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The Ludic Drive as Innovation Driver: Introduction to the Gamification of Innovation

Steffen Roth, Dirk Schneckenberg and Chia-Wen Tsai

Gamification has recently been receiving increased attention in corporate innovation and business research alike. In this article, we first outline the main streams of research on gamification in the creativity and innovation literature. We then introduce the selection of contributions to this special section by theoretically embedding them in their application contexts. Thus referring to research fields as different as business model innovation, design thinking and crowdsourcing, we indicate theoretical challenges for future research on gamification, among the most important of which we count theoretical approaches to the question of whether and how organizations actually can play with persons.

Introduction

The key to innovation, creativity, is commonly attributed to *persons* (Amabile, 1997; Zhou & Shalley, 2003), *groups* (Florida, 2002; Paulus & Nijstad, 2003), *organizations* (Drazin, Glynn & Kazanjian, 1999; Davila et al., 2006), or even entire *economies* (Howkins, 2002; Friedman, 2006). Despite the various levels of analysis and the heterogeneity of theoretical discourses, we find that in all four perspectives, different forms of creativity are considered as qualities which are displayed or possessed by individual or collective 'creative selves' (Prichard, 2002).

Recent research, however, has emphasized role games and the process of playing as sources for and resources of creativity (Dodgson, Gann & Salter, 2005) as well as their function to potentially provide spaces and media for the application of creative thinking and reflection processes in contexts of business strategy and management education (Andersen, 2001). As games are social by nature, they transcend the borders of actor-centred attribution and call for a focus on specific qualities or *steering technologies of communication* (Thygesen, 2007). The emerging interest in the interrelation of play, game, creativity and innovation therefore reflects and affects quite fundamental changes of the executive wish lists (McCosh et al., 1998) of 'proven methods of innovation management', which have so far not been met by systematic updates of the corresponding list of supplies of creativity and innovation management tools. The emerging body of literature on specific aspects such as design thinking in product development, structural constellations in change management, Lego Serious Play in strategic management, serious games in management education, or the recently detected gamification of crowdsourcing hence calls for comprehensive analyses of the underlying climate change to a more playful ecology of minds.

This special section on the 'Gamification of Innovation' is therefore focused on the collection and reflection of different types of games which are situated and played in the wider context of creativity and innovation management. The subsequent section of our editorial introduction provides a tentative overview of pertinent definitions for the phenomenon of gamification. We furthermore contextualize three cases of the gamification of innovation, thus introducing the contributions to this special section of *Creativity and Innovation Management*.

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Theoretical Approaches to Gamification

Despite the relatively short history of the term 'gamification' (Deterding et al., 2011), with the first documented use of the concept dating back to 2008, the phenomenon is already observed to be moving towards the 'peak of the hype' (Burke, 2014). Gamification is popular in areas as different as education (Kelle, Klemke & Specht, 2011; Grove et al., 2013), prototyping (Johns & Shaw, 2006), and advertising and marketing (Zichermann & Cunningham, 2011; Terlutter & Capella, 2013). In these and further contexts, the term 'gamification' commonly refers to the use of game design methods as a means to 'leverage games for business benefit' (Werbach & Hunter, 2012, p. 28). The general purpose of gamification as a way of organizing collaboration is 'to extract the game elements that make good games enjoyable and fun to play, adapt them and use those elements' (Domínguez et al., 2013, p. 382) in the given contexts, with the desired outcome being game-like sensations of fun and engagement even if these contexts are normally prone to more banal or boring experiences. In this context, game researchers stress that gamification should not stop at a mere 'point(s)ification' (Sjöklint, 2014), a recently emerged neologism for forms of gamification that only add the least interesting aspects of games such as the scoring system. Instead, gamification should be perceived and enacted as a more comprehensive, holistic approach to organize interaction between stakeholders in the respective contexts in which interaction is desired and constructed by those stakeholders for common purposes. We summarize some tentative definitions for gamification in Table 1.

