

Historical View of Mobile Social Game Evolution in Japan: Retrospective Analysis of Success Factors

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Abstract—The Internet is famous for its fast-incubating capability. Mobile social service engineering is one of the fastest examples of that capability. The dynamism of mobile social service engineering has discouraged any reasonable systematic analysis. The author attempts to parse the dynamism using an historical approach. Mobile social service engineering in Japan has only 4 years of evolutionary history. However, retrospective analysis is one of the only feasible research approaches to analyze the massive repercussions of this evolution. The author gives a descriptive analysis of changes of industrial landscape over the last 4 years. Then, the author discusses six different view models to parse the three landmark mobile social games in Japan.

I. INTRODUCTION

History is not a common topic of research in the Internet service industry. Any subject of study requires justification. Many IT industry people are skeptical that study of the past can provide any specific clues that are helpful to current and future business. They are used to radical changes and destructive innovation. Many cases of landslide and destructive innovation seem to change the landscape completely, therefore, they seem to change all the underlying principles. If these assumptions are correct, then it seems reasonable that people don't look back. Whole ecosystems are changed, and therefore, it is not so promising in terms of learning from the past.

The agile changes that leverage the high-speed and reliable communication infrastructures make people believe that subsequent changes are right around the corner, without any direct reference to the past.

However, even if the industrial landscape is continuously changing, it is important to pursue some clues in order to parse the current changes. Possible sources of these clues include the study of the past. History helps us understand change and how the current business landscape came to be.

The author attempts to identify the driving factors of mobile social game business using an historical analysis of business evolution.

II. BACKGROUND

A. Purpose of Research

The aim of this research is to identify and review the history of mobile social game business.

B. Related Works

History is one of the unexplored research domains in computing. Usually, history is discussed in terms of persons, projects, and institutions. In the computing literature, the most notable subjects of history was programming languages [1] [2]. Programming languages usually evolve, therefore, they are well suited to historical description. The next most popular subject of historical study in the past was software, which is close to programming languages [3]. However, past literature concerning the history of software focused on archiving [4]. In the current computing landscape of big data and cloud computing, archiving is losing priority when it comes to software.

Sholombs et al discussed a cross-country comparison of computing [5].

For service engineering, history is one of the rarest subjects of study. The intangible nature of services, their context-dependency, regional dependency, and dynamism makes consistent research quite challenging. Many people do not believe there are any underlying principles of service engineering.

Yamakami discussed a staging model of the mobile content business [6]. Social service engineering, such as the mobile social game business, is increasing in importance. However, a specific history of service engineering has not been covered in research literature.

The originality of this paper lies in its presentation of an historical review of mobile social game evolution in Japan.

III. OBSERVATION

The criteria for selecting an historical representation of mobile social games in Japan are depicted in Table I.

Three landmarks of mobile social game business in Japan are depicted in Table II.

Facebook launched its Facebook Platform in May 2007. That platform was the driving power of Facebook in outperforming MySpace, the top social networking service (SNS) at that time. It is also the landmark that represents the start of mass interpersonal persuasion, a type of persuasion triggered by individuals, and with the scale of mass-media.

TABLE I
SELECTION CRITERIA

Item	Description
Game business landmark	The company's flagship product with high reputation and revenue-generating capabilities
Breakthrough aspect	Representing a turning point in mobile social game business with new features
Size of followers	Size of motif-copying games
Revenue-generating capabilities	Record-breaking revenue records

TABLE II
THREE LANDMARKS OF MOBILE SOCIAL GAME BUSINESS

Game title	Vendor	Launch (month year)	Description
Tsuri-Sta	GREE	May 2007	A fishing game where players enjoy collecting "fishing" gear and participating in team events with other players. Originally not OpenSocial-based.
Kaito Royale	DeNA	October 2009	A game of thieves where players enjoy collecting "treasures" and participating in team events. Treasures may be stolen by other thieves.
Dragon Collection	Konami digital entertainment	September 2010	A card battle game. Players enjoy collecting, synthesizing, and winning stronger cards. Players create a deck of multiple cards to win a battle.

When Tsuri-Sta was launched, there was no full understanding of SNS open platforms. Tsuri-Sta was designed to be an entertaining game for feature-phones. It was a browser-based game. It dealt with fishing because fishing is one of the most popular sports in Japan.

Tsuri-Sta gradually gathered as many as 10 million users and its revenue-generating engine: item-purchasing, became a strong driving force behind the Initial Public Offering (IPO) of GREE.

Kaito Royale was a flagship game for DeNA. Once DeNA decided to pursue the path of a game vendor utilizing open platform strategies, the strong revenue generation of their in-house game, Kaito Royale, became another turning point. DeNA secured their flagship game in order to leverage the revenue and user traffic of their own SNS (Mobage).

