



Received: 25 September 2015  
Accepted: 25 November 2015  
Published: 04 January 2016

\*Corresponding author: Natalia Maehle,  
Centre for Innovation, Bergen University  
College, Postbox 7030, Bergen 5020,  
Norway  
E-mail: [natalia.mehle@hib.no](mailto:natalia.mehle@hib.no)

Reviewing editor:  
Tahir Nisar, University of Southampton,  
UK

Additional information is available at  
the end of the article

## MANAGEMENT | RESEARCH ARTICLE

# Crowdsourcing innovation and product development: Gamification as a motivational driver

Maya Kavaliova<sup>1</sup>, Farzad Virjee<sup>2</sup>, Natalia Maehle<sup>3\*</sup> and Ingeborg Astrid Kleppe<sup>4</sup>

**Abstract:** Crowdsourcing—outsourcing a job to external contributors through an open call—has become an important part of innovation process and product development. However, many crowdsourcing initiatives fail due to low engagement and participation. In the current paper, we aim to explore how companies can employ gamification—game elements and design techniques—to motivate contributions to a crowdsourcing project. Based on an exploratory case study of Threadless, a web-based apparel store, we propose implications that can assist companies in leveraging global capabilities for new product development. Threadless employs game thinking through a wide array of game elements and game mechanics including challenges, achievements, countdowns, discovery, points, reward schedules, and status. Our analysis shows that consumers are fun seekers. They will carry out activities without expecting anything in return, if they perceive it as being fun. Moreover, companies should openly acknowledge consumers' contributions and give them recognition by using flexible reward system, statuses, and challenges. Despite the importance of extrinsic rewards, it is also essential to realize that intrinsic factors are crucial for maintaining consumers' continued engagement and therefore we strongly recommend companies to build a strong virtual brand community around their crowdsourcing projects.

### ABOUT THE AUTHORS

Maya Kavaliova holds MSc in Economics and Business Administration from Norwegian School of Economics and CEMS Master in International Management. During the past years, she worked in corporate and business development, marketing and product management of IT products.

Farzad Virjee holds MSc in Economics and Business Administration with a focus on International Business from Norwegian School of Economics. Since 2014, Farzad has been with SAP, where he is responsible for the business operations of the Analytics Development Unit. Prior to that, he has worked as an art director, graphic designer, marketing support, and treasurer accountant at other firms.

Natalia Maehle, PhD, is an associate professor at the Centre for Innovation, Bergen University College. Her research interests include innovations, consumer behavior, social media, and gamification.

Ingeborg Astrid Kleppe, PhD, is a professor at the Department of Strategy and Management at the Norwegian School of Economics. She is teaching and doing research in social media marketing and consumer behavior.

### PUBLIC INTEREST STATEMENT

With the rise of Web 2.0 technologies and social media, many companies have started to outsource innovation activities and product development to external contributors (e.g. consumers) through an open call, so-called crowdsourcing. The problem is that crowdsourcing initiatives often fail due to low engagement. This paper uses a case of Threadless, a web-based apparel store, to show how companies can employ gamification—game elements and design—to address this issue. Our findings demonstrate the effectiveness of using challenges, achievements, points, rewards, and status to increase consumers' engagement in crowdsourcing projects. For example, Threadless' point mechanism of voting and challenges has resulted in thousands of submissions from across the globe and has significantly boosted consumers' creativity. Many consumers also recognize monetary rewards in the form of money and gifts as a strong motivational driver. In addition, consumers are motivated by status game mechanics giving them recognition for their achievements.

**Subjects: e-Business; Internet / Digital Marketing / e-Marketing; Management of Technology & Innovation**

**Keywords: gamification; crowdsourcing; innovation; product development; consumer engagement; Threadless**

### 1. Introduction

The rise of Web 2.0 technologies and social media has changed the company's management practice concerning innovation processes and product development. As a result, firms have started shifting from the traditional business models of "closed service innovation", where value is generated internally by the employees, towards "open service innovation", where value is generated by both internal and external innovators (Chesbrough, 2003). This makes crowdsourcing—the act of outsourcing a job to an undefined group of external contributors through an open call (Howe, 2006)—an important source for innovation. The collaborative and competitive nature of crowdsourcing enables companies to identify, access, assimilate, and leverage the abundant knowledge, skills and resources that exist beyond their own borders (Neyer, Bullinger, & Moeslein, 2009; Whitla, 2009). Moreover, the company benefits from increased cost savings since monetary rewards are rare (Howe, 2006). Involving consumers in product development also allows the firms to ensure that they innovate in line with consumer demands (Khurana & Rosenthal, 1997).

However, getting consumers engaged with one's brand has become extremely challenging due to the rising competition. Low development costs and abundance of the virtual platforms have led to a large number of underperforming and under populated communities that fail to achieve critical mass for problem-solving. Many crowdsourcing initiatives fail due to low consumer engagement and participation (McGonigal, 2011). As the CEO of Cambrian House, an unsuccessful crowdsourced platform, Michael Sikorsky stated; "the wisdom of crowds worked well in the model, but it was our participation of crowd aspect which broke down" (Techcrunch, 2008).

Recently, gamification has gained popularity among practitioners and scholars as a tool to motivate, engage, increase user activity, and retain consumers in a particular brand or community (Deterding, Dixon, Khaled, & Nacke, 2011). Gamification can be defined as using game elements and design techniques in a non-game setting (Werbach & Hunter, 2012). Research shows that online communities greatly benefit from implementation of gamification, often with the end-goal of shaping the user behavior (Deterding et al., 2011; Hamari & Koivisto, 2013; Zichermann & Cunningham, 2011). Games have proven to solve challenges such as consumer activation, inability to gain critical mass, and thin participation (McGonigal, 2011). Given the crowdsourcing challenges discussed above, we aim to investigate how to harness the wisdom of the crowd using gamification strategies.

Consumer motivations for co-creation are studied in the literature (Brabham, 2010; Füller, 2010; Franke & Shah, 2003; Lakhani, Jeppesen, Lohse, & Panetta, 2007), but limited research focuses on the use of gamification as a motivational driver. Research suggests that gamification can drive the actions through game mechanics and dynamics both in games and gamified environments (e.g. Fang & Zhao, 2010; Yee, 2006; Zichermann & Cunningham, 2011). However, we cannot find any studies on gamified crowdsourcing to date. To cover this gap, the current study focuses on exploring how companies employ gamification strategies to motivate contributions to a crowdsourcing project. We also aim to contribute to the limited existing knowledge on motivational triggers driving consumer involvement in crowdsourcing. The underlying intrinsic and extrinsic drivers of consumer participation and their interplay with the mechanics and dynamics of gamification form the basis for our investigation. Due to the limited research in this direction and lack of available macro data, we choose a case-study approach. We use a case of Threadless.com (referred to as Threadless from hereon), an exemplary crowdsourcing web-based apparel store. We explore Threadless' gamification strategies from a managerial standpoint, and complement it with a netnographic analysis of

Threadless online community. The Threadless case was used in the earlier studies (e.g. Brabham, 2008); however, the motivational factors based on gamification elements were not considered before.

As a result, we provide recommendations for companies on how to facilitate consumer participation with the use of gamification. Highlighting the triggers that drive consumer participation in virtual communities is crucial for companies aspiring to create successful crowdsourced communities and promote their co-creation endeavors.

## 2. Theoretical background

### 2.1. Crowdsourcing

Crowdsourcing is a new form of business organization, where consumers' online leisure activities transfer into productive labor harnessed as a free resource for the benefit of the industry (Kozinets, Hemetsberger, & Schau, 2008). Advantages of the wisdom of the crowd includes reaching a larger pool of talents for problem-solving, overcoming local search bias, and exploiting complementary external knowledge (Howe, 2006). In contrast to open source and commons-based peer production, crowdsourcing is sponsored and managed by the organization, which issues the task, creates incentives for crowd participation, assesses the results, and emerges in mass fabrication (Brabham, 2008; Howe, 2009).

