

## ENTERPRISE GAMIFICATION IN BUSINESS TO CONSUMER (B2C) ENGAGEMENT MODEL

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### ABSTRACT

*Organisations are constantly looking for ways to innovate and provide a differentiated client experience. With the explosive adoption of new technologies driven by disrupting factors as social networking, crowd generated content, cloud and mobile a new system of engagement was created, leveraging gamification concepts. Applying game mechanics and design elements to non-gaming contexts brings a new model of engagement that increases the point of interaction stickiness and quality of engagement. The current study investigates the influence of Gamification within the Placement (Distribution, Marketing Mix) using the Technology Acceptance Model at conceptual level. The proposed theory may be tested using an experiment or questionnaire study. Also the paper list few practical examples of applying gamification in various industries. The proposed model offers enterprises a tactical tool to increase the channel interaction and customer engagement, to realise expected benefits by adding gamification capabilities to existing value chain.*

**KEYWORDS:** *gamification, innovation, technology acceptance model, user experience.*

**JEL CLASSIFICATION:** *O10, O21, O30, O31, O 32, O35, M30*

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### 1. INTRODUCTION

The paper investigates the possible influence of gamification to achieve higher levels of engagement, change behaviors and attitude using a conceptual model derived from Technology Acceptance Model (Davis, 1989). Gartner (2011) predicted that by 2015 a full 50% of organizations will have gamification in their processes. This phenomenon became a core competency in specific companies, as Social Networks Services (SNS) and Social Network Games. These organizations (as Facebook, Google+, Twitter, LinkedIn) are driven by crowd generated content, information sharing and unstructured data generation. Foursquare leveraged the success of location based service providing crowd generated content capabilities. That created the opportunity to diversify toward digital marketing.

Retail Organizations adopted also gamification strategies as an effort to increase the channels attractiveness and optimize the marketing mix by increasing the usage of distribution channels that provides a system of engagement experience. Increasing interaction with customer, not only organizations leverages insights of the individual and uncovers behavior patterns, but also creates an anchor point providing a valuable positive experience respective to brand or organization.

Many of current applications of gamifications implies a reward based system that aim to motivate potential or current players to encourage progress and competition. Comparison of individual performance evaluated against peers acts as motivational factor resulting increased system usage and attitudinal intention to use. Competition was identified (Reeves and Read, 2009) as one of the

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10 main capabilities in successful game designs. Gamification could be also used to educate customers and create comparison between choices, decision making, relativity of anchor points and memory effect (Ariely, 2008), as a decision influencer for fulfilling specific action in the decision process.

## **2. TECHNOLOGY ACCEPTANCE MODEL (TAM) REVIEW**

With the continuous development of new electronic technologies and mass adoption of internet, the need to study of factors that could explain the success of introducing a new technology accelerated. While subject is very broad, it was necessary to identify the factors that influence the way and when technology is used. One popular model is TAM, a further development of TRA. TRA, (Martin Fishbein and Icek Ajzen 1975, 1980) Theory of Reasoned Action, is a model for predicting behavioral intention, with a research focus on attitude, which led to study of attitude and behavior. Once a conceptual model can explain the observed phenomenon by factors, it was also necessary to investigate the influence of them.

With the explosive adoption of new technologies as Cloud Computing that provides a challenge for traditional enterprises that differentiated against smaller competitors in traditional business by entry barriers as discussed within Five Forces Framework (Porter, 2008, 1979), digital channels introduced a paradigm shift allowing smaller companies to compete without the burden of large financial investments. For example, complex platforms that offers CRM or ERP functionalities commoditized allowing new entrants to execute similar tactics with other players are now commoditized by cloud technologies.

As we discuss about placement, distribution and point of interaction with an organisation, TAM can be used in the context of Marketing Mix to identify strategies and tactics to increase the distribution usage, hence to obtain specific benefits and increase the level of customer engagement. Some of benefits, listed as examples are: brand awareness, brand loyalty/ customer advocacy, increase product awareness/ education, increase customer acquisition, retention and cross-sell.

The term "engagement", in a business sense, describes the connection between a consumer and a product or service (Zichermann and Cunningham, 2011), that includes a period of time with relevant connection with a person, place, thing or idea.

TAM is focused on two main vectors, Perceived Usefulness – that aggregates at a conceptual level factors related to functional aspects and Perceived Easy of Use – that aggregates factors related to User Experience, ergonomic evaluation of the degree of a person's belief that using a particular system would be free from effort (Davis, 1989).

