

# Online Ideation Games as Means to Change

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**Abstract:** Companies have to adapt to change if they want to stay competitive. Inducing and managing change processes are, however, highly complex and difficult tasks, especially when individual beliefs, knowledge, and routines are addressed. Despite the importance of this aspect, research on concrete measures is still underrepresented. Within the present study, an online ideation game is examined as a means to change. The aim of this study is therefore to explore whether participation in an online ideation game induce change by fostering learning and unlearning. A longitudinal, quantitative approach is chosen to detect changes over time. An adjusted opinion leadership scale of Childers [Ch86] is applied as a measure of change on an individual level. The findings of this study demonstrate that an online ideation game can induce change processes.

## 1 Introduction

Most of the time, companies operate in a competitive environment, which is stable and clearly understood. As a consequence, organizational competences and resources have been aligned over time to this environment. This ensures competitiveness and a company's survival. Even if Dewald and Bowen [DB10] are noticing a shortening of stability in this environment, periods of stability still last relatively long and are characterized by incremental changes and innovations. This in turn further determines and shapes organizational routines and processes [MF80, RT94]. Revolutionary changes, however, punctuate these periods of stability and create a new competitive framework for companies [RT94]. Factors contributing to fundamental changes can be found within and outside of organizational boundaries. Examples of internal factors are structural changes in the organization, or changes in the composition of the top management level [RT94]. Technology and market turbulence illustrate examples of external factors urging companies to reconsider and change their competitive position, their competencies, their technologies, and their routines. Technological turbulence describes, therein, the rate of change in which technologies are improved or are replaced by new technologies [JK93]. Market turbulence reflects changes in the preferences of buyers, wide-ranging wants and

needs, changing buyer structure, and a need to offer constantly new products [HH04, JK93]. In industries where market turbulence is high, companies are subsequently challenged to be highly innovative and to introduce new products under uncertain conditions. A company can respond adequately to changes through its capability to learn and to further develop upon existing knowledge. A substantial body of research has, therefore, been dedicated to learning in organizations and organizational learning in a variety of aspects [e.g. Ma91, LM88a, KA07, ALB03, LL05]. Kane and Alavi [KA07] examined, for instance, the influence of information technology in the context of organizational learning, and found that IT-enabled learning mechanisms influence organizational learning positively. Adjusting to change, however, is not solely accomplished by continuing and improving the status quo. Companies have to reconsider taken-for-granted assumptions of how to conduct business, and to abandon identified impediments to change. Dewald and Bowen [DB10] state in this context that whether “small or large, it is difficult for any organization invested in ‘old ways’ to abandon those known ways” (p. 198). Other authors have used terms such as core rigidities [Le92], incumbent inertia [LM88b, TG10], or competency traps [LM88a] to describe this phenomenon. Bettis and Prahalad [BP96] explain this difficulty with the robustness of existing dominant logics and routines. Routines comprise, according to Levitt and March [LM88a], procedures, forms, rules, conventions, technologies, strategies, beliefs, frameworks, paradigms, cultures, knowledge, and codes, and are thus the backbone and the essence of an organization. Tsang and Zahra [TZ08] argue, therefore, in favor of removing these routines and ways of thinking in order to enable change. The ability to unlearn plays a pivotal role in this context. Pratt and Barnett [PB97] define unlearning as “a process of discarding obsolete and misleading knowledge that is stimulated by opposing emotions which enable new responses and mental maps to develop” (p. 82). Starbuck [St96] draws attention to the individual in this process and sees unlearning as “a process that shows people they should no longer rely on their current beliefs and methods” (p. 727). These definitions have one characteristic in common: they characterize unlearning as an intended, actively initiated and conducted process, which distinguishes it from its meaning in colloquial use as a form of forgetting [TZ08].

Insights of how to initiate and achieve learning and unlearning within an organization is, despite its importance, still scarce. Exceptions are the works of Starbuck [St96], Becker et al. [BHA06], and Becker [Be10], who give general recommendations of how to achieve this objective. Starbuck [St96], for example, describes eight viewpoints that can support unlearning, while Becker et al. [BHA06] and Becker [Be10] suggest using training sessions, documented policies and procedures, structures, and information sessions to induce unlearning. Due to its characteristics, online ideation games could enrich the existing toolkit. Although they are mainly used to access the creative potential of people within and outside of an organization, online ideation games have indicated their inherent potential for this purpose (see e.g. [ABM12]). The use of an online ideation game as means to change is, however, still a new field of application. The aim of this study is therefore to explore whether participation in an online ideation game can foster change in individuals. In order to examine change, a longitudinal, quantitative approach has been chosen for this study.

