Success factors of platform leadership in web 2.0 service business

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Abstract   The purpose of this study is to investigate the critical success factors of platform leadership in the Web 2.0 based service business environment. Because of the lack of theoretical foundation for this topic, we adopted relevant theory and case study analyses. Representative Web 2.0 firms which have developed platform leadership were chosen and analyzed on the basis of previous research on platform strategy through spider web analysis. This study shows that Web 2.0 firms such as Google, Flickr, and Salesforce.com differ in their competitive capabilities for platform leadership. The result of this research suggests that platform leadership in the Web 2.0 era depends on five interdependent dimensions: innovation ability, connectivity, complementarities, efficiency, and network effects.

Keywords   Platform leadership · Web 2.0 · Innovation ability · Connectivity · Complementarities · Efficiency · Network effects

1 Introduction

Today, service has become the primary industry of the world economy. For example, in the USA, the service industry employs more than 70% of total labor

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force and contributes more than 60% of annual GDP (An and Noh 2009). In addition, the service sector represents 76% of the activity in the USA while in Europe figures show around 65% (Lee et al. 2007). The service industry consists of a variety of segments. Among those, Web 2.0 industry has become an important segment (Lee et al. 2008). Therefore, many researchers have studied Web 1.0 and Web 2.0 industries to identify the critical success factors in this emerging environment (O'Reilly 2005; Best 2006; Hoegg et al. 2006; McAfee 2006; Greenmeier and Gaudin 2007; Constantinides and Fountain 2008; Lee et al. 2008). In this study, we start from reviewing the previous research on Web 2.0 and investigate platform leadership as a successful competitive strategy in the Web 2.0 industry.

Web 2.0 companies, such as Facebook and MySpace.com, are engaged in platform competition. A platform is a foundation technology or service which is indispensable to businesses in this industry (Gawer and Cusumano 2008). The main role of platforms is to provide a set of clearly defined rules and practices that helps organize and support the activities of many users (Hagel et al. 2008). To be successful in platform competition in today's Web 2.0 era, organizations must understand the fundamental characteristics of Web 2.0. Unlike Web 1.0, Web 2.0 is a revolution driven by using the Web as a platform and an effort to develop new rules of competition (O'Reilly 2006).

The message of successful Web 2.0 companies such as Flickr is that Web 2.0 is not only about building applications, but also building a platform where different groups of users can interact (Shen 2008). Leading Web 2.0 companies form an ecosystem where innovation can create new value as more users adopt the platform and its complements (Iansiti and Levien 2004). However, some Web 2.0 companies struggle because their strategies fail to deal with the innovation aspect of platform leadership.

Despite the many opportunities that Web 2.0 can provide, there has been a paucity of research examining how Web 2.0 companies develop platform leadership which leads to competitive advantage. Most research in this area has focused on architectures and technologies which have triggered development of the Web 2.0 platform. This study examines the business aspects of platform strategy in Web 2.0. Furthermore, this research develops a model to explain how Web 2.0 companies become platform leaders through five critical success factors: innovation ability, connectivity, complementarities, efficiency, and positive network effect.

2 Web 2.0

Web 2.0 is defined as a business revolution driven by the use of the Web as a platform for innovation and the emerging new rules for value creation on the platform (O'Reilly 2006). Web 2.0 involves web development and design to facilitate interactive sharing, user-based design, and collaboration on the World Wide Web. Web 2.0 companies allow users to do much more than just retrieve information on the platform. They can build on the interactive facilities of Web 1.0 to provide platform computing, allowing participants to run software applications

entirely through a browser. Unlike users of Web 1.0 platforms, Web 2.0 users can own and exercise control over the data in platforms. Web 2.0 companies may have an architecture of participation that encourages users to add value to the application as they use it. This feature stands out as major difference over traditional Web 1.0 companies, which limit users to only view data while the firms control the data. With the Web as a platform, Web 2.0 has the following unique characteristics: rich user experience, user participation, dynamic content, metadata, web standards, and scalability (Best 2006). Additional characteristics, such as openness, freedom, and collective intelligence, can be viewed as essential attributes of Web 2.0 (Greenmeier and Gaudin 2007).

