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Gamification Design for Mobile Marketing Effectiveness

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Abstract

Retailing and other business sectors have been buffeted by the diffusion of mobile technology, a trend that presents a variety of hard challenges but interesting opportunities to retail marketers. One such opportunity is gamification, which, it is hoped, will enhance appeal to mobile consumers. Our sense from both personal experience and the literature is that the gamified mobile apps currently offered by firms mostly miss the mark. We provide a systematic overview of game design and point out how principles derived from that field are highly applicable to gamification in mobile marketing settings. We are aided by the work of Schell (2008) whose Elemental Game Tetrad Model allows us to offer a coherent look at how gamification should affect mobile marketing outcomes.

Introduction

According to the International Telecommunications Union (2015), mobile devices are now ubiquitous, with 4.5 billion mobile users across the world in 2014. This represents a very high level of penetration with 96 subscriptions per 100 people (compared to 16 per 100 for fixed lines). Broadband coverage is rapidly being extended around the world (ITU 2015). This suggests that for a majority of consumers in the world today, the phone is the primary access point for electronic content, including games. In addition to rapid changes in consumer access to the mobile Internet, there is also a proliferation of mobile devices within households and individuals, especially in the developed world. These devices span form factors from basic feature phones to smart phones, through "phablets", to tablets.

Many businesses continue to be affected by the technological trends surrounding mobile, but perhaps none more than retailing (Shankar, Venkatesh, Hofacker and Naik 2010). The portability of mobile devices means that the customer has a device with her near to and within the retailer's space. Traditionally, customers enter the retailer's space but with mobile devices retailers can invert the paradigm and enter the customer's personal environment. In fact, the location-centric services enabled by mobile platforms change the nature of the primary source of competitive advantage in retailing, namely location. (Shankar et al. 2010).

In parallel with the growth of mobile technology is a nascent but growing interest in gamification (Marchand and Hennig-Thurau 2013; Terlutter and Capella 2013). Consistent with the literature (Blohm and Leimeister 2013; Groh 2012; Huotari and Hamari 2012), we define gamification as the use of game design elements to enhance *non-game* products and services by increasing customer value and encouraging value-creating behaviors such as increased consumption, greater loyalty, engagement, or product advocacy (Blohm and Leimeister 2013; Zichermann and Cunningham 2011). For example, users of My Starbucks Rewards earn gold stars for using the mobile app to pay and are granted status levels and benefits at different star levels. As another example, Daily Challenge from MeYou Health sends its users a challenge to engage in a healthy action every 24 hours. Users earn points for each challenge completed and are encouraged to share their success with their connections who, in turn, are encouraged to provide supportive posts. It should be pointed out that the non-game use of game-like elements is not new (Blohm and Leimeister 2013). For example, many loyalty programs include points (e.g., miles) and status (e.g., platinum, gold, etc.). However, gamification may be distinguished from traditional loyalty programs by providing added social and motivational benefits through product usage rather than just expenditures (Blohm and Leimeister 2013; Huotari and Hamari 2012).

The ubiquity and other aspects of mobile technology make it particularly well-suited to gamification, a strategy that has already become an important component of many mobile service offerings as firms seek to enhance enjoyment, engagement, and retention. Millennials in particular are heavy users of both game technology and mobile phones (Zickuhr 2011). The technique is also especially useful to reach consumers in phone-centric parts of the world.

Gamification executed on the mobile platform has the potential to impact an important set of retailing outcomes; to entertain customers, to accelerate repurchase, to retain customers, and to contribute to in-store engagement. In fact its impact might be felt throughout the consumer decision process. Further optimism might be justified from what we know about video games, which have been shown to enhance arousal (Poels et al. 2012); self-efficacy, competence, relatedness, and autonomy (Przybylski, Rigby, and Ryan 2010; Ryan, Rigby, and Przybylski 2006); and to facilitate social interactions that enhance learning and encourage teaching (Albuquerque and Nevskaya 2015).

Despite the promise, our own academic intuition, based on interactions with gamified interfaces offered by a wide variety of service firms and backed up by what game design practitioners are saying (Deterding 2012; Ferrara 2013), is that much of what passes for gamification fails to live up to its possibilities. For one thing both the literature and practice tend to focus on points and awards, neglecting other game design elements that can be used to create a more game like experience including challenges and narratives, social connections, and visual design (Conaway and Garay 2014). To that list we can also add mystery, surprise, and discovery (Schell 2008). Many of these other elements are particularly suited for mobile platforms. For example, HelloLocal is used by shopping mall operators to engage consumers in treasure hunts in which beacon technology provides clues to complete a treasure map (Cameron 2015). One of

the goals in this work is to organize all game design elements and thereby expose the full

theoretical and practical range of mobile gamification. A second goal is to carefully work

through our organizational scheme and investigate each gamification element, offering

appropriate theoretical background for its uses and pitfall along with open research questions.