This study is structured as follows: In chapter 2 a definition of online ideation games is given, before the research questions are derived from literature in chapter 3. Chapter 4 describes the sample subject, the data collection and the operationalization of change. The empirical findings are presented in chapter 5. Finally, chapter 6 comprises the discussion, implications, and possibilities for future research.

## **2 Online Ideation Games**

Online ideation games are idea competitions which have been modified in a way that gives them a game-like appeal. Idea competition can be defined, in general, with the help of common characteristics [ABM12, BM10]. In idea competitions an invitation is sent to a private audience, or to the general public, to submit ideas for predefined topics. Submissions can occur in the form of rough ideas, to fully developed solutions [BM10]. Submissions have to be made within a given period of time, which can range from a few hours, to forms without a set end-date [BM10], and are evaluated by experts, the community, or a combination of both groups [PW06, ABM12]. After closing the competition and evaluating contributions, winners are announced.

The modification of idea competitions to an online ideation game is accomplished by the use of game mechanics [SW13] and can be subsumed under the term gamification [De11]. Game mechanics are the constitutive building blocks of games that occur in a structured and predefined way, as they enable the implementation of game characteristics [SW13]. In concordance with definitions of Schell [Sc08] and Fullerton et al. [FSH04], game mechanics are the means to induce actions and behaviors of players towards the goals of a game. Witt et al. [Wi12] argue, therefore, that developers who apply and implement game mechanics to an idea competition, or to another serious context, are not concerned in principle with the fact whether participants actually perceive a serious system as a game, but how the system has to be constructed and designed in order to ensure that participants behave and act in an intended way.

## **3 Derivation of Research Question**

Research on idea competitions and games gives reason to believe that they can play an essential role as means to change. Although idea competitions are, in principle, applied to gain access to knowledge and ideas of employees and people outside of organizational boundaries to solve existing challenges, or to be provided with new impulses for innovations, Adamczyk et al. [ABM12] point to existing research that shows further relevant benefits of the usage of idea competition in the context of this study. Pack et al. [Pa04], for instance, found that 95 percent of participants of an idea competition reported a positive attitude toward the competition subject because of participation. Moreover, those participants had improved in theoretical and practical related areas. Oppliger [Op01] describes another example where participants were able to learn and improve their skills by taking part in an idea competition. Romanello [Ro05] ascribes similar benefits and outcomes to the usage of idea competitions as an integral part in the set of

teaching tools and techniques. What all those examples have in common is that participants are confronted with new information and challenges, and have to adjust to these new ramifications in order to solve given tasks. In order to do so, participants have to be willing to change, and have to accept new information and knowledge. Pardo del Val and Fuentes [PF03] provide a summary of research that shows how change can be impeded by refusal to accept information that is not desired or expected [BSH92, SGH78], by adhering to old assumptions and thoughts [BSH92], or by distorting reality due to unchallenged implicit assumptions [SGH78]. All these findings show that a major obstacle to change lies not within the organizational structures and given organizational procedures, but within employees, and that overcoming these obstacles is highly difficult and complex, as beliefs and opinions have to be addressed. By taking part in an online ideation game, participants work on tasks and deal with predefined topics; therewith, they can gain deeper insights. This can result in a more differentiated view on, and a more profound knowledge towards, a topic.