Web 2.0 companies typically take advantage of some of the following techniques: (1) search, (2) link, (3) authoring, (4) tag, (5) extension, and (6) signal (McAfee 2006).

- Search: For any platform to create value, its participants must first be able to locate what they seek. Although both Internet page layouts and navigation aids can help users find what they want, participants are increasingly bypassing these in favor of keyword searches (O'Reilly 2004).
- Link: A link is a guide to important pieces of information and provides structure to online content. In this structure, the best pages are those linked to the most frequently used. For instance, Google increases Internet search quality dramatically by taking advantage of information contained in links between Web pages.
- Authoring: Authoring is another important technique for creating constantly updated content over a platform. Unlike Web 1.0 companies, Web 2.0 firms allow most participants to update content constantly. For example, Internet blogs and Wikipedia have shown that many participants have a desire to create a content for a broad audience. In wikis, group authorship can create convergent and accurate content. In blogs, individual authors post and respond to content over time.
- Tag: Contents are categorized by creating tags that are simple, one-word descriptions. The categorization system that emerges from tagging is called a folksonomy rather than a taxonomy. While the categorization scheme is developed by experts in taxonomies, folksonomies reflect the information structure and relationships in use by participants.
- Extension: Extension is another technology for automating some of the work of categorization and pattern matching through the use of algorithms. Amazons' recommendations system is an early example of the use of extensions.
- Signal: The signal provides instant notices to users when content of interest is updated. The use of a novel technology called Really Simple Syndication (RSS) generates a short notice when any change occurs in the content occur.

3 Platform strategy

As Web technology has advanced, more information is available and accessibility has also been improved (Evans and Wurster 1999). In order to develop new business

models in this environment, companies have tried to utilize the characteristics of Web 2.0 (Constantinides and Fountain 2008). However, the Web 2.0 environment requires distinctive competitive strategies, because Web 2.0 businesses work on a certain type of platform and the platform combines the core components of a firm that are based on the complements created by various companies and users. This process separates the platform as a foundation technology or service which is indispensable to businesses in a particular industry (Gawer and Cusumano 2008). In this context, Web 2.0 companies cannot be dominant market players without platform leadership.

There are several prerequisite conditions for developing the platform. The platform should fulfill an essential role in improving services or contribute to solving fundamental technological problems in an industry. Also, it should be able to provide easy connectivity for expanding the use of the platform, as well as allowing new and even unintended end-uses (Cusumano and Gawer 2002). The platform should support participants to reduce their risk through defined standards and practices. In addition, it should also be able to foster specialization among participants so as to increase value and functionality as more participants join in (Hagel et al. 2008).

Obtaining platform leadership in a certain market is a challenging task for market players. However, once a company gains a platform leadership, it works as a competitive advantage and enables the firm to enjoy enormous financial benefits by leveraging its core competence. Thus, making a strategic decision on how to develop platform leadership is one of the most important success factors in the Web 2.0 environment. Gawer and Cusumano (2008) suggest two strategies for platform leadership. One is "coring" strategy to develop a new platform which has not previously existed in an industry, a blue ocean strategy (Kim and Mauborgne 2005). The other is "tipping" strategy by using the existing competitive advantage. When a firm develops a new core technology or service which becomes a considerable force in the industry, the developer gains platform leadership via increasing returns to scale (Arthur 1996).

In spite of the importance of achieving platform leadership, few researchers have examined this topic in the Web 2.0 environment. Thus, more research is needed on this topic. The platform strategy should reflect the traits of Web 2.0. In addition, the platform strategy should contain a sustainable way to protect and maintain competitive advantage by successfully attracting other companies and users to join its platform.

