

Revenue-Generation Pattern Analysis of Mobile Social Games in Japan

Toshihiko Yamakami

Research and Business Development, ACCESS

Nakase 1-10-2, Mihama-ku, Chiba-shi,

Chiba, Japan 261-0023

Email: Toshihiko.Yamakami@access-company.com

Abstract—Feature-phone-based mobile social games in Japan have boosted their revenue since the 2nd half of 2009. The rapid growth of revenue-generation enables a wide range of trial and error for creating revenue-generation engines. The author analyzes monetization techniques used in feature-phone-based social games. The author discusses the underlying design principles behind the hype of mobile social games.

I. INTRODUCTION

There is increasing visibility of mobile social games as revenue-generating engines on the Internet. Major Japanese social network services launched an open platform strategy to open up their OpenSocial-based APIs to third-party vendors in the 2nd half of 2009. It provides a revenue opportunity for mobile social game vendors. Item-purchasing in mobile feature phones has shown a radical increase. A market estimate by the Mitsubishi-UFJ Morgan-Stanley Securities is shown in Fig. 1.

The major part of revenue comes from the feature-phone market, not the fast-growing smart phone market.

In October 2010, a survey by Mobile Marketing Japan showed that 70 % of SNS users answered that their purpose for joining an SNS was “playing games”, which outnumbered the social interactions with friends (<http://mobilemarketing.jp/commonimages/20101006press.pdf> in Japanese).

This represents an interesting turning point for Internet business, because legacy Internet business depended on a freemium model without charging end users. Revenue-generating engines have boosted the profits of major mobile social game vendors. Even the top advertising agencies, the top e-commerce companies, and the top broadcasting companies

were outnumbered by the top social game vendors according to records published in 2011.

It is interesting that there are emerging revenue-generating engines that can turn the empty virtual world into real money flow.

The author examines a wide range of monetization mechanisms that are used in feature-phone-based social games in order to provide a bird-eye view of the underlying methodologies for revenue-generation of mobile social games.

II. BACKGROUND

A. Purpose of Research

The aim of this research is to identify the key factors that drive the revenue generation of mobile social games.

B. Related Works

Social games that include item-purchasing are an emerging business domain that is gaining significant attention from industry. OpenSocial is an application programming interface standard for Web-based social network applications [1] [2] [3]. It was developed by Google and released in November 2007. All of the major Japanese SNS services provide OpenSocial-based APIs.

Nojima analyzed and conceptualized the relationship between pricing models and motivations for MMO (Massive Multiplayer Online) play [4].

Fairfield discussed the definition of virtual items [5]. Lehdonvirta discussed virtual item sales as a revenue model [6].

Guo conducted focus group studies to identify the factors that influence purchasing behavior in virtual worlds [7] and presented several factors including effort expectancy, character competency, the quality of the virtual world system, social influence, virtual item resources, personal real resources, performance expectancy, and self-actualization.

Hsu applied the technology acceptance model (TAM), which incorporates social influences and flow experience as belief-related constructs to predict users' acceptance of on-line games and revealed that 80 % of game play is explained by social norms, attitudes, and flow experience [8].

Funk described mental models in addition to the startup problem and standard setting in order to explain the evolution of the mobile Internet [9].

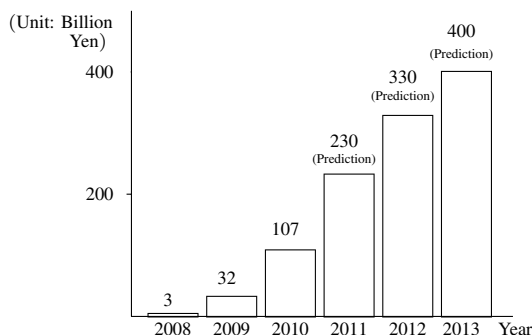


Fig. 1. Market Estimate of Mobile Social Game in Japan

Hong presented the desire to be unique as the driving factor for mobile content revenue [10].

Yamakami presented a community-based stage model in order to explain the evolution of the mobile content business in Japan [11].

Past literature did not examine the revenue-generating engines of mobile social games partly due to lack of variety in revenue-generating engines and item-purchasing in past online games.

The originality of this paper lies in its examination of the taxonomy of the revenue-generating engines in mobile social games and its observation of the rapidly growing landscape of social games.