The TAM model (TAM) shows how the event driven model could increase actual system usage.

Behavioral intention indicates the level of individual's readiness to perform a given behavior, assumed to be an immediate antecedent of behavior (Ajzen, 2002). TAM is based on attitude toward the behavior, subjective norm, and perceived behavioral control. Each predictor is weighted for its importance in relation to the behavior and population of interest.

According to Davis (1993) user acceptance represents a critical factor that influences the success or failure of an information system, concept that can be applied to e-commerce channels. The term external variables influence the perceived usefulness (U) and perceived easy of use (E). External variables also include all the system design features. Attitude toward using has an indirect influence effect to the actual system use. (Davis, 1993)

## **3. GAMIFICATION CONCEPTS REVIEW**

Gamification has been studied with applicability in various fields as marketing, customer engagement and increase digital channel usage behavior, ideation and crowd innovation, education and Training, knowledge sourcing. Broader applicability exists also in context of user authentication, cryptography

and payments. Some of applicability is reviewed in paper Rethinking Gamification (Mathias Fuchs, Sonia Fizek, Paolo Ruffino, Niklas Schrape, 2014).

The history of Gamification is quite recent, with a standard name established in 2008 without wide adoption until 2010, originated in digital media industry (Deterding et al, 2011).

Deterding evaluates that “gamification” does indeed demarcate a distinct but previously unspecified group of phenomena, namely the complex of gamefulness, gameful interaction, and gameful design, which are different from the more established concepts of playfulness, playful interaction, or design for playfulness. Based on Deterding, we accept the proposed definition: “Gamification” as use of game design elements in non-game contexts and use it consequently.

In this paper we will use term “gamified ” to indicate presence or use of gamification. A set of new terms as “gamified”, “gameful” derived from game were adopted by literature(Deterding et al, 2011). In the gamification context, according to some work (Zichermann and Cunningham, 2011) engagement is being comprised of a series of potentially interrelated metrics that combine to form a whole. These metrics are: how recent frequency, duration, how viral, ratings. All of these, appreciated collectively, could form an Engagement score ‘E’.

There is a distinct differentiation between Game and play concepts. “Play” is part of a broader, looser category, containing but different from “games”. Deterding evaluates that “paidia” (or “playing”) involves a more freeform, expressive, improvisational, even “tumultuous” recombination of behaviors and meanings. “Ludus” (or “gaming”) captures playing structured by rules and competitive strife toward goals. Different level of game mechanics (Deterding et al, 2011) can be adopted in a nongaming context:

- Game Interface design patterns –includes common successful interaction design components and design solutions for a known problem in a context. Practical examples includes badges, leaderboard, levels.
- Game design patterns & mechanics- includes commonly reoccurring parts of the design of a game that concern a gameplay. Examples includes time constraints, limited resources, turns
- Game design principles & heuristics-evaluative guidelines to approach a design problem or analyze a given design solution. Examples includes enduring play, clear goals, variety of games styles.
- Game models- conceptual models of the components of game or game experience. Examples includes MDA, challenge, fantasy, curiosity, game design blocks, CEGE, Core Elements of the Gaming Experience. MDA stands for Mechanics-Dynamics-Aesthetics framework (MDA, 2014).
- Game design methods- includes game design specific practices and processes. Examples includes play testing, play centric design, value conscious game design.

Two major categories of gamification types were considered by the authors, based on (Nicholson, 2012) paper. While this paper is not focused on gamification literature review, the following taxonomy is relevant, against the applicability and possible influence of gamification over TAM:

- Meaningful gamification – that implies use of game design elements to help users find meaning in a nongame context.
- BLAP gamification , that implies reward based system in place in order to provide extrinsic motivation by use of concepts as Badges, Levels and Leaderboards, Achievements, and Points

This brings also into attention the impact of Motivation within the Gamification concepts- intrinsic and extrinsic (Aparicio et All, 2012). There are opinions (Kohn ,1999) that evaluates that extrinsic motivation – as rewards – don’t provide long term engagement and could discourage actual system usage. Rewards and punishment system (Kohn, 1999) is different from a consequence based system, and represent both negative and positive influencers. Helping individual to take own decision without an external controlling behavior is expected to lead to better results.

Choice of one over the other depends on expected benefits out of gamified experience (Nicholson, 2012) in the specific business context.

