Gamification Design for Increasing Customer Purchase Intention in a Mobile Marketing Campaign App

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Abstract. Mobile apps have been developed for marketing purposes and for creating new opportunities for firms to communicate with and satisfy their target audience. However, numerous mobile apps are added daily to the Google Play and Apple App Store. This study developed a mobile application to encourage customers to participate and engage in a marketing campaign in order to increase their potential opportunity for making purchases in an internationally branded apparel store. In this study, we applied a systematic framework of Internet marketing with four strategic stages: attract, engage, retain, and monetize, for guiding and ensuring the success of the marketing campaign. Two human factor researchers were planned, and we administered a focus group interview with six computer game designers for retrieving persuasive game mechanics from existing games. Afterward, we classified the collected gamification mechanics into the four stages, according to their Internet marketing functionality. By referring to the generated gamification mechanics, we then developed a mobile application for supporting a apparel store marketing campaign. Customers' engagement behavior and purchase results were measured. This paper discussed the implications of this study on both research and practice.

Keywords: mobile app, gamification, augmented reality, social network.

1 Introduction

Gamification design is a new HCI approach that involves using the application of computer game design elements to solve nongame problems, which is a new HCI research area involving several real cases, particularly for applications in sales and marketing [1-2], management and administration [3-4], and educating young people [5-7]. Gamification technologies have been proven to be able to manipulate either

individual or social factors for motivating customers' intentions and changing customers' behavior [8-10]. For example, a Starbucks mobile app, called My Starbucks Rewards, provides customers with an incentive system that promotes repeat visits. The Starbucks app rewards customers with a gold star every time they use it to pay for a transaction. As the customer reaches the first 5-star milestone, that customer is immediately rewarded with a "Green Level" status and is granted free refills of coffee purchased that day.

In this study, we applied gamification technologies to develop a mobile application for encouraging customers to engage in a marketing campaign and increasing the potential opportunity for making purchases in an internationally branded apparel store. Specifically, we first developed a gamification framework with four strategic stages: attract, engage, retain, and monetize, by adopting an online marketing framework [11]. Based on the proposed framework, the related gamification design feature, which we expected to achieve the Internet marketing goal of each stage in general, was generated and introduced in session two. Session three involved identifying the appropriate gamification feature from the results of session two, and we realized those features as a mobile application regarding iOS and an Android version in session four. Finally, we analyzed the campaign marketing results by collecting data from both the mobile application database and the brand's Facebook page insights.

2   The Internet Marketing Framework and Related Gamification Technologies

In this study, we developed a framework with four stages: attract, engage, retain, and monetize, for general online marketing and Internet business operation purposes. Using gamification technologies, the framework was expected to reinforce the participants' motivation to engage in a marketing campaign and to retain the mobile application of the marketing campaign. The ultimate goal of the gamification framework was to increase the purchase intention of the campaign participants and to monetize the apparel store.

Specifically, "attract" refers to enticing customers, so that they become aware of, understand, and ultimately accept and adopt the services or products; for example, free for a limited time gamification mechanics cross-site quests, and dynamic social feeds. "Engage" represents satisfying customers through positive experiences in interacting with the provided services or applications; for example, by using gamification mechanics such as the progress bar, item collection, and leaderboards. "Retain" involves the customers' loyalty to reuse or revisit the services or products, as well as related gamification mechanics such as daily visit rewards, virtual characters, and community systems. "Monetize" means to increase customers' intentions to purchase and, in turn, to create revenue or cash flow for the Internet service; for example, by using gamification mechanics such as sale packages, group buying, and transition feeds.

Based on the proposed framework, the related gamification design feature achieved the goal of each stage of Internet marketing, as expected. Two human factor researchers and six junior multimedia designers were invited to gather, classify, and evaluate each gamification mechanic by reviewing and identifying possible gamification mechanics based on existing online services, including gamification platforms (e.g., Badgeville and Bigdoor), web services, mobile apps, and online game-user experience research [12]. Each of the mechanics are associated with one of the four stages of the proposed framework by using the card sorting technique. The following sections explain the four stages and the 30 gamification mechanics.