As an online ideation game is examined in this study, research on games will also need to be considered in order to assess its value as a means to change. Therein, it is necessary to reflect the role of game mechanics due to their initial importance in transforming an idea competition into an online ideation game. Scheiner and Witt [SW13], in their theoretical paper on game mechanics as triggers of motivation and creativity in idea competitions, argue that game mechanics can exert an influence on participants with respect to changing attitudes and behavior in several ways. Game points, which are assigned automatically for a predefined shown behavior, and social points, which are granted by other players, provide immediate feedback to participants. Hence, only such behavior, which is seen as appropriate by the designers and other players, is rewarded with points. Participants can learn, as a consequence, in the form of trial-and-error experiences, what is valued, and can adapt to it [LRV01, Cs90]. The game mechanics level and leaderboards depict in an accumulated way the accomplished and offer by that the opportunity to compare own performance with those of others. Because of the possibility of comparison, participants may adjust to improve their own position in the online ideation game. Moreover, the game mechanic story can foster and induce change within individuals. Story can be used in creating an imaginary frame, enabling people to consider things from a different perspective. This is seen as a crucial element to overcome confined mental corridors [CCD08]. Online ideation games incorporate, in addition, often the game mechanic exchange. Exchange gives participants the opportunity to communicate, support, and collaborate with each other. Hence, participants can learn from each other, and learn how to behave in this specific social group. This provides grounds to become an active part of a community within the online ideation game, and to satisfy the need of social belonging [Su97].

Bearing the previous arguments in mind, participation in an online ideation game could be a valuable means to change. The following research question asks therefore:

Research question: Does participation in an online ideation game lead to change within individuals?

## **4 Sample Subject, Data Collection, and Operationalization of Change**

### **4.1. Sample Subject**

The online ideation game EVOKE was selected as the sample subject. EVOKE was funded by the World Bank Institute, developed by Natron Baxter Applied Gaming, and designed by Jane McGonigal and Kiyash Monsef. It was chosen as a winner of the 2<sup>nd</sup> Annual Games for Change Award for its excellence in “games for change”. Each week, a new challenge was presented. The presented challenges comprised the topics “social innovation”, “food security”, “power shift”, “water crisis”, “future of money”, “empowering women”, “urban resilience”, “indigenous knowledge”, “crisis networking”, and “what happens next”. Challenge 1 dealt with social innovation in general, and challenge 10 focused on how to improve the system. Challenge 1 and 10 had subsequently no direct connection to specific social challenges and were therefore excluded from the study. Participants had one week to submit their ideas, before the next challenge was assigned.

Participation in EVOKE required, in general, no previous knowledge towards the given challenges. The inclusion of several sources of information in EVOKE ensured that participants had the necessary knowledge to enable the development of ideas and potential solutions.

### **4.2 Data Collection**

To answer the derived research questions, two independent longitudinal panel studies were conducted. An online questionnaire was used to collect the responses. Each participant logged into the online survey with a unique, randomly created code. This ensured, on the one hand, anonymity for participants. On the other hand, data sets in t1 and t2 of respondents could be identified and matched afterwards. This enabled the longitudinal panel analysis.

Only those participants from the two independent longitudinal panel studies who had completed EVOKE, and had additionally answered all questions in the questionnaires regarding the opinion leadership scale, were included in the statistical analysis. As a consequence, the data of 27 participants from the first and 61 participants from the second study could be used for the empirical analysis. Both studies were consolidated, as the ramifications for participation in the two studies were structured and organized identically. The sample comprised 54 male and 33 female participants. One participant did not state their gender.

### **4.3 Operationalization of Change**

In order to measure, on a longitudinal base, changes within participants of an online ideation game, a form of measurement had to be chosen that allowed the tracking of changes in relevant attributes. The opinion leadership scale illustrated a valuable

approach. Although, opinion leadership has been part of scientific research for many decades, no common understanding exists regarding which measure should be generally used. In this study, change was measured with the opinion leadership scale of Childers [Ch86] (see Table 1).

A necessary prerequisite for the measurement of opinion leadership illustrates that anonymity is ensured, which was given in this study. Opinion leadership was measured for each social challenge before the social challenge was addressed, and after the completion of EVOKE. Opinion leadership belongs to the category of self-report measures. Self-report measures have been criticized in the past, as the accuracy of own-performance-evaluation has been doubted [LLE88]. Kratzer and Lettl [KL09] show, however, that opinion leadership can hardly be examined objectively, and that a broad stream of literature gives evidence to the fact that self-report measures achieve high accuracy levels. They point furthermore to previous findings, where high correlations between self-reports with “more ‘objective’ measures” [KL09, p. 652] were found, where self-ratings achieved superior findings than objective ratings, and where errors caused by self-reported techniques were negligible. Additionally, it was not the purpose of this study to identify opinion leaders, but to examine whether the self-assessment to addressed topics had changed. The opinion leadership scale fulfilled this objective by comprising elements focusing on a person’s perceived knowledge of a topic, and the perceived status of this person in her/his social environment.