Kaito Royale used the OpenSocial framework. Kaito Royale used three of the five mobile social game components: routine work, tactics, and social interactions. Kaito Royale demonstrated the strong stage and micro-stage schemes through micro-management, using the time dimension. It extensively managed minute-level user expectations with its micro-achievement systems.

Dragon Collection used a card battle system, which is one of the most popular and profitable game systems in Japan. In a card battle system, it is easy to extend the game, add variations, and fine-tune game parameters. Once it attracts users, it is easy to manage the game's evolution just by

TABLE III
CHARACTERISTICS OF THREE LANDMARKS

Game title	Description
Tsuri-Sta	The revenue-generating capability was the driving force of GREE's IPO. It also triggered the success stories of mobile social game vendors with no record of success in traditional console games.
Kaito Royale	A smash hit by Mobage. The landmark that represents small team-based social games can generate million dollar-level of monthly revenue. It also represents the game platform wars that attempted to capture as many as possible game vendors on each platform.
Dragon Collection	The first smash hit by third-party vendors in GREE that triggered the massive entry of traditional game vendors into mobile social games. The landmark that represents the collaboration of traditional game vendors and mobile social game platform providers. Card battles are easy to create, convert, extend, measure, and manipulate. They also make it easy to visualize the benefits to be gained by payment.

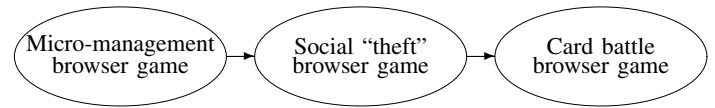


Fig. 1. Game types.

adding cards with variations of parameters. The values of rare cards are visible using parameter systems. The system, card collection, synthesis, training, and battle, is easy to grasp. The basic card battle system can be extended to a wide range of audiences, from young male-oriented motifs to grown-up female-oriented motifs. Game vendors can focus increased user-perceived values by using high-quality graphics. When game vendors have rich cash-flow, this is one of the easiest measures that they can take.

The characteristics of the three landmarks are depicted in Table III.

From the viewpoint of mobile social games, Tsuri-sta was not a truly social game. However, it is remarkable that Tsuri-sta represents the realization of item-purchasing revenue-generation on feature-phones. Tsuri-sta developed two of the five mobile social game components: routine work and finger skills.

IV. VIEW MODELS FROM RETROSPECTIVE INTERPRETATIONS

The proposed stage transition is descriptive. From retrospective interpretations, the author proposes multiple view models of mobile social game evolution in Japan using the landmarks that are described above.

The game types are depicted in Fig. 1.

First, Tsuri-sta explored the micro-management of mobile social games. When a game successfully creates a series of achievable goals within the short span of available time on mobile handsets, users are eager to pursue such goals within their fragmented time slots throughout the day. A sense of

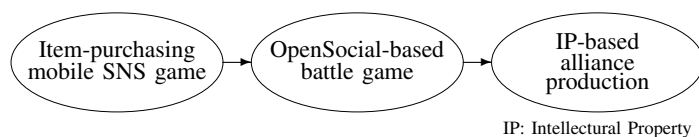


Fig. 2. Business models.

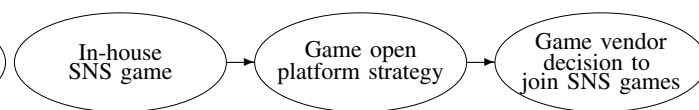


Fig. 3. Business management decisions of game vendors.

the incremental improvement of skills and tactics provides pleasure for users.

Second, Kaito Royale extended this micro-management with a series of stages with multiple missions. Missions provide treasures. Each mission is easy to accomplish, by pressing the ENTER key, but the number of attempts is limited per hour. Social factors are incorporated into a game of thieves. Treasures are protected once they are obtained as an entire collection. Five to seven treasures are required in order to complete the entire collection. Until the completion of the entire collection, each treasure is prone to theft attempts by other players.

Third, Dragon Collection proved the usefulness of browser-based card battle games. Cards are easy to manipulate in terms of graphic motifs and game parameters. Graphic motifs also provide clues to the rarity of a card, which attracts the attention and desire of players. Micro-management systems can be easily incorporated into the simple framework of card battle games.

The business models are depicted in Fig. 2.

First, Tsuri-sta proved that item-purchasing games can be revenue-generating engines for mobile SNSs.

Second, Kaito Royale proved the importance of SNS-based open platforms. After the success of Kaito Royale, DeNA (provider of Mobage and Kaito Royale) re-oriented their business model back to that of an SNS platform provider strategy in order to make full use of their game design and operation know-how.