III. OBSERVATION

A. Different Monetization Strategies

There are different revenue-generation policies in mobile social games. From analysis, there are four different strategies in mobile social games. One follows a gambling-spirit-oriented direction. A “Gatcha” is a capsule container for a toy or a gadget. There are vending machines that contain many Gatcha capsules. The price is one or two dollars. Before opening a capsule, its inner contents are not visible. Some of the contents come in a set, and therefore, users continue buying Gatcha, trying their luck at getting a full set. Virtual Gatcha for digital content is a popular revenue-generator in mobile social games. Sometimes, the content is an avatar, clothes for avatar, weapons, and so on.

The second strategy involves the premium items. Some part of the game requires special items that need to be purchased. Users will pay to browse premium parts, or to complete a set that includes a premium item will pay. If there is a set of 7 items, of which 6 items can be obtained for free, then, there is a temptation to pay for the last item to complete the set. The premium item can be used for differentiated self expression, like earning respects, or honors. Clothes and accessory items can be used for differentiation, which is no different from the real world.

The third strategy consists of competition for items. There is a competition, and some users want to have an extra opportunity to win. For example, there may be a limited number of chances for battle per day. If a user wants to pursue an extra opportunity to win, the user can purchase an extra ticket. There can be some implicit variations. For example, a battle needs 100 coupons. A coupon can be recovered every 3 minutes. Therefore, if a user redeems a full set of 100 coupons, the user will need to wait for 300 minutes (5 hours) for the next battle. There are some special items (like a regenerative drinks, etc) that are sold as well.

Sometimes, the competitions lasting anywhere from 3 days to 4 weeks boost the revenue from regenerative items. This is partly because each user pays for small wins. Another factor is that people may pay for hundreds of dollars just to enjoy the “almighty-feeling” that come from winning. If a user pays enough, they can beat anyone, which provides compensation for one’s every-day real-world frustrations.

TABLE I
FOUR REVENUE-GENERATING ENGINE TYPES

Type	Revenue-generation	Target Desire
Gambling-spirit	Completing a set of items with a chance-oriented vending mechanism	Completion, Pursuing lucks
Premium-item	Creating differentiated game parts which require paid items	Differentiation, Completion
Winning-opportunities	Creating competitions and selling items for advantages in battle	Winning, Competition
Time-saving	Free games with choice of spending time to play and spending money to play and save time	Time, Easy play option

TABLE II
FOUR USER MODEL TYPES

Type	User Model
Gambling-spirit	When there is an event to pursue a set of items (five to seven) and the cost for each trial is low, users tend to spend more money than they expected before the trial.
Premium-item	Users would like to differentiate themselves and make personal customizations to gain social recognition.
Winning-opportunities	There are competitions, and a certain percentage of users are willing to pay to obtain winning advantages.
Time-saving	When there are free games to play, a certain percentage of users are happy to pay if there is a trade-off between spending hours of play time and paying for items.

The fourth strategy involves time-saving items. Most of the games can be played without a fee. However, there are some time-saving items that can be purchased. The user has a choice whether to spend more of their time for free, or to spend money for the ease of play and to save time.

The social application vendor Adways provided the game “Kaibutsu-Chronicle” on the iPhone and Android platforms. Kaibutsu literally means “monster” in Japanese. It is not a feature-phone based mobile social game, but it is a standalone game in the sense that it does not depend on any social network services. This is one of the top revenue-generating network games on the iPhone in Japan. Its peak revenue reaches up to 2 million Japanese yen per day. Adways commented that 90 % of their revenue comes from direct payments, and 10 % from advertisement revenue. They say that basic game design is free to play. Users can play the game without payment as long as they don’t matter about the length of time they play. Users plays for free on weekdays, and play with time-saving paid items on weekends. There is a trade-off between payment and the length of time spent playing the game. It is up to the user whether to pay for additional time-saving items or not.

This is summarized in Table I.

The four user models are depicted in Table II.

B. Artifacts for Generating Revenue

There are many artifacts used for to generate revenue. For example, aesthetical value is important in justifying payment. Dressing-up avatars in unique costumes is a common technique for using artifacts for such justification.

Another example is the indirect use of artifacts in social contexts. If the number of items is small, it is difficult to use them as gifts due to its rarity. If there are dozens of items, it is easy to use them as gifts. However, if the user interacts with dozens of friends, they will consume most of their belongings. For example, seeds are an example of such artifacts. When there is an event in which users gain a premium advantage if they can collect many gifts, you have to present a gift in order to collect a sufficient number of gifts. Dozens of seeds can be used for such gift exchanges, and gradually the user will exhaust the number of seeds. Then, after the event, a user will have a greater chance of being forced to pay something to continue with a smaller number of seeds.