To achieve these goals we draw on the ideas of Jesse Schell (2008), whose Elemental

Game Tetrad Model provides a coherent and logical way to look at how designers can encourage

positive marketing outcomes of gamification. We use this model as the basis for posing a series

of research questions about the impact of mobile gamification design on mobile marketing

outcomes. In this way we hope to help the field to develop a fundamental understanding of how

gamification can enhance mobile marketing, including mobile advertising (Grewal, Bart, Spann

and Zubcsek 2015), mobile promotion (Pancras, Andrews, Goehring, Hui and Thornswood

2015), mobile shopper marketing (Shankar, Kleijnen, Ramanathan, Rizley, Holland and

Morrissey 2015).

We will start by discussing the four tetrad elements and their impact on marketing

outcomes. From there we will discuss product-side moderators of the impact of the tetrad

elements on marketing outcomes, followed by consumer-side moderators of the tetrad-outcome

relationship. Thus our conceptual model, and the flow of this paper, correspond to Figure 1.

Insert Figure1 About Here

Tetrad Gamification Elements

A widely acknowledged framework for designing games is the Elemental Tetrad Model

proposed by Schell (2008). It consists of four elemental design characteristics that interrelate and

serve to create a cognitive and affective ecosystem around the theme of a game, for example competition, skill development or enjoyment. We propose these four elements are applicable to gamification. In Schell's view, all four elements must be carefully aligned in order to create player immersion and engagement. The first element, *story* or the narrative format, provides context to a game and adds meaning to the consumption experience. *Mechanics*, the second element, refers to rules and structural aspects of games and is concerned with how success is recognized by reward, incentive structures and game levels. Game mechanics enable players to know how to maneuver through the game and to form an impression of what is expected and rewarded at hierarchical game levels. The mechanics enable a game dynamic that in turn creates a specific user experience (Huotari and Hamari 2012). Third, *aesthetics* or the look and feel of a game instill games with a sense of purpose and strengthen the development of the storyline. For many games, a focus on visual imagery and presentation is important to creating an immersive experience, although other senses may come into play. Finally, *technology* pertains to how the medium, in our case the mobile platform, shapes the game experience. For instance, the fact that a mobile device is in effect a networked computer creates opportunities for interactivity and dynamic game play.

The tetrad framework provides an integral approach to designing gamification exchanges by linking the various elements to the game-like experience. For instance, in case this experience falls short of player expectations, this may be attributed to the fact that maybe the aesthetics are not optimally aligned with the story or the technology may not adequately support feedback and incentive structures (mechanics) that engage players. In what follows we will work through each element of the tetrad, and then propose moderating relationships between tetrad elements and product factors, followed by consumer factors.

Design Element 1: Story

Most companies recognize the importance of storytelling as a persuasion strategy but have limited understanding of how the story element in (mobile) games can be effectively used for marketing purposes. Research on narrative transportation (e. g. van Laer et al. 2014) provides important insights into the importance of the story. Narrative transportation refers to "a convergent process, where all of the person's mental systems and capabilities become focused on the events occurring in the narrative." (Green and Brock 2000, p. 701). van Laer et al. (2014) argue that this is a three-step process. First, it is important that the receiver focusses attention on the development of the story and analyses it. Subsequently, narrative transportation is achieved through two components; mental imagery and empathy. While mental imagery signifies that a story receiver imagines that she feels part of the story, empathy reflects the receiver's attempt to understand and relate to the story character. Taken together, these two components create the illusion known as "suspension of disbelief" that transports one into the story of the game. In effect, narrative transportation results when the player is psychologically "lost" in that story. Stories provide relevance and meaning to the player experience, context for the application of tasks, and guide action. Building a narrative means answering questions, such as: What is the setting? Who is the hero? What can the hero achieve?

Approaching mobile gamification from the perspective of story-telling holds the promise of a powerful persuasion strategy. When transported, players tend to be less aware of their own beliefs, attitudes, and intentions as they become engrossed in how the story in the game unfolds. This is in contrast to analytical or fact-based persuasion where people are inclined to draw on prior beliefs (Petty, Cacioppo, and Schumann 1983). Consequently, narrative transportation "may lead to at least temporary acceptance of values and beliefs that represent a shift from the

individual's existing beliefs" (Slater and Rouner 2002, p. 177). Taking this into account has the potential to render game associated advertising more effective.

