004b) propose a model of co-creation (DART) with four building blocks: dialogue, access, risk, and transparency. The authors refer to the transparency as a necessary condition to create trust between organization and society. The empirical study by Dabbish et al. (2012) concludes that transparency can support innovation, knowledge sharing, and community building in a variety of ways.
Security and privacy	Introduction of technologies safeguarding user security and anonymity is crucial for the creation of active community and encouragement of diverse opinions (Skaržauskienė et al., 2015). Communication in social networks is not isolated with possibilities to share personal information within a closed circle of persons, thus at the same time the possibility for such data to become accessible for million people all over the world remains (Štitilis, 2013).

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