Small Window Effect: Lessons from Mobile Service Engineering

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Abstract—The Internet business has been characterized by its dynamism. The fast and reliable communication infrastructure itself has driven fast and dynamic changes. This dynamism makes the static analysis of business model engineering a challenge. Key factors have exercised the filtering of business models. However, the retrospective analysis of such a factor does not bring useful foresights for future business. The author analyzes the lessons learned in past business model engineering in relation to the Internet. Then, the author proposes the concept called the “small window effect” in order to capture the dynamism of business model engineering vis-a-vis the transience of the Internet.

I. INTRODUCTION

The Internet has continued to accelerate the diffusion, shifts and evolution of technology and business models. It makes the static analysis of business models difficult.

What were top players at some points quickly vanished and lost their power. On the other hand, other top players quickly emerged as dominant powers and swept away any opportunities that competing players could grasp. After establishing dominance, the top players must sustain growth worldwide. Yahoo! was once one of the most visible players, but it lost its glory after Google emerged. Google was not the first search engine player, but it quickly caught up and secured its dominance. In early 2008, there were many SNS players on this planet, MySpace, Facebook, Hi5, Friendster, Orkut, Imeem, and Bebo. The number of users of the top player, MySpace, just reached 100 million. The number of Facebook users was almost the same number. Another second wave of SNS players had 20–30 million registered users. Only 4 years have passed, and Facebook is now the dominant player, and all other players lost their global visibility.

The author has recognized that the fundamental focus of business model engineering is dynamic, not static. In order to capture the dynamism of the business model engineering, it is necessary to invent a new approach suitable to the analysis of dynamic evolution.

The author analyzes of business model engineering from the viewpoint of a time-dimensional analysis. Then, the author proposes key factors that exercise differentiation of business model engineering in relation to the Internet.

II. BACKGROUND

A. Purpose of Research

The aim of this research is to identify the key factors that distinguish the small number of winners in business model engineering that dominate in Internet business.

B. Related Works

Innovation is fast and dynamic, and therefore, it is challenging to identify its solid underlying principles. There are irreversible changes that occur during innovation that characterize that innovation. However, it is difficult to identify and predict such changes.

For the user side, the most notable example is a chasm in the diffusion process. Moore discussed crossing the chasm in order to highlight the real-world obstacles to making mainstream products [1]. Denning described a chasm between technologists and users [2].

For the provider side, the most notable example is “winner-takes-all”. It is crucial to identify the contributing factors that drive irreversible changes in business model engineering. Information technology has accelerated agility, therefore, Lu et al argued for that perspective [3]. When the financial factor played an important role, Fioretti discussed them from an investment perspective [4].

When an innovation is destructive, it causes irreversible changes. Shin discussed it from the perspective of social innovation [5]. In service innovations, other factors have an impact. Chen et al discussed the value-creation process with the innovation-intensive service industry [6].

Innovation is not a one-time process in many cases. Joshi et al discussed the absorptive capacity theory to discuss continuous innovation [7]. Fortuin et al discussed it from the product-life-cycle viewpoint [8].

In order to explore the possibilities of innovation, agility has been given focus by researchers. Maurer discussed agile development for crossing the chasm in software development [9]. Cummins discussed enterprise service components including service oriented architecture for creating agile organizations [10]. The agile method is used to fill the gap between a producer and a consumer. Conboy discussed the agile method from the viewpoint of including customers in the development process [11]. This turns the time-dimensional methodology.
into a space-dimensional methodology. Judy et al discussed the agile method for small and medium business innovation [12].

In the case of mobile services, they depend on technology and investment. Baumer discussed mobile service innovation from the viewpoint of STOF (Service, Technology, Organization and Finance) model [13].

These studies did not address the factors that cause the irreversible changes. When an irreversible changes occurs and a dominant player emerges, the company grows quickly. When the company exercises its dominant power, there are multiple influences that come from that. This leads to the challenges of parsing the contributing factors.

The originality of this paper lies in its examination of the factors that drive these irreversible changes in business model engineering.

III. OBSERVATION
A. Mobile business landscape in Japan

There are three major SNSs in Japan: Mobage, Mixi and GREE. Mixi has its origin in a PC-based SNS and is a leading SNS provider in Japan. Originally, it was an invitation-only SNS, which emphasized a closed SNS in order to protect users. Since 2007, the number of accesses to Mixi from mobile handsets has outnumbered the number of accesses from PCs.