4 Model of platform leadership

This study is based on the conceptual approach using relevant prior research and the inductive case study method because of the lack of theoretical frameworks dealing with Web 2.0. Representative Web 2.0 firms which have developed appropriate platforms were selected and analyzed on the basis of previous research on Web 2.0 and platform strategy.

As shown in Fig. 1, this study develops five components of a platform strategy in the Web 2.0 environment. These components are: (1) innovation ability, (2)
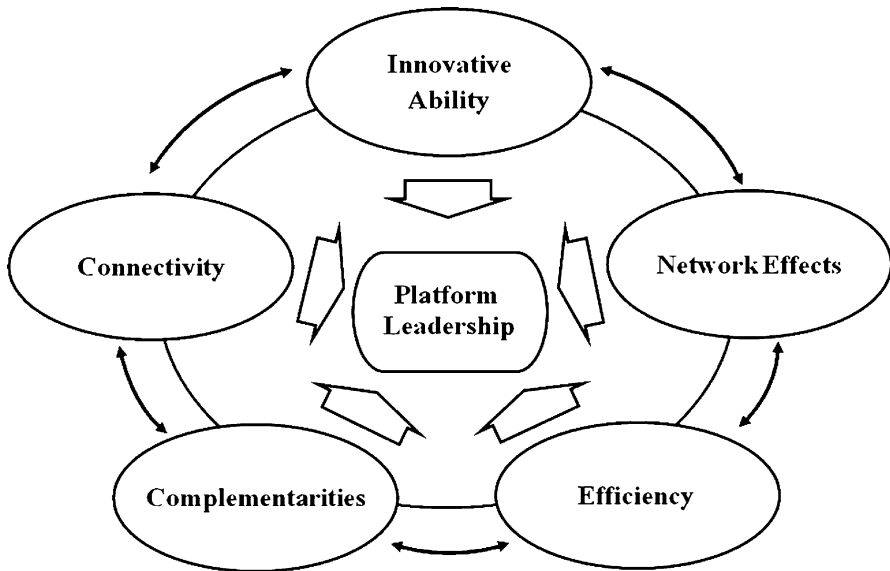
Fig. 1 Model of the platform leadership in the Web 2.0 era

connectivity, (3) complementarities, (4) efficiency, and (5) network effects. These components are related to one another and each factor influences the other. These five components have the potential to help firms gain new platform leadership and thereby enhance their competitive advantage.

4.1 Innovation ability

Innovation is referred to as the potential to create new value (Schumpeter 1934). Especially in the open environment like Web 2.0, the openness can expedite innovation and lead to more value (Chesbrough and Appleyard 2007). Therefore, the platform should be developed in an innovative way and should be able to solve essential problems currently existing in an industry by using the open characteristics of the Internet (Meyer and Mugge 2001). In this context, the innovation ability in Web 2.0 has a deep relationship with the open environment provided by Web 2.0.

The ability to innovate to solve essential problems in an industry can be evaluated by checking how the industry works without the service or function provided by the platform (Cusumano and Gawer 2002). Google became a platform leader because its search engine makes it possible for web users to easily find information they want on the Internet. In addition, Google also succeeds in identifying relationships between advertisements and user searches, an innovative service which allows only those users who are interested in a certain area are linked to the related advertisements. In other words, Google provides value by improving its search engine for establishing relationships between searches and advertisements. Without Google's search services, information seekers might spend much

more time and efforts and web advertisements might still remain in an inefficient way.

The ability to innovate and solve current problems in an industry often creates new value (Schumpeter 1939). This ability is embodied in new technologies or services which are applied to the platform. eBay was the first company to do auctions among consumers on a large scale. eBay's platform has the innovative structure to allow a product of relatively small value to be automatically traded between individuals via on-line trade. This structure created new value which the existing distribution companies did not provide before. In addition, eBay's innovative platform attracted new participants, such as suppliers and consumers who did not participate in the past.

