

**EXPLORATION DES MECANISMES D'ENGAGEMENT DURANT LE PROCESSUS DE CO-CREATION
DE VALEUR : LE CAS DE LA GAMIFICATION SUR LES PLATEFORMES DE DEVELOPPEMENT DE
NOUVEAUX PRODUITS**

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Résumé : Les chercheurs et praticiens reconnaissent la pertinence d'intégrer les consommateurs dans le processus de développement de nouveaux produits et recommandent l'utilisation des nouvelles technologies à cette fin. Cependant, bien qu'elles jouent un rôle important, la mise en place de plateformes en ligne n'est pas suffisante pour engager le consommateur, ce qui est pourtant un facteur clé pour réussir une activité de co-crédation. Malgré l'importante littérature sur la co-crédation de valeur, peu de recherche sont menées sur la manière dont les plateformes interactives doivent être développées pour engager le consommateur. Pour compléter cette lacune théorique, sur base de l'étude approfondie d'un cas incluant des données longitudinales et de riches informations qualitatives, notre recherche investigate l'impact de deux mécanismes de gamification, la coopération et la compétition, sur l'engagement des utilisateurs. Cette recherche met en avant la présence de quatre profils d'utilisateurs et évalue ensuite leur engagement émotionnel, cognitif et comportemental au travers du temps.

Mots clés : gamification ; co-crédation ; étude longitudinal ; plateforme en ligne ; profils d'utilisateur

**EXPLORATION OF ENGAGEMENT MECHANICS DURING THE VALUE CO-CREATION PROCESS:
THE CASE OF GAMIFICATION IN A NEW PRODUCT DEVELOPMENT PLATFORM**

Abstract : Academics and practitioners acknowledge the relevance of integrating customers in the development of new products and recommend the use of new technologies to this end. However, though they play an important role, the development of an online platforms is not sufficient for effective engagement of customers, yet considered as a key predictor of successful co-creation initiatives. Despite the large body of research regarding value co-creation, little is known about how to design interactive platforms to engage consumers. To address this gap, based on an in-depth case study including longitudinal data and rich qualitative material, this research investigates the impact of two gamification mechanics: cooperation and competition. This research highlights the existence of four user profiles. We then assess their emotional, cognitive and behavioral engagement with the gamified cocreation platform over time.

Keywords : gamification ; co-creation ; longitudinal study ; online platform ; users' profiles

EXPLORATION OF ENGAGEMENT MECHANICS DURING THE VALUE CO-CREATION PROCESS: THE CASE OF GAMIFICATION IN A NEW PRODUCT DEVELOPMENT PLATFORM

Introduction

Academics and practitioners acknowledge the relevance of integrating customers in the development of new products or services in terms of innovation and relationship management (Ramaswamy and Ozcan, 2014). The emergence of online platforms, communities and social networks has been widely recognized as facilitating the interactions and the exchange of resources among actors (Sawhney, Verona and Prandelli, 2005). However, even if they play an important role (Nambisan and Baron, 2009), they are not sufficient for effective engagement of customers, yet considered as a key predictor of successful co-creation experiences (Brodie, Hollebeek, Juric et al., 2011). Consumer engagement (CE) is defined as the level and intensity of the relationship customers develop with a focal object, such as a brand, community or process (Brodie et al., 2011). Described as a dynamic and iterative process of interactions, CE generates cognitive, emotional and behavioral manifestations (Hollebeek, 2010; Brodie et al., 2011). Engaged consumers are more willing to promote, advocate, collaborate and share their knowledge with companies (Kumar, Aksoy, Donkers et al., 2010). Several authors have noted the key role played by interactive platforms in providing a compelling experience and consequently engaging consumers (Kohler, Matzler and Füller, 2009; Füller, Hutter and Faullant, 2011).

Despite the growing body of research regarding value co-creation (Galvagno and Dalli, 2014), little is known about how to design interactive platforms to engage consumers in the value co-creation process (Breidbach, Kolb and Srinivasan, 2013; Ostrom, Parasuraman, Bowen et al., 2015). Among the multiple mechanisms that might be implemented to design engagement platforms, managers and researchers have called for the use of gamification (Werbach and Hunter, 2012; Robson, Plangger, Kietzmann et al., 2014), “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled et al., 2011). Whereas gamification mechanics, which are defined as a game’s structure, goals and rules, are a priori determined by the game designers, the behaviors and emotions that a game generates are difficult to predict. Consequently, the key issue for designers resides in their capabilities to develop mechanics that generate the intended emotions and behaviors (Robson, Plangger, Kietzmann et al., 2015). However, despite the increased use of gamification mechanics for the purposes of innovation, it is still unclear how they influence CE (Hamari and al., 2014).

