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Gamification: A framework for designing software in e-banking



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ABSTRACT

The gamification software development gave emphasis to the role played by the users to test and improve the software. This study presents a framework for software gamified in e-banking, taking a users' groups and a qualitative research approach, to check the users' design preferences in five cases of banking software gamified (Futebank, Dreams, Galaxy, Olympics, and Warrants). After software presentation, and usage experience, 53 participants, responses to a survey with six open questions. The data were analyzed through a text semantic software, to detect and classify lexical items in, accordance, with standard of software quality characteristics and user experiences. Two primary categories were identified, as well five dimensions in each element and characteristic categories. The results show five characteristic dimensions (design, appearance, functionality, rules, and objectives) and five element dimension (game, product, security, process, and information). These findings provide a framework for web designers and e-business, highlighting the most important software features when dealing with serious applications with game design. It adds value to the current literature on understanding the customer relationship with the game and the financial product, identifying new dimensions (game and product) on the approach of thinking and design gamification in e-banking. Our finding contributes to a better understanding of key elements and characteristics in e-banking software design and has important practical implications for software development and marketing practices. Thoughts on the users' software design preferences identified, should propel increase adoption and attractiveness of online banking.

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1. Introduction

Gamification emerges as a new e-business strategy with innovative ways to customer engagement and boost sales. However, there is no framework defining the software elements in e-banking, which could be used to design a strategy for influencing bank customers to adopt gamification. In this paper, we study the customers' design preferences of gamified e-banking applications. Online games have become a significant part of our ever-daily life (McGonigal, 2011). Attempting to accept vantage of the growing passion for games, gamification is a trending phenomenon that aims to influence people, by developing a game design in different business contexts (Deterring, Dixon, Khaled, & Nacke, 2011). The use of game design for business purposes has rapidly gained a substantial attention from academia, and marketing practitioners in online games, as well as in serious game contexts (e.g. Hamari &

Lehdonvirta, 2010; Huotari & Hamari, 2012). Thus, the development of enhancing business applications with game design has been entitled as "gamification" (Dicheva, Dichev, Agre, & Angelova, 2010).

The banking industry is facing revenue problems, difficulties differentiating products, and to retain their customers, to change this situation, banks should redesign their business applications, according to what the customer likes, to increase the online system usage (PWC, 2011). When software is designed correctly, gamification has a substantial business impact, and become an important means for organizations, to engage, and motivate them to modify behaviors, develop skills, or solve problems (Burke, 2013). Leveraging some of the features designed in online games, gamification can turn many other types of business activities into games. This design includes defining business objectives as well as application definition, deployment, and acceptance. In the longer term, as design practices improve and organizations focus on setting clear business objectives, gamification will have a significant business impact and become an important means for banks to engage customers (Burke, 2013). Therefore, it takes a winning

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combination of elements and characteristic to create a high-quality website, and customers are looking for not just information, but also a compelling and aesthetically pleasing web design (Cox & Dale, 2002).

Following the successes of online games, marketers have started to apply the game design in non-game contexts, particularly for engaging and retain online website visitors. However, gamification is still an experimental business strategy, and it is not clear what are the customer's preferences, which should be applied are in e-banking context (Calvillo-Gómez, Cairns, & Cox, 2010; Deterding et al., 2011). Websites are a key success factor for most organizations to promote and sell their products (Dedrick, Gurbaxani, & Kraemer, 2003). Although many banks have made substantial investments into projects aimed at developing websites, most of them fail to meet customers and business goals (Hsieh & Wang, 2007). In addition, the poor interface design is one of the main reasons of website failures (Nielson, 1997), lack of website usability and customer satisfaction (Flavián, Guinalíu, & Gurrea, 2006; Palmer, 2002).

The problem with business software is that unlike game software, it is not typically optimized for how the user experiences the information (Spotfire, 2013). The business software is designed to optimize navigating, forgetting the user's design preferences that influence the motivation to adopt and use the online systems (McDaniel, 2011). There no studies investigating the customers design preferences in software gamified and related game design analogies (e.g. relationship between game and financial product), which results in a better understanding of gamification (Hamari, 2013). Little research exists concerning how gamification can be successfully applied within different contexts (Hamari, 2013; Huotari & Hamari, 2012), and the contexts in which gamification may be useful have not yet been identified (Blohm & Leimeister, 2013).