Third, Dragon Collection provided proof of the participatory role of traditional game vendors in the framework of mobile social games. Konami employed a collaboration strategy to penetrate into mobile social games. They created alliances with server platform providers, game framework providers, graphics providers and other utility players in order to construct their flagship game. This triggered the new strategic alliances for many traditional game vendors that had strong consumer-focused IP (intellectual properties) in the consumer game business. This also leveraged new business players that make use of existing IPs in the alliance framework.

The business management decisions are depicted in Fig. 3.

First, Tsuri-sta provided proof of the revenue-generating opportunities of in-house games on SNSs.

Second, Kaito Royale provided proof of viral-diffused SNS-based games. It demonstrated the power of SNS providers that can direct Web traffic toward games.

Third, Dragon Collection's stunning revenue record attracted the many skeptical, traditional game vendors into the



Fig. 4. Revenue-generating players.

business arena of mobile social games.

Revenue-generating players are depicted in Fig. 4.

First, Tsuri-sta demonstrated the strong power of SNS providers to guide user traffic as a revenue-generating engine.

Second, Kaito Royale demonstrated the strong power of the OpenSocial-based platform to be for a revenue-generating engine.

Third, Dragon Collection demonstrated the traditional game vendor position within the emerging mobile social game ecosystems. Combination of the strong IP power of traditional game vendors with the competencies (such as stream mining, and strong user traffic guidance) of emerging SNS providers, provided a strong and fast revenue-generating capability.

Game goal schemes are depicted in Fig. 5.

First, Tsuri-sta explored staged micro-management. Micro-management is provided for stages whose advanced stages require advanced skills and tactics.

Second, Kaito Royale explored staged collection with social interactions. Collection behaviors are required in order to protect treasures against other players' attempts to steal them. Further motivation to complete a collection set is added also.

Third, Dragon Collection provided a standard sequence of card battles: gaining, collecting, raising, and battling. Gaining a new card is fun. Collecting a set of powerful cards provides further fun. Not only just collecting, but also spending hours and money to strengthen the user's collection is a valuable asset for a user. Finally, a set of trained cards provides a strong advantage over battles. This provides a strong sense of competition and high loyalty among users dedicated to grow their own assets, a collection of cards.

Major in-game sales items are depicted in Fig. 6.

Tsuri-sta provided fishing rods to give paying users advan-

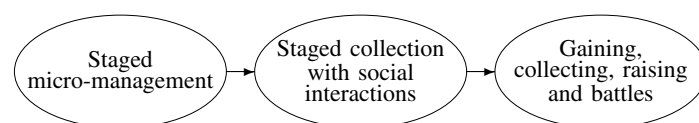


Fig. 5. Game goal schemes.

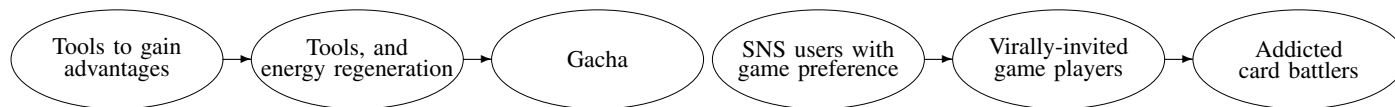


Fig. 6. Major in-game sales items.

Fig. 8. Users.

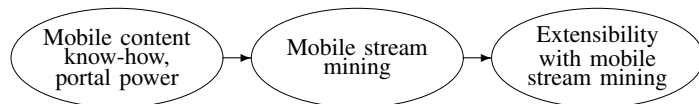


Fig. 7. Background competence.

tages when fishing. This provides a trade-off between time and money. If a user spends money, he/she can save time in accomplishing his/her goal in Tsuru-sta. Time is a valuable asset for people. This is a reasonable trade-off and provides revenue-generating opportunities for game vendors.

Kaito Royale extended the time management factor. A user has to complete a collection under threat from other players. In order to protect his/her assets, a player has to set up tools for protection, or makes use of the trade-off between time and money. Regenerative drinks provide opportunities to complete a set of items to secure their treasures.

Dragon Collection made use of Gacha. Gacha is a mechanism to provide a randomly picked item, sometimes for free, and sometimes as paid items. Gacha is a great framework for introducing a gambling spirit into mobile social games. It also obscures the high price of premium items because one attempt at Gacha can be cheap.

Background competence is depicted in Fig. 7.

First, Tsuru-sta was an arena for GREE to demonstrate their mobile content know-how. It also demonstrated the portal power of GREE, which has tens of millions of users.

Second, Kaito Royale demonstrated the power of stream mining. When millions of users play a social game, the data stream generated by users provides useful clues for improving the game. Each user's behavior provides an important clue to improve the game as collective evidence.