2.1   Attract—Make Users Aware of the Available E-marketing Events

The purpose of the *attract* stage is to encourage increasingly greater numbers of Internet users to become aware of, understand and ultimately use the service. There are thirteen gamification mechanics to attract users:

- voting contests: organize public voting contests using a social network plug-in (e.g., Facebook's "Like" feature); each vote will generate viral promotion for the service.
- referral rewards: allow users to share the service with their social networks for a reward (e.g., Dropbox users invite others to earn extra space).
- O2O (online to offline) rewards: cross-promote with physical brands. Users can obtain coupons from inside physical products and use them online.
- high visibility interaction: design mobile online services to include a high visibility gesture (e.g., some puzzle games require a special gesture to play) that will catch other people's attention when someone uses the service in a public space.
- require a team: require users to join or form a team before using the service (e.g., before playing table games or chess games, which require multiple users).

2.2   Engage—Encourage Users to Remain on the Site for Longer

The *engage* stage involves satisfying users and encouraging them to continue using the service. thirteen gamification mechanics to engage users:

- virtual try-on: providing users an on-line in-store changing room – that is, it enables users to try on clothes to check one or more of size, fit or style, but virtually rather than physically. The virtual try -on engage users by providing them more immersive experience.
- progress bars: simplify user tutorials into a few steps that are easy to follow. Additionally, provide rewards (e.g., points or applause) and offer clear hints to encourage users to move to the next step.
- avatar tutorials: help new users to quickly develop an understanding of the service by using a character-based tutorial (e.g., Microsoft Clippy).

- leveling systems: a common way to encourage use by allowing users to master each level at the appropriate speed. Each user's level must be visible to other members so that they can gain recognition from fellow users.
- effort-based rewards: reward users according to their contributions to the service or community; for example, reward them for sharing useful information or inviting friends to sign up for the service.
- item collection: provide item collection systems that encourage users to collect cards, badges or resource collections. Users will make an effort to complete the collections and will be satisfied with their achievement when they do so.
- group quests: create group-level goals. This will encourage the user to exert more effort on the site, not only for himself or herself but also for the team.
- virtual currency: use a virtual currency system (usually with points as the currency) to create an economic system within the service. Users will participate in a system of supply and demand and will make an effort to earn points.
- points for time spent on the site: provide virtual rewards (e.g., Experience point, virtual currency, or gifts) to users based on how long they stay on the site.

2.3   Retain—Make Sure That Users Revisit the Service and Event Frequently

The purpose of the *retain* stage is to ensure that users revisit the site or use the service frequently. To ensure that users will return, one must consider both personal and social user motivations.

- leaderboards: leaderboards are an effective way to motivate people to compete for high rankings.
- daily visit rewards: each user can receive a default or random gift on his or her first site visit per day.
- real world events: give special gifts to celebrate real world holidays and events online.
- continuous login rewards: encourage users by offering daily login rewards: those who use the site on more days will receive higher-value rewards.
- locked stages: motivate user quests using locked stages: users must pass through one stage before they can progress to the next. Offer high-value rewards in high-level stages.
- time-declining items: depreciate the value or function of virtual items over time. Users will return to the service to prevent the depreciation of virtual goods.
- subscription fee: charge users a monthly or annual subscription fee. Users will tend to return to the service frequently once they have pre-paid the fee.
- time-interval rewards: make attractive rewards available within a quest at a certain time of day (e.g., 3:00 pm). Users will tend to revisit the service at that time.
- one-week marathons: use a weekly ranking leaderboard to encourage high-ranked users to return for daily competitions and to encourage laggards to return the next week.

2.4   Monetize—Motivate the User to Pay for the Service

The purpose of the *monetize* stage is to create business revenue. This study has identified gamification mechanics that support two consumption methods—top-up and direct payment.

- sales package: sell points in packages. Users can obtain more points (or other rewards) when they purchase a large number of points at one time.
- accumulate rewards: provide rewards to users when their top-up quotas reach a certain level.
- highlight VIP users: make user levels visible on their profiles. This can help encourage users to top-up to gain recognition and benefits (ex: sales promotion code or prize) from others.
- group buying: allow users to top-up their accounts together with a certain number of friends to obtain special discounts or extra rewards.
- special talents: sell items that allow users obtain superpowers that they can use in the online service. The superiority of an item can encourage users to purchase their first top-up points.
- earned coupons: Provide coupons after user purchases that may help them to secure a win. The coupon should be able to stimulate consumption, but issuing the coupon should not cost the service anything.
- crowdfunding: Make collective action possible for users, allowing them to pool their money to do good things such as disaster relief or scientific research.