Another artifact is an item that controls a probability. If there is a 20 % chance of encountering a premium battleship, an item could be sold to increase the probability to 40 %, 90 % or even 100 %. If there is a slot machine that produces a certain premium item 10 % of the time, an item can be sold to increase that probability to 100 %, which allows the purchaser to virtually specify a particular item. This is a kind of expectation management. There is another opportunity to set up this type of artifact because the actual probability can be controlled dynamically during the PDCA(Plan-Do-Check-Action) cycle of game management in some cases.

C. From Illusion to Systematic Approaches

Since the launch of feature-phone-based SNS games in 2009, there has been hype on the revenue-generating capabilities of mobile social games in Japan. In the early stages, there was a common misconception that mobile social games were like magic wands with the ability to create revenue from a vacuum in the digital world. At that time, the limitations of features-phone user interfaces presented obstacles for rich media expression. This constraint limited the ceiling of the initial production costs for mobile social games, which lowered the entry barrier for new social game vendors.

Strong revenue-generation quickly changed the business landscape. First, aesthetical expression was improved utilizing strong cash flows, this eliminated poor new comers that were cash-poor. User expectations regarding aesthetical expression were raised where the initial budget for entry rose. Second, increased competition with lower entry barriers that were misunderstood reduced the profit margins of many inexperienced vendors. Third, the extensive exploration of revenue-generation made users busy. Users were busy for handling multiple games, therefore, their chances to accept friend invitation decreased. Mechanisms and events were copied from successful games, which reduced uniqueness of each game.

On the other hand, strong competition has brought some positive effects as well. The guiding principles have been explored and improved during intensive observation of games by competitors. This has encouraged the systematic analysis of revenue-generation engines in mobile social games.

Japanese mobile social games are on the path of transition from feature-phones to smart phones, however, the majority

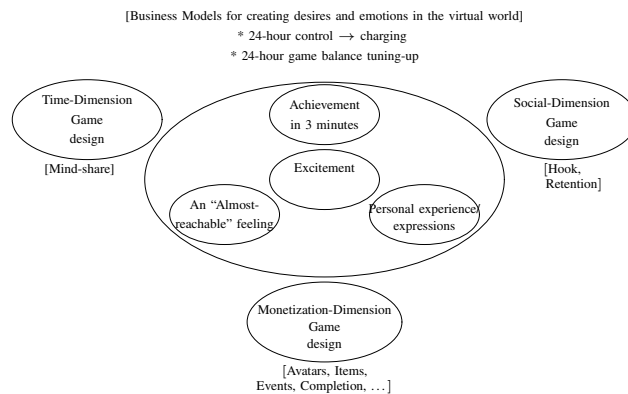


Fig. 2. Model of Revenue-generation in mobile social games

of users still use feature phones, which require more focus on game design and schemes than on rich media expression.

GREE mentioned in their September 2011 presentation of their flagship in-house social game "Tanken Drilland" (Tanken means "adventure") that 83.5 % of users are light users, 12 % are medium users, and 4.5 % are heavy users. Light users play the role of inviting new users and creating the liveliness of the game. They also serve as victims for paying users. The medium and heavy users play the role of generating revenue. Heavy users can earn easy wins, and gains a kind of feeling of omnipotence. Also, they can help light users by using their paid capabilities.

Maybe not all of the medium users and heavy users are paying users, however, the core part of the paying users come from these segments. The paying rate from 10 % to 20 % is higher than the global standards, e.g. 2-3 %, estimated from Facebook games. The high paying rate can be contributed to the fact that Japanese SNSs are not for social interactions but for game-play. A survey in 2011 by Mobile Marketing Japan shows that 70 % of Japanese SNS users answered that their primary reason for joining an SNS was "playing games."

IV. PATTERN ANALYSIS OF REVENUE-GENERATING ENGINES IN MOBILE SOCIAL GAMES

A. Bird's eye view of Revenue-generation

The strong revenue-generating capability of item-purchasing business model is misleading in terms of the ability of social game vendors to produce a good revenue simply by creating a list of prices on premium items. Many people thought that just price tags on social competition drove people to pay. From the exploration of revenue-generation in mobile social games, the author provides the view of revenue-generation in mobile social games, as depicted in Fig. 2. This consists of a combination of inter-disciplinary efforts to encourage people to feel a desire to play a little bit more.