A crowdsourcing project is a special case of brand community where members collaborate in a virtual space. Online brand communities are non-geographically bound communities where admirers of a brand share a sense of belonging to something larger than their individual self. A brand community is confirmed and evolves through the enactment of community rituals and traditions, and members' sense of moral responsibility to keep the community thriving (Muniz & O'Guinn, 2001). Some additional characteristics of virtual community also apply to crowdsourcing projects. First, virtual communities structure around distinct interests that provide its reason for existence (Bagozzi & Dholakia, 2002). Second, virtual community members feel a bond towards their fellow community members and a sense of separation from non-community members that encourages the members to regular visits in the community (Wellman & Gulia, 1999). Third, member interaction in virtual communities cultivates norms of interactions, creates community jargons, maintains social roles, establishes boundaries, and shows commitment to community goals (Bagozzi & Dholakia, 2002). In sum, active member participation is the source for the formation and continuation of virtual communities (Arnould, Price, & Malshe, 2006). Crowdsourcing projects comprise all the above attributes and therefore qualify to be studied as crowdsourcing community projects. However, crowdsourcing community projects have one distinct characteristic that places them in a particular category of brand communities. Crowdsourcing projects are created, hosted, and maintained by corporations with the explicit purpose of generating profit for the company (Brabham, 2013). Hence, the challenge for the crowdsourcing company is to mobilize community dynamics and collective identities necessary for membership engagement, collaboration, and co-creation.

The development of technology has made it easy and cheap to develop a crowdsourcing platform (Ahmad, Battle, Malkani, & Kamvar, 2011). Nevertheless, there are some challenges that negatively affect its sustainability and productivity. McGonigal (2011) claims that participatory fun networks are more rewarding for their members compared to serious ones (e.g. crowdsourcing), and tend to absorb the majority in online engagement. Moreover, serious crowdsourcing projects have thin participation spread due to the overwhelming number of requests to join collaborations; about 200 million requests for participation in crowdsourcing initiatives strive to involve the 1,7 billion of online crowd, making it 8,5 persons per request (McGonigal, 2011). Therefore, solving the challenges associated with user motivation and online engagement becomes crucial for harnessing the wisdom of the crowd, and ensuring the sustainability of crowdsourcing projects.

## 2.2. Consumer motivations for community participation

Self-determination theory suggests that leisure activities such as virtual co-creation can be a function of two types of consumer motivations, namely intrinsic and extrinsic motivations (Guay, Vallerand, & Blanchard, 2000). Intrinsically motivated consumers perform the activity for their own sake and prefer experiential-oriented behaviors (Gagné & Deci, 2005). Intrinsic motivation fuels persistent contribution to the community, engagement, fun, genuine interest in the medium and the content, less intentional and selective orientation, time filling and recreational activity, and hedonic gratification (Füller, 2010). In contrast, extrinsically motivated consumers perform an activity as a means to achieve some separable objective or personal benefits (Wong-On-Wing, Guo, & Lui, 2010). Such behaviors are characterized by situational involvement, selective and intentional engagement, cognition, and by interest in content, work, and utilitarian benefits (Hoffman & Novak, 2009). Extrinsic motivations stimulate a person for an action, while rewards and goals reinforce the behavior (Porter, 1970). However, some extrinsic motivations can be internalized and therefore lead to active personal commitment. In this case, a person accepts the value or utility of a task and the extrinsic goal becomes self-endorsed and thus adopted with a sense of volition (Deci & Ryan, 2000). In online communities, intrinsic motivation dominates, while extrinsic rewards are usually limited to small monetary prizes or social rewards such as a positive reputation in the community (Dahlander & Magnusson, 2005; Hertel, Niedner, & Herrmann, 2003; Shah, 2006).

Based on the rich body of motivation research available in related fields such as user innovation (Franke & Shah, 2003) and consumer creativity (Dahl & Moreau, 2007), Füller (2010) identified 10 motive categories that explain why consumers get involved in virtual co-creation. These categories are playful task, curiosity, altruism-community support, making friends, self-efficacy, information seeking, skill development, recognition-visibility, personal need-dissatisfaction, and compensation-monetary reward (Füller, 2010). Brabham (2008) argues that the desire to earn money, develop one's creative skills, and networking outranked other altruistic motivations, while Lakhani et al. (2007) emphasizes the importance of the enjoyment of problem-solving, its complexity, utilizing the free time, and the financial reward. The previous research on the Threadless community has revealed drivers such as the opportunity to make money, to improve creative skills and for eventual freelance design work, addiction, and the love for the community (Brabham, 2008).

In practice, it is generally a combination of several intrinsic and extrinsic motives that encourage contributors to get involved in content creation activities. For instance, there might be some members that are primarily motivated by ideological reasons, whereas others might be motivated by community affiliation or skill development (Füller, 2010). Furthermore, a consumer's motivation for participation in an online community can change overtime, from extrinsic motivation through the value from one's own use of developed solution to intrinsic motivation from enjoyment and fun in the long run (Shah, 2006).

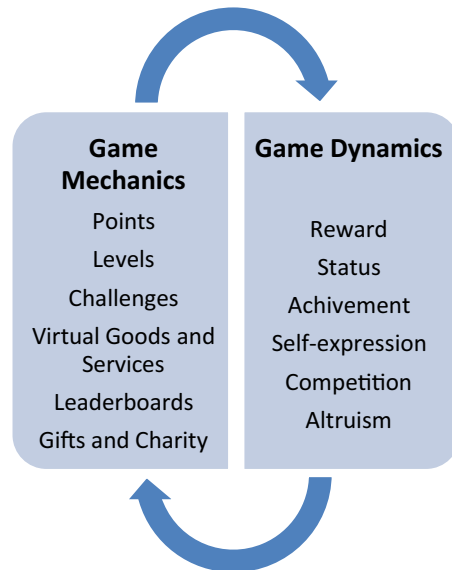
## 2.3. Gamification

A common definition of gamification embraces the concept of using game elements and design techniques in a non-game setting, often with the end-goal of shaping the user behavior (Deterding et al., 2011; Hamari & Koivisto, 2013; Zichermann & Cunningham, 2011). From a service marketing perspective, Huotari and Hamari (2012) place the emphasis on the experiential nature of gamification, defining it as a process of reinforcing a service with affordances for gameful experiences in order to support consumer's value creation. The latter definition highlights that the effect on retention and customer loyalty cannot be achieved merely by the means of game elements but rather engagement in gameful experiences should be present (Huotari & Hamari, 2012).

Gamification derives from motivational principles of games such as explicit goal, rules, feedback system, and voluntary participation (McGonigal, 2011). A goal is a specific outcome a player works to achieve which gives him a sense of purpose. Rules set limitations, which unleash creativity and foster strategic thinking. Feedback systems inform how close the player is to achieving the goal so as to persuade the gamer that the goal is achievable and motivates the gamer to keep playing. Voluntary

**Figure 1. Connection between game mechanics and dynamics.**

Source: Adopted from PWC (2012).



participation ensures that everyone knows and accepts the goal, rules, and feedback. While this knowledge gives common ground for various people to play, freedom makes the game a pleasurable experience.

LeBlanc, Hunicke, and Zubek (2004) devised a game design framework introducing three main components of a good game: mechanics, dynamics, and aesthetics. The terms game mechanics and game (design) elements in the literature are often used interchangeably. Game mechanics includes rules, imperatives, and procedures supported by technology that governs the performance through a system of incentives, feedback, and rewards. They often have a predictable outcome, and are sometimes so obvious that they executed as a behavioral reflex (Wu, 2011). Game dynamics are the players' interactions with game mechanics, representing communication between the game and the player (LeBlanc et al., 2004). Thus, game dynamics and mechanics are interconnected in the way depicted in Figure 1.

