REDEFINING GAMIFICATION

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ABSTRACT

Gamification is a new term describing the will to look for elements from the game world that can motivate and engage users in non-gaming contexts. Albeit not new, this concept is very popular nowadays as it envisions more productive workplaces filled with employees that would be loyal to their companies. It appears in a fast changing technological context where the interaction becomes fancier and fancier… in the private area only, hence the need for a new design in more serious contexts. We first try to define what we mean by gamification, what and how that field of practice is supposed to solve and its implication when applied to workplaces. Then, we analyze current gamification conception and try to identify its underlying concepts. We state that gamification is an attempt to create cheap and ideologically company-fitted persuasive technology and emotional design. However, we suggest that it could be a valuable contribution if done well, and that we can enrich the persuasive technology and emotional design fields with game design patterns. Thus, providing the designers with a concrete design tool that would guide them by taking into account their goal and context of use and specifying every potential side-effect.

KEYWORDS

Ergonomics, User Experience, Gamification, Persuasive Technology, Emotional Design, Motivation.

1. INTRODUCTION

Continuous technical evolutions and new information and communication technologies democratization have led to deep changes concerning the way it is used. During the 70s, the designers' first concern was about its accessibility. Afterwards, the user became more and more important in the conception process (Brangier & Bastien, 2010), leading to the study of usability, emotions and persuasive technologies. Following that trend, Gamification appeared as *« an informal umbrella term for the use of video game elements in nongaming systems to improve user experience (UX) and user engagement »* (Deterding & Dixon, 2011, p.2). The idea is to make more engaging and motivating interactions through the use of games. Quickly controversial, this idea is perceived by a lot of companies as a seductive concept that probably holds out the prospect of the sales of the gaming industry. As an example, according to Gartner, more than 50% of innovative companies will use gamification in their software development strategies by 2015 (Gartner, 2011).

In this paper, we aim at understanding better what we mean by gamification, what and how that field of practice is supposed to solve and its implication when applied to workplaces. Finally, we analyze gamification conception and try to identify its underlying concepts.

2. GAMIFICATION

2.1 Games, work and gamification

2.1.1 Defining gamification

Several definition have been published concerning gamification (Deterding & al., 2011; Thom, Millen & DiMicco, n.d; Witt, Scheiner & Robra-Bissantz, 2011 ; Zichermann & Cunningham, 2011). All of them mention the idea that game elements are introduced in non-gaming contexts, with the will to make the user experience and engagement better. Typical examples of game elements used are points systems, levels and badges (Gnauk, Dannecker & Hahmann, 2012). Some mention the goal of solving problems, reaching a fun and devouring experience, but it is not systematic. For example, Liu, Alexandrova and Nakajima (2011) target "*so-called game-like behavior: focus on the task at hand, multitasking under pressure, work overtime without discontented attitude, always keep retrying when fails, etc.*". Serious Games, given that they contain both ludic and utilitarian scenarios (Alvarez & Michaud, 2008) and that they often are derived from existing games, can be thought as an extreme gamification process.

A lot of gamification examples does exist on the internet: HealthMonth (healthy goals), Foursquare (geolocalization when hanging out), CupidsPlay (dating service), Email Game or Attend (emails management), Chorewars or EpicWin (everyday tasks management), UpStream (online recruiting), DevHub (website creation), IdeaStreet (brainstorming) or Visual Studio Achievement (software coding)… In order to comprehend the marketing stakes, we can analyze one of its main illustrations. Badgeville - "the behavior platform" – uses game mechanics through: targeted behavior definition, associated reward selection, mission, social relationships and competition. It is interesting to note that it allows behavior monitoring. It is also the case of companies such as Crowdtwist or IActionable. The latter explain not trying to generate fun or enjoyment, but permitting the users to be more aware of their performances, setting objectives, generating loyalty and leveraging behaviors. Gamification is therefore offering an interactive environment that would be simple, beautiful, enjoying and engaging. It reflects a will to trick the user into creating a misleading situation evacuating the conflict relationship that exists between human and productive work.

2.1.2 Opposition between game and work

When analyzing game, lots of researchers, instead of viewing it as a sum of game mechanics - like points and leaderboards - describe an *experience* (Schell, 2008). All those definitions set the game in a space aside, as an absorbing experience, detached from reality and productivity imperatives (Caillois, 1967; Winnicott, 1971; Triclot, 2011; Juul, 2005).