4.2 Connectivity

The Web 2.0 environment is more user-friendly than that of Web 1.0 by enhancing the opportunities to participate in contents creation (Hoegg et al. 2006). The openness of Web 2.0 means not only technical connectivity with proper application programming interface, but also openness for the society with the right to use the contents (Alexander 2006).

The platform should provide enough accessibility to end users, as well as expert groups, who can complement the platform (O'Reilly 2005). In other words, the platform in the Web 2.0 environment should have the capability to update the information that is demanded by users. It should be able to reconstruct the information generated through the participation of users and create new meaningful data. While the Web 1.0 platform provided services on the basis of the web browser combined with a PC, the platform of Web 2.0 should be able to create new services using devices such as mobile, digital multimedia broadcasting, and Internet protocol television (Wilson 2006).

Easy connectivity provides opportunities to create collective value by numerous participants in the platform (Gruber 2007). The accumulated collective value dynamically evolves by itself. Wikipedia is a good example showing the mechanism of collective intelligence, a type of collective value.

Easy connectivity allows the platform leader to enjoy a long-tail effect that many companies could not fully take advantage of previously (Constantinides and Fountain 2008). In the case of Amazon, over 50% of its sales are obtained from the books in the long tail, those who are ranked under 130,000th in sales (Anderson 2004). In contrast with off-line book stores, the cost of uploading the data in Amazon is almost zero. Therefore, the margins of Amazon tend to be large in the long tail. Another example of the long-tail effect is Apple's iTunes. Consequently, one of the most important strategic factors of a platform strategy is easy connectivity.

4.3 Complementarities

Nalebuff and Brandenburger (1997) state that, "A player is your complementor if customers value your product more when they have the other player's product than

when they have your product alone." The Resource-Based View also presents the role of complementarities as a strategic asset that is a source of value creation (Amit and Schoemaker 1993). Complementarities are an interaction between goods that provide more value together than each of the products could separately (Amit and Zott 2001).

Complementarities in the Web 2.0 era are accelerated by such characteristics as openness, connection, conversation, and collective intelligence, which can also be features of a platform. With this unique characteristic, Web 2.0 firms have opportunities to create leading platforms that provide products and services that bring users together in networks (Eisenmann et al. 2006). Most Web 2.0 companies provide services that connect users with similar needs. Platform leaders can develop content and expand the system without increasing any cost by allowing users and content developers easy access to the platform system source. Therefore, Web 2.0 companies can increase revenue through complementary activities. For instance, Google made its platform accessible to other web-based companies by providing its software source. Many firms are trying to match their products to Google search results. This could not only increase user satisfaction, but also leverage Google's profit through complementarities.

The most advanced complementary activity in Web 2.0 is collective intelligence. It differs from the traditional definition of complementarities. Complementarities by collective intelligence in Web 2.0 cannot be obtained through a small number of partners. Thanks to innovative technology, companies now can assemble complementary participants on a greater scale than before (Bonabeau 2009). For example, Wikipedia offers a platform which provides more value than that of each participant's knowledge separately.

4.4 Efficiency

Becoming a platform leader in the industry allows the company to reduce transaction costs by supporting a stabled market for the transaction and earning profit from both sides (Eisenmann et al. 2006). Compared to the limited number of participants in traditional markets, the platform in Web 2.0 allows an enormous number of participants to make transactions. Accordingly, the revenue of the platform leader increases with the large number of transactions and proportional decrease in transaction costs. Therefore, the greater transaction efficiency enables the greater value (Amit and Zott 2001).

Platforms offer one of two forms of leverage. Development leverage reduces the investment in products or services. Interaction leverage reduces the cost and effort necessary to arrange orders of participants (Hagel et al. 2008). Through the leverage effects of a platform, platform leaders in Web 2.0 realize efficiencies in many ways such as lowering advertising costs, improving R&D results, increasing sales, and cutting labor costs.