To empirically address this important gap, our research attempts to offer a more fine-grained understanding of the role that gamification mechanics plays in engaging actors in co-creation platforms. In particular, with this study, we seek to investigate the following questions:

- What are the profiles of users based on their behaviors on a gamified cocreation platform?
- How do users’ profiles predict current and future users’ emotional, cognitive and behavioral engagement?

Based on an in-depth case study including longitudinal data and rich qualitative material, this research investigates two widely used gamification mechanics – cooperation and competition – will be studied deeply. The competition mechanic consists of one player or group winning and the others losing, whereas the cooperation mechanic relies on players collaborating to achieve a common goal (Werbach and Hunter, 2012). This research first highlights the existence of multiple user profiles and then assess users’ emotional, cognitive

and behavioral engagement with the gamified cocreation platform. Our study contributes to the extant literature because it emphasizes four user profiles, i.e., invisible users, competitors, cooperators and coopetitors. Furthermore, adopting a longitudinal perspective helps us better capture the dynamics of CE over time across the various profiles and to study their respective reactions to the gamification mechanics.

Background

Brodie et al. (2011, p.9) defined CE as “a psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships”. The authors describe CE as a dynamic and iterative process of interactions encompassing cognitive, emotional and behavioral manifestations (Hollebeek, 2010; Brodie et al., 2011). The cognitive dimension refers to the level of customer’s concentration toward the engagement focal object. The emotional dimension includes customers’ sense of belonging to the brand, organization or community. Finally, the behavioral dimension relates to the customers’ energy level and mental resilience in interacting with the engagement focal object. The engagement platform design is considered as a lever to manage and maintain CE over time (Kohler et al., 2009; Füller et al., 2011).

Gamification has emerged recently as one of most popular practices used by companies to manage their co-creation platforms (Gartner, 2011). Although gamification has been described as a fruitful alternative to engage actors, literature related to this emerging concept remains conceptual and there is a lack of empirical study analyzing the impact of such mechanics on participants’ engagement (Hamari, Koivisto and Sarsa, 2014). Harwood and Gary (2010) have recently highlighted the impact of gamification mechanics on emotional and behavioral engagement. Although, the authors considered the participants as an homogeneous group reacting similarly to the gamification mechanics. Several studies from the literature regarding game studies (Bartle, 1996), online community marketing (Kozinets, 2010) and innovation (Bullinger, Neyer, Rass et al., 2010) literature have emphasized the existence of multiple user profiles on interactive platform. Therefore, we need to investigate these profiles and assess how they interact and engage within a gamified value co-creation platform. Finally, because CE is a dynamic and iterative process, we need to capture its evolution over time according for each user profile.

Research design

To identify user profiles and assess the intensity and level of users’ engagement, an in-depth case study method was used. An extensive analysis of a cocreation platform was conducted. On this platform, individuals are invited to not only submit their ideas but also vote for and enrich ideas suggested by others. Along the process, idea or design submissions are rewarded through competitive mechanics (only winning users are rewarded for their contributions). Writing review on others’ ideas or voting for a project are rewarded through cooperative mechanics (every users are rewarded for their contributions). The rewards consist of a percentage of the profits generated through the sale of the products and services created. Whereas idea submissions and writing reviews results in rewards with a high expected value, naming proposals and votes offer lower rewards. Multiple types of qualitative and quantitative data were gathered. Longitudinal data, including all the contributions, submissions, votes or comments made by all platform members over a period of six months, were extracted. Additionally, 2174 comments covering a six-months-period were gathered and 9 in-depth interviews were conducted to support qualitative analysis.

To address the two research questions, we performed our analysis following two steps. Firstly, we applied a cluster analysis to identify users’ profiles according to their behaviors

(number of submitted ideas, designs, posted comments and votes) and qualified these profiles through netnography and in-depth interviews. Secondly, to predict users' current and future engagement according to their profiles, we assessed the intensity of their cognitive, emotional and behavioral engagement and captured their evolution over time. Therefore, for each user, we computed scores reflecting behavioral CE through the four dimensions suggested by Kumar et al. (2010) namely Customer Lifetime Value, Customer Influencer Value, Customer Knowledge Value and Customer Referral Value. These dimensions were monthly evaluated to capture their dynamics. Regression analyses were then applied to predict clusters' current and future behavioral engagement. Netnography and in-depth interviews were also used to investigate emotional and cognitive CE and their evolution over time. Finally, we discussed our findings with multiple theories from psycho-sociology, game studies and marketing.