3   Applying Gamification Mechanics to Design the Mobile App for the Marketing Campaign

The mobile marketing campaign application was designed by following the proposed four Internet marketing stages, and was realized by applying both gamification mechanisms and informative technologies for achieving customer satisfaction. The mobile application was developed by the Service Systems Technology Center of the Industrial Technology Research Institute (ITRI) in Taiwan, and the application was uploaded to both Google Play and Apple's App Store by December 1, 2013.

3.1   Attract

As illustrated in Figure 1, we used O2O (online to offline) rewards as the gamification mechanism to appear in in-store posters, street flyers, and staff t-shirts for improving the marketing campaign's visibility. Users were motivated to participate in the campaign because of the appealing rewards that appeared on the posters and flyers. Based on the results of this study, we can ensure that customers will be willing to download and access the marketing campaign's mobile application.

3.2   Engage

At the engage stage, we converted the seasonal clothing and accessories of the branded apparel store from physical objects to 3D virtual objects. We used the character customization system as a gamification metaphor in the study and imported the generated objects into the system to allow users to conduct a virtual appraisal (see Figure 2). Thus, the customers can collect the 3D seasonal products by obtaining pictures from the photographs on the brochure or from the tags on the in-store goods. The app system also provided a feature allowing customers to appraise seasonal products with the augmented reality (AR) feature in the app. The customers can therefore generate photomontages by combining their own photo and the 3D objects. This feature was expected to bring a fantastic interactive experience to the customers and, in turn, encourage them to spend time in either the physical store collecting 3D objects or using the app for appraising seasonal products.

3.3   Retain

At the retain stage of the study, we applied redeemable points to reward the customers for their personal achievements and a leaderboard to encourage interpersonal competition among the customers. The two gamification features were designed by referring to the customer interface style of popular SNS games (e.g., Candy Crush Saga, and Farmville). These two features provided a reinforcing loop to satisfy the personal and social motivation of the customers. The two types of motivation were expected to encourage customers to revisit the app frequently. As shown in Figure 3, the marketing campaign leaderboard can be used to enhance and retain the user's interpersonal competition.

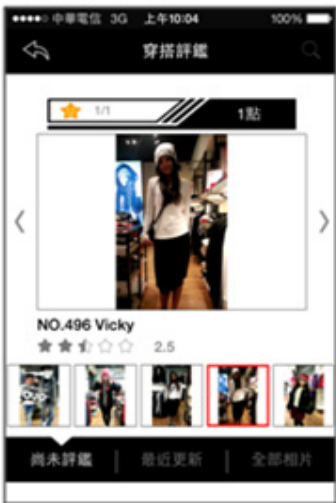**Fig. 1.** O2O rewards: providing rewards experience.

Fig. 2. Virtual try-on: engage users through providing O2O rewards a highly immersive and interactive to attract users.
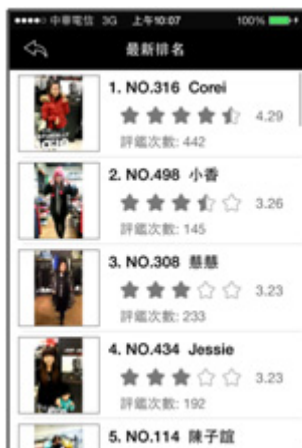
Fig. 3. Leaderboard: enhance campaign

Fig. 4. Highlight VIP users: encourage users to participant's interpersonal competition top-up to gain recognition and benefits from others.motivation to retain them

3.4 Monetize

Finally, the mobile app allows customers to display their user levels on their profiles, thereby highlighting VIP users, as illustrated in Figure 4. This can motivate users to accumulate points to gain recognition and benefits from others. The social influence from the customers' social network is the gamification feature allowing customers to receive praise and recognition from their online families and friends. This feature was expected to increase customers' intentions to purchase and to lead customers' impulsive buying.

3.5 The Evaluation of the Promotion Effect of a Gamification App on a Marketing Campaign

We evaluated the promotion effect of the proposed app after developing the four-step function in this study. We collected users' engaging and purchasing behavior data from December 25, 2013 to January 29, 2014. The engaging behavior data were collected from the app background system and the Facebook fan page. The purchasing behavior data were collected from users' in-store purchasing data and feedback.