### 3.1. Game Model

According to Maroney (Maroney, 2001), game is a form of play characterized by goals and structure with a possible representation (Nicholson, 2012) as:

$$\text{Game} = \text{Play} + \text{Goal} + \text{Structure} \quad (1)$$

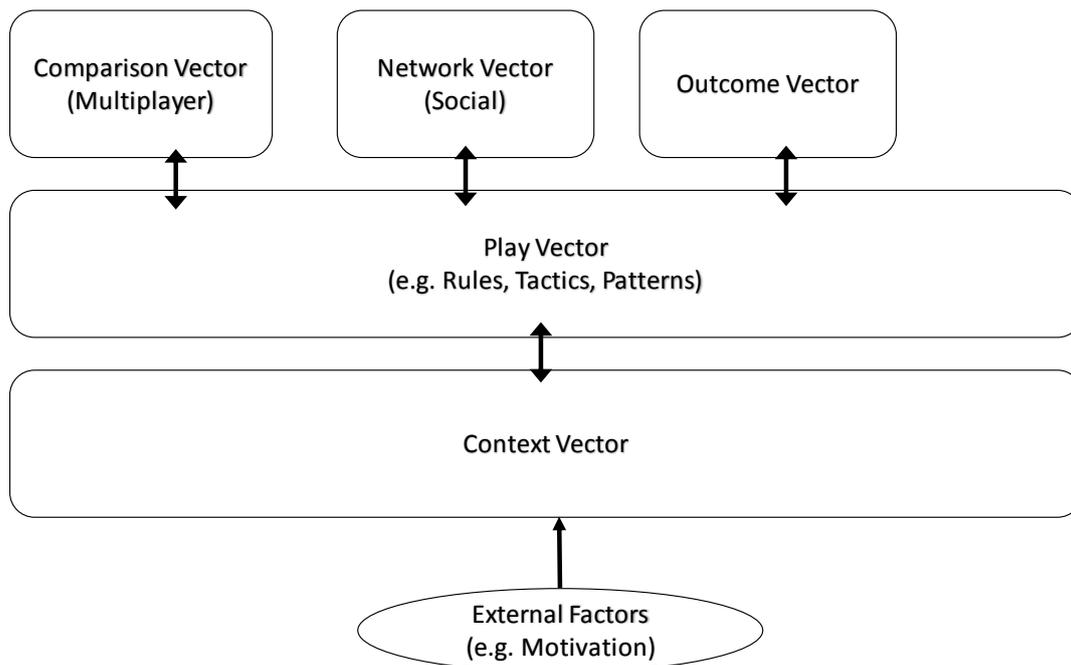
The current paper proposes the following definition for Game in context of Gamification, as an “expected engaging experience that creates a meaningful context and outcome, based on a structured play, within a multiplayer and social network environment”

That consequently translates into the following equation:

$$\text{Game} = F\{\text{Context, Play, Outcome, Comparison, Network}\} \quad (2)$$

Where F is an unknown function that is expected to be predicted/ modeled at game design stage. Please note that in the current definition author proposes, Play incorporate also Tactics, Patterns and Rules, while Comparison is related to relativity in decision making (Ariely, 2008).

The following diagram represents the Game in visual format, using Vectors concept.



**Figure 1. Proposed Model for Game within Gamification context**

Source: Author’s drawing

In the current paper, a vector is a cluster of Factors that contributes to the explanation of a common observed phenomenon. In a statistical modeling approach, a vector could be the result of Factorial analysis of a group of independent variables. The current paper does not propose a quantitative model based on empirical research, due the variability of the concept, but can be tested in specific practical implementations.

Arrows in diagram describes major information flow that have influence. The model describes the following entities:

1. Context Vector – includes all facts and links between meaningful events in relationship with business model / marketing mix. That is represented as a narrative and particularization data model for specific game design,
2. Play Vector: includes all entities, concepts and rules that creates the game dynamics and flow.it describes the interaction engine. This includes also tactics, rules and patterns, Time. In some cases, gamified experience allows to user to change the rules as part of the game rules. The Play Vector receives a critical amount of information from the Context Vector.
3. Outcome Vector: includes all user expected benefit out of gamified experience, regardless linkage to intrinsic or extrinsic motivators. If Play Vector manages to deliver right output to Outcome Vector, it is expected that an increase in behavioral Intension to use (BI) to be observed. Author estimates that there is a direct positive relationship between Outcome Vector and BI that can be empirical tested in various real implementation scenarios.
4. Network Vector – contributes to overall Gamification Effect by including Social Networking communication and interaction model.
5. Comparison Vector – In a Multiplayer environment or a single player environment with a context that allows user to assess its position against peers or other players.

