Gamification

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INTRODUCTION

The concept of 'gamification' is about the use of play and passion to drive user engagement in an activity (Groh, 2012); which follows the idea of games where "players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (Salen & Zimmermann, 2003, p. 96). This is achieved by the use of game-based elements and mechanisms in a non-game environment. Gamification is not about turning routine activities into a game; but to redesign work processes with game mechanisms for a fun and enjoyable experience. Gamification is, in a nutshell, the combination of various components which drive a sequence of desired mechanics to develop dynamics of interaction behaviours with the intention of supporting key business processes (Werbach & Hunter, 2012). At last, gamification is all about changing the way in which specific activities and processes operate; predominantly for users to have more fun and greater engagement in what they are doing. Gamification focus on the user; the game mechanics in a gamified system merely exist to ensure a strong sense fun, passion and play that is embedded within the system (Deloitte, 2012).

Transferring the commitment of gamers to solve "just the next level" (as they play over and over again) into commitment to business processes, is an area of emerging interest. This draws on several disciplines ranging from psychology and behavioural sciences through to game theory. We follow the framework provided by Werbach and Hunter (2012) and examine key gamification elements: components (tools and approaches that can be used), mechanics (essential actions describing the way in which these components drive micro-level behaviours), and dynamics (outcomes relating to the behaviours, interactions, and intentions of players). Gamification examples are followed by criticisms of the approach.

BACKGROUND

Gamification is "the use of game design elements in non-game contexts" (Deterding, Dixon, Khaled, & Nacke, 2011, p. 10) with the intent of injecting fun, play, and passion into tasks and processes. The redesign of processes embeds characteristics that are more commonly found in games, into the non-game activities (Deterding et al., 2011, p. 13). Therefore, it is the application of "the *motivational properties* of games and layers them on top of other learning activities, integrating the human desire to communicate and share accomplishment with goal-setting to direct the attention of learners and motivate them to action" (Landers & Callan, 2011, p. 421, emphasis added). The term was not widely adopted until 2010 and there is still significant confusion amongst various terms which have similar meanings, so that gamification can be used interchangeably with terms such as *behavioral games*, *funware*, *applied gaming, productivity games*, the *game layer* of a process, or *playful design* (Deterding et al., 2011).

The increase in motivation of users is accomplished through the careful combination of a range of *building blocks* into the design and structure of a given process. This incorporates game-based practices and elements. It remains distinctly different to the concept of *serious games*, which is more tightly concerned with the use of games to achieve serious outcomes. For example, challenges or puzzles in a game, where having multiple

people working on the puzzle allows the players to progress in the game, while having the puzzle solved is of real-world purpose to the game-designers (Liu, Alexandrova, Nakajima, & Lehdonvirta, 2011). By having the task in some way incorporated into the overall structure of the game, players accomplish the task as a *side effect* of their gameplay (Oja & Riekki, 2012).

Clearly, fun and engagement in the people's behaviour has a strong and rich background in behaviour and psychology research. This is necessary to understand the motivation of users and how and why they might react in various ways to particular stimuli. The concept provides improved engagement of the user with the gamified system, relying heavily on recency of interactions, duration of interaction, frequent interactions, the ability for the system to be Viralised' and become widely adopted, and the ability to rate and evaluate a system (Zichermann & Cunningham, 2011).

Gamification builds on established game-based approaches and an understanding of the nature of humankind, founded on behavioral economics and psychology, to allow system designers to achieve objectives. Gamification is applied in various disciplines to promote and encourage certain behaviours. Examples include Health (Nike+ tracks activities and shares this in a community for comparison; http://nikeplus.nike.com/plus), Environment (a speed camera lottery motivates safe and responsible driving; http://www.youtube.com/watch?feature=player_embedded&v=iynzHWwJXaA and the world's deepest bin to motivate people not to pollute the environment; http://www.youtube.com/watch?feature=player_embedded&v=cbEKAwCoCKw), Social Interaction (Piano Stairs are designed to engage people using stairs and to encourage them to interact with people around themselves; http://www.youtube.com/watch?feature=player_embedded&v=2lXh2n0aPyw) or Science (the computationally intensive challenge of understanding how molecules can be folded can be solved by laypeople when it is turned into a computer game; http://www.americanscientist.org/science/pub/behind-the-scenes-of-foldit-pioneering-science-gamification).

MAIN FOCUS OF THE ARTICLE

Even though s*erious games* and gamification of activities have to be distinguished with respect to their primary objective, they still share several key elements (Ma, Oikonomou, & Jain, 2011). With serious games (or games in general), the key elements are used to solve a *serious* problem as part of education (rather than a game for entertainment), while gamification is about applying these key elements in a non-game context to induce an engaging behaviour. In the context of training and learning purposes, gamification means that key learning objectives for a particular class module are used to apply the key elements of gamification on the activities that would enable participants to infer the rules for the key learning objectives. The learner is not supposed to be entangled in rules and guidelines how to achieve the objectives as they would do in serious games, but envision the activities in a 'playful' way where the participation is voluntary and fun; addressing the passion of the learner to intrinsically feel the obligation to achieve the objectives (Groh, 2012). In this section, the key elements of gamification are described and demonstrated on several examples; see also Figure 1.

Key Elements

One of the very common misconceptions of gamification is it is as simple as the addition of points-, badge-, or leaderboard-based systems (the PBLs) to existing activities. However, by adding these elements to existing processes particular user behaviours will be influenced and modified. This does not necessarily imply that the desired change of behaviours will be achieved. For example, leaderboards often reflect a snapshot of the latest results. While a new round with an empty leaderboard and equally skilled participants most likely result in a healthy competition, an unbalanced group or already existing perfect scores can have the unintended consequence of discouraging participants due to the big gap to the leaders. As a consequence, the different components and mechanics must be carefully designed and thought through in such a way that they will support the design business dynamics.

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