So far, there is no scientific consensus regarding the websites' objectives and what characteristics should be implemented (Ganguly, Dash, Cyr, & Head, 2010). Therefore is important to foster effective use of business software, through the application of game design, bears high potential to counteract the growing complexity of banking systems (Sommerville et al., 2012). Loiacono, Chen, and Goodhue (2007), advocate that more studies be required to verify web design and its characteristics since studies focusing on the user's preferences in game design are rare (Sotamaa, 2010). Understanding whether gamification is effective is also a pertinent, practical issue in what are the user's game-like elements and characteristics (Hamari, Koivisto, & Sarsa, 2014). The e-business design is important to improve customers' ability to make decisions (Hasley & Gregg, 2010). In fact, a significant association was found between web design quality and customer decision-making to buy (Delone & McLean, 2003). With these in mind, it is time to move research attention to acquiring an understanding of customers' software preferences, an e-banking with game design. This inevitably leads to our research question: What are the users' design preferences in e-banking gamified?

Subsequently, we will explore the customer's software design preferences, and propose a framework with the key software elements and characteristics to be developed in e-banking software, hoping to contribute to a better understanding of designing gamification in e-banking context. To determine the customer software preferences, we have developed five business projects with game design, presented to a user discussion group to collect their perceptions, and identified the most important software features, to be included in business applications. An interpretative text analysis was performed (Jokela, Iivari, Matero, & Karukka, 2003), and a qualitative research approach (Creswell, 2007; Hennink, Hutter, & Bailey, 2010), to detect and organize keywords

(dimensions) related to what the user's preferences are in gamified applications.

A literature review was conducted to identify the importance of game design, design standards, and user design preferences in gamification at bank context. We provide a two-fold contribution. First, we advance the understanding the customer relationship with gamification, by identifying their preferences on e-banking software design. Second, we contribute to five gamification cases establishing game analogies between game rules and financial product rules, which provide guidelines for future research as well as new business applications, towards an effective customer usage of e-banking.

The study proceeds as follows: In the theoretical background section, we outline the theoretical foundations that could explain gamification, web design, and banking and gamification examples. In the following methodology section, we present the research method and process applied in our investigation, followed by the cases analysis section where we describe our five-gamification cases, data collection, and processing. In the results section, we outline the results and present the characteristics and elements of gamification, following the discussion, and conclusions sections, where we analyze and compare the results, the outcomes with our findings and suggestions, for further research on designing gamification in e-banking.

2. Theoretical background

This research addressed customers' preferences during an experience with surfing business software gamified and evaluated some essential, design components of websites and extent of customer satisfaction. This study also evaluated some essential, design components of academic library gamification, web design, e-banking, and scope, of customers' experience from gamified business application. The knowledge about the elements and characteristics that enable customers to achieve better, their personal sets of using business applications, allow web designers and business managers to determine what are the requirements that need to develop on their websites, and alternatively, what information/process/analogies, attract customers to buy online.

Next, through the relevant literature in this section, we will introduce and describe web design, games, and business, to understand the importance of gamification and customers' design preferences in a banking context.

2.1. Web design

The web design returns navigation or primary benefits, with the performance of a certain task, which could affect positively the customer experience and loyalty (Choi & Kim, 2004). In this sense, the quality of the design of the website is important for any online store to attract customers (Ganguly et al., 2010). The web design's objective is to influence positively, overall customer satisfaction, the perceived service quality, and to affect positively, the purchase intention (Lee & Lin, 2005). The website's usability following three central features (Schaupp & Bélanger, 2005): 1) must offer a user-friendly interface and be easy to use 2) must include the ability to search quickly and accurately and 3) must provide full content and interactive mechanisms.

The perceived design quality of the website, significantly influences user confidence, and trust (Zhang, Prybutok, Ryan, & Pavur, 2009), and retain users more time on the website (Liao, Palvia, & Lin, 2006). Also, addition, the website contents (e.g. text, pictures, graphics, animation or, avatars), can transform web design to become more attractive and appealing, influencing users to spend more time on the website (Ganguly et al., 2010). However,

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