Google AdSense, PayPerPost, Text-Link-Ads, Advertlets, and ImageFly are good examples of advertising business platforms in Web 2.0. These platforms increase the efficiency of platforms by developing new advertising models which are more efficient for users. The common aspect of these platforms is the sharing of profits

with users. By sharing profits, they can sharply increase the number of network users.

In order to maximize the leverage effect as a platform leader, a company in the Web 2.0 environment needs to reach a critical mass. Companies with a critical mass can enjoy benefits from the efficiency of user behavior. Users want their platform to retain a high concentration in the industry where the company operates. Therefore, they do not want a new entrant unless the newcomer provides a more innovative platform. Users do not want to take the time and effort to adapt to a new platform unless it is sufficiently innovative. Efficiency will increase as increasing number of customers become networked in the platform. Eventually, the platform could reach the status of "self-evolution"—continuous development of the platform through the efforts of devoted users rather than that of the platform originator.

4.5 Network effects

A network effect is the effect that one user of a good or service has on the value of that good or service for other users. An empirical evidence of network effects has been found in the context of various products and services (Brynjolfsson and Kemerer 1996; Dranove and Gandal 2003; Gandal 1995). The positive network effect can be explained by the classic example of the telephone. As more people own telephones, the telephone becomes more valuable to each owner.

The positive network effect is one of the most important factors of platform strategy. In the Google's AdSense platform, for instance, positive network effects helped many others in addition to Google. There have been a multitude of unexpected winners, such as all the small- and medium-sized business customers, advertisers, content providers, potential customers, and bloggers because of AdSense's stellar returns from pay-per-click direct advertising. It is not a zero-sum game: positive network effects can grow the entire pie and even proliferate thousands of little pies and tartlets. This finding is consistent with Metcalfe's Law. This law states that the value of a network increases as the square of the number of users (Metcalfe 1995). Network effects help explain why growth and profitability accelerate as a system obtains more users. Therefore, managing positive network effects is a primary task in developing platform leadership in Web 2.0.

Web-enabled online networks have generated several new types of positive network effects: (1) direct network effects, (2) indirect network effects, (3) two-sided network effects, and (4) social network effects.

- Direct network effects: The simplest network effects are direct. As discussed above, the value of a good or service increases as more participants use it (Katz and Shapiro 1985). Each new customer boosts the value of the network and often increases the willingness of all participants to share the cost of network services. For instance, Google's AdWords allows small and medium-sized businesses to use online advertising in a cheap and easy way. Google's $5 to enroll and 5 cents per click program has enticed many new users and generated value, thereby increasing the long-tail reward for niche players.

- Indirect network effects: Network effects can also be indirect. The increased usage of a product or service spawns the production of increasingly valuable complementary goods, resulting in added value related to the original products or services (Economides and Salop 1992). For example, while direct network effects are associated with Windows and file compatibility, the indirect effects arise from the increased quality and availability of complementary applications software.

- Two-sided network effects: Network effects may also be two sided. The increase in usage by one group of users can increase the value of a complementary product or service to another distinct group of users (Rochet and Tirole 2003). With two-sided network effect, the platform's value to any given user depends largely on the number of users on the other side of the network. Value grows as the platform matches demand from both the sides. Because of network effects, successful platforms enjoy increasing returns to scale. Users will pay more for the access to a bigger network so margins improve as user bases grow (Eisenmann et al. 2006). Platforms serving two-sided networks are not a new phenomenon. Due to technology, platforms have become more prevalent in recent years. For example, Google links advertisers and Web searchers.

- Social network effects: Social network effects occur when groups of participants join together in the Web 2.0 business environment. For instance, an instance messaging can influence a user directly with the decision of a small subset of other participants. The extant and density of clustering in this social network can become very important in Web 2.0 firms.