Most commonly, advertising and in-app purchasing are used to convert players into payers and generate external revenues. Unfortunately, the business case may get in the way of the game, as in-game advertising and selling disrupt the narrative experience and are often viewed as intrusive by players. A greater focus on narration may help mobile marketers who seek ways in which mobile marketing and gamification are integrated such that the game-like experience is not threatened and mobile revenues are generated (Walden 2013).

One important question is whether marketing activities should be congruent or incongruent with mobile gamification narratives. The theoretical and empirical evidence is equivocal (Krammer 2014). Ads in mobile games are generally regarded as intrusive as they draw attention away from the purposeful act of gaming (Li, Edwards and Lee, 2002; Truong and Simmons, 2010). On the other hand, intrusiveness may make an ad stand out and thus be more effective. These alternative expectations are based on two rival effects: (1) priming and (2) interference. While the former is based on the idea that playing a mobile game or gamified app activates a scheme that makes processing of a congruent ad easier (De Pelsmacker, Geuens and Anckaert, 2002), the latter is derived from the assumption that thematic blending of game and ad will diminish ad recall (Furnham, Gunter and Richardson, 2002). Similar competing predictions involve congruence between game and marketing goals. For example if mobile game advertising is not goal related players are less likely to click (Cho 1999) and may not interact with the ad beyond the involuntary exposure. In other words, there will be an interference effect. Alternatively, low levels of attention to the ad may lead to pre-attentive processing and a more

favorable advertising attitude (Shapiro, MacInnis and Heckler 1997). This leads us to posit the following research question:

RQ1: How does thematic congruence impact the marketing effectiveness of mobile gamification?

An equally important issue is whether narrative transportation is the process that can potentially explain why congruence between the game story and marketing enhances or diminishes marketing effectiveness (Krammer 2014). When processing narratives, people construct mental models specific to the events that occur in the story in which they are engaged. In case this process is interrupted it is likely to negatively affect narrative transportation (Zwarun and Hall 2012). It has been argued that processing ad information diminishes the ability to process the story line, and therefore, decreases the likelihood of narrative transportation (Wang and Calder 2009). It could also be argued that congruent advertising, which is less disruptive, may therefore have a positive effect on narrative transportation in mobile gaming. A possible alternative explanation, however, is that a thematically congruent ad message in mobile gamification leads to lower levels of narrative transportation. For instance, Mandler (1982) suggests that information congruent to the media context has a higher chance of being processed, taking processing capacity away from the actual narrative thus reducing transportation. Finally, if the level of immersion is high i.e., narrative transportation is large and significant, the player may have fewer psychological and attentional resources available to process the advertising information due to depletion (Vohs and Heatherton 2000).

Additionally, the influence of narrative transportation on advertising outcomes, like recall and attitude toward the ad could be explained taking into account the fact that unconscious persuasion takes place when people are transported and this has the ability to have an impact

beyond the narrative of the game (Green and Brock 2000). It is likely that non-disruptive or thematically congruent advertising will have an impact (positive or less negative viz-a-viz disruptive advertising (c.f., Wang and Calder 2009). The positive experience associated with narrative transportation is then transferred over to advertising evaluations (Green and Brock 2000), although there are some indications that this, in turn, is attenuated when advertising is not goal-relevant (Durkin and Wakefield 2008). In addition, narrative transportation could mediate the role between thematic compatibility, the advertised product, and the consumer. This is likely to be driven by congruence (Oppenheimer and Olivola 2010) between the narrative and the product (e.g., a game that is a quest and a product that is congruent with journeys) or between the narrative and the consumer (e.g., an early adopter may be more willing to submit to immersive experiences rather than a late adopter).[1] Congruence and fit could also lead to feelings of fluency, thus impacting preference formation for the advertised products (Novemsky et al. 2007). This leads us to formulate the following research question:

RQ2: What is the mediating role of narrative transportation between thematic congruence and the marketing effectiveness of mobile gamification?