This requires the delicate management of multiple factors in the time dimension and social dimension to maintain a good balance of multiple game factors, and to provide different benefits for different segments of users. The three dimensions involved are social, time, and monetization dimensions. Good

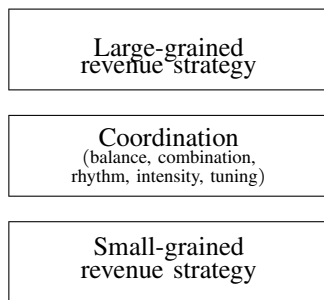


Fig. 3. A three-layered view of revenue-generation engineering

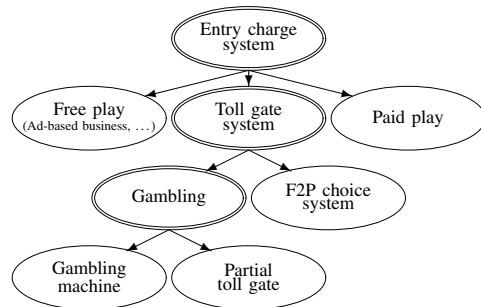


Fig. 4. Large-grained revenue-generating strategies in mobile social games

coordination of these three different dimensions is crucial for maintaining sustainable revenue-generation in mobile social games.

B. Taxonomy of Revenue-generation

A three-layered view of revenue-generation engineering is depicted in Fig. 3.

A taxonomy of revenue-generating engines in mobile social games is depicted in Fig. 4.

These revenue-generating strategies are not completely exclusive. Some of the strategies can be utilized in combination. However, it should be noted that the monetization design behind each strategy is different in order to model the paying behavior.

Gambling machine is different from the real-world gambling because the mobile social games never return real cash. Therefore, expectation management is important in this gambling-spirit oriented revenue generation strategy. Also, the principle to gather small amounts of money from a large number of speculating users is important. It is common to combine this gambling spirit with a collection of something. When there is one item left to complete a set, the user is more tempted to pay extra to complete that set. This requires further consideration about how to put users in a state of near-completion during game-play.

Partial toll games include a wide range of variation. The game vendor can charge for a premium item which can serve as a gate-keeper for some premium play grounds. In order to complete the whole game, if one is an enthusiastic user, one will pay for it. Or, it may just be a toll game for better weapons and armor. To gain the winning status, one can pay

for better tools in order to win. It is effective to demonstrate social competition in a range of different flavors.

Another toll can be set for self-decoration. Expressing oneself is an important factor in social contexts. Users can buy special decorations for avatars, rooms, pets, and so on. Sometimes, one may pay to differentiate oneself. On other occasions, one may pay to share an atmosphere, like wearing Halloween costumes in October. Vendors can create a premium playground that limits the number of users admitted.

Another toll can be for adding differentiation or variety. Extra stories or side stories with different consequences can be purchased as premium tickets for novel games.

This toll game system can add user engagement and excitement. If a user encounters a battle using a paid weapon and has a chance of losing the weapon at a loss, it adds excitement. It is like watching a horserace: it is more exciting if one bets money on the race.

The free-to-play choice is based on a different design. The user can play all parts of the game ground as long as they have an unlimited amount of time to play. Certain parts of earning game points and game levels are time-consuming. Therefore, users may purchase some extra items or tickets in order to earn the equivalent results.

In the free play model, the game vendor seek revenue using a freemium model, such as in-game advertisements, etc.

In the paid play model, users are expected to pay in honor of good game design leading to their paid satisfaction.

The different monetization strategies are based on different user modeling. This leads to different game design, social factor design, daily tuning of game balance, and tutorials for guiding end users.

Social games are live things and need to be customized and tuned every day. Still, the dependency of monetization strategy and the underlying user model require careful design of the game concept before detailed implementation.

The partial toll-gate is the mainstream of item-purchasing. Micro-grained revenue-generation strategies are depicted in Table III.

V. DISCUSSION

A. Advantages of the Proposed Model

The bursting of past bubbles indicates that the hype surrounding revenue-generation will be removed gradually through intensive competition and a natural selection process. In order to prepare for the post-hype business model engineering, it is important to provide a systematic view of the variety of revenue-generation in order to maximize competencies.

The proposed three-dimensional view of revenue-generation provides a framework for parsing complexity of revenue-generation in mobile social games.