5 Spider web analysis of platform leadership

Web 2.0 firms can create platform leadership with different strategic approaches. Because of unique strategic resources, each firm differs in its focus on what and how strategic components are used to achieve competitive platform leadership in the Web 2.0 era. As shown in Fig. 2 and Table 1, a spider web analysis shows which of the five components are more critical in achieving platform leadership for a particular organization. Multiple investigators examined three firms and used publicly available information about each firm such as the company's web site, annual report, and investment analysts' reports to measure the level of five components in the spider web. This study focused on three Web 2.0 firms which have become platform leaders: (1) Google, (2) Flickr, and (3) Salesfore.com.

Although all five critical factors are essential to gain platform leadership, a spider web analysis of three firms indicated that each firm has its unique shape of spider web. As shown in Fig. 2, Google has achieved competitive advantage by emphasizing its innovation ability of creating profitable business models in the Internet maze. Key drivers of Flickr to attain platform leadership are to leverage network effect and connectivity. Salesforce.com has obtained its platform leadership with both efficiency and complementarities factors. Therefore, spider web analysis of three firms indicated that each firm can achieve its platform leadership in its own way in the Web 2.0 business environment.
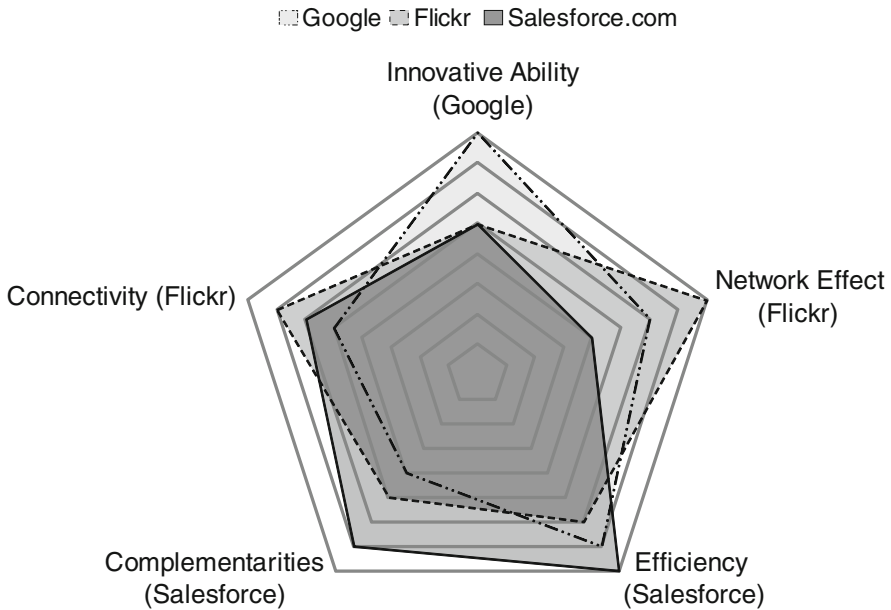
Fig. 2 Spider web analysis of platform leadership

5.1 Google

The innovation ability has been the core driver for Google to attain the current platform leadership in the search industry. This ability has also positively influenced other value factors such as efficiency and network effect. As a result, Google has been successful in attracting many users of its services, enabling Google to serve a broad span of users, which has eventually resulted in Google's platform leadership invulnerable.

(1) Innovation ability: Innovation ability has been the main strength that built the platform leadership of Google in the search-engine industry. By displaying a superb ability to innovate and solve essential problems in the search industry, Google has earned platform leadership over the years. First, Google provides improved solutions to the essential technical problem of finding out what users are really looking for in the Internet maze. By finding an answer to the existing problem, Google's search service allows its platform leadership. Second, Google has found the answer to how firms can make a profit from using the Internet. Google AdSense brought about a radical change in the advertising industry by linking focused advertising to user searches. Based on Google's ability to innovate, Google has been able to continue to enlarge its platform.