How congruence functions may depend on regulatory fit (RF). Research could then explore how game engagement might be stimulated when there is a match between the player's goal orientation and the goal being pursed in the gamified app (e.g., Higgins, 2006). The key idea behind Regulatory Fit Theory is that each individual has a different motivational orientation, or regulatory focus, and that these vary from a promotion focus (motivated by achieving gains)

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[1] An example of this is use of virtual reality headsets (e.g., the Oculus Rift) in gaming. The immersive 3D experience of such headsets is not completely free of side-effects, the most common being nausea (others being blurry vision while gaming and a feeling of being overwhelmed). However, for narrative where 3D immersion is required, early adopters are willing to deal with the side-effects (Rubin 2014).

to a prevention focus (motivated by avoiding losses) (e. g., van Noort, Kerkhof and Fennis 2008). RF theory posits that fit affects perceptions of the value of an experience through both the sense of "feeling right" and the level of engagement (Lee, Keller, & Sternthal, 2010). High RF has the potential to intensify the experience of thematic compatibility, such that positive reactions become more positive, whereas negative reactions become more negative (Avnet & Higgins, 2006). RF increases the motivation to process information, makes people more attentive to a message, and more willing to spend time playing (i.e., engagement induces processing fluency) (Lee et al., 2010). Through the experience of fit, players should feel better about playing the mobile gamified app. In terms of the underlying mechanism, we argue that the "feels right" experience and a sense of enjoyment may lead to an increase in the marketing effectiveness of mobile gamification. However, the way in which RF influences players could vary between verbal and nonverbal formats. Verbal routes of regulatory fit are based on ad claims or product information. Nonverbal RF routes are processed through visuals and observed movements, or in general, the look and feel of an ad (Mourali and Pons 2009). Since nonverbal stimuli are more compatible with mobile gaming platforms we posit that visual marketing-related stimuli are more effective in the context of mobile gamification.

RQ3: What is the mediating role of nonverbally induced regulatory fit between thematic congruence and the marketing effectiveness of mobile gamification?

The type of story played out in a game is conditional on its genre. Genre categories include action, fighter, puzzles and racers (see Marchand and Hennig-Thurau 2013 for a more inclusive list). Recent advances in mobile technology are impacting the development of game genres, which are likely to differ in terms of the impact and effectiveness of marketing-related content. In one example of what is known as a serious game, health improvement is often cited

as new development in mobile gaming, fueled by mounting evidence that mobile games help players to relax and improve their general mental health. A game such as Fit Brains is designed to stimulate cognitive abilities and mental effort sustenance. Likewise, mobile games are now technically capable to assist consumers in making healthy food choices, develop math skills and increase reading speed. The technology offers the possibility to monitor behavior and allows for testing at different levels. It is important that in evaluating the marketing potential of mobile gamification attention is paid differences across genres of games:

RQ4: How does genre impact the marketing effectiveness of mobile gamification?

Design Element 2: Mechanics

Game mechanics refer to the game's procedures and rules, how players achieve goal, and how they are rewarded. Common mobile game mechanics include badges, points, progress bars, and leaderboards, although it has been argued that these ultimately refer to "forms of feedback within the game" whereas the real power of games is generated by forcing users to make meaningful choices in the pursuit of difficult goals (Deterding 2012). Salen and Zimmerman (2004) also argue that a core element of effective game design is to create an experience that is meaningful in the sense that there is a clear connection between player actions and game outcomes. Reward systems help in motivating players, creating loyalty to the game. The mechanics of a game provide the feedback that makes game outcomes comprehensible and which signals social status.

Numerous design choices appear under the topic of mechanics, including public versus privately viewable incentives; categorical, continuous, symbolic, or monetary incentives; and the role of goal achievement and progression. For instance, recent research (Shen, Fishbach, and Hsee, 2015) has demonstrated that rewards of uncertain magnitudes tend to motivate people

more than rewards with known magnitudes, even when the expected value of the uncertain incentive is lower. This motivating-uncertainty effect occurs when people concentrate on the process of obtaining the reward instead of the actual outcome of the reward. Given the competitive nature of games and the inherent enjoyment in playing games, it would be interesting to assess whether the motivating-uncertainty effect is a dominant force in driving the mobile gamification experience.

It would also be of interest to assess whether the so-called goal gradient hypothesis (Kivetz, Urminsky & Zheng, 2006) applies in the context of mobile gamification. The idea is that people tend to increase effort as they approach rewards (Kivetz, Urminsky, & Zheng, 2006) or approach visual finish lines (Cheema & Bagchi, 2011). Similarly, it is of interest to assess whether helping players get started through the use of initial bonus credits, for instance, would increase the likelihood of reaching a higher level in the game. Alternatively, sensory experience could be intensified by as players approach their next level. In fact, in the popular Peggle game increasing sound intensity is used to encourage goal attainment.