Cronbach’s alpha was calculated for all opinion leadership constructs with respect to each social challenge and to each time interval (t1, t2). In all cases, Cronbach’s alpha was above the value of .700. Each construct fulfilled, as a consequence, the prerequisite of reliability.

Items				
Please rate yourself on the following scales relating to your interactions with friends and neighbors regarding ... <sup>1</sup>				
1. In general, do you talk to your friends and neighbors about ... <sup>1</sup> :				
Very often (1)	(2)	(3)	(4)	never (5)
2. When you talk to your friends and neighbors about ... <sup>1</sup> do you:				
Give a great deal of information (1)	(2)	(3)	(4)	give very little information (5)
3. During the past six months, how many people have you told about ... <sup>1</sup> ?				
Told a number of people (1)	(2)	(3)	(4)	told no one (5)
4. Compared with your circle of friends, how likely are you to be asked about ... <sup>1</sup> ?				
Very likely to be asked (1)	(2)	(3)	(4)	not at all likely to be asked (5)
5. In discussions of ... <sup>1</sup> , which of the following happens most often?				
You tell your friends about ... <sup>1</sup> (1)	(2)	(3)	(4)	your friends tell you about ... <sup>1</sup> (5)
6. Overall, in your discussions with friends and neighbors are you:				
Often used as a source of advice (1)	(2)	(3)	(4)	not used as a source of advice (5)

<sup>1</sup>food security, power shift, water crisis, future of money, empowering women, urban resilience, indigenous knowledge, crisis networking (independently addressed)

Table 1. Adjusted opinion leadership measure

In order to ensure the appropriateness of the chosen statistical examination, data was tested on normal distribution with a Kolmogorov-Smirnov test. Power shift, empowering women, future of money, indigenous knowledge, crisis networking, and water crisis were normally distributed in t1 and t2, while food security and urban resilience deviated in t2 from normal distribution. All categories, which were normally distributed in t1 and t2, were subsequently analyzed with a paired t-test. Food security and urban resilience were analyzed with the nonparametric Wilcoxon test.

## 5 Findings

Figure 1 shows the general self-report on opinion leadership regarding the specific given social challenges in EVOKE. The self-report among respondents can be divided into two subgroups. In the first subgroup are those challenges in which participants believed themselves to possess a more consolidated knowledge and took, as a consequence, a more active role in their interpersonal relationships. Power shift, and the future of money belong to this group. The second subgroup comprises the topics, empowering women, urban resilience, food security, water crisis, crisis networking, and indigenous knowledge. Participants rated, with respect to these topics, their interpersonal role as tending to be rather passive, and their knowledge subsequently as somewhat unconsolidated and limited.