Third, Dragon Collection demonstrated the power of extensibility combined with stream mining. Even with the strength of stream mining, it is difficult to tune a game when the game is complicated. Card battle systems are flexible and easy to tune. Addition of cards, manipulating game parameters are both easy and flexible. These characteristics have the most affinity to background data mining capabilities.

Users are depicted in Fig. 8.

First, Tsuru-sta explored SNS users with game preferences. Japan and Korea are countries with high ratios of users with game preferences. Social interactions are essentially asynchronous, therefore, there are fragments(slots) of time for SNS users to make use of. Mobile games are ideal candidates for such time-killing purposes.

Second, Kaito Royale demonstrated the viral power of SNSs. At the time of Kaito Royale, many Japanese answered that their reason for joining an SNS was to play a game.

Third, Dragon Collection demonstrated the use of a high percentage of paying users in SNSs. At the time that Dragon Collection was introduced, 10–20 % of mobile SNS users were paying users for mobile social games. The familiarity of card game battles provided advantages for Dragon Collection in removing the first-entry mental barriers of new users.

V. DISCUSSION

A. The advantages of the proposed approach

The historical approach to IT business engineering is an unexplored research field. This paper provides descriptive view models of the evolution of mobile social games. The Internet is progressing so quickly that its progress is referred to in dog years. Dog years, in this case, mean that one year of evolution on the Internet equals seven years in other businesses. The mobile social game business emerged at a rapid pace. Some people in the industry mention that one year in the mobile social game business equals three years of i-mode business, in the early days of the Japanese mobile content business.

OpenSocial-based mobile social games just emerged in Japan in 2009. Just three years changed the entire mobile business landscape in Japan. The historical approach provides a basis for creating research models to explain the evolution of mobile social games. The proposed view models can be used as litmus tests for cross-regional analysis of mobile social games. When cross-regional analysis provides consistent results, it can be used to build a universal contributing factor model. And when the cross-regional analysis reveals differences between regions, it can be used to build a regional contributing factor model.

The author discussed six dimensions for staging views as depicted in Table IV.

The cross-regional analysis of those views is beyond the scope of this paper. Future cross-regional analysis may provide the results similar to those depicted in Table V.

And, future cross-regional analysis will provide clues to the driving factors in the evolution of mobile social games.

B. Limitations

This paper is descriptive and qualitative.

Case studies and quantitative evaluation of social game business success remain for future study. Quantitative comparative analysis is beyond the scope of this paper. No quantitative analysis to identify contributing factors is given in this paper.

TABLE IV
SIX DIMENSIONS FOR STAGING VIEWS.

Dimension	Description
Game type	Game structure to compose a goal.
Business model	Revenue-generating patterns for mobile social games.
Business management direction	Focus of business engineering.
Revenue-generating players	Major players that generate revenues in the mobile social business ecosystem.
Game goal scheme	Game goal presented to players.
Major sales items	Visible items to generate revenue.
Background competence	Major competence to support revenue-generating engines.
User	User motivation

TABLE V
POSSIBLE RESULTS OF CROSS-REGIONAL ANALYSIS.

Item	Description
Similarity	Similar stage transition is observed.
Different order	Similar stages are identified but the order of occurrence is different.
Overlap	Similar stages are identified but they are not isolated enough to provide a notably visible pattern.
Different stage pattern	Similar stages are not identified as a major stage.

The proposed model came from observation of mobile social game evolution. It may be linked to region-specific or service-specific factors. Cross-regional analysis remains for future study.

VI. CONCLUSION

The study of history has been an unexplored field in the IT business. There has been an illusion that all IT business changes are dynamic and difficult to predict through analysis of the past. However, contrary to this common understanding, it is a social innovation in IT that has deeply penetrated everyday lives, more than a technical innovation.

The author attempts to explore the history of mobile social game business in order to identify the contributing factors in its evolution. The author examines the three major landmark games in order to provide a retrospective view of the evolution of games. Then, the author provides six view models of transitions using six factors: game type, business management, revenue-generating players, game goal scheme, sales item, background competence, and users.

These dimensions and views provide a basis for cross-regional analysis in order to identify universal evolutionary factors and region-specific factors that drive the evolution of mobile social games. Mobile social games are the first examples of social service engineering, which will be one of the major industrial engineering arenas for the next decade.

The Internet is rapidly transitioning from an infrastructure of information to an infrastructure of social interactions. The best practices in the design and engineering of mobile social games are rich resources for studying social service engineering. The evolution of mobile social games is fast and amazing, and despite the dazzling speed and dynamics, we can learn a lot from the history of its evolution.

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