Proposed definitions of gamification seem to be directed towards engaging people or users in game-directed ways for a variety of different objectives. Deterding et al. (2011, p. 1) describe gamification as 'the use of game design elements in non-game contexts' and discuss a range of concepts underlying game, element, design and non-game contexts in their studies. They consider it important, for example, to understand that gamification relates as a concept to games, not to play or playfulness. There is a difference between a game and play (Groh, 2012), which can be illustrated by reference to Caillois' (2001) concepts of *paidia* and *ludus* as two distinctive poles of play activities. While *paidia* (playing) refers to a higher degree of freedom to chose and results in a large variety of voluntary actions, *ludus* (gaming) denotes a rule-based gaming process with well-defined sets of rules and regulations for objectives to be achieved in these specific contexts. McGonigal (2011) supports this contrasting position by characterizing gamefulness as a counterpart to playfulness in decision contexts, with current conceptualizations of gamification stressing game elements in interaction processes. The *ludus* aspect hence dominates theorizing in the emergent field. Reeves and Red (2009) have studied ingredients for gamification such as avatars, feedback, teams, time pressure and ranks and levels. While these specific components are neither exclusive to game contexts nor necessarily interrelated, in their combination they create instances of gamified applications (Groh, 2012). Juul (2011) also stated that the combinations of similar elements lead tothe constitution of a game. Deterding et al. (2011) explicate that game elements can not only be found in gamified applications, but that they are situated outside gaming environments as well. They do, nevertheless, advocate an exclusion logic for defining gamification by stating that the term should be limited to the use of game design and not be applied to game-based

Table 1. Tentative Definitions of Gamification

Source	Definition
Deterding et al. (2011)	'The use of game design elements in non-game contexts.'
Zichermann and Cunningham (2011)	'The process of using game-thinking and mechanics to engage users.'
Bunchball (2012)	'When used in a business context, gamification is the process of integrating game dynamics (and game mechanics) into a website, business service, online community, content portal, or marketing campaign in order to drive participation and engagement.'
Gartner Study (2012)	'The use of game mechanics and game design techniques in nongame contexts to design behaviors, develop skills or to engage people in innovation.'

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technologies or practices of the wider game ecology. The boundaries of non-game contexts should, on the other hand, be flexibly defined and not be limited to any specific usage, contexts or media (Groh, 2012). This leads to the situation where gamification may be studied in the most different contexts, such as business model design, education and managerial incentive systems for knowledge sharing in open innovation (Schneckenberg, 2014a, 2014b; Spieth, Schneckenberg & Ricart, 2014).

In the next section of this introduction to the gamification of innovation, we will contextualize the papers featured in this special section as three cases of how game designs or elements can be used to increase business model innovation skills, to foster creativity and to improve processes and outcomes of idea competitions.

Three Cases

The three papers selected for this special section of *Creativity and Innovation Management* represent the variety of contexts into which gamification can be situated as the phenomenon under study. All three papers position gamification as a goal-oriented process, which is embedded into respective action contexts striving to achieve predetermined business purposes. The unit of analysis for the studies presented are individual interactions which have been influenced by game-based design elements in the respective business contexts. We present the papers in this editorial introduction by placing them in the overall perspective of gamification as an emergent research stream in creativity and innovation management.

The Gamification of Business Model Innovation

The paper by Sune Gudiksen ('Business Model Design Games: Rules and Procedures to Challenge Assumptions and Elicit Surprises') presents an interesting study on the use of game-based workshops to foster business model innovation, which represents a highly relevant context for gamification at the intersection of corporate strategy, entrepreneurship and innovation management (Spieth, Schneckenberg & Ricart, 2014). Business models represent a multi-dimensional phenomenon which spans across various units, functions and processes of organizations (DaSilva & Turkman, 2014). While strategy scholars operationalize business models at the system-level unit of analysis to understand how firms create and deliver value to gain competitive advantage (Teece, 2010), studies in the innovation management field focus more on the role of business models for bringing new products and technologies to markets (Zott, Amit & Massa, 2011). At the same time, managers struggle to efficiently develop and implement new business models in corporate practice. As many firms operate in dynamic industry environments, which experience repeated disruptive innovation phases, business model innovation can be understood as one dynamic capability of firms (Teece, 2010). What differentiates business model innovation from concepts for product, service or technology innovation is its multi-dimensional nature. Business models integrate constituents from different firm levels and processes into key components to organize value creation, value proposition and value appropriation. Rethinking and reconfiguring these components into innovative business models constitutes a highly complex and transversal management task, which underlines the position that business models represent a subject of innovation (Spieth et al., 2013).