#### **2.4. Motivations for game participation**

A study performed on 1,000 video game players by Fang and Zhao (2010) concludes that the challenge of the task, competition with other users, diversion with the game from responsibilities or stress, social interactions, emotion stimulus through game play, and fantasy in doing extraordinary things are the major gratification factors (Fang & Zhao, 2010). According to McGonigal (2011), games provide players with voluntary obstacles, which allow them to use their personal strengths that they cannot use in real life. By performing different types of work, gamers achieve "hard fun," giving them positive stress experience. Moreover, gameplay gives optimistic sense of own capabilities and invigorating rush of activity, which makes games addictive. Fiero—a feeling of triumph over adversity—is another element that makes games appealing.

Feeling of happiness is one of the main reasons why games induce intrinsic motivation (McGonigal, 2011). This phenomenon is an example of flow, a concept developed by an American psychologist Mihály Csíkszentmihályi. According to Csíkszentmihályi (1990), "flow" is the mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity. The following conditions should be met in order to achieve a flow state: (1) An activity should have a clear set of goals that adds direction and structure to the task; (2) One should get clear and immediate feedback for his/her progress on the activity allowing to adjust the performance and maintain the flow state; (3) It should be a good

balance between the perceived challenges of the activity and one's own perceived skills (Csíkszentmihályi, Abuhamdeh, & Nakamura, 2005).

Csíkszentmihályi (1990) argues that everyday life lacks flow, while games are high in flow due to their special characteristics. All games have a goal that gives the whole activity a purpose and meaning. Games have also a set of specific rules that limit what players can do to achieve a goal, and therefore require more creativity and strategic thinking. While in the game, players get constant feedback (e.g. points, levels, progress bar) showing how close they are to achieve their goals. This feedback makes goal achievement more realistic by showing gradual improvement and motivates to play further. Finally, games are voluntary, which supports sense of security and pleasure. All of these game dynamics can stimulate players to move into a flow state.

Bartle (in Sempere, 2009) classifies players of multiplayer online games into four distinct categories based on their preferences or what drives their behavior. These categories feature gaming personalities such as the achiever, explorer, socializer, and killer. The personality types are affected by different game dynamics, and are mutually inclusive, implying that an average player can carry characteristics of all these types (Zichermann & Cunningham, 2011). In response to Bartle's findings, Yee (2006) identifies 10 motivational components grouped into three components, namely achievement, social interaction, and immersion. The achievement component embraces the desire for rapid power and in-game wealth acquisition and progress (advancement), interest in existing rules and system to optimize the performance (mechanics), and the urge to challenge others (competition). Social components are predominantly concerned with helping and chatting with other gamers (socializing), building long-term connections with them (relationships), and enjoying being a part of the team (team work). Finally, in terms of immersion such factors as exploring and finding things (discovery), role-playing, character's appearance customization (customization), and escape from real-life problems (escapism) appeared significant. The results of Yee's (2006) findings largely coincide with Goh and Lee's (2011) study of 7,000 players of EverQuest, a Massively-Multiplayer Online Role Playing Game. The latter also highlighted that players often find games addictive and stay motivated by achieving high scores.

### 3. Methodology

We use an exploratory single case-study approach to understand a successful real-world crowdsourcing phenomenon and couple it with netnography as the method of analysis (Kozinets, 2002). The case-study method allows us to observe and explore individuals and organizations, through complex interventions, relationships, and communities (Baxter & Jack, 2008). The "what, how and why" nature of our research questions drives our choice of an exploratory single-case (holistic) study design, which is used to explore those situations where the intervention being evaluated has no clear, single set of outcomes (Yin, 2003). Furthermore, Yin (2009) suggests that a single-case design should be preferred over multiple-case design when the case under consideration is a representative or typical case, which Threadless is.

#### 3.1. Case: Threadless

Threadless is an online apparel company that crowdsources the designs and produces apparel based on its members' feedback. It is based in Chicago and was founded in 2000 by Jake Nickell and Jacob DeHart. Part apparel maker and part social network, Threadless has a website where members share their T-shirt design concepts and have them voted on by a community of followers every week. After one week of voting, the top-scoring designs are reviewed and graded. Based on the community feedback and the subsequent average score, the top 10 designs are selected each week for printing on apparel. These products are then made available worldwide, through online store, as well as through retail store in Chicago. As a token of their outstanding designs, the designers receive Threadless gift card, varying amount of cash and other competition specific rewards for their printed work, along with the opportunity of winning numerous awards. Threadless holds the rights to the design on clothing; however, the designers retain the rights to their designs on all other apparel. Threadless community also represents an excellent case of using gamification for consumer

engagement as it employs game thinking through a wide array of game elements and game mechanics. As a result of their successful community-centered business model, Threadless having never produced unsold t-shirts, and has generated more than \$ 17,000,000 in annual sales with a 35% profit margin and a rapidly growing community (Menichinelli, 2012).

### **3.2. Netnography**

We adopted Kozinets (2009) netnographic research technique in order to derive meanings from user posts and comments on the Threadless community. Netnography uses internet-optimized ethnographic research methodology to study the social context over the web (Bartl, 2009), and allows listening to what the consumers are saying within their natural settings and extracting meaningful information from their online participation. Consumer motivations for participating in crowdsourcing have been primarily studied through questionnaires and interviews (Brabham, 2008; Cova & Pace, 2006; Muniz & Schau, 2005). However, the answers from consumers during an interview can be biased due to several reasons including unconscious motivations and social sensitivity (Prisacaru, 2012).

We followed the five steps suggested by Kozinets (2009), including making cultural entrée, gathering data, ensuring trustworthy analysis and interpretation, conducting ethical standards, and providing opportunities for culture member feedback. We used the “Blogs” section on the Threadless community as the main source of data collection, since this section acts as the message board on the community. Our participation within this section lasted from February to November 2013, and was kept at a purely observational level. During these months, we went through countless member ideas, blogs, posts, and comments. The emphasis was kept on rich and descriptive member posts that offered sufficient insights into the member motivations for participation. Moreover, we wrote reflective field notes in-order to enhance our analytical depth and insight into interpreting member posts. These field notes assisted us with capturing our observations, feelings, and emotions while collecting data from the community. For the purpose of saving web clippings of member posts and storing reflective field notes, we made use of a free program called “Skitch.” This program significantly assisted us in listing, organizing, and storing countless member posts, and our own thoughts and feelings while collecting these posts from the community’s message board.

## **4. Analysis**

### **4.1. Gamification strategies at Threadless—Company perspective**

Threadless has gamified crowdsourcing through incorporating game thinking in its platform. Over the years, the Threadless staff has actively induced various game mechanics such as challenges, achievements, bonuses, countdowns, discovery, points, reward schedules, and status on the community, which encourage consumer participation. The resulting game dynamics, in the form of member participation motives vary ranging from intrinsic playful tasks to extrinsic compensation and reward seeking.

#### **4.1.1. Onboarding**

Through a very creative onboarding how-to video for the new comers, Threadless has transformed the process of submitting a design into a game. The video highlights the necessary “steps for earning fame and fortune at Threadless and beyond” (Threadless, 2013). Threadless community is introduced as a place where members share, discuss, and promote their designs, along with interacting and meeting new artists. Everyone on Threadless can give a score for the designs and share their voice in the development of the product. All members are encouraged to interact with their fellow members and give constructive feedback to their work. In essence, the process of idea creation is not just positioned as a means to gain financial rewards, but rather showcased as a fun-filled process leading to social interactions.

#### 4.1.2. Community challenges

Threadless actively uses game mechanics of challenges to host design competitions and choose which design to produce. The challenges vary from open-ended Threadless run challenges, to member initiated competitions.