But more importantly, game –by being detached from reality- is intrinsically opposed to work. Work should be associated with a constraint and is performed even though it is not enjoyable in itself, so that we can achieve a goal. Games, on the contrary, are pleasant and don't need any specific goal. On top of that, a game that is played under constraint or as a position is not a game anymore neither is a game that implies productivity requirements. This raises several issues: what about productivity and efficiency? What about a needed anchor to reality? Efficiency is part of usability and refers to "*the resources expended in relation to the accuracy and completeness with which users achieve goals*" (ISO norm: 9241-11, 1998). At work, efficiency means minimum cost for maximum productivity while a game has to last longer and constantly challenge the player (Flow, Csikszentmihalyi, 1990). Gamification is thus questionable as Apter (1991) pointed out that arousal induced by challenges are pleasant when the activity does not have an external goal, but highly stressful when in the context of goal-oriented work. Besides, interface could evolve with functionalities that would be available after a certain level of "play", which is –again- questionable. Finally, playing is an experience that is on the fringe of reality (Winnicott, 1971) and that implies taking a chance (Caillois, 1967). Could the search of points outshine the search of productivity? Could gamification induce a detachment from work, by repeatedly staging a pleasure in the interaction and an interactive hedonism that would tend to be globalized?

We can also wonder about the meaning gamification conveys. "*[Games] illustrate (…) a moral and intellectual value of a culture*" (Caillois, 1967, p.76). Given the current characteristics of gamification (users' actions analysis, real / virtual monetization of work / leisure, competition at work, behavior modification), we are far from "*a universe that is kept aside, closed, protected: a pure area*" (p.38). According to Triclot (2011), games are politic and gamification is a way to transcript anything into indicators-to-be-optimized: it stages an ideal of perfect equality, publically available indicator and no cheating. Besides, this envisions people as competitors which do not reflect the average population. This questions the efficacy of those methods. Concerning those who are receptive to it, it relies on extrinsic motivators. The lure of possession is the reason why the users perform the task, and they don't feel attached to the quality of the outcome.

Gamification seems to try to unite the triad “usable, hedonic and engaging” that emerges from the evolution of HCI disciplines (Brangier & al., 2010). Gamification is thus an ideology that relies on three main points.

- Gamification is perceived as a new key concept for technology acceptance. Nowadays, there is a big contrast between the difficulties when using professional software and the obvious success of the video games and mobile devices: gamification does not consider the professional practice as dealing with constraints and production needs but through ludic interactions.
- Gamification pleads for a successful professional model of interaction. It is defined as the implementation of aesthetic means, ludic procedures and enjoyable interactions that, in a professional context, would tend to correctly fill a function or an activity. Gamification would thus become a condition to professional technologies use.
- Gamification is a range of HCI intervention methods, dealing with practices that can sometimes help or arm the users. It can turn interactions that are simple and efficient for experts into more complicated ones whilst making a more pleasant interaction for the young, born with new technologies, or for novices.

2.2 Gamification design

2.2.1 Current gamification design and critics

Currently, gamification is a buzzword and a lot of marketers and game / social game designers have shared their insights, either through live presentation or downloadable slides / websites. The term “slideshareatture” has been coined to describe that fact (Robert, 2011). Very often, some contributions consist of a gathering of motivational psychology theories (as different as neuropsychology, conditioning, intrinsic - extrinsic motivation, eustress, PERMA[1], Maslow) and game design theories (Bartle’s players types, MDA[2], Flow), leading to the conclusion that game elements must be adapted to the user’s profile (social style, motivators and skills), and that the emphasize must be on status, progression elements, rewards, social connection and challenges.

Two authors are well known for they public criticism of the notion of gamification. First, according to Deterding, badges and points are only feedback displayed after what makes the core of the game experience: challenge mastery. He states that a good game design is hard to obtain, and that it can’t be performed by adding magical game mechanics. Besides, he reminds us that most game elements that are reused are competition elements like leaderboards, which does not suit every user, and leads to unexpected behaviors like cheating, compulsive actions and can be in conflict with social norms. The motivational theory he uses as a reference is the self-determination theory (Ryan & Deci, 2000) that define innate psychological needs: competence, autonomy, relatedness, which should be the starting point for every gamified design. Second, Bogost expressed his discontent through his blog post “Gamification is bullshit” (2011). According to him, gamification is an “Exploitationware”. He states that marketers have initiated that field, making companies believe that the game experience could be transferred into work to increase productivity. According to him, “*this rhetorical power derives from the "-ification" rather than from the "game". -ification involves simple, repeatable, proven techniques or devices*”. Both those authors state that gamification as it is nowadays is a trick, and is too simplistic to have real and efficient motivational effects.

