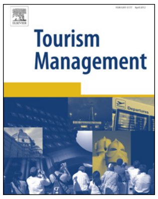
Tourism Management 60 (2017) 244–256

Contents lists available at ScienceDirect

Tourism Management

journal homepage: www.elsevier.com/locate/tourman



Serious games and the gamification of tourism☆

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HIGHLIGHTS

- A systematic review of the concept of gamification.
- Identified extrinsic and intrinsic motivational gaming elements that contribute to a meaningful gamification.
- Discussed the application of gamification in tourism with case practices.

ARTICLE INFO

Article history:
Received 15 January 2016
Received in revised form
25 November 2016
Accepted 27 November 2016

Keywords:
Gamification
Serious games
Engagement
Loyalty
Tourism experiences

ABSTRACT

Gamification has become a focus of attention in an increasing number of fields including business, education, and health care. Through a wide range of applications and support functions, its potential for the tourism industry is significant. Gamification of tourism can contribute to a more rewarding interactions and higher level of satisfaction, as well as increase brand awareness and loyalty to the destination. As one of the first attempts to conceptualize gamification of tourism, this paper examines gaming in general terms and the application of it in specific tourism fields. It identifies game design elements that can contribute to a meaningful gamification. A few cases of best practices are presented to show how this innovative concept can benefit tourism marketing. Implications for tourism marketing and management are discussed as well as future research recommendations.

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1. Introduction

Persuasive computing technology has become popular in our daily lives (Bogost, 2007; Shuib, Shamshirband, & Ismail, 2015). Serious games, as a type of persuasive technology, are computer/video games with a set of cognitive design properties to focus on changing user behaviour and transferring knowledge, instead of the mere entertainment function of traditional games (Ghanbari, Simila, & Markkula, 2015). They are widely used in training, medical applications and leisure activities in the last decade (Oinas-Kukkonen & Harjumaa, 2008, pp. 200–205). Researchers (Xu, Tian, Buhalis, Weber, & Zhang, 2015; p. 2) suggest they could “collect information about consumers, determine behaviour patterns, thought processes, priorities and interests, the aims of these games usually include using gaming technologies and methodologies to engage users at a deeper level and to improve their experiences”.

The popularity of video games in the past decade, empowered by the rapid development of smart mobile devices, allowing mobile experiences (Gentes, Guyot-Mbodji & Demeure, 2010) and vibrant on site communication, has made gaming popular and attractive to a broader group of players. Recently, serious games and the application of game elements have drawn a great attention from different fields, including education, heath, and tourism, motivating its adoption in a non-gaming context (Xu, Weber, & Buhalis, 2014). The recent 5 years has seen the spread of the terminology ‘gamification’ (Epstein, 2013). It usually refers to the application of game mechanism outside its original domain (Deterding, Dixon, Khaled, & Nacke, 2011). Through a wide range of applications and support functions, its potential for business is significant, such as engaging customers in experiential co-creation and training service providers for innovative processes and functions.

Seaborn and Fels (2015 p16) state that gamification has its “roots in marketing endeavours”. For example, loyalty cards, stamp books,

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☆ Part of the paper has been presented at the ENTER Conference, Dublin.

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http://dx.doi.org/10.1016/j.tourman.2016.11.020
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competition and reward membership, are early approaches as customers can collect points to exchange for presents and gifts. Foursquare partners with some restaurants to redeem game players' virtual rewards or check-ins into free cupcakes and drinks (Frey, 2012). WTM (2011) states gamification is spreading to the travel industry and predicts it to be a popular future trend for travel industry. Research on gamification is emerging with only a few academic papers discussing the use of gamification for marketing and service industry (Huotari & Hamiri, 2012; Lucassen & Jasen, 2014; Xu et al., 2014). Academic research on the use of gamification in tourism context is still limited with only a few exemptions (Sigala, 2015a; Xu et al., 2014; Correa & Kitano, 2015; Negrusa, Toader, Sofica, 2015). The recently published book on 'gamification in tourism' (Bulencer& Egger, 2015) is a welcome addition to the theoretical development.

The aim of this study is to investigate how gamification could support tourism marketing. The objectives of this paper therefore include: 1) systematically review the concept of gamification; 2) explore game design elements that are applicable in the tourism industry; 3) review best case practises on the adoption of gamification in the tourism industry; 4) discuss the benefits of gamification for tourism marketing.