(2) Connectivity: By distributing free software such as Google AdSense, Google has allowed the users and website publishers to easily connect to one another on its web platform. Compared to previous web advertisements such as

Table 1 Value factors of selected Web 2.0 firms

	Innovation ability	Connectivity	Complementarities	Efficiency	Network effect
Google	Introduced PageRank, a technology giving precise web search results, enabling information seekers to get more credible results Compared with previous web ads such as banners and popups, Google AdSense matchs users with relevant ads	By distributing free software, such as Google AdSense, Google allowed users and website publishers to easily connect to one another based on its web platform	A large span of user network enables complementarities on Google web platform Google AdSense combines desire of website publishers of all sizes with Google platform expansion, which leads to more complementarities	Improvement on search engine makes users saving information-seeking time and effort Provided relevant ads to users adds efficiency with improved search results	The broadly distributed Google AdSense created more intense user network
Flickr	Found innovative ways to search an enormous technical problem involving how to build a scalable and searchable image database without spending tremendous sums of money	Used an application programming interface (API)	Easily getting a variety of photos by tagging keywords	Reduced the cost of developing and implementing photo management database	Allowed users in Flickr to become very comfortable uploading and sharing self created digital content Engaged all participants in Flickr to tag a photo with keywords or metadata
Salesforce.com	Used Software as a services(Saas), and then cloud computing, a web-enabled software application distribution model Leading the industry for CRM solution provider with a web-based software application model	Adopted open source applications of AppExchange	With the Cloud platform model, Salesforce.com provides more benefit to all of the software creators, developers, and customers than separately	Reduced complexity and high initial cost of buying or building a custom application Customer can build and deliver applications faster than the traditional model	By Saas and cloud computing model, positive network effects and increasing returns are encouraged

banners and popups, Google AdSense easily matches users with relevant advertisements.

(3) Complementarities: As more users are involved in the Google platform, the web-based business owners were able to generate more profit from advertisements on Google compared to ads on other websites. In order to gain broader user network, Google has combined the desire of website publishers of all sizes with Google platform expansion, which lead to even more complementarities.

(4) Efficiency: Innovation in searching methods enabled web users to easily get more credible results. Also, innovation in the way of web ads made it possible for the website owners to advertise their sites with much more efficiency at the same or less costs.

(5) Network effect: The broadly used Google search engine and AdSense have created huge user networks. In June 2007, Google launched its first developers' conference, with more than 6,000 programmers participating from around the world.

5.2 Flickr

Flickr, a photo management and sharing web application, is another great example of Web 2.0 firms. This firm has pioneered the concept of folksonomy, a cooperative classification method through shared metadata. Flickr's easy-to-use web interface and free photo management storage service enable users to actively upload personal photos and add comments for their own convenience. The greater the number of users and aggregated feedback obtained by Flickr, the better the system performs for every user. Direct positive network effects have allowed Flickr to become the center of a digital photo ecosystem of developers, bloggers, digital photographers, and sophisticated users.

(1) Innovation ability: Flickr found innovative ways to search an enormous technical problem involving how to build a scalable and searchable image database without spending tremendous sums of money. Flickr's tag-based approach helps reduce the cost and risk of developing and implementing a database by creating partnerships with its users and third-party developers.

(2) Connectivity: Flickr's open system and open application programming interface are its primary strengths that have allowed third-party individual developers as well as companies to build image uploaders for a range of operating systems and to connect to Flickr's many different applications.

(3) Complementarities: When participants find it easy to connect and collaborate with others, they become increasingly comfortable sharing self-generated content; frequent interaction builds communities, trust, and self-policing norms. By 2006, Flickr's platform had allowed more than 2 million registered users to become active uploaders of more than 100 millions photos, 80% of which were publicly shared through the Flickr photo database.