}A common denominator in the literature is the assumption that business model innovation has a positive impact on the performance of firms. However, we lack understanding of processes and conditions that lead to a successful recognition of opportunities and adherent reconfiguration of resources to capture market value. It is this perspective which fits to the research undertaken by Gudiksen when he explores the use of game-based reflection processes to facilitate innovative business model designs. The study applied an action research process to investigate how experimental workshops using a range of game-based methods supported group reflection on business models. The game-based methods applied various materials and processes to let workshop participants create artefacts representing components of the targeted business model representations. The purposive sampling procedure selected cases with contrasting constituents to elicit a set of relevant conclusions from the observation and interpretation of the game-driven interaction processes of the groups. By investigating game-based business model designs, Gudiksen proposes an alternative perspective for the recognition and articulation of new business opportunities which complements extant, ratio-centred business model frameworks with a playful and intuitive reference frame.

The Gamification of Products, Services and Corporate Identities

The paper by Klaus-Peter Schulz, Silke Geithner, Christian Wölfel and Jens

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Krzywinski ('Toolkit-based Modeling and Serious Play as Means to Foster Creativity in Innovation Processes') situates gamification as one design thinking process into the context of creativity and shared understanding of innovation challenges in organizations. Design thinking has recently emerged as a promising concept to integrate design methods into business strategy and innovation (Martin, 2009). A starting point of design thinking is to perceive ill-defined, complex and contradictory challenges as opportunities rather than liabilities for problem-solving (Buchanan, 1992). Design thinking often deals with fuzzy or wicked problems (Churchman, 1967), and it relies on the logic of abductive reasoning to synthesize opposing viewpoints into integrated solutions (Russel, 1959; Martin, 2009). While the meaning of design thinking continues to expand (Buchanan, 1992), we can classify its main perceptions into four categories. The first research stream presents design thinking as a human-centred approach that delivers deep insights to understand hidden customer needs (Brown, 2008; Stickdorn & Schneider, 2010). The second category summarizes design thinking as the application of tools and methods like prototyping and visualization. Designers use these techniques to enhance cognitive and mental reflection for complex problem-solving (Burnette, 2009). The third stream defines design thinking as particular managerial behaviour to drive innovation at project level. Managers empathize with colleagues and reframe alternative viewpoints to rethink orthodoxies (Liedtka & Ogilvie, 2011; Roscam & Zwamborn, 2012). The final category develops design thinking as a strategic principle that enables organizations to balance exploration and exploitation and to establish a continuous innovation culture (Beckman & Barry, 2007; Brown, 2008; Martin, 2009).

Against this background, the authors elicit in their study the use of Lego Serious Play as one concrete method to foster creative and intuitive thought and reflection of groups which face ideation challenges in the early stages of innovation. The investigated method of Lego Serious Play relies on the combination of preformatted material artefacts and a sequence of guiding processes, which lead the workshop participants to build tangible physical representations of their inner reflections on the posted innovation challenge. The authors contrast the investigation of this method with a more traditional creative thinking approach which applies paper, pens and photographs to let participants create visually supported narratives of their thoughts for innovation problems. The findings showcase the potential of goal-oriented playful processes to facitilate group reflection during the early phase of innovation.