The first type of design competitions hosted by the Threadless staff—“Threadless design challenge”—is an ongoing competition, where each submitted design receives 7 days of community voting, from the moment it is approved by the staff. Monetary rewards (ranging from \$250 to \$2,000) and royalties (ranging between 3 and 20%) are offered to the artists, based on what the design is printed on. The competition is published on the challenge page and is a general competition, open to all, and meant to attract all appropriate designs without any restrictions. The members are encouraged to let their imagination flow and submit their art works, which makes them feeling like a part of the company.

The second type of competitions hosted by Threadless—“Themed challenges”—revolves around a particular theme to inspire designs that members would not have thought of otherwise, e.g. 90s Pop culture, The Simpsons, Music for Relief, WWF, etc. Moreover, Threadless often partners with another company to design a challenge for its members, e.g. “Threadless + Sony: Your soundtrack,” “Threadless + GAP Worn-In,” and “Path + Threadless.” Based on the rules outlined in the challenge description, the winner of the competition receives cash prize, a gift certificate from Threadless, and a giveaway from the partner company. Moreover, some competitions such as “Threadless + Spider-Man” are designed to promote collaboration amongst the members by awarding cash prize for artist collaboration.

The “Community design challenges” are run by the members of the community who layout the challenge rules and the awards for the winner. “Threadwars” amongst others are a series of community-led design competitions that have become immensely popular amongst the members. By allowing the members to create their own design competitions, Threadless reaffirms their high value for the company. Moreover, such member-led challenges highlight how involved the members are within the community. In addition to actively participating in the competition, some members respond to the open donation call for the winners, by giving something that belongs to them, e.g. self-made art prints, poster prints, iPhone cases, t-shirts, and much more.

#### 4.1.3. Community structure and continuity

Threadless uses the point-based scoring game mechanic to introduce excitement and competitiveness. It applies a five-point scoring scale for rating the designs, where 1 is the worst and 5 is the best. This scale remains the same across Threadless, irrespective of the type of challenge. In addition, two types of countdown mechanics are used in which the members are only given a certain amount of time to do something. The first one is based on the challenge time frame, which is usually a window of 3 weeks for each competition hosted by Threadless. The only exception is the “Threadless design challenge,” which is an ongoing competition. The second countdown mechanic is based on the time limit given to each member submission for being voted by the community (a period of 7 days). However, if the submitted design receives a low score within the first 24 hours of the submission, the design is dropped from the race. This is done to keep the number of submissions manageable and works as an indicator for the artist to rework on the design.

Threadless also uses bonus game mechanics where it rewards its members for having completed a specific task. Usually these bonuses are embedded in ongoing competitions and offer monetary and non-monetary rewards. For instance, the Threadless design challenge offers bonus points if the artists display their design on more than one type of product. Whereas in a separate Love design challenge, \$200 gift code was given to the winner recreating a Threadless design within Minecraft challenge.



The status game mechanic is employed to showcase the contribution of each individual member to the community. Every member has a user profile on the website, showing his name, duration of the community membership, total number of submissions this member scored, average score given, and number of submissions that resulted in getting printed. This creates a virtual status of the member within the community. Once a design gets printed, the member gains alumni status that adds more value to his feedback and comments on the forum. In addition to that, Threadless uses access game mechanics by having a forum sector open only to alumnus. These status mechanics work give each member a snapshot of their work, and motivate them to progress and improve their ratio of submitted vs. printed designs.

Moreover, Threadless all the time expresses its appreciation to their members. Each month they add one artist to its “Made” showcase, as a gesture of appreciation for all their good work. The main page features the top design by the artist, the name, and the country of origin. The details present the interests of the artists and their design submissions. Featuring a member as an artist makes him/her feel more like a celebrity. Apart from the appealing rewards that are offered to the competition winners, Threadless gives “Bestee Awards” to its members for their overall contribution to the community. The awards include various honors such as Design of the Year, People’s Choice Design of the Year, Blogger of the Year, Collaboration of the Year, Slogan of the Year, and Scorer of the Year. These titles are not just popular on the Threadless community; the artists use them on other platforms as well. In addition, Threadless also awards “Mini-Bestee Awards” which are not as high in status as Besteas awards but are nevertheless excellent game mechanics used by Threadless, e.g. Most likely to take selfies, Best unprinted artist, Biggest Threadfan, Newcomer of the Year. These awards present a virtual and physical representation of achievement and are highly cherished by the members. It also allows the award winners to brag about their achievements and adds challenge to the experience.

#### **4.2. Consumer community interactions—Consumer perspective**

In this section, we present the analysis of the consumer conversations in the Threadless community where we relate consumer’s motivations to participate in product development and crowdsourcing to Threadless gamification initiatives. The discussion is organized according to the following types of motivation: intrinsic, internalized extrinsic, and extrinsic.

##### **4.2.1. Intrinsic motivations**

**4.2.1.1. Intrinsic playful task.** A number of threads in user conversations contained words such as “fun” or “interesting and exciting” referring to the pleasure of art creation. The perception of hard artistic work as an enjoyable activity relates to a state of “hard fun” described by McGonigal (2011) as typical to games. Designers feel happier by playing the “Threadless game” rather than just relaxing (McGonigal, 2011). We observe that by emerging in design activities and having “hard fun”, members experience blissful productivity dynamics (i.e. a sense of accomplishment; McGonigal, 2011), which keeps them involved in co-creation. In addition, an opportunity to explore, see, and buy interesting designs is perceived as fun. This excitement follows many submitted designs or readymade prints and is represented by reoccurring expressions such as “love this design,” “enjoy,” etc. (see, Table 1 for more examples of consumer reactions).

**4.2.1.2. Curiosity—Exploration—Arousal seeking.** Curiosity—exploration—arousal seeking motivational factor can be observed in the form of seeking inspiration (Yee, 2006; Füller, 2010). It can take many forms, e.g. discovering new styles, trying them out, application of new artistic tools. Design challenges have proven to work as an inspirational trigger. There are many member posts on the forum highlighting this feature (see, Table 1 for an example). The desire to excel in challenge and achieve something helps the artist to explore new sides of their creativity. Moreover, inspiration does not only derive from artworks but also from other community members that can become real-life role models (see Table 1).

**Table 1. Examples of consumer motivations**

	Type of motivation	Undermining motivations	Examples
Intrinsic	Intrinsic playful task	Hard fun and blissful productivity	I may not know the technicalities of artwork, but this was such a fun ride to go through this new work! Waiting for more updates! This is going to be rad! (ourgraphicfaith).
		Fun of exploration	I love designs like this designs that really make you think at what you are looking at and wonder (nemrawesome).
	Curiosity—exploration—arousal seeking	Professional development from the work of others	There's a lot of inspiration to take in; I have grown as an artist because of Threadless (fourLTRS).
		Design challenges are inspirational triggers	I create designs with or without Threadless, it's a useful platform though. I think it can be inspiring to think that other people will see your work though. Sometimes the challenges might inspire me to make something that I might not have made (ThomasOrrow).
		Real-life inspiration from non-designing activity	You are a true warrior, OlliRudi. You have inspired my life (olie!).
	Addiction	Scheduled participation	So much wholesome goodness here. I look forward to this every week (Musarter).
Lifetime goals shaped around the community participation		THREADLESS LIFETIME GOALS:[x] - Get printed.[x] - Get a challenge-winning print. [...] [-] - Win a Bestee award.[-] - Become a Threadless MADE artist (kuro_te).	
Internalized extrinsic motivations	Achievements—challenge—self efficacy	Score and skill improvement	I made this just for fun, and just to encourage my growth as an artist in here :) There are some quite complex calculations behind: everything is based on what happens here! Number of subs, scores, prints, etc., all this stuff contributes to the development of my stats (gebe).
		Urgent optimism	I'll risk the deep water and keep submitting. how else will we find the bugs? (biotwist).
		Achievement of developing skills, rather than printing	I'm working hard to be up there with you guys one day. On another note, I design for a bedlinen company that sells to major retailers across the country. Every now and then I sit in on the meetings where they talk numbers and ROI and what they're looking for next quarter etc... I'm not saying that this is how Threadless picks what they print, just that I understand more now why certain designs might get picked while other incredible designs get looked over. It all comes down to what they think will actually sell (melmike).
		Challenge oneself	I think I do it to progress as an artist, to get an (unbiased) opinion of my work, to see new and various art and be inspired by it, to laugh and to cry together with a community of designers, to challenge myself and take me out of my (artist) comfort zone. And maybe also to get a print and make some cash (Mantichore).
		Competitive personality	But I really want to become a better designer and artist and there is no better way to do that than to put yourself up against the best that there is! (phraze).
Recognition—visibility		Sharing artwork and emotions, visibility	I just love the though(t) of someone else going around and talking about how much they love something I created. It would mean that I've shared the enjoyment I had while making it! (tylerbramer).
		Self-promotion	Promote your design here, i will help you score and comment your design ^-^Post your links below i will help you comment and vote 5555. Give me your love if you're free (Wilfur).
Relationships building and consciousness of kind		Idea sharing and interactions	All about the people. I've been a member for 4 years or something, but I've only started actively participating in the last handful of months. I wish I'd have been at it the whole time. [...] but primarily it's a place to bounce ideas off people and enjoy the work and sensibilities of others, for me (foodstampdavis).
		Private relationship creation	[...]Another obvious amazing memories is meeting a lot of great artists like Madcobra, v.calahan, kooky love, RAULIO, gebe, theo86, and lots more, which i'd love to name. And of course the PRINTS I've had thanks again eveyone and Threadless for the prints (goliath72).
Escapism		Escape from real-life problems	I can honestly say that threadless has been a major part of my life over the past 18 months. Things have been a little up and down of late, but like the redundant situation comedy 'Cheers', Threadless has been a place I can come and rest my life [...] (Wharton).