(4) Efficiency: Efficiency is one of major components to allow Flickr to achieve platform leadership. Flickr essentially provides the service that most users

need and want the most: photo inventory and management. In addition, Flickr offers users a variety of ways to organize photos, a set of tools for connecting photos to maps, and options for printing photos in many different formats.

(5) Network effect: Flickr's network is another major driving force for obtaining platform leadership. The system of Flickr multiplies positive networks effects in different ways. First, users are very comfortable uploading and sharing self-created digital content. By 2006, Flickr's platform had more than 2 million registered users, who uploaded more than 100 million photos. Second, all participants in Flickr can tag a photo with metadata. This tagging allows Flickr to categorize photo images into tag clusters and provide aggregated feedback to users. As a result, 85% of the digital photos in Flickr have human-added metadata. As more users become involved in tagging, the quality of search and image categorization enhance dramatically.

5.3 Salesforce.com

Launched in 1999 by former Oracle executive Marc Benioff, Salesforce.com provides Customer Relationship Management (CRM) solutions over the Internet through a software service model. In a relatively short period of time, it has achieved platform leadership in the CRM market because of its efficient platform that reduces the investment required to build and deliver products or services.

(1) Innovation ability: Used software as a service, and then cloud computing, Salesforce.com is now leading the industry as a CRM solution provider with a web-based software application model.

(2) Connectivity: This component has greatly contributed to the firm's platform leadership. With AppExchange products, Salesforce.com provides a platform that enables external or third-party developers to easily create application services for the enterprise market. As a consequence, connectivity among Salesforce.com participants and users has greatly expanded.

(3) Complementarities: The platform model in Salesforce.com has developed into a "Cloud Platform" with cloud computing service technology, which provides the most flexible web-enabled solutions than ever. With the Cloud Platform model, Salesforce.com provides more benefits to all of the software creators, developers, and customers than them separately. Therefore, the platform strategy model of Salesforce.com has enormous complementarities which are one of the main strengths of the company.

(4) Efficiency: The platform with cloud computing reduces the complexity and high initial cost of buying or building a custom application. Moreover, customers can build and deliver applications faster than the traditional model. The Salesforce.com platform model has shown much strength in customer cost reduction in many ways.

(5) Network effect: Software as a service and the cloud computing model encourage, positive network effects. Every operation as project in a company can add and share its CRM data through a cloud computing network.

6 Conclusion

The characteristics of Web 2.0 provide tremendous opportunities for value creation to Internet-based companies as well as traditional market-based companies. However, few companies appear to leverage these opportunities strategically. This study developed a model of platform leadership in the Web 2.0 era that could help explain how Web 2.0 companies become platform leaders through five critical success factors: innovation ability, connectivity, complementarities, efficiency, and network effects.

Innovation ability to solve current problems in an industry allows Web 2.0 companies to create new value. Easy connectivity facilitates the benefits of the collective value and long-tail effect provided by various participants in a platform. Complementarities allow Web 2.0 companies to create more value through the combination of products or services than would be possible by each separately. Efficiency enables participants to do more with less by reducing the transaction cost. Network effects generate increasing returns to participants as more users join in the platform. With these five components, Web 2.0 companies can create platform leadership and enhance competitive advantage in a particular industry.

Through a spider web analysis of three cases (Google, Flickr, and Sales-force.com), this study showed how the firms leverage some of the five factors in the model to create particular core competence. Figure 2 presents that Web 2.0 firms with different strategic profiles can create platform leadership in different ways. Because of the fierce competition in the Web 2.0 market, companies are currently seeking an innovative strategy to survive. This study provides a basis for understanding platform strategies in Web 2.0 that can assist practitioners in making the right strategic choices to take advantage of Web 2.0 opportunities.

This study has limitations due to the fact that the components for platform leadership developed in this study are based mostly on previous literature and a limited case study of three firms. In this respect, further research is needed to complement the results of this study. Despite this limitation, this study is still meaningful as it represents the first attempt to related the concept of platform leadership to the Web 2.0 industry.

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