Because system design features often relates to the core business activity or offering, gamification concepts could applied in order to enhance the actual system use, by modifying a set of characteristics to obtain expected benefits in an incremental way.

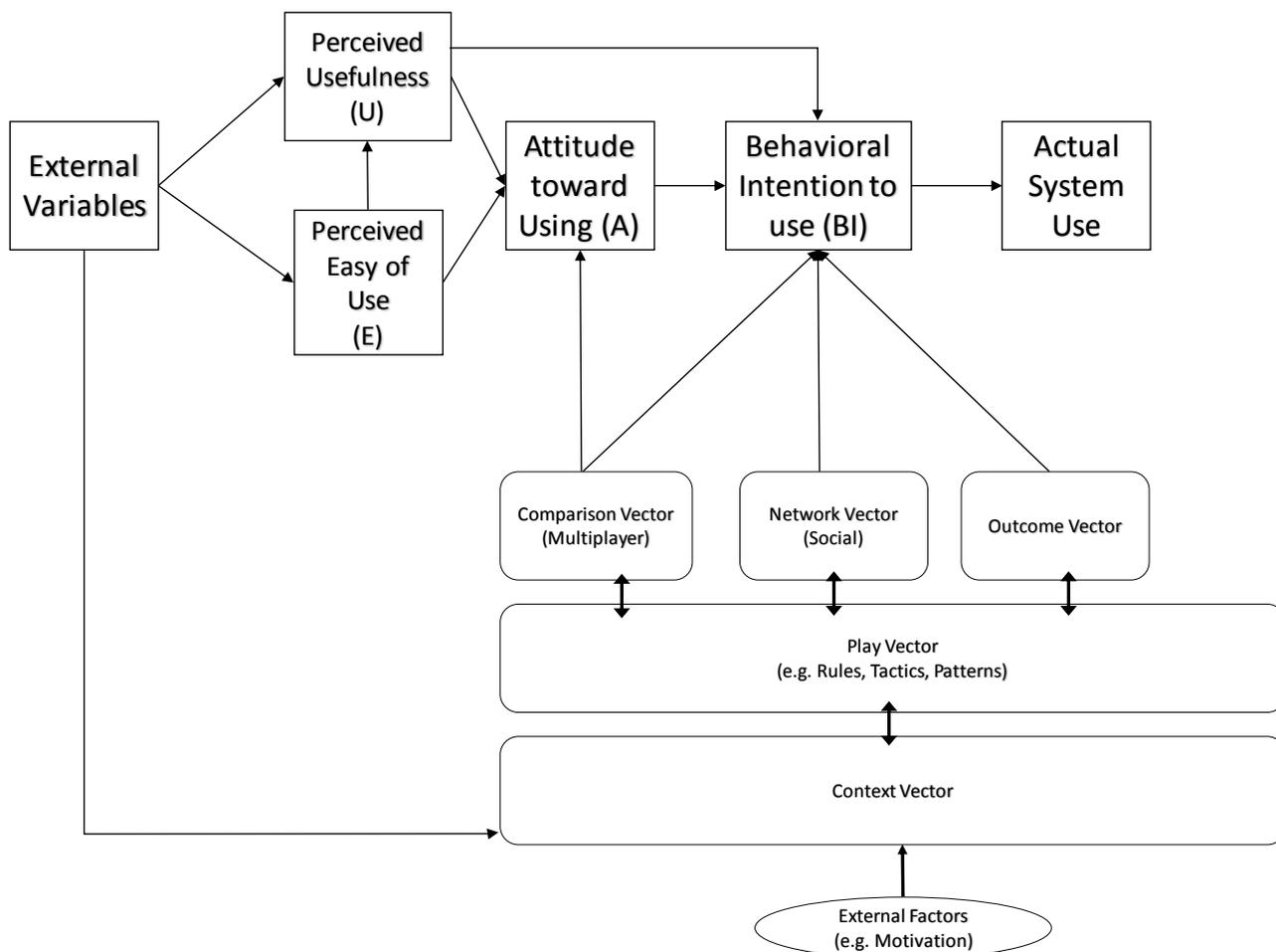
### 3.2. Proposed TAM Gamified Model

In the context of using gamified business processes, the author proposes the following model on top of exiting TAM (Davis, 1989) model. The Model proposed shows that Gamification effect (as a direct contribution of Outcome, Network and Comparison Vectors) will influence the Behavioral Intention to use (BI), hence increasing the Actual system use. The KPIs that could be attached on top of standard that relates to business performance could be, but not limited to Net Promoter score, channel usage, loyalty, customer satisfaction, but also how recent, frequency, duration, how viral, ratings (Zichermann and Cunningham, 2011).