(Continued)

**Table 1. (Continued)**

	Type of motivation	Undermining motivations	Examples
Extrinsic	Monetary and non-monetary motivational drivers	Money	I just want the money (biotwist).
		Gifts	No, I haven't landed my second print but i was pleasantly surprised to wake up this morning with an email telling me i have won some Flaming Lips merchandise simply for voting on all the designs (mip1980).
		Badges	I know what people mean when they say a badge is no big deal, but I remember from personal experience - it's no big deal once you have it :) Before you have it it feels like the hugest possible deal (celandinestern).
		Consistent feedback	I do wish Threadless rewarded the people who reach scoring milestones rather than just a random week of scoring (jess4002).

4.2.1.3. *Flow*. By using game thinking and design, Threadless satisfies the preconditions for entering the flow state (Csikszentmihályi et al., 2005). In particular, members are provided with the set of clear goals such as voting for a design, creating designs, and submitting them in order to win the challenge and get printed. The feedback is ensured by virtual community scoring and commenting on the designs and the Threadless staff approving and selecting the designs to print. Moreover, topics of challenges vary and submissions do not have to be artistically complex which ensures that each participant can do his best using the skills he has. Based on this, we assume that Threadless community members can achieve the state of flow. However, it is hard to draw the line between flow, addiction and fun as motivational factors.

4.2.1.4. *Addiction*. For years, members show gradually growing degree of engagement from random voting on design to weekly submissions. Members highlight their desire to participate in the community and challenges by stating “I made myself commit to weekly participation” (benjaminleebates2013) and “I will do this every week. Until it’s not cool anymore” (space-sick2011). This refers to high degree of engagement, commitment to the development of creative skills, and creation of a stronger bond with the community triggered by appointment dynamics (i.e. specific times/places a participants must participate; Gamification.org, 2013). We observe that participants consistently login at least once a week in order to post new submissions, reply to forum threads, and to provide feedback in the form of gratitude or design criticism. In repetition of such actions as submitting, voting, commenting, and buying Threadless members show behavioral momentum game dynamics (i.e. people’s tendency to keep doing what they have been doing) pinpointed by McGonigal (2011). Addiction to the community is highlighted by the quote of the member setting “Threadless Lifetime Goals” (see Table 1). Shaping one’s life goals around the virtual community shows the importance of Threadless in one’ life and addiction to the community.

#### 4.2.2. Internalized extrinsic motivations

4.2.2.1. *Achievements—Challenge—Self efficacy*. Threadless exists to monetize the creativity of the crowd, thus, the ultimate goal of many members is to obtain high voting score and eventually get printed. Score breakdown and analysis of previous submission and evolution of scores are discussed in many blog posts. This refers to the development of skills and expertise, but also members’ desire to achieve higher score and prove their competences. Participants constantly submit designs in various competitions regardless of the degree of their expertise in the hope of winning which refers to urgent optimism game dynamics (i.e. extreme self-motivation; McGonigal, 2011). Although being printed is important, a bigger goal for members is to excel professionally and see people wearing their designs: “I signed up in the hope of somebody wearing my work” (ThomasOrow 2013), “otherwise it’s lovely to see all these beautiful people who have bought the dress - makes me very happy” (digsy 2013).

Any submission, both regular and for a challenge, has to compete for votes with works of artists from all over the world. Many participants underline the competitive nature of their personality, which stimulates them for further submissions and facilitates portfolio enhancement. This finding correlates with game-related motivational factors pinpointed by Yee (2006). Always ongoing challenges fostering the competitiveness between members and further development of artistic skills and relationships shapes Threadless as an infinite game.

In addition, by giving the power of selection to its members Threadless shows ownership game dynamics (i.e. a sense of control). Designs are not only picked by the staff, but every voter contributes to the designer's victory. Members express this dynamics by voting for beloved prints and make designers achievement happen. Hence, we observe high importance of achievement, challenge, and competition as a motivation for crowdsourcing engagement.

*4.2.2.2. Recognition—Visibility.* Members show the aspiration for recognition by starting self-promotion campaigns and demonstrating their expertise. Self-promotion is often used both by new and experienced artists to draw attention to their newest submissions. Broad exposure to people both within and outside the virtual community gives the designers an opportunity to gain visibility and admiration.

*4.2.2.3. Relationship building and consciousness of kind.* Threadless community is competitive but also friendly. Relationship building and community belonging are reflected in the way members communicate. They behave exceptionally politely and show respect to each other. They also involve in ongoing knowledge transfer. Similarly to Brabham (2010), we identify that community itself is an important motivational factor for Threadless members. The Threadless community represents a place to share ideas and talk about private matters, which stimulates members for co-creation. The community is a competitor advantage of Threadless over other collaboration or creative websites. With Threadless being on the market for years, many members have a long history associated with the platform, which leads to relationships formation amongst them both privately, in real life and for new products development.

*4.2.2.4. Escapism.* Some members get involved with Threadless community to cope with their real-life problems and escape from the reality. To avoid boring work and entertain themselves, they post in the forum, vote, or create new threads. Furthermore, existing friendly relationships in the community create a fruitful atmosphere for escapism.

#### *4.2.3. Extrinsic motivations*

Both monetary rewards and non-monetary rewards can be found in Threadless as a form of extrinsic motivation.

*4.2.3.1. Monetary rewards.* Threadless tends to stimulate co-creation by financial awards for winning challenges, subchallenges and being printed. For example, the artists whose designs get printed receive monetary rewards (ranging from \$250 to \$2,000) and royalties (ranging between 3 and 20%). The winners of the competitions organized together with partner companies (e.g. "Threadless + Sony: Your soundtrack", "Threadless + GAP Worn-In") often get cash prize, a gift certificate from Threadless, and a giveaway from the partner company. In the "Community design challenges" run by Threadless members, the winners receive art prints, poster prints, iPhone cases and t-shirts, donated by other members.