4   Result

4.1 The Engaging Behavior of App Users

The marketing campaign attracted a total of 1456 users and created 14188 logins from December 25, 2013 to January 29, 2014. The app maintained 200 to 400 users/hour

online in session. As shown in Figure 5, all app users created 13205 "likes" for the Facebook fan page, and the gender distribution was predominantly female (92% vs. 8%), which is consistent with the general gender distribution of the branded apparel store. Regarding age distribution, 37% of the users were 25–34 years old, 29% were 18–24 years old, and 21% were 35–44 years old.
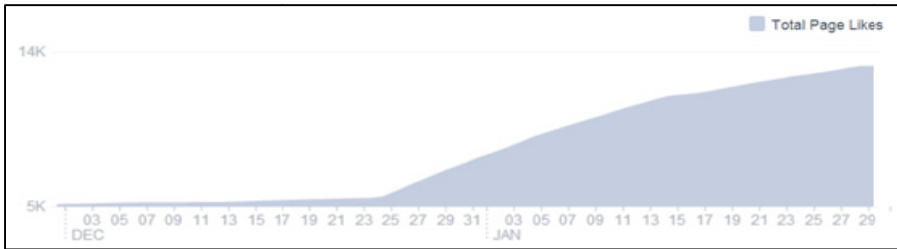

Fig. 5. The engaging behavior of marketing campaign participant on Facebook Fan Page

4.2   The Purchasing Behavior of App Users

An additional 637 purchasing behaviors were created in the app campaign. All app users uploaded 458 pictures, and 42% of the users revisited the store to purchase in session. Therefore, the users' purchasing behaviors were substantially influenced by using the proposed app.

5   Conclusion

The main goal of this study was to develop a mobile application to encourage customers to engage in a marketing campaign and increase the potential opportunity for affecting purchases in an internationally branded apparel store. Specifically, we deconstructed the processes involved in online service operations by using a model involving four stages: attract, engage, retain, and monetize. Moreover, we identified 52 gamification mechanics to determine the design implications of the mobile app. The promotion effect of the proposed app was also evaluated in this study. The limitations of this study will be addressed in our future research. The proposed gamification mechanics were not explained in detail in this study; more examples or cases of each identified mechanic will be provided in the future. Future studies will focus on explaining how these mechanics motivate people and, in turn, trigger their online shopping behavior.

References

1. Huotari, K., Hamari, J.: "Gamification" from the perspective of service marketing. In: Proc. CHI 2011 Workshop Gamification (May 2011)
2. Terlutter, R., Capella, M.L.: The Gamification of Advertising: Analysis and Research Directions of In-Game Advertising, Advergames, and Advertising in Social Network Games. Journal of Advertising 42(2-3), 95–112 (2013)
3. Stevens, S.H.: How gamification and behavior science can drive social change one employee at a time. In: Marcus, A. (ed.) DUXU 2013, Part II. LNCS, vol. 8013, pp. 597–601. Springer, Heidelberg (2013)
4. Webb, E.N., Cantú, A.: Building Internal Enthusiasm for Gamification in Your Organization. In: Kurosu, M. (ed.) HCII/HCI 2013, Part II. LNCS, vol. 8005, pp. 316–322. Springer, Heidelberg (2013)
5. Kapp, K.M.: The gamification of learning and instruction: game-based methods and strategies for training and education (2012), `http://Wiley.com`
6. Landers, R.N., Callan, R.C.: Casual social games as serious games: The psychology of gamification in undergraduate education and employee training. In: Serious Games and Edutainment Applications, pp. 399–423. Springer, London (2011)
7. Raymer, R., Design, E.L.: Gamification: Using Game Mechanics to Enhance eLearning. Elearn Magazine 2011(9), 3 (2011)
8. Shang, S.S., Lin, K.Y.: An Understanding of the Impact of Gamification on Purchase Intentions (2013)
9. Deterding, S.: Gamification: designing for motivation. Interactions 19(4), 14–17 (2012)
10. Jackson, S.: Cult of Analytics: Driving Online Marketing Strategies Using. Routledge (2009)
11. Hsu, S.H., Chang, J.W., Lee, C.C.: Designing Attractive Gamification Features for Collaborative Storytelling Websites. Cyberpsychology, Behavior, and Social Networking 16(6), 428–435 (2013)
12. Hsu, S.H., Wen, M.H., Wu, M.C.: Exploring user experiences as predictors of MMORPG addiction. Computers & Education 53(3), 990–999 (2009)