GREE originated as a mobile-specific SNS. GREE and Mobage both have little connection to a user’s real identity. Trust is dependent on the unique user identifier provided by the mobile handset.

Mobage put less focus on the SNS-factor because it originated as a game download site for teenagers. With the emergence of mobile social games in 2010, this became a significant strength for Mobage. Fast-growing mobile social games led to large-scale social games with approximately 100 virtual friends per user. With this large number of friends, it is difficult to limit play to only real-world friends. End users quickly acquired the skills to deal with virtual friends. Mobage was the most suitable game platform, whose use of hidden identities made it the most popular of the three major SNSs in Japan. This helped construct mobile social games with a large number of virtual friends on Mobage, which leveraged the growth of both, the number of users, and the amount of money paid for item-purchasing in Mobage.

It is considered to be a strong barrier against Facebook penetration into Japan. Facebook is the world’s leading SNS provider and has more than 1 billion users worldwide. Its service based on the real identities of its users, which represents a challenge to penetration into the Japanese market, in which the virtual identity system has already proliferated.

B. Limitations of Existing Models

It came as a surprise when Mobage developed a fast-growing revenue-generation engine for DeNA, the operating company of Mobage. Within one and a half years of its adoption of OpenSocial, DeNA quickly increased its revenue from item purchasing in mobile social games. It outperformed the largest advertising agency, Dentsu, and the largest TV broadcasting company, NTV, in the operating profits in the year from April 2010 to March 2011.

The number of SNS users steadily grew during the year 2010, however, there was not much difference in the number of users among Mogabe, GREE and Mixi. With some delays between launch dates, the three major SNS providers adopted OpenSocial, with no measurable difference in the number of users.

With some detailed analysis, it should be noted that in-house games generated the most significant profits for them.

Existing business model engineering theory did not provide sufficient clues to explain the remarkable results of business model engineering.

The author argues that the weakness of legacy business model engineering lies in its dependence on static analysis.

Mixi first adopted OpenSocial as its open platform strategy. This decision was based on its observation of the success of Facebook with its open platform strategy. As a late-comer, Mixi took the open platform strategy with the open platform of OpenSocial because there was little hope for a late-comer to create its own dedicated APIs to compete with.

GREE was the market leader in creating in-house games for mobile SNS. It started to generate remarkable growth from its in-house social fishing and gardening games. This profit delayed GREE’s decision for an open platform strategy. GREE was the third SNS provider to adopt the open platform strategy in June 2010.

First, Mobage merely followed the open platform strategy as a content provider. Then, it adopted the open platform strategy, and became the second SNS provider using the OpenSocial platform.

C. Retrospective Analysis of Mobage success

The mobile social game market is still growing and transitory. The author attempts to give a transition analysis of Mobage success. The success factors are depicted in Table I.

IV. SMALL WINDOW EFFECT
A. Definition

A small window is a small span of time within which a radical shift of technological uses and business ecosystems
takes place. Before this window is open, it makes little sense to make an effort to build up business ecosystems because the established business models and ecosystems will be quickly swept away once the small window opens. After this window closes, the emerging powers that utilize the small window opportunity will dominate the market, where it makes little sense to make an effort to amend the established business ecosystems. Therefore, it is important to identify small window opportunities in business scenes in which a small window effect can be expected. It is easy to say, however, past literature did not examine precisely how we can manage these small windows other than just waiting for some turn of fortune.

B. Positions in Business Model Engineering

The author has observed the success of Mobage. His findings include the followings:

- The beginning of revenue-generation in its in-house social games was relatively accidental,
- The excellence of its business model engineering is that it made good use of initial opportunities to boost their cash flow
- The cash flow helped them close the small window, to significantly differentiate it from its followers

The initial growth of in-house games was relatively accidental. This is a key to Internet success. It is important to identify small windows in domains where the initial entry barrier is low. Whatever the business opportunities are, it is important that the initial entry barrier is low. Internet business is found in business areas where there are relatively many opportunities with low entry barriers in addition to fast-growing opportunities. That is why there are so many emerging companies in the Internet business. In the initial stages, the costs of launching mobile social games were low. Several man-months were enough to launch a mobile social game, where games were not as interesting as standalone games at the time. Social factors helped boost the use of such a game. Once a cash flow cycle was established, Mobage quickly accumulated know-how with regard to capturing users in social networks and driving them to purchase a variety of items in social contexts. This leveraged their cash flow, then, they could put more money to differentiate their games with well-designed and aesthetically-enhanced games.