*This kind of monetary rewards in the form of money or gifts are recognized by many members as a strong motivational driver and they admit that they participate in the Threadless community because they want the money (see Table 1).*

*4.2.3.2. Non-monetary rewards.* "Alumnus" status (gained once you get the first design printed) is a goal for many community members. In addition to the feeling of accomplishment and

community recognition alumni can access the forum closed for other members. Such segregation shows that the access is used as the reward for achieving higher community status. Before Threadless also used badges, but abandoned them in 2012. However, many members clearly suggest introducing them again on the consistent basis. For members, a badge is a source of recognition of one's work as worth time and effort. Although financial rewards for winning challenges and weekly scorings are in place, some members miss being praised for reaching scoring milestones. This implies the need in more consistent and fast feedback, new goals and non-monetary rewards for smaller accomplishments (see Table 1).

In addition to awarding the winners, Threadless rewards active members with a free merchandise or Threadless cash for voting and submitting photos of wearing products. Such encouragement has proven to successfully work in motivating consumer to participate further in co-creation and performing sometimes tedious tasks.

#### **4.3. Challenges related to using gamification mechanics**

Threadless members believe that the community is changing for the worse and there is a threat of community destruction. Many members connect it with the change of the website layout and voting system accompanying it. The increase in cheating and unfairness triggered a wave of complaints, investigations, and lowered the number of active voters. Recent experiences with challenges show that the community has transformed from giving honest feedback to favoring friends and acquaintances.

As a result, we observe a self-protection mechanism. By appealing to the staff with growing number of low votes and presenting downvoters, the community aims to return back to the equilibrium state. Many members suggest implementation of game mechanics to achieve higher status differentiation, improve exclusivity of participation, and shield Threadless from harmful members. The members perceive game mechanics as an instrument to ensure fairness and, therefore, protect and reinforce the community: "But what if we were to stop this by implementing a system that unlocked features only for users that have proven that they actually want to be a part of Threadless and not just annoy people/downvote perfectly good designs?" (AbstractMatter 2013).

### **5. Discussion**

The current research investigates how and why consumers engage in a gamified crowdfunding community. By using Threadless community as an exemplary case, we explore the effect of different game mechanics and dynamics on consumers' motivations to participate in innovation process and product development. Threadless employs a wide array of game mechanics including challenges, achievements, countdowns, discovery, points, reward schedules, and status. Once the consumers are engaged in the community, they are introduced to "how to" tutorial featuring progressive steps new members should take in order to excel on Threadless game. Moreover, assistance provided by forum participants on any stage of project development plays the role of feedback game mechanics, which allow for interaction, promotion, sharing, and discussions.

The success and effectiveness of gamification in social media crowdsourcing projects can be assessed by three main outcome measures: (1) number of contributions; (2) quality of contributions; and (3) active member engagement in the online community project. Our qualitative analysis of online content and Threadless statistics combined document that Threadless performs very well on all the three outcome measures. Threadless receives about 125 design submissions a day, which generate votes from the site's hundreds of thousands of users on a daily basis. In turn, these activities generate half a dozen new T-shirt offerings a week sold in batches of 1,500 (Walker, 2007). Almost everything sells out. These numbers show that Threadless has managed to achieve not only a great number of contributions, but also "high contribution quality" by crowdsourcing quality control to their members through the voting mechanism. In the current study, we observe members' response to the Threadless gamification initiatives by following their Internet conversations and studying the exemplar quotes. Our findings confirm that Threadless members are highly engaged

and motivated to participate in the crowdsourcing, and that their motivations relate to the gamification elements employed by Threadless.

The crowdsourcing model enriched with gamified elements gives consumers the power to make decisions about products on their own terms (Pires, Stanton, & Rita, 2006). Point mechanism of voting and challenges give consumers the perception of ownership over selection and production. Ongoing design challenges have proven to result in thousands of submissions from across the globe and have significantly boosted member creativity. Threadless promotes user competitiveness by point scoring game mechanics that is based on voting for submitted designs. Furthermore, Threadless also uses bonus game mechanics to provide monetary and non-monetary rewards to its members for having completed a specific task during the design challenge. A wide range of community-hosted challenges appeal to the competitive nature of members' personality, and allow them to step out of their comfort zone. The repeating nature of Threadless game can be explained through its infinite gameplay dynamics, implying that a game does not have an explicit end. Thus, members may remain engaged in this game and co-create value.

Contribution of each individual member to the community is highlighted by the status game mechanics. Although Threadless does not have a more common hierarchical system of statuses, every member has a personal page giving overview of their activities, submissions, prints, etc. Moreover, alumni status is given to participants as they get their first design printed. This status allows gaining more value in community interactions and enjoying access to special restricted area of the forum, yet another powerful game mechanic.

Our analysis of consumer interactions reveals that members' co-creation motivations stem from both crowdsourcing process itself and the gamification elements introduced by Threadless. Although extrinsic rewards, both monetary and non-monetary, are well represented on Threadless, intrinsic and internalized extrinsic motivations such as community, addiction, self-development and challenge are the strongest drivers, which keep people engaged. As noted by Füller (2010), co-creation is driven by fun. On Threadless, it is the fun of playing the game. Moreover, this joy can be better described as "hard fun", i.e. positive stress from achieving a difficult goal (McGonigal, 2011). Moreover, the inspiration factor as a form of arousal seeking has strong presence in the community. Also, Threadless complies with the conditions for achieving flow state, a feeling of happiness associated with playing a game (Csikszentmihályi et al., 2005). Nevertheless, in the context of Threadless, it is hard to draw the line between flow, addiction and fun as motivational factors. Addiction as a motivational driver is highlighted by both crowdsourcing and gamification scholars (Brabham, 2010; Goh & Lee, 2011). Similar to Brabham's (2010), we notice that members consistently surf website, answer posts, comment, produce, and submit artwork. Some members even shape their lifetime goals around Threadless community. Addicted members use Threadless to escape real-life problems and boredom.

Although abundance of quantitative game mechanics may be damaging for the platform due to oversimplification, consumers actively ask for them in their online discussions and show concerns for the removal of some game mechanics such as badges and shields (Boulet, 2012). They complain about these missing game mechanics, since they want to get appreciation for reaching scoring milestones (Deci, Koestner, & Ryan, 2001; Zichermann & Cunningham, 2011). This calls for the need for more consistent and quick feedback, along with recognition, praise, and increased non-monetary rewards for smaller accomplishments.

Gamified environments are often criticized for being too focused on quantitative performance measurement such as points (Deterding, 2011). Nevertheless, we discovered that Threadless does not rest solely on quantitative elements but rather embraces a compelling range of other mechanics. Unlike other platforms employing gamification, Threadless in fact steps out of pointification and simple game mechanics, or non-monetary extrinsic rewards. For instance, leader boards were abandoned; badges, levels, and progression in its classic perception of virtual goods and progress bars do

not exist. It can be explained by Threadless ambition to maintain long-term community engagement and mitigate the risk of being the part of the community just for the sake of games.

Despite of all the benefits of gamified crowdsourcing, we uncover certain drawbacks. We noticed that a relatively small part of the community members obtain rewards through unfair means such as cheating and breaking the rules of the Threadless game. They abuse the system by creating multiple accounts, down-voting, even asking friends to score high for them and low for others. Such occurrences are made possible through certain game mechanics, such as the voting system, the points mechanism, the availability of monetary rewards, and the desire to obtain higher community status. However, social shame and transparency allow discovering fraud and mitigating drawbacks of gamification.

The current study provides valuable insights for companies willing to leverage the collective wisdom of their consumers through gamified strategies. To start with, companies need to understand that consumers are fun seekers. They will carry out activities without expecting anything in return, if they perceive it as being fun. Additionally, consumers aspire for recognition and often would spend time only to get the praise and appreciation from fellow consumers in the community. If consumers perceive their contributions as being appreciated by the company, it will strengthen their engagement. Companies should openly acknowledge consumers' contributions and give them recognition by using flexible reward system, statuses, and challenges. Despite the importance of extrinsic rewards, it is also essential to realize that solely relying on cash prizes, bonuses, and other extrinsic motivations and game mechanics will not insure success in the long run. Intrinsic factors are crucial for maintaining consumers' continued engagement and therefore we strongly recommend companies to deeply embed intrinsic elements within their communities and build the virtual brand community around common interest and passion. Another important implication is that once used game mechanics should not be discontinued as members start craving for their return.