Research on meritocratic governance systems demonstrates the ways in which ranking systems form the basis for providing selective incentives (Olson 1965; Willer 2009). In the gamification context, this phenomenon is referred to as "badging". Badging describes the contingencies under which visual identifiers are provided to reflect the merits of a player's accumulated achievements and within-game social position, as seen in World of Warcraft and other games. This accumulation of symbolic capital (i.e., points or other symbols associated with status) can sometimes become dysfunctional from a marketer's point of view. Such symbolic capital must be integrated with real world currencies and with marketing goals related to the firm's goods and services. Integration must be done with care since it may "break the spell" of a

closed gaming world, sometimes referred to as the game's magic circle (Lin et al., 2007). For mobile gamification, it is unclear how symbolic capital should be converted into real capital (such as discounts on products or services) to maximize engagement while avoiding player frustration and exit:

RQ5: How does reward structure impact the marketing effectiveness of mobile gamification?

The notion of rewards leads us to the topic of motivation and its categories. The use of incentives, such as financial rewards, is commonly based on the need to drive extrinsic motivation (i.e., the accumulation of material gains). However, it has been widely demonstrated that over time the effect of incentives decreases and even undermines intrinsic motivation. Blohm and Leimeister (2013) argue that this may not the case with game-based incentives that reflect game-specific symbolic rewards (e.g., points or badges), as their collection provides visual evidence of one's performance, help in documenting progress towards personal goals, facilitates social interaction in a community of peers and in the competitive environment and function as instruments of social recognition within games. In this way incentives such as point and badges serve to accommodate both intrinsic and extrinsic motivators. However, other research suggests that reward structures, such as virtual goods and prizes for reaching different levels, need to be continually offered to maintain interest; taking these away leads to consumer abandonment (Nevskaya and Albuquerque 2015). In other words, for many consumers, these extrinsic incentives are never fully internalized.

RQ6: How does the mix of intrinsic and extrinsic rewards impact the marketing outcomes of mobile gamification?

Flow is defined as an optimal psychological experience that comes with the correct balance between a challenge and the skills available to deal with it (Csikszentmihalyi 2014). Flow has been widely used to understand interactive media consumption (see Hoffman and Novak 2009 for a review) and one might therefore assume that well executed gamification could induce flow although there is no empirical evidence for this assumption. The presence of is important to managers since flow benefits brand attitudes, purchase intention, unplanned purchases, and online purchases in general (Hoffman and Novak 2009), in both exploratory and goal-directed activities (Novak, Hoffman and Duhachek 2003).

The importance of flow suggests that gamification designers will need to get the level of challenge right. One problem is that increased difficulty in more advanced levels leads to game abandonment (Albuquerque and Nevskaya 2015). Other research suggests that gamification features that rely on tacit knowledge, such as navigation, are better learned through concentrated practice whereas explicit knowledge, such as written instructions, is better acquired by spaced learning sessions. To the extent that consumption, satisfaction, and loyalty depend on consumer proficiency and the strength of practice effects (Johnson, Bellman, and Lohse 2003; Lakshmanan, Lindsey, and Krishnan 2010); and the extent to which interface mastery is required for games to meet the psychological needs of competence, autonomy, and relatedness (Przybylski, Rigby, and Ryan 2010); it is important that marketers consider how and whether consumers will develop sufficient proficiency to benefit from gamification elements. More generally, ease of use is a critical determinant of the perceived usefulness of mobile services (Gao et al. 2013).

RQ7: How do reward difficulty levels impact the marketing effectiveness of mobile gamification?

Mobile gamification offers the opportunity to generate at least two types of non-monetary value propositions for consumers. In addition to the economic value of reward structures, mobile gamification offers self-development through experience and obtaining knowledge, but also engagement in social interaction and competition. Epistemic value, which refers to the cognitive benefits of skills, information acquisition and learning (Nambisan and Baron 2009) can expand players' knowledge and expertise. Social value, through the appreciation, compliments and reciprocal exchange with others, can also motivate players (Nambisan and Baron 2009). Mobile gamification mechanics that encourage social interaction create an atmosphere of camaraderie, build social bonds, and facilitate future interactions (both with the brand and other players).

RQ8: How do mobile gamification mechanics that foster epistemic versus social value impact the marketing effectiveness of mobile gamification?

In addition to reward, level of difficulty, knowledge and social exchange mechanics, mobile gamification designers need to make choices about the gamer's visual perspective. In some games, game action is seen through the eyes of a participant. In others, the perspective is that of an observer. A participant with a first person perspective (e.g., in a driving game) is likely to behave more viscerally and act on limited data (his/her perspective) while a participant with an observer's perspective is likely to engage in more detached and deliberative actions. The marketing effectiveness of such gamification mechanics is unknown, and we therefore ask

RQ9. How does the visual perspective of the participant impact the marketing effectiveness of mobile gamification?