The proposed tree-diagram provides a taxonomy of revenue-generating engines in mobile social games, and therefore, it helps establish the revenue-generation strategies in the competitive market. It gives a clear view of revenue-generation strategies for mobile social games in order to provide a

TABLE III
MICRO-GRAINED REVENUE-GENERATION STRATEGIES

Item	Summary
Decoration	Decorative items for avatars, rooms, etc. Dresses, accessories. Seasonal. Special design by popular characters. Items based on special intellectual properties.
Treasures	Aesthetic objects for owning something special.
Competitive Items with game advantages	Weapons, armor, additional offence or defense, special protection, et al. Usually for battles and competitions.
Premium items in the game	Special seeds, genes, pony for a horserace, etc. Items to secure game advantages (map, sight, speed increase, etc). Special fusion of multiple playing gadgets. Usually for social recognition.
Regenerative items	Items to continue playing, regenerate, recovery, etc. For easy game-play, completion or competitions.
Probability control items	Improve encounter or winning probability, 100 % specification, double the winning probability, etc
Removal of game constraints	Increase the number of photos, increase the number of servants or warriors, increase the number of carryable treasures, changing nicknames, et al
Tickets	Tickets for toll-gate for restricted area, tickets to read or play extra stories, retry for the game stages, et al
Time-constraint special effects	Control the 10-minute fever time where earning points are doubled, et al. Premium items valid for special time-constraint.
Gift items	Items for presenting to friends, allies.

systematic guidance about revenue-generation depending on the assumed user model.

B. Limitations

This research is a qualitative study. Quantitative measures for verifying multiple aspects of the revenue-generating engines discussed in this paper remain for further study.

Acceptance of mobile social games is an ongoing transitive prolegomenon that requires further observation with regard to game design and playability.

Detailed research models of payment behaviors in mobile social games and their verification are beyond the scope of this paper.

Different games have different target users. This paper does not address the entire diversity of mobile social games.

Japanese mobile social games are different from Facebook games in terms of their identity and trust structures. Detailed study of Japanese-specific regional factors is beyond the scope of this paper.

VI. CONCLUSION

Since late 2009, Japan has witnessed the rapid growth of revenue-generating engines in mobile social games. The growth of profits from item-purchasing in mobile social games represented a significant change in the mobile business and game business landscapes in Japan.

The competitive landscape of mobile social games has driven the exploration of different revenue-generating engines. Different revenue-generating engines are coupled with different user models and different designs and operations.

The proposed three-dimensional view of revenue-generation provides a framework for parsing the complexity of revenue-generation in mobile social games.

The author also presents the large-grained revenue-generation strategies, and the fine-grained revenue-generation strategies, as well as a three-layered view of revenue-generation strategies in order to facilitate a systematic approach to revenue-generation in mobile social games. It provides the clear view of revenue-generation engineering for mobile social games in order to provide systematic guidance about revenue-generation depending on the assumed user model.

The author hopes that the proposed approach provides a starting point to provide a systematic methodology for a range of different business model engineering in mobile social games.

REFERENCES

- [1] O. Foundation, "Opensocial 1.0 specification," available at <http://www.opensocial.org/Technical-Resources>, 2010.
- [2] C. Cole, C. Russell, and J. Whyte, *Building OpenSocial Apps: A Field Guide to Working with the MySpace Platform*. Addison-Wesley Professional, October 2009.
- [3] L. Grewe, *OpenSocial Network Programming*. Wrox Press Ltd., April 2009.
- [4] M. Nojima, "Pricing models and motivations for mmo play," in *Proceedings of DiGRA '07*, ser. DiGRA '07. Tokyo: Digital Games Research Association, September 2007, pp. 671–682.
- [5] J. Fairfield, "Virtual property," *Boston University Law Review*, vol. 85, p. 1047, 2005.
- [6] V. Lehdonvirta, "Virtual item sales as a revenue model: identifying attributes that drive purchase decisions," *Electronic Commerce Research*, vol. 9, no. 1-2, pp. 97–113, June 2009.
- [7] Y. Guo and S. Barnes, "Virtual item purchase behavior in virtual worlds: an exploratory investigation," *Electronic Commerce Research*, vol. 9, no. 1-2, pp. 77–96, June 2009.
- [8] C.-L. Hsu and H.-P. Lu, "Why do people play on-line games? an extended tam with social influences and flow experience," *Inf. Manage.*, vol. 41, pp. 853–868, September 2004. [Online]. Available at: <http://portal.acm.org/citation.cfm?id=1031977.1031981>
- [9] J. L. Funk, "Solving the startup problem in western mobile internet markets," *Telecommunication Policy*, vol. 31, no. 1, pp. 14–30, February 2007.
- [10] S.-J. Hong, K. Y. Tam, and J. Kim, "Mobile data service fuels the desire for uniqueness," *Communications of the ACM*, vol. 49, no. 9, pp. 89–94, September 2006.
- [11] T. Yamakami, "A stage view model of development of mobile data services: Implications from mobile data service and business model evolution in japan," in *ICSSSM 2010*. IEEE Computer Society, June 2010, pp. 205–210.