In order to investigate how gamification can benefit tourism marketing, this research has been conducted with an exploratory research nature based on mini case studies. A case study is a research strategy which usually studies one or multiple cases, often used when research is still in its early formative stage (Punch, 2005). Gamification is a new research field with multidisciplinary attention, although some scholars have focused on this topic, this field is still new. In addition, this field is typically characterised by the constant change in innovation and technology (Boes, Buhalis, & Inversini, 2015). Therefore, the case study method enables researchers to gain knowledge and to explore how the established cases use gamification for tourism marketing. A multiple case study research strategy has been used (Yin, 1994) as it enables a more general overview of the results.

From Feb, 2014 to April, 2014, the researchers used search engine Google (google.co.uk) and Android (UK market) and Apple (UK market) app stores, and academic resources (Elsevier dataset) to check tourism/tourist games. Key words 'tourism game', 'travel game', 'gamification' 'tourism gamification' 'location based game' 'treasure hunt game' 'augmented reality game' 'gamified app' were used. Then a careful screening of each game/app was carried out, only those related to tourists/tourism games were saved. A content analysis was used for the case studies. A coding scheme is developed based on the analysis of secondary research on gamification and gaming elements. Each game was then coded by each researcher respectively based on the coding scheme. There was no obvious disparity at this stage and any ambiguity was discussed between the researchers. Key gaming elements were identified for each case. This process is followed by a cross-case examination and within-case examination along with literature review to develop coding clusters and to support external validity. From the final results, best practices are based on the following criteria: 1) respond not only to the extrinsic elements but also to the intrinsic elements; 2) use at least three gaming mechanism; 3) been awarded best gamification application or recommended by other researchers.

This paper starts with a discussion of the gaming theories, the concept of games, serious games and gamification, game design elements and framework. The second part includes how gamification has been used in the tourism context with case practises to explain how gamification may benefit tourism marketing. Finally, the paper ends up with a conclusion and possible research direction in the future.

2. Gamification theory

2.1. The concept of games

Avedon and Sutton-Smith (1971) conclude game features include: voluntary participation, having certain rules, different parties may have conflicts and usually generate unequal results. Although different definitions have been used, researchers agree a set of game characteristics can be used to define games, such as rules, uncertain outcomes, conflict etc. (Juul, 2003; Salen & Zimmerman, 2004). After reviewing several definitions of games, Seaborn and Fels (2015 p16) summarize that the characteristics of games usually include "rules, structure, voluntary play, uncertain outcomes, conflict, representation, resolution, etc.". Rules build up boundaries and set up instructions of game play. Conflict includes both competition and cooperation between different parties and the game system itself (Xu et al., 2014). The uncertain outcome refers to winning, losing or scoring against the game goals or other players (Crawford, 2011; Reiser, 2012). Some games include an element of luck as a random value determining next movement of the process, while other games are driven by preference, knowledge, skill or collaboration between different players. Gaming can be very addictive as players are motivated to reach a higher goal, to score points against each other and gain either material or non-material gains such as inclusion to the hall of honour (McGonigal, 2011).

2.2. Conceptualizing gamification

Although there is no universal definition of gamification, Deterding et al.'s (2011) definition is widely accepted that refers gamification as contextualizing game design outside its original domain. Zichermann and Cunningham (2011) suggest gamification is to establish brand, engage users and influence their behaviour by using game mechanics in areas other than traditional gaming context. As Deterding et al. (2011, p10) suggest "gamification involves applying elements of gamefulness, gameful interaction, and gameful design with a specific intention in mind". For example, designing a treasure hunt in a tourism destination will help visitors to explore various areas and to collect points, photos, memories and experiences but may not have winners or losers. Seaborn and Fels (2015 p16) further explain "gamefulness refers to the lived experience, gameful interaction refers to the objects, tools and contexts and gameful design refers to the practice of crafting a gameful experience". The end result of gamification may or may not be a fully-fledged game and players may use it in a different way. Gamification is more about motivating people to take actions (Deterding et al., 2011) perhaps in a structured way and follow specific rules to achieve variable outcomes. Games are more about fun and entertainment, although they share the same concept of funware (Azadegan & Riedel, 2012). However, Seaborn and Fels (2015) argue that sometimes it is not easy to identify game elements. Therefore, it is inevitable to subjectively differentiate a fully fledged game and a gamified system which uses some game mechanics but not to create a whole game. Nevertheless, gamification differs with games at the purpose of play. Gamification focuses on changing players' behaviour, engagement with their environment and co-players who may also be fellow customers or service providers towards achieving meaningful interaction and engagement and potentially achieve rewards. In contrast, games focus more on entertainment and pleasure.

Alternative terms have also been used to gamification, such as 'game based learning', 'serious games' or 'pervasive games' (Bogost, 2007; Kapp, 2012). This also makes it difficult to differentiate the concept of 'games' and 'gamification'. Serious games often focus on

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