Design Element 3: Aesthetics

Appearance matters in creating an engaging experience. A case in point is the Bad Piggies game, which features one of Angry Birds' supporting characters in its own game. This successful game is often mentioned as an example of effective aesthetics. Pigs feature consistently in the logo, the icon and the game. Pig noses are used to dot the i's throughout to emphasize that Bad Piggies is a character-centric game. Since the bad piggies are green, this color is heavily emphasized and different hues of the base color are used to create the illusion of depth even on small mobile screens. The main characters fly airplanes which have to be created, and the eyes of the pigs track finger movements as airplanes are being built. The bad piggies show detailed facial expressions of joy (e.g., as they are tumbling down slopes). All of these aesthetic features and character quirks are characteristic of a game gestalt, or creative vision, that enhances engagement; perhaps through narrative transportation. This should enhance the effectiveness of associated advertising and within-game product placement. Future research can examine this idea by asking:

RQ10: How does the creative vision impact the marketing effectiveness of mobile gamification?

Visual semiotics is another aspect of game aesthetics that focuses on how various elements in visual representations signal meaning (Rose 2012). An essential semiotic distinction is made between conceptual and narrative representations. Pictorial representations of products in games (e.g., the TNT brand on a Bad Piggie airplane) are conceptual in that they are stable and represent a generalized brand signal (Kress and van Leeuwen 2006). In contrast, narrative representations depict transitory processes of visual elements denoting behavior (e.g., a game character drinking a branded soft drink). An avenue for further research would be whether mobile gamification that uses narrative, as opposed to pictorial representation (see also Paivio's

1971 dual process theory), is more or less effective in terms of enhancing online engagement, purchase intention and reducing price sensitivity.

RQ11: How do conceptual versus narrative representations impact the marketing effectiveness of mobile gamification? Finally, given the increased popularity of user-generated images and social network sites, such as Pinterest and Instagram, an important research question is whether snapshot aesthetics are more effective than other design aesthetic choices. Snapshot refers to a style that is generally perceived as more 'real' and 'authentic' and characterized by off lighting, blurred focus, harsh contrast and shaky movements (Schroeder 2012). This style of aesthetics gives products a more dynamic and contemporary look. For example, a pertinent research direction would be to examine whether snapshot-like design elements contribute to brand authenticity.

RQ12: What is the impact of snapshot (vs. other) aesthetic formats on the marketing effectiveness of mobile gamification?

Design Element 4: Technology

Technology is the medium through which the story is told, the mechanics operate, and the aesthetics are presented. For one thing, gamification designers will increasingly assume broadband access. For another, the shift from specialized consoles to generic smartphones continues, mobile games and gamification will likely bring new, casual, gamers into the domain of gaming. These consumers are looking for games to provide transient benefits, e.g., relieving boredom while waiting in line, rather fully immersive gaming experiences. Retailers and others catering to the mass of mobile consumers will need to take into account - given that the cognitive resources available to mobile games are low – that games that have very low barriers to entry will become more popular. Low barriers to entry and rapid technological changes will likely lead

to a succession of new games replacing current games in popularity at a rapid pace. Gamification will therefore require that designers produce a series of games. Thus mobile gamified apps will resemble a continuous service rather than a single, fixed good.

Although consoles will likely become even more specialized for the serious gamer, the mobile platform will keep evolving as well. For instance, the introduction of the iPhone 6 and 6+, as well as the development of Samsung's Galaxy models, are driving change in the mobile gaming landscape. With larger devices, including tablets, players are able to immerse themselves in a more engaging experience. There is anecdotal evidence that screen size (and computing power) matters; industry studies reveal that tablet owners download and play more extensively than mobile phone owners (Mintel 2013). Mobile devices are used in a variety of physical and social environments and the environment, as well as the form factor of the device itself changes the way players hold it (i.e., landscape vs. portrait). The physical actions of tapping, scrolling, swiping, pinching and typing likely depend on their technological context. Thus subtle game experience antecedents may have important implications for using mobile gamification as a marketing vehicle.

RQ13: How does the platform impact the marketing effectiveness of mobile gamification?

Mobile devices are becoming more personal and more intimate as the market for wearable devices or "wearables" is set to explode (Stern 2015). The growth in wearables will primarily be driven by smartwatches and fitness trackers; hardware that does not have any roots in gaming. Consumer interest in wearables is driven by the ease of tracking individual data in domains such as fitness, health and the "quantified self." The vast majority of apps that leverage such personal data use gamification principles (visual cues, threshold targets etc.) to increase engagement and usage. Design will need to cope with both the vast amount of new data available

to customers and the potential ability of apps to leverage these data. Gamification designers will also have to consider two possible strategies, one for software and one for hardware. For software, we envision synergistic games that incorporate personal data into the gamification environment in a seamless manner (e.g., using data from a heart rate monitor in a first person shooter game). The second strategy would be to develop wearable hardware that is customized for gaming but also allows for other data collection (e.g., virtual reality equipment that can also be used to consume entertainment).