Scientific papers start being publish on that topic, such as Flatla (& al., 2011) who created serious games based on key concepts of games, game design atoms and Reeve and Read’s work on game elements use to trigger real-life engagement. According to Gnauk (& al., 2012) and Zichermann (& al., 2011), hedonic aspects of games are embedded into points, levels and badges but also usability, visually appealing elements and nice interactions. They also include social comparison / challenges to trigger motivation. Liu (& al., Nakajima, 2011) use psychology theories (social facilitation and social loafing) and economic incentives theories as starting points. They define a gamification loop that starts with challenges with specific winning condition. Every goal achieved lead to rewards (through any point system) that lead to leaderboard entries and badges attributions. Then, it modifies the user’s social and network status. Despite that framework, the authors insist on the importance of a game-like surface. Padilla, Halley and Chantler (2011) use a matching

[1] Positive emotions - Engagement / flow - Relationships- Meaning and purpose – Accomplishments (Seligman, 2011)

[2] Mechanics, Dynamics, Aesthetics (Hunicke, Leblanc, & Zubek, 2004)

images matrix as a game environment and reward their users with micropayments. Law, Kasirun and Gan (2011) try to motivate their application users by attributing them roles and missions. Rewards consist of the attribution of point, badges and status. A leaderboard is also provided, as well as statistics on the users' performance. Finally, the whole application is supposed to rely on an epic mission. In order to motivate the members of a community to tag images, Knautz (& al., 2012) provided them with an egg pet that would grow through levels depending on experience points. They also used the techniques of achievements, leaderboards and social comments. Finally, Singer and Schneider (2012) tried to encourage computer students' participation on software version control through a social application that consists of team feeds, comments, avatar, leaderboards, and congratulation notifications when achievements are reached and weekly digest mail on the team's efforts. The students admitted having overcommitted in order to reach milestones, but liked the feedback the application provided both as a motivating progress indicator and a summary of pasts tasks.

To conclude, gamification is a trendy field of study and everyone wants to be part of it. A lot of different motivational and game theories are used, but we could summarize the way it is designed nowadays as an attempt to create the gamification loop described by Liu (& al., 2011). By analyzing it, we can link it to two existing concepts: Persuasive technology and Emotional design.

2.2.2 Proposition: redefining gamification

We could argue that Persuasive technology is the first and most obvious underlying concept in gamification. It is described as an attempt to change attitudes or behaviors and consists on elements that aim at simplifying the interaction, guiding the users, adapting the interaction to them, providing relevant prompting and feedbacks, rewards (even if that is controversial in the Persuasive Technology field), immersive and simulation environments, using dialogue with the system and avatars. Social mechanics and attractive visual elements are also potential persuasive technology techniques (Oinas-Kukkonen & Harjumaa, 2009). Nemery, Brangier & Kopp (2011) insist on four static criteria: credibility, privacy, personalization and attractiveness, and on the importance of a dynamic support made of increasing and more demanding solicitations. We believe that it matches the gamification loop as described by Liu (& al., 2011): step-goals, rewards, performance feedback, social mechanics… all that it similar. The main difference is in the nature of the feedback and on the key-role granted to rewards, which are directly (and too simplistically?) taken from games. We could even argue that Serious game, the most extreme gamification experience, is a kind of persuasive technology as it is an immersive simulation system.

Some authors have insisted on the importance of also having non instrumental qualities such as game visual elements. This is linked to Emotional design and overlaps the attractiveness criteria of persuasive technology. Besides, the constant idea of designing to fulfill users' needs that are beyond usability, whether those needs are conceptualized by psychologists or game designers is typically an Emotional design concern.

We believe that we can draw a conclusion out of this: gamification as it is conceptualized nowadays is an attempt to create cheap and ideologically company-fitted persuasive technology and emotional design. It doesn't mean that we should forget about that topic, but we should refocus the debate on what matters: the need to rethink current user interface design because of the current changes in our numeric society. It is true that the interfaces are much fancier in the private area, and that we should learn from it. It is also true that engaging the users and motivating them is a promising topic. But using badges and points will not help, and we should center our effort on persuasive technology and emotional design to enhance the hedonic aspects of the interfaces and induce users' behaviors. We can take inspiration from game mechanics, but wisely and when it means better feedback, better fitted interaction and better guidance such as the "task status display" pattern from the "Fun of use project" (Kohler, Niebuhr & Hassenzahl, 2007) that explicit goal and goal progress, and resulted in a better perception of the hedonic qualities and global judgment of a productivity software. Our proposition is to see how we can enrich the persuasive technology and emotional design fields with game design patterns, and provide the designers with a concrete design tool that would guide them taking into account their goal and context of use and specifying every potential side-effect.

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