There is also an expected influence between Game Experience, as Function {Context, Play, Outcome, Comparison, Network} and Attitude toward using (A).

We used the concept of External variables within the TAM framework, that implies that External Variables for TAM includes also System Design qualities in relationship with motivation- either intrinsic or extrinsic (Enterprise Gamification, 2014. We see also an influence from the Game Experience on external Variables- that describe the interaction where in the gamified experience, for example when the end user is able to change the product or price qualities, like in user driven innovation cases, but the strength of this influence depends on industry and product/ service.

In some cases, depending on the model for system design is selected, as shown in Table 2, the gamified process can also alter the Perceived Easy of Use noted E, indirect by external variables.



**Figure 2. Author's proposed model**

Source: Author's drawing, adapted from TAM (Davis, 1989)

### 3.3. Gamification expected benefits

The current paper didn't investigated the quantitative effects of gamification. However there are few studies that analyses this aspect (Herzig, Ameling, & Schill, 2012) , (Herzig, Strahringer, & Ameling, 2012), in the context of a specific gamified implementation and reference architecture for a platform to suport gamification. While Herzig, Ameling, & Schill (2012) focuses on the positive impact of technology acceptance in a given context , authors focuses on the expected benefits out of applying TAM and gamification to achieve a business goal .Other studies are proposing a model to measure the Gamification effectiveness (Amir and Ralph, 2014).

### 3.4. Gamification integrated in distribution value chain examples

There are a number of notable enterprises that adopted gamification as part of the value chain. Some of the notable examples (BBVA Innovation Centre, 2012) includes customer projects like Foursquare, Microsoft, CodeAcademy, Wolkswagen, Barclays, Bank Of America, Commonwealth Bank. Also same paper cites the Employee Facing Gamification at Siemens, IBM, Google, SAP, Delloite to name a few.

Another example comes from investment banking, where gamification was applied for trading experience sharing – moving the trading towards a social platform as Saxobank (Saxo Bank introduces Social Trading, 2014) and FidorBank (Social Trading, die neue Art des Tradings, 2014).

CosmosDirekt, a direct insurer in Germany, part of Generalli Group, achieved business growth leveraging only the online channels. Gamification is part of their digital strategy. (CosmosDirekt Press release, 2013)

The applicability is not limited to large enterprises, an example is WAZE, GPS crowd sourced gamified driving experience (Yee, 2014). We mention also Facebook or LinkedIn, as early adopters of gamification concepts.

#### 4. CONCLUSIONS

Gamification brings a new set of capabilities to increase the customer engagement and also there is a wide range of applications, that supports business growth initiatives. Organisations that ignore the gamification effect, might pay the opportunity cost. Depending on business, they might be even exposed to risk of Strategic drift.

The proposed model provides a structured framework extension of TAM in order to analyse or add gamification capabilities within a specific value chain. The current paper identifies main vectors driving effective customer engagement and can be applied to achieve specific business goals, rather than focusing purely on technology or Human Computer Interaction.

The model identifies that the main influence of applying gamification to a distribution channel is on Attitude towards using it and on Behavioral Intention to use, that will influence the actual system use. That creates a better user experience and an increased usage frequency. Often, gamification can support user driven innovation and crown knowledge gathering for enterprises.

The model proposed in this paper also supports the game architecture for implementing the required capabilities paper also, making this research applicable.

While Gamification is still a new concept, we expect wider adoption, to generate business innovation. Gamification responds to the paradigm shift, that moved customer to an empowered customer with a powerful network effect. With the continuous sophistication in customer profile, organisations will need to react fast and provide seamless seamless experience, not just transaction enabled platforms.