The use of gamification for crowdsourcing innovation and product development is an unexplored territory, and therefore our study is of highly explorative nature. Due to the lack of available macro data, we have chosen a case study as a research method. We use a critical case of Threadless to get new insights on how companies employ game design and game elements for motivating participation in the crowdsourcing initiatives. We also use netnographic observation to understand consumers' response to gamification strategies. However, due to the explorative nature of this study we cannot compare and assess the effectiveness of different gamification strategies. Previous research argues that in online communities intrinsic motivations dominate (Dahlander & Magnusson, 2005; Hertel et al., 2003; Shah, 2006). Also, the importance of intrinsic motivations is highlighted in the literature on gaming (Fang & Zhao, 2010; McGonigal, 2011). Still, Brabham (2008) demonstrates the crucial role of monetary rewards in the Threadless community and several authors show that a combination of intrinsic and extrinsic motives encourages contributors to get involved in content creation activities (e.g. Füller, 2010).

Our study suggests intrinsic and internalized extrinsic motivations are the strongest motivational drivers even if extrinsic rewards are important. Still, we recognize the need to compare the effects of different gamification elements and encourage further research in this direction. One follow-up can be an experiment that compares the effectiveness of intrinsic motivations with internalized extrinsic motivations and its various component parts such as achievement and recognition in achieving their intended aims (e.g. more participation in crowdsourcing initiatives). By providing an overview of different gamification strategies and related consumer motivations, the current study acts as an important starting point for further investigations in this direction.

However, this study has some limitations worth mentioning. Netnography allows us to observe and interpret the consumer conversations that are virtually available in written form. The same study conducted by researchers with different background might yield different results due to the subjective nature of their interpretation of the same quotes. To mitigate this effect, we attempted to

explore the meaning of quotes from different perspectives, used multiple data sources and checked interpretations to reveal new meanings. However, caution has to be taken while generalizing the results. In addition, our results fail to incorporate the richness of human interactions such as body language and tone of voice, and limit the analysis to be solely based on the written conversations. To address this issue, we immersed ourselves in the community culture through long-term engagement.

Further research can focus on different types of intrinsic and extrinsic motivations that affect consumer engagement in crowdsourcing communities. In particular, the relationship between flow, addiction, and fun as motivational drivers for consumer engagement can be further explored. Future studies can also investigate the effects of various other game mechanics, which are not used in Threadless community (e.g. leader boards and levels). Unintended behavior that emerges from using game mechanics can be another interesting topic for research. For instance, it is important to look on how game mechanics can be misused and develop recommendations and measures for prevention of cheating and other downsides of gamification. Additionally, it would be valuable to see how gamification is used for encouraging consumer engagement in other contexts in diverse industries.

#### Funding

The authors received no direct funding for this research.

#### Author details

Maya Kavaliova<sup>1</sup>

E-mail: [maya.kavaliova@gmail.com](mailto:maya.kavaliova@gmail.com)

ORCID ID: <http://orcid.org/0000-0003-1276-6022>

Farzad Virjee<sup>2</sup>

E-mail: [farzad.virjee@gmail.com](mailto:farzad.virjee@gmail.com)

Natalia Maehle<sup>3</sup>

E-mail: [natalia.mehle@hib.no](mailto:natalia.mehle@hib.no)

Ingeborg Astrid Kleppe<sup>4</sup>

E-mail: [ingeborg.kleppe@nhh.no](mailto:ingeborg.kleppe@nhh.no)

<sup>1</sup> Acer Europe SA, via Circonvallazione 4, Canobbio 6952, Switzerland.

<sup>2</sup> SAP, Schwetzingenstraße 6, apt 207, Mannheim 68165, Germany.

<sup>3</sup> Centre for Innovation, Bergen University College, Postbox 7030, Bergen 5020, Norway.

<sup>4</sup> Department of Strategy and Management, Norwegian School of Economics, NHH, Helleveien 30, Bergen 5045, Norway.

#### Citation information

Cite this article as: Crowdsourcing innovation and product development: Gamification as a motivational driver, Maya Kavaliova, Farzad Virjee, Natalia Maehle & Ingeborg Astrid Kleppe, *Cogent Business & Management* (2016), 3: 1128132.

#### References

- Ahmad, S., Battle, A., Malkani, Z., & Kamvar, S. (2011). The jabberwocky programming environment for structured social programming. In *Proceedings of 4th Annual ACM Symposium on User Interface Software and Technology* (pp. 53–64). New York, NY.
- Arnould, E. J., Price, L. L., & Malshe, A. (2006). Toward a cultural resource-based theory of the customer. In R. Lusch & S. Vargo (Eds.), *The new dominant logic in marketing* (pp. 91–104). New York, NY: Armonk.
- Bagozzi, R. P., & Dholakia, U. M. (2002). Intentional social action in virtual communities. *Journal of Interactive Marketing*, 16, 2–21. <http://dx.doi.org/10.1002/dir.10006>
- Bartl, M. (2009). Netnography—Utilizing online communities as source of innovation. *The Making-of Innovation*. Retrieved September 24, 2014, from [michaelbartl.com](http://michaelbartl.com)
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13, 544–559.
- Boulet, G. (2012). Gamification: The latest buzzword and the next fad. *eLearn Magazine*. Retrieved September 15, 2015, from <http://elearnmag.acm.org/archive.cfm?aid=2421596>
- Brabham, D. C. (2008). Crowdsourcing as a model for problem solving: An introduction and cases. *Convergence: The International Journal of Research into New Media Technologies*, 14, 75–90.
- Brabham, D. C. (2010). Moving a crowd at threadless. *Information, Communication & Society*, 13, 1122–1145.
- Brabham, D. C. (2013). Crowdsourcing: A model for leveraging online communities. In A. Delwiche & J. Henderson (Eds.), *The participatory cultures handbook* (pp. 120–129). New York, NY: Routledge.
- Chesbrough, H. W. (2003). The era of open innovation. *Sloan Management Review*, 44, 35–41.
- Cova, B., & Pace, S. (2006). Brand community of convenience products: New forms of customer empowerment—The case “my Nutella The Community”. *European Journal of Marketing*, 40, 1087–1105.
- Csikszentmihályi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper and Row.
- Csikszentmihályi, M., Abuhamdeh, S., & Nakamura, J. (2005). Flow. In A. Elliot (Ed.), *Handbook of competence and motivation* (pp. 598–698). New York, NY: Guilford Press.
- Dahl, D. W., & Moreau, C. P. (2007). Thinking inside the box: Why consumers enjoy constrained creative experiences. *Journal of Marketing Research*, 44, 327–369.
- Dahlander, L., & Magnusson, M. (2005). Relationships between open source software companies and communities: Observations from Nordic firms. *Research Policy*, 34, 481–493. <http://dx.doi.org/10.1016/j.respol.2005.02.003>
- Deci, E., Koestner, R., & Ryan, R. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research*, 71(1), 1–27. <http://dx.doi.org/10.3102/00346543071001001>
- Deci, E., & Ryan, R. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54–67.
- Deterding, S. (2011). *Meaningful play: Getting gamification right*. Retrieved May 15, 2015, from <http://www.slideshare.net/dings/meaningful-play-getting-gami>
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “Gamification”. In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments* (pp. 9–15). Tampere.
- Fang, X., & Zhao, F. (2010). Personality and enjoyment of computer game play. *Computers in Industry*, 61, 342–349. <http://dx.doi.org/10.1016/j.compind.2009.12.005>