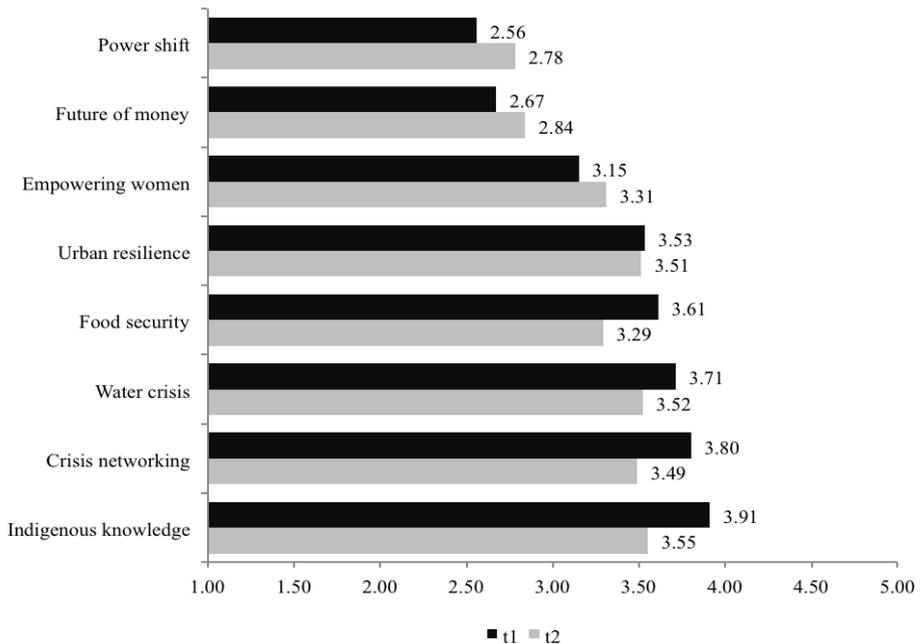


Figure 1: Opinion leadership (N=88) (1= very high level of opinion leadership to 5= very low level of opinion leadership)

Figure 1 also shows that self-report on social challenges were not stable over time, but differed between t1 and t2. To test whether these changes were statistically significant, a paired t-test was conducted for those challenges with a normal distribution, and a Wilcoxon test for those where the underlying data deviated by at least one interval from normal distribution. The findings are shown in Table 2. Apart from urban resilience, all changes were significant to  $p < 0.05$ . Respondents underwent, as a consequence, a major change in their own perception during their participating in EVOKE. The self-assessment towards their own interpersonal role and knowledge with respect to power shift, future of money, and empowering women decreased from t1 to t2, while it increased for all other social challenges, with the exception of urban resilience.

Social challenge	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
			Mean	Lower	Upper			
Power shift	-.22348	1.01202	.10788	-.43791	-.00906	-2.072	87	.041*
Empowering women	-.16477	.69641	.07424	-.31233	-.01722	-2.220	87	.029*
Future of money	-.16667	.78092	.08325	-.33213	-.00121	-2.002	87	.048*
Indigenous knowledge	.36553	.95888	.10222	.16236	.56870	3.576	87	.001*
Crisis networking	.30682	.93324	.09948	.10908	.50455	3.084	87	.003*
Water crisis	.19886	.69106	.07367	.05244	.34528	2.699	87	.008*
			Negative Ranks	Positive Ranks	Ties	Total	Z	Asymp. sig. (2-tailed)
Food security			53	26	9	88	-3.900	.000*
	Mean rank		44.81	30.19				
	Sum of ranks		2375.00	785.00				
Urban resilience			43	38	7	88	-.465	.642
	Mean rank		40.91	41.11				
	Sum of ranks		1759.00	1562.00				

\*sign.  $p < 0.05$

Table 2. Paired t-test and Wilcoxon test

## 6 Discussion, Implications, and Possibilities for Future Research

### 6.1 Discussion and Implications

The findings of this study show that changes in the self-perception of opinion leadership occur in almost all topics covered. An exception is urban resilience, where no significant change occurs. The self-assessment towards power shift, future of money, and empowering women decreases and increases towards in food security, water crisis, crisis

networking, and indigenous knowledge. Concerning food security, water crisis, crisis networking, and indigenous knowledge, participants see themselves, subsequently, as more proficient and state to take a more active role in conversations. Regarding power shift, future of money, and empowering women, the opposite effect is given. Here participants perceive themselves as less knowledgeable and less proficient than in the beginning.

It is important to emphasize that the direction of change is not one-sided, but is given in both directions. This means that participation in this online ideation game seems to have induced change by fostering learning and unlearning processes simultaneously. Participants seem to have questioned their existing knowledge base in those topics where they felt they possessed a reasonable knowledge before participating in the online ideation game. They probably realized that they were not as competent as they thought. At the same time, participants see themselves, after the completion of the online ideation game, as more competent in topics where they assessed their knowledge to be rather limited at the beginning.

The findings of this study emphasize the value of an online ideation game as a means to change, as it indicates that deeply rooted, cognitive obstacles and beliefs can be challenged and addressed. Without such a possibility of influence, people tend to stick to existing and developed beliefs, and to ignore or interpret information in a way that is aligned to existing knowledge and beliefs [BSH92, SGH78, PF03]. This is especially given for unlearning, which can be achieved solely when people firmly believe that existing knowledge is inappropriate [BSH92, PF03]. The findings of this study offer, hence, an important managerial implication: Online ideation games seem to be a promising and valuable instrument that can extend the organizational toolkit in the context of continuous and fundamental change.