C. Implications of the Real-time Web

The transitions in the real-time Internet are depicted in Fig. 2.

The author began using the Internet in May of 1980, as an undergraduate student in the computer science department. Everything was interconnected by uucp, therefore, there was no real-time aspect to the Internet at that time. Email messages took tens of hours to reach the U.S. from Japan. And, except for the U.S. (maybe including Canada) and Japan, there was no Internet connectivity on this planet.

Even at that time, we could imagine a real-time, high-speed Internet that would enable the transmission of video and audio. The concepts of broadcast and multicast existed even in the era of TCP/IP. Since then, many researchers considered the real-time Internet to refer to the ability to share and broadcast video.

With the emergence of ubiquitous computing, some people coined the concept of “the Internet of things.” Some researchers considered the real-time Internet to refer to the ability to share and broadcast video from the viewpoint of business model engineering. The real-time Web today is the Internet of real-time human responses. With Twitter, Facebook, SNS-based games, billions of people interact in real-time. Human real-time responses are extremely valuable as content, which has makes huge implications for Internet business model engineering.

Games, shared purchasing, and coupons are not new. The key competence of the emerging Internet companies is the ability to make use of their business models in the landscape of the real-time Web.

D. Factors that drive Small Window Effect

Factors that drive the small window effect are depicted in Table II.

Key differences that drive a small window effect are depicted in Table III.

The next question to research is how universal the small window effect is in business engineering. The applicability of this effect depends on service-specific characteristics. It depends on the front players’ ability to close the window. The factors that enable the small window effect are depicted in Table IV.

V. DISCUSSION

A. Advantages of the Proposed Approach

In the past literature, irreversible changes were described as the significant performance of a competence power.
type of competence analysis is common, however, it does not explain the process where irreversible changes occur.

Creating a dominant power player is a complicated process, which is difficult to analyze.

Comparisons with other approaches are depicted in Table V.

The four golden rules of mobile social game design are depicted in Fig. 3. The figure also serves as a four-stage gatekeeper model of success for mobile social games.

In the four golden rules, the first one, aesthetic values and the third one, critical mass, have advantages for leading vendors. The cash-rich and user-rich front runners can leverage their existing assets to boost the revenue of new games. The second factor, simplicity, is not clear, however, the front runners can understand the importance of simplicity, while the late-coming competitors tend to waste time and resources to make things more complicated. The fourth factor, operation-driven value creation, is not clear, either. The stream-mining-based feedback mechanism for tuning games also benefits the front runners.

From a retrospective view, mobile social games that followed the golden rules had advantages for front-runners even when the revenue-generating capabilities of the item purchasing business model became visible to the public.

B. Limitations

This paper is descriptive and qualitative. It still needs to examine how we can define the small window effect in any quantitative manner.

Identification of irreversible changes is not covered in this paper.

Case studies and quantitative evaluation of irreversible changes in innovation remain future study.

The proposed process model lacks quantitative analysis in this paper.

The proposed model came from the observation of mobile social game evolution. It may be linked to region-specific or service-specific factors. No quantitative analysis to identify these dependent factors is given in this paper.
VI. CONCLUSION

The Internet has been a factor in driving information and communication innovations. It has accelerated innovations. We get used to the speed of change.

This dynamism has obscured the fundamental factors. However, the author has come to recognize that the dynamism itself is the fundamental factor of modern innovation. Usually, the speed of change has been focused on studying the innovation process. The author focuses on the irreversibility of changes as the fundamental issue in this innovative dynamism. In other words, how to create irreversible business changes is the most important factor in business model engineering.

In order to identify the factors stated above, the author proposes the concept of the small window effect. The small window effect is one of the typical examples that represent the selection mechanism in business model engineering. Measures to identify the balance between the cost of opening a window and of closing that window will facilitate the examination of the small window effect. Quantitative research to identify such measures remains for future works.

REFERENCES