- Franke, N., & Shah, S. (2003). How communities support innovative activities: An exploration of assistance and sharing among end-users. *Research Policy*, 32, 157–178. [http://dx.doi.org/10.1016/S0048-7333\(02\)00006-9](http://dx.doi.org/10.1016/S0048-7333(02)00006-9)
- Füller, J. (2010). Refining virtual co-creation from a consumer perspective. *California Management Review*, 52, 98–122. <http://dx.doi.org/10.1525/cm.2010.52.2.98>
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26, 331–362. [http://dx.doi.org/10.1002/\(ISSN\)1099-1379](http://dx.doi.org/10.1002/(ISSN)1099-1379)
- Gamification.org. (2013). *Game mechanics*. Retrieved May 1, 2013, from [http://www.gamification.org/wiki/Game\\_Mechanics](http://www.gamification.org/wiki/Game_Mechanics)
- Goh, D., & Lee, C. (2011). Perceptions, quality and motivational needs in image tagging human computation games. *Journal of Information Science*. doi:10.1177/0165551511417786
- Guay, F., Vallerand, R. J., & Blanchard, C. M. (2000). On the assessment of situational intrinsic and extrinsic motivation: The situational motivation scale (SIMS). *Motivation and Emotion*, 24, 175–213. <http://dx.doi.org/10.1023/A:1005614228250>
- Hamari, J., & Koivisto, J. (2013). Social motivations to use gamification: An empirical study of gamifying exercise. In *Proceedings of the 21st European Conference on Information Systems*. Utrecht.
- Hertel, G., Niedner, S., & Herrmann, S. (2003). Motivation of software developers in open source projects: An internet-based survey of contributors to the Linux kernel. *Research Policy*, 32, 1159–1177. [http://dx.doi.org/10.1016/S0048-7333\(03\)00047-7](http://dx.doi.org/10.1016/S0048-7333(03)00047-7)
- Hoffman, D., & Novak, T. (2009). Flow online: Lessons learned and future prospects. *Journal of Interactive Marketing*, 23, 23–34. <http://dx.doi.org/10.1016/j.intmar.2008.10.003>
- Howe, J. (2006). *The rise of crowdsourcing*. Retrieved July 7, 2015, from <http://www.wired.com/wired/archive/14.06/crowds.html>
- Howe, J. (2009). *Crowdsourcing: Why the power of the crowd is driving the future of business*. New York, NY: Crown.
- Huotari, K., & Hamari, J. (2012). Defining gamification—A service marketing perspective. In *Proceeding of the 16th International Academic MindTrek Conference* (pp. 17–22). Tampere.
- Khurana, A., & Rosenthal, R. (1997). Integrating the fuzzy-front-end of new product development. *Sloan Management Review*, 38, 103–120.
- Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research*, 39, 61–72. <http://dx.doi.org/10.1509/jmkr.39.1.61.18935>
- Kozinets, R. V. (2009). *Netnography: Doing ethnographic research online*. London: Sage.
- Kozinets, R. V., Hemetsberger, A., & Schau, H. J. (2008). The wisdom of consumer crowds: Collective innovation in the age of networked marketing. *Journal of Macromarketing*, 28, 339–354. <http://dx.doi.org/10.1177/0276146708325382>
- Lakhani, K. R., Jeppesen, L. B., Lohse, P. A., & Panetta, J. A. (2007). *The value of openness in scientific problem solving* (Harvard Business School Working Paper No. 07–050). Retrieved May 18, 2015, from <http://www.hbs.edu/faculty/Publication%20Files/07-050.pdf>
- LeBlanc, M., Hunnicke, R., & Zubek, R. (2004). A formal approach to game design and game research. In *Proceedings of the AAAI-04 Workshop on Challenges in Game AI* (pp. 1–5). San Jose, CA.
- McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world*. New York, NY: Penguin Press.
- Menichinelli, M. (2012). *Crowdsourcing the design while still manufacturing the product*. Retrieved July 7, 2015, from [http://p2pfoundation.net/Threadless\\_-\\_Business\\_Model](http://p2pfoundation.net/Threadless_-_Business_Model)
- Muniz, A. M., & O'Guinn, T. C. (2001). Brand community. *Journal of Consumer Research*, 27, 412–432. <http://dx.doi.org/10.1086/319618>
- Muniz, M., & Schau, H. (2005). Religiosity in the abandoned apple Newton brand community. *Journal of Consumer Research*, 31, 737–747. <http://dx.doi.org/10.1086/jcr.2005.31.issue-4>
- Neyer, A. K., Bullinger, A. C., & Moeslein, K. M. (2009). Integrating inside and outside innovators: A socio-technical systems perspective. *R&D Management Journal*, 39, 410–419.
- Pires, G. D., Stanton, J., & Rita, P. (2006). The internet, consumer empowerment and marketing strategies. *European Journal of Marketing*, 40, 936–949.
- Porter, L. (1970). *The use of rewards in motivating marginal members of the work*. Washington, DC: Performance Research.
- Prisacaru, A. (2012). *Postmodernism and the value of the consumer products: Are the new fashion dolls a bad influence on children? A netnography on Barbie vs. Bratz*. Aarhus: Aarhus School of Business, Aarhus University.
- PWC. (2012). *Enterprise gamification: Buzzword or business tool*. Melbourne: Author.
- Sempere, A. (2009). *The work of art in the age of virtual production*. Retrieved September 18, 2015, from [http://andrewsempere.org/projectAssets/CHArt2009/CHArt09\\_asempere\\_presentation.pdf](http://andrewsempere.org/projectAssets/CHArt2009/CHArt09_asempere_presentation.pdf)
- Shah, S. (2006). Motivation, governance, and the viability of hybrid forms in open source software development. *Management Science*, 52, 1000–1014. <http://dx.doi.org/10.1287/mnsc.1060.0553>
- Techcrunch. (2008). *When crowdsourcing fails: Cambrian house headed to the deadpool*. Retrieved May 1, 2015, from <http://techcrunch.com/2008/05/12/when-crowdsourcing-fails-cambrian-house-headed-to-the-deadpool/>
- Threadless. (2013). *Start with an idea*. Retrieved September 5, 2013, from <http://www.threadless.com/make/idea>
- Walker, R. (2007). Mass appeal: Threadlines. *The New York Times*. Retrieved October 31, 2015, from [http://www.nytimes.com/2007/07/08/magazine/08wwln-consumed-t.html?\\_r=0](http://www.nytimes.com/2007/07/08/magazine/08wwln-consumed-t.html?_r=0)
- Wellman, B., & Gulia, M. (1999). Net surfers don't ride alone: Virtual communities as communities. In B. Wellman (Ed.), *Networks in the global village* (pp. 331–366). Boulder, CO: Westview Press.
- Werbach, K., & Hunter, D. (2012). *For the win*. Philadelphia, PA: Wharton Digital Press.
- Whitla, P. (2009). Crowdsourcing and its application in marketing activities. *Journal of Contemporary Management Research*, 5, 15–28.
- Wong-On-Wing, B., Guo, L., & Lui, G. (2010). Intrinsic and extrinsic motivation and participation in budgeting: Antecedents and consequences. *Behavioral Research in Accounting*, 22, 133–153. <http://dx.doi.org/10.2308/bria.2010.22.2.133>
- Wu, M. (2011). *Gamification from a company of pro gamers*. Retrieved April 20, 2015, from <https://lithosphere.lithium.com/t5/science-of-social-blog/Gamification-from-a-Company-of-Pro-Gamers/ba-p/19258>
- Yee, N. (2006). Motivations for play in online games. *CyberPsychology & Behavior*, 9, 772–775. <http://dx.doi.org/10.1089/cpb.2006.9.772>
- Yin, R. K. (2003). *Applications of case study research*. Thousand Oaks, CA: Sage.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Los Angeles, CA: Sage.
- Zichermann, G., & Cunningham, C. (2011). *Gamification by design*. Sebastopol: O'Reilly Media.



© 2016 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at [www.CogentOA.com](http://www.CogentOA.com)**