## **6.2 Possibilities for Future Research**

Despite the value of the findings, this study possesses limitations which offer possibilities for future research. The limitations of this study arise from the chosen sample, the chosen methodology, and the content of addressed challenges.

Concerning the sample of this study, only students have been tested. Future research has to analyze whether the identified effect can also be found in an organizational setting, where the age structure differs to this study. Concerning the methodology, the study did not examine the reasons that determined change within the group of participants, but analyzed instead whether changes occurred over time. Future research could, subsequently, open up this black box by choosing a cross-sectional approach in contrast to the longitudinal panel study. Regarding the content of given challenges, only social topics were addressed within the chosen online ideation game. Within profit-oriented organizations, the structure and composition of existing challenges are different. Future research could investigate, therefore, whether similar results can be achieved in a setting with different challenges.

## References

- [ABM12] Adamczyk, S.; Bullinger, A. C.; Moeslein, K. M.: Innovation contests: a review, classification and outlook. *Creativity and Innovation Management*, 21 (4), 2012, 335-360.
- [ALB03] Akgün, A. E.; Lynn, G. S.; Byrne, J. C.: Organizational learning: a socio-cognitive framework. *Human Relations*, 56 (7), 2003; pp. 839-868.
- [Be10] Becker, K.: Facilitating unlearning during implementation of new technology. *Journal of Organizational Change Management*, 23 (3), 2010; pp. 251-268.
- [BHA06] Becker, K.; Hyland, P.; Acutt, B.: Considering unlearning in HRD practices: an Australian study. *Journal of European Industrial Training*, 30 (8), 2006; pp. 608-621.
- [BM10] Bullinger, A. C.; Moeslein, K.: Innovation contests – where are we? In *Proceedings of the Sixteenth Americas Conference on Information Systems*, 2010; pp. 1-8. Peru. Retrieved from <http://aisel.aisnet.org/amcis2010/28>
- [BP96] Bettis, R. A.; Prahalad, C. K.: The dominant logic: retrospective and extension. *Strategic Management Journal*, 16 (1), 1996; pp. 5-14.
- [BSH92] Barr, P. S.; Stimpert, J. L.; Huff, A. S.: Cognitive change, strategic action, and organizational renewal. *Strategic Management Journal*, 13 (3), 1992; pp. 15-36.
- [CCD08] Coyne, K. P.; Clifford, P. G.; Dye, R.: Thinking from inside the box. *Harvard Business Review*, 85 (12), 2008; pp. 71-78.
- [Ch86] Childers, T.: Assessment of the psychometric properties of an opinion leadership scale. *Journal of Marketing Research*, 23(6), 1986; pp. 184-188.
- [Cs90] Csikszentmihalyi, M.: *Flow: The Psychology of Optimal Experience*. Harper and Row, New York, 1990.
- [DB10] Dewald, J.; Bowen, F.: Storm clouds and silver linings: responding to disruptive innovations through cognitive resilience. *Entrepreneurship Theory and Practice*, 34 (1), 2010; pp. 197-218.
- [De11] Deterding, S. et al.: Gamification: toward a definition. In *CHI 2011 Gamification Workshop Proceedings*, Vancouver, BC, Canada; pp. 12-15, 2011.
- [FSH04] Fullerton, T.; Swain, C.; Hoffman, S.: *Game Design Workshop. Designing, Prototyping and Playtesting Games*. CMP Books, San Francisco, 2004.
- [HH04] Hult, G.; Hurley, R.: Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33 (5), 2004; pp. 429-438.
- [JK93] Jaworski, B. J.; Kohli, A. K.: Market orientation: antecedents and consequences. *The Journal of Marketing*, 57 (3), 1993; pp. 53-70.
- [KA07] Kane, G. C.; Alavi, M.: Information technology and organizational learning: an investigation of exploration and exploitation processes. *Organization Science*, 18 (5), 2007; pp. 796-812.
- [KL09] Kratzer, J.; Lettl, C.: Distinctive roles of lead users and opinion leaders in the social networks of schoolchildren. *Journal of Consumer Research*, 36 (4), 2009; pp. 646-659.
- [Le92] Leonard-Barton, D.: Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13 (S1), 1992; pp. 111-125.
- [LL05] Lumpkin, G. T.; Lichtenstein, B. B.: The role of organizational learning in the opportunity- recognition process. *Entrepreneurship: Theory & Practice*, 29 (4), 2005; pp. 451-472.
- [LM88a] Levitt, B.; March, J. G.: Organizational learning. *Annual Review of Sociology*, 14, 1988; pp. 319-340.
- [LM88b] Lieberman, M. B.; Montgomery, D. B.: First-mover advantages. *Strategic Management Journal*, 9 (S1), 1988; pp. 41-58.
- [LLE88] Locke, E. A.; Latham, G. P.; Erez, M.: The determinants of goal commitment. *Academy of Management Review*, 13 (1), 1988; pp. 23-39.
- [LRV01] Linder, M. -O.; Roos, J.; Victor, B.: *Play in organizations*. Working Paper 2, Imagination Lab Foundation, Lausanne, 2001.
- [Ma91] March, J. G.: Exploration and exploitation in organizational learning. *Organization Science*, 2 (1), 1991; pp. 71-87.
- [MF80] Miller, D.; Friesen, P. H.: Momentum and revolution in organizational adaptation. *Academy of Management Journal*, 23 (4), 1980; pp. 591-614.