RQ14: How will wearables impact the marketing effectiveness of mobile gamification?

The notion of narrative transportation discussed above was originally developed for oral and verbatim story-telling contexts. Narrative transportation has recently been extended to the study of games based on the premise that these formats are characterized by a higher degree of media richness (Biocca, 2002) which leads to greater narrative immersion. For instance, Polichak and Gerrig (2002) suggest that the use of audio-visual elements in games generates a richer participatory response by engaging the sense of hearing. Game narratives that are as immersive as traditional stories enhance player experiences above and beyond media effects (e. g. TV vs. text).

RQ15: How does the platform moderate the impact of gamification story on the marketing effectiveness of mobile gamification?

A typical console game has a relatively low entry barrier for new players but the difficulty of the game grows in a non-linear fashion as the player becomes more and more proficient at the game. However, with mobile gamification, the relative lack of involvement and need gratification objective make this non-linearity unappealing. Thus, relative to console games,

gamified mobile apps are likely to have a more linear reward to effort structure. This leads us to ask

RQ16: How does the platform moderate the impact of gamification mechanics on the marketing effectiveness of mobile gamification?

The smaller form factors of mobile relative to console or computer games makes it hard to embed rich graphics into apps. However text heavy games also poses similar challenges. Thus we would posit that mobile games will have bright block graphics, simple layouts and minimal text to draw attention and engagement within the small form factor. This type of thinking leads to the general question,

RQ17. How does the platform moderate the impact of gamification aesthetics on the marketing effectiveness of mobile gamification?

Playing a game necessitates the taking on of a role. These roles can be that of an individual or a person within team. Team gaming, where teams are either chosen by the players or the platform, typically relies on participants taking different roles in order to complement each other in their quest to achieve a common objective. For example, in games such as Battlefield 4, team members play roles as shooters/snipers, prospectors, pilots, etc., in order to succeed at a specific mission. Similarly to all interface design, mobile gamification will be challenged by small screens on mobile devices and the more so when social presence needs to be represented. We might suppose then that individual identities will be preserved more strongly on mobile gamified apps relative to group identities. In general we ask,

RQ18: How does the platform moderate the impact of identity expression on the marketing effectiveness of mobile gamification?

Product-Related Moderators

The impact of design characteristics on the marketing effectiveness of mobile gamification should vary by product type. For example, a narrative focused on consumer actions may be more appealing for utilitarian products while a narrative around reactions to product experiences may work better for hedonic products (Moore 2015). The effect of mechanics, such as the use of real names or publicizing rewards, should depend on the extent to which products are used to signal identity (Berger and Heath 2007). Aesthetics should be more important for hedonic than utilitarian products, although both types of products should benefit from enhanced aesthetics (Alba and Williams 2013). The importance of particular technology features, such as virtual reality, should also be more important for products that are highly experiential (Suh and Lee 2005). Just as marketing goals vary along the produce life cycle, the optimal type of narrative will necessarily need to vary as products move from introduction to maturity (Day 1981).

RQ19: How do product characteristics moderate the impact of story, mechanics, aesthetics and technology on marketing effectiveness?

Consumer-Related Moderators

The extent to which gamification enhances mobile services should depend on consumer goals. For example, gamification can be used to meet enjoyment and entertainment goals but, because gamification may lower ease of use, it may interfere with utilitarian and instrumental goals (Nysveen, Pedersen, and Thorbjørnsen 2005). More specifically, a rich story may be helpful when a consumer has a learning goal (since narrative transportation is associated with greater self-referencing, and therefore greater learning; Escalas 2007). Similarly, the effect of

game mechanics may depend on consumer proximity to particular goals as well as the mechanics of goal achievement (Kivetz, Urminsky & Zheng, 2006; Zhang and Huang 2010). For example, as mentioned earlier badges and other rewards often become more salient as one approaches a particular reward level (Cheema & Bagchi, 2011; Kivetz, Urminsky & Zheng, 2006). The effectiveness of mechanics that encourage social interactions versus learning should depend on whether consumer goals match these mechanics. The effectiveness of playful aesthetics should depend on fit with consumer mood (Puccinelli 2006). The impact of the technological capabilities of gamified environments should depend on consumer needs for large amounts of (rich) information versus simple interfaces to make easy and quick decisions.