The Gamification of Ideation

Crowdsourcing represents a specific form of open innovation that aims at the integration of private persons in organizational ideation or product development processes (Roth, 2009, 2010; Roth, Kaivo-Oja & Hirschmann, 2013). Invented by Jeff Howe (2006), the term 'crowdsourcing' is used whenever organizations outsource innovation processes not to individual experts, teams or organizations, but rather trust in the wisdom of communities, networks, or simply crowds. Commonly, specialized innovation intermediaries (Chesbrough, 2006) use online platforms to make contact between idea-seeking organizations and crowds of up to 250,000 idea givers. The basic challenge these intermediaries face is to attract growing numbers of both clients in need of ideas and crowd members who are willing to contribute their ideas for the chance of rewards ranging from $20 to $100,000. The problem with this growth strategy, however, is the negative relationship between the two growth targets: Growing crowds lead to lower average rewards for individual crowd members, therefore to lower motivation and participation, and eventually to fewer ideas at higher cost. Moreover, the question of what actually makes people participate in crowdsourcing, and thus could help to sustain crowd loyalty, remains a major issue of concern in crowdsourcing research (Sun, Fang & Lim, 2012). First results, however, indicate that intrinsic motivation can neither explain participation in projects with high task complexity nor be lossless, replaced by financial rewards. Recent research on crowdsourcing indicates that successful platforms will have to increasingly focus on non-pecuniary idea generation (Hallerstede et al., 2010), which is even truer as financial rewards boost idea quantity rather than idea quality (Frey, Lüthje & Haag, 2011). Moreover, crowdsourcing turn consumers into prosumers and potentially creates a society in which un- or underpaid innovators (Kleemann, Voss & Rieder, 2008) regularly contribute to the development of products which they nonetheless have to pay for in the end. It is these and further issues that create obvious discontent among participants and have significantly adverse impacts on the overall willingness to participate in crowdsourcing processes. Crowdsourcing thus represents not only a new form of value creation (Lobre, 2007), but also calls for an enhanced value concept that takes into account forms of value creation related to both money and other symbolically generalized media, such as power, belief, truth

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or achievement (Roth, 2014a, 2014b). The observation of an increasing gamification of crowdsourcing links not only to the latter. An early form of gamified crowdsourcing has been designed by microtask (De Benetti, 2011a, 2011b). In 2011, the Finnish distributed work agency launched a multiplayer online game that supported the Finnish National Library in digitalizing comprehensive text collections of significant cultural heritage value. Normally taking several years of paid work, the workload was distributed to some 55,000 players who performed the individual tasks for free as soon as these had been transformed into problems to be solved to succeed in an online game. Further examples of such productive multiplayer online games include the US Army's attempts to develop new strategies to combat the Somali pirates based on the analyses of a specially designed massive multi-player online war game (Kapp, 2012) or McGill University's Phylo (http://phylo.cs.mcgill.ca/), which 'is a challenging flash game in which every puzzle completed contributes to mapping diseases within human DNA'.

In each of these cases a game was designed to motivate crowd participation in what would be impossible to achieve by individual persons or organizations, or at least be too monotonous a task to be fun. Approaching the idea of incentive structures that allow for the cultivation of crowd loyalty without featuring the mentioned disadvantages, however, we find that the question of what actually makes people contribute their ideas remains an unresolved issue of crowdsourcing research (Sun, Fang & Lim, 2012), with this research gap being both marked by and filled with concepts like social flow, playful design and serious or productive games, which are all indicating the emergence of a discourse on whether or how the gamification of crowdsourcing leads to an increase in crowd loyalty and idea quality, and therefore supports the development of sustainable (competitive) advantages for clients, crowd members and the crowdsourcing intermediaries themselves. Against this background, Christian Scheiner's article entitled 'The Motivational Fabric of Gamified Idea Competitions: The Evaluation of Game Mechanics from a Longitudinal Perspective' clearly illustrates how the use of even, or especially, very basic game elements such as game points, rating systems, badges or game levels positively impacts the motivation to participate in online idea competitions.

Conclusion

The above cases are among the first to open up and enter the tension zone of gamification and innovation to explore the ways in which games shape and reshape the forms and functions of communication in order to stimulate creativity. In talking about gamification and its relationships with creativity and innovation, there seems to be a strong propensity to emphasize design activities and processes at the creative side and to focus upon the functional and purposive targets at the innovative side of the concept. As with any subject of investigation spanning different dimensions and reference fields, research on gamification needs to balance the differing expectations and discourses of the creativity and innovation audience while not losing its coherence as a theoretical reference point.

Future research may wish to investigate the impact of the combined trends of gamification and crowdsourcing on the future of work and innovation. In this context, the vision of business process outsourcing to massive multiplayer online games will require us to attain the next level of conceptual efforts and empirical skills. Moreover, gamification clearly points at new horizons for the reinvention of customer relationship management in the sense that customer relations will be expected to be more fun in the future and, if they are fun, could again be outsourced to users or crowds. A more conceptual challenge in the context of gamification and innovation may arise if we ask whether and how organizations actually can play with persons. Finally, we may also want to look on the dark side of the gamification of innovation and ask if there is currently just too much gamification, or if gamification is generally bullshit (Bogost, 2011).

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