Results discussion

Identification of user profiles The four emerging profiles that we identified are supported by agency and communion theory used to characterize individuals' interpersonal interactions (Bakan, 1966). Therefore, whereas the previous literature distinguishes cooperation and competition as two extremes of one dimension, the communion and agency literature considers them as distinct dimensions. Given these two dimensions, we classified competitors as dominant and unfriendly (A+/C-). These users tend to dominate the platform by submitting well-designed ideas and succeeding in commercializing their projects. Cooperators emphasize submissive and friendly behaviors (A-/C+). They aim to sustain and develop the platform. They serve the community. Coopetitors exhibit leadership on the platform as they interact well with other users to develop their own projects (A+/C+). Finally, invisible users do not take part in the community or perform actions on the platform (A-/C-). They are spectators (Robson et al., 2014).

According to their profiles, users seem make different contributions on the co-creation platform and specific expectations regarding the value they want to obtain from their interactions (Nambisan and Baron, 2009). The motives emerging from the content analysis are consistent with previous research investigating users' activities on online co-creation platforms (Nambisan and Baron, 2009; Roberts, Hughes and Kertbo, 2014). However, this study reveals the salience of specific motives according to the users' profiles. Indeed, competitors seem to be highly concerned by the efficiency aspect and mainly seek to commercialize their already well-designed ideas; they are driven by extrinsic motives (Roberts et al., 2014). Cooperators seem to be mainly motivated by being integrated within a community and being recognized as part of it (Nambisan and Baron, 2009; Roberts et al., 2014). Coopetitors are described by the previous literature as a hybrid profile between cooperators and competitors (Bullinger et al., 2010). However, the content analysis reveals that coopetitors have specific motives as they seek collaboration on their own projects by interacting with other users (Roberts et al., 2014). The invisible users are driven by their curiosity, and they most value the hedonic dimension of their experience on the platform because they seem to enjoy exploring and discovering others' projects and debates (Nambisan and Baron, 2009). In that context, the gamification mechanics are used by users to derive their expected value. In that context, the gamification mechanics are used by users to derive their expected value. Competition mechanics are used by competitors and coopetitors to legitimize their expertise. Cooperation mechanics are used by coopetitors to motivate others to contribute to their own projects. Other user profiles are indifferent to these mechanics, especially the cooperators, who reject them, because they would risk distracting users from the primary platform objective, i.e., the joint development of innovations.

Users' engagement on the co-creation platform Based on these insights on users' profiles, we examined their behavioral, cognitive and emotional engagement. Similarly to Robson et al. (2015), who adopted the MDE framework, this study demonstrates that based on the gamified co-creation experience, users' engagement outcomes can be either emotional or behavioral. Additionally, we emphasize the cognitive engagement outcomes that may be generated through such experiences. In the NPD process, these cognitive manifestations of engagement take, for example, the form of idea emulation or rich user reviews of submitted ideas. These three forms of user engagement outcomes – cognitive, emotional and behavioral – are supported by Brodie et al. (2011). According to the content analysis, CE may generate positive or negative effects on the general functioning of a co-creation platform (Werbach and Hunter, 2012). Indeed, because the multiple profiles have different motives and contributions, their interactions reveal potential conflicting interests (Baron and Warnaby, 2011). For example, competitors, who are characterized by short-term participation, are often criticized and do not receive sufficient legitimacy from cooperators and coopetitors, who value long-term participation. Therefore, competitors tend to disengage from the co-creation platform after some time as they see the interest in their ideas and projects decreasing. The lack of interest in competitors' projects comes from the cooperators' and coopetitors' underestimation of competitors' contributions because they consider competitors to be newcomers. Finally, as suggested by Brodie et al. (2011), this study captures the iterative and dynamic nature of engagement. Indeed, for the different user profiles, the CE evolves differently. Whereas competitors exhibit short-term engagement, cooperators and coopetitors are long-term partners.

Contributions

This study bridges marketing and game studies and contributes to both fields. We emphasize gamification as a valuable means of designing smart technologies to create, boost and maintain users' engagement (call from Breidbach et al. (2013); Ostrom et al. (2015)). This study highlights four profiles that react differently to gamification mechanics and provides insight regarding how these profiles co-exist and interact through a cocreation platform. Furthermore, we captured the dynamics and iterative nature of CE, as described in a recent study by Brodie et al. (2011), by highlighting the evolution of CE according to the various profiles. This study also contributes to the game literature because it notes the cognitive dimension of CE in addition to the emotional and behavioral components, which have already been emphasized by the MDE framework (Robson et al., 2015). The cognitive dimension emerges from the content analysis and is supported by the literature related to CE (Brodie et al., 2011). This study provides practitioners with guidelines regarding the relevance of using competition and cooperation mechanics according to the profiles they want to interact with. For example, our study does not support using competition or cooperation mechanics in an online community because these practices are rejected by cooperators, who constitute a large fraction of the members on these platforms. Competition mechanics are more relevant when managers expect an intense but punctual contribution. A combination of cooperation and competition mechanics would be valuable when managers plan to collaborate with coopetitors in a long-term partnership.

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