RQ20: What is the moderating effect of consumer goals on the impact of story, mechanics, aesthetics and technology on the marketing effectiveness of mobile gamification?

Consumer characteristics should also moderate how gamification design impacts marketing effectiveness. In terms of consumer characteristics, research on online gaming shows that although the majority of consumers, who are extrinsically motivated, increase participation in response to rewards such as virtual goods; a minority, with stronger use habits and stronger intrinsic motivation, are unaffected by reward offers (Nevskaya and Albuquerque 2015). Other research shows that the importance of different game features is different for older versus younger consumers (Park and Lee 2011). Other research suggests that the attractiveness of gamification features will depend on consumers existing game use, whether this use is habitual or occurs across different contexts, as well as consumers' addictive tendency to play games (Hartmann, Jung, and Vorderer 2012).

In terms of specific design elements, the effectiveness of particular narratives in achieving transportation and enhancing persuasion, is likely to depend on compatibility with the

consumer's regulatory focus (Aaker and Lee 2001; Higgins, 2006). For example, gamification that tells a story on individual achievement is more likely to appeal to individuals with a promotion focus whereas a narrative around social connections is more likely to appeal to those with a prevention focus (Aaker and Lee 2001). The effectiveness of mechanics, such as reward structures and goals, should also depend on individual differences in risk aversion and reward seeking (Hamari, Huotari, Tolvanen 2015; Nevskaya and Albuquerque 2015). The role of aesthetics in enhancing gamification effectiveness should depend on the extent to which consumers have a strong connection to aesthetic dimensions of marketing offerings (Bloch, Brunel and Arnold 2003). The effects of technology design to enhance gamification should depend on individual consumer experience, age, and gender (Venkatesh, Thong, and Xu 2012).

RQ21: How do consumer characteristics moderate the impact of story, mechanics, aesthetics and technology on the marketing effectiveness of mobile gamification?

A related theme is how the context in which consumers employ their devices changes their interactions or usage patterns and the impact of gamification design elements. Unlike computers, mobile devices are used while standing, walking, on public transport, etc. Moreover, players hold devices in very different ways (i.e., landscape vs. portrait) and tapping, scrolling, and typing behaviors may differentially impact click through behavior on within-game banners. These subtle game experience antecedents may have important implications for using mobile games as a marketing vehicle.

For example, a rich story may be counterproductive when using a mobile in a car. However, to the extent that the consumer's physical location can be integrated into the narrative, this many increase narrative immersion and enhance the consumer experience. Similarly, the effectiveness of mechanics like loyalty points for visiting a retail outlet should depend on the

consumer's physical distance from the outlet. The effect of technological capabilities, such as the ability to continue interactions across multiple platforms, will depend on the extent to which the consumer uses multiple devices for a shopping session.

RQ22: How do usage context characteristics moderate the impact of story, mechanics, aesthetics and technology on the marketing effectiveness of mobile gamification?

Conclusions

We began this work operating under the assumption that game design principles had not been thoroughly leveraged in practitioner gamification design. Gamification is claimed to enhance loyalty, customer engagement, and motivation (Blohm and Leimeister 2013; Zichermann and Cunningham 2011). However, there is limited empirical evidence of these effects (Hamari, Koivisto and Sarsa 2014). Rather than pick gamification elements in a vacuum, we believe a better forward would be for researchers to utilize the fundamental elements of game design – the Schell (2008) tetrad of story, mechanics, aesthetics and technology. We note that these have been poorly investigated by marketing academics, if at all, both in a general and a specific (mobile gamification) setting. We are of the opinion that gamification is not a fad. Whenever gamification process design impacts the customer, marketers should take the lead on understanding and improving design. We hope to have contributed to this understanding at its onset.

Researchers might utilize a variety of data collection approaches to explore answers to our research questions. Long duration data collection from students, customers or panel members using experiments to manipulate the story, aesthetics, mechanics or technology across groups would seem to an ideal approach. We expect many firms to engage in A/B testing for the mobile

gamification apps. Another approach for academics would be to collect company data to compare marketing results across companies that used different approaches to gamification.

Game activity throws off quite a lot of data at the individual level (Jolley, Mizerski and Olaru 2006), and the task of modeling such data is nontrivial. Additional questions arise when dealing with team games and the appropriate level of analysis. In addition to the substantive research questions we have posed, many methodological questions and payoffs exist in this area.

In summary, more and more the real economy is being supplemented with additional symbolic economies; miles, points, and the various tokens of a gamified world. This trend is mostly playing out on mobile devices. We believe retailers can help themselves in such a world with well thought out gamification tactics.

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Figure 1: Overview of the Current Approach