- [Op01] Oppliger, D. E.: University – Pre-college interaction through FIRST Robotics competition. Paper presented at the International Conference on Engineering Education, Oslo, 2001.
- [Pa04] Pack, D. J. et al.: Fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *IEEE Transactions on Education*, 47 (3), 2004; pp. 369-376.
- [PB97] Pratt, M. G.; Barnett, C. K.: Emotions and unlearning in Amway recruiting techniques: Promoting change through 'safe' ambivalence. *Management Learning* 28 (1), 1997; pp. 65-88.
- [PF03] Pardo del Val, M. ; Fuentes, C. M.: Resistance to change: a literature review and empirical study. *Management Decision*, 41 (2), 2003; pp. 148-155.
- [PW06] Piller, F. T.; Walcher, D.: Toolkits for Idea Competitions: A Novel Method to Integrate Users in New Product Development. *R&D Management*, 36 (3), 2006; pp. 307-318.
- [Ro05] Romanello, T.: Collaborative competition? A great way to teach and motivate. *The Physics Teacher*, 43, 2005; pp. 76-78.
- [RT94] Romanelli, E.; Tushman, M. L.: Organizational transformation as punctuated equilibrium: an empirical test. *The Academy of Management Journal*, 37 (5), 1994; pp. 1141-1166.
- [Sc08] Schell, J.: *The art of game design*. Burlington: Morgan Kaufmann Publishers, 2008.
- [SGH78] Starbuck, W.; Greve, A.; Hedberg, B.: Responding to crisis. *Journal of Business Administration*, 9 (2), 1978; pp. 111-137.
- [St96] Starbuck, W.H.: Unlearning ineffective or obsolete technologies. *International Journal of Technology Management*, 11 (7–8), 1996; pp. 725-737.
- [Su97] Sutton-Smith, B.: *The ambiguity of play*. Harvard University Press, Cambridge, 1997.
- [SW13] Scheiner, C. W.; Witt, M.: The Backbone of gamification – A theoretical consideration of play and game mechanics. In Horbach, M. (Ed.): *Informatik 2013 – Informatik angepasst an Mensch, Organisation und Umwelt, Lecture Notes in Informatics (LNI) – Proceedings, Series of the Gesellschaft fuer Informatik, Vol. 220, 2013; pp. 2372-2386.*
- [TG10] Tripsas, M.; Gavetti, G.: Capabilities, cognition, and inertia: evidence from digital imaging. *Strategic Management Journal*, 21 (10), 2010; pp. 1147-1161.
- [TZ08] Tsang, E. W. K.; Zhara, S. A.: Organizational unlearning. *Human Relations*, 61 (10), 2008; pp. 1435-1462.
- [Wi12] Witt M. et al.: Creative process engagement in a multiplayer online-ideation game. In Hans-Ulrich Heiß; Peter Pepper; Holger Schlingloff/Jörg Schneider (Eds.): *Informatik schafft Communities; Lecture Notes in Informatics (LNI) - Proceedings, Series of the Gesellschaft fuer Informatik, Vol. 208, 2012; pp. 978-991.*