#### REFERENCES

- Ajzen, I. (2002). *Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior*. Journal of Applied Social Psychology, 32, 665-683.
- Amir, B. & Ralph, P. (2014). *Proposing a Theory of Gamification Effectiveness*, ICSE Companion'14, May 31 – June 7, 2014, Hyderabad, India.
- Aparicio, A.F., Vela, F.L.G., Sánchez, J.L.G., Montes J.L.I. (Oct 3–5, 2012). *Analysis and application of gamification*, Interaccion'12, Elche, Alicante, Spain.
- Ariely, D. (2008). *Predictably Irrational- The Hidden Forces That Shape Our Decisions* BBVA Innovation Centre. 2012. *Gamification The business of fun*. Retrieved Sept 11, 2014 from [https://www.centrodeinnovacionbbva.com/sites/default/files/gamification\\_english.pdf](https://www.centrodeinnovacionbbva.com/sites/default/files/gamification_english.pdf)
- Davis, F. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology*, MIS Quarterly, 13(3): 319–340.
- Davis, F. (1993). *User acceptance of computer technology: system characteristics, user perceptions*. Int. J. Man-Machines, 38 (3), 485-487.
- Deterding, S., Dixon, D., Khaled, R., Nack, e L. (2011). *From Game Design Elements to Gamefulness: Defining “Gamification”* MindTrek Tampere Finland.
- Enterprise Gamification. . *Gamification: Extrinsic and Intrinsic Motivators*. Retrieved Sept 23, 2014 from <http://vimeo.com/88939322>

- Rethinking Gamification*, Edited Book by Fuchs M., Fizek S., Ruffino P., Schrape N. (2014). Meson Press, ISBN 978-3-95796-000-9
- Gartner (2011). *Gartner Says by 2015, More Than 50 Percent of Organizations That Manage Innovation Processes Will Gamify Those Processes*  
<http://www.gartner.com/it/page.jsp?id=1629214>.
- Hamari, J. & Koivisto, J. (2013). *Social motivations to use gamification: an empirical study of gamifying exercise*. Proceedings of the 21st European Conference on Information Systems, Utrecht, Netherlands, June 5–8, 2013.
- Maroney, K. (2001). *My entire waking life*. *The Games Journal*. Retrieved Sept 11, 2014 from <http://www.thegamesjournal.com/articles/MyEntireWakingLife.shtml>,
- MDA Framework. In *Wikipedia*. Retrieved Sept 11, 2014 from [http://en.wikipedia.org/wiki/MDA\\_framework](http://en.wikipedia.org/wiki/MDA_framework)
- Nicholson, S. (2012, October). *Strategies for meaningful gamification: Concepts behind transformative play and participatory museums*.
- Herzig, P., Ameling, M., & Schill, A. (2012). *A Generic Platform for Enterprise Gamification* Joint Working Conference on Software Architecture & 6th European Conference on Software Architecture.
- Herzig, P., Strahinger, S., & Ameling, M. (2012). *Gamification of ERP Systems - Exploring Gamification Effects on User Acceptance Constructs*, Multikonferenz Wirtschaftsinformatik. Press release (accessed 2014): *Saxo Bank introduces Social Trading*, <http://www.saxobank.com/news/tradingfloor/saxo-bank-introduces-social-trading>
- Press release (accessed 2014): *Social Trading, die neue Art des Tradings*, <https://www.fidor.de/produkte/social-trading>
- Press release (accessed 2013): *CosmosDirekt Press release*, [www.cosmosdirekt.de/bilanzpressekonferenz-2013](http://www.cosmosdirekt.de/bilanzpressekonferenz-2013)
- Porter, M. E. (2008). *The Five Competitive Forces That Shape Strategy*, retrieved Sept 2014 from <http://hbr.org/2008/01/the-five-competitive-forces-that-shape-strategy/ar/1> .
- Reeves, B. and Read, J.L. (2009). *Total engagement: using games and virtual worlds to change the way people work and businesses compete*. Harvard Business School Press,
- TAM . In *Wikipedia, Technology Acceptance Model*. Retrieved Sept 11, 2014 from [http://en.wikipedia.org/wiki/Technology\\_acceptance\\_model](http://en.wikipedia.org/wiki/Technology_acceptance_model)
- Yee C. (Blog Entry). *Waze How Waze built its Craze through Gamification*. Retrieved Sept 11, 2014 from <http://www.yukaichou.com/gamification-examples/an-octalysis-look-at-the-waze-craze/>
- Zichermann, G., Cunningham, C. (2011). *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*, O'Reilly Media.