Preface

EMERGING WEB 2.0-BASED BUSINESS MODELS

Recently, the Web paradigm shifted from the business-centered to user-centered one. This paradigm shift has become known as “Web 2.0”, coined by Tim O’Reilly in 2004 (O’Reilly, 2007). Web 2.0 refers to a website that has evolved beyond Web 1.0 and features user-created-content and online communities that allow website visitors to interact dynamically with the site. While technological distinctions between Web 1.0 and Web 2.0 are often not clear in some areas, the social and technological environment for positive user participation and interactivity epitomizes Web 2.0. Web 2.0 is continuously evolving and offers new business models and support business processes, knowledge management, customer relationship management, and partner relationship management.

Despite the lack of a comprehensive framework for the use of Web 2.0 applications, businesses are eager to use them. Managers are already active users of the various Web 2.0 technologies such as social networks and blogs. Managers are realizing that Web 2.0 affects a wide spectrum of business activities from building product or brand awareness to after-sales services. The main purpose of this study is to explore emerging Web 2.0-based business models. This study proceeds as follows: Section 2 presents a literature review on Web 2.0. Section 3 explores emerging Web 2.0-based business models. Finally, Section 4 concludes with managerial implications.

LITERATURE REVIEW

Web 2.0 refers to the multitude of new ways that the Internet is used as a platform for developing and hosting software applications and developing and exchanging digital contents by the businesses and users. Due to the easy publication and editing of online content, Web 2.0 has already had great impacts on the ways that people interact and businesses operate. A global survey conducted by McKinsey in 2007 finds that the popularity of Web 2.0-based applications is growing among businesses (McKinsey Survey on Internet Technologies, 2007). While most companies surveyed have so far integrated a limited number of these applications into their business strategies, the large majority have indicated that Web 2.0 integration is important for maintaining the company’s market position, providing a competitive edge, and addressing customer demand. Other studies on Web 2.0 adoption indicate that the benefits of the Web 2.0 applications come from knowledge management initiatives (Cayzer, 2004; Wagner, 2004), project management efforts (Miller, 2006), and social networks that connect employees (Middleton,
Businesses can leverage Web 2.0 technologies in order to dynamically cooperate with customers and partners in efforts to generate new design innovations (Brown, 2008).

McAfee (2006) coined the term “enterprise 2.0” to describe the application of Web 2.0 to the enterprise utilizing wikis and social networking software to support and enhance the continuously changing and emergent collaborative structures of knowledge work across the enterprise. Organizations need to invest in Web 2.0 technologies differently from the way they invested in information technology (IT) projects in the past. Organizations will have to find new ways of management to respect the freedom, openness, and sociality inherent to Web 2.0 technologies (De Hertogh & Viaene, 2010).

The most important contribution of Web 2.0 is not in the software but in the information provided on the web sites (van Iwaarden, van der Wiele, Williams, & Eldridge, 2010). The tremendous increase in user-generated content (UGC) on the Internet has important consequences for Web users, as well as companies. While most studies argue that Web 2.0 is a healthy phenomenon, as it is promoting free expression and democracy and is becoming the new source of consumer influence and empowerment, critics argue that Web 2.0 also promotes low quality amateur journalism, threatens intellectual property rights, and blurs the boundaries between fact and fiction. Objections about UGC have also to do with issues of privacy and the lack of responsibility for online publications (Constantinides, 2010). Web 2.0 also emphasizes communication via the e-social networking, occurring on so-called e-community platforms. Therefore, interaction between users is the utmost importance. Interaction is easily conceivable for private as well as for commercial purposes (Kollmann & Lomberg, 2010).

Web 2.0 has contributed to an unprecedented growth of information volume, new forms of networking, customer empowerment, and new business models (Constantinides & Fountain, 2008). The following discusses major Web 2.0 applications including social networking sites, blogs, folksonomies, wikis, and integrated services.

**Social Networking Sites**

Social networking sites (SNS) allow individuals to form or maintain online social connections and share their skills, talents, knowledge, and/or preferences with other members. While every social networking site requires its members to create a profile, each site has different purposes and targets specific user populations. For example, Facebook focuses on friend networks, LinkedIn focuses business networks, and MySpace focuses on special interest topics such as movies and hobbies. Recently, these SNS have expanded their business models and have begun competing with each other.

**Blogs**

Blogs (short for weblogs) are online journals that are characterized by short entries and regular updates. Blogs are inherently flexible and can be used for a variety of purposes, ranging from personal opinions to knowledge management initiatives and customer relation tools (Ives & Watlington, 2005). One of the most useful features of blogs is the functionality that allows readers to comment on each entry (Kolbisch & Maurer, 2006; Rosenbloom, 2004). The collective comments and links on blogs form a clustered online network termed the blogosphere (Schmidt, 2007). A variety of public blogging services are available to individuals and firms. For example, Twitter is the most popular social networking microblogging service which thrives on constant change and updates. Tweets are text-based posts of up to 140 characters displayed on the author’s profile page and delivered to the author’s subscribers, known as
followers. Authors can restrict delivery to those in their circle of friends or allow open access. Recently, blogs have demonstrated the sheer power of information sharing and dissemination in areas of politics, natural phenomena, and celebrity activities.

**Collectively Arranged Metadata: Folksonomies and Tags**

Collectively arranged metadata are the result of user participation in the classification of digital objects. Collectively arranged metadata become more useful as more users participate in the creation. The process of individually assigning metadata about objects such as URLs, images, videos, and texts is called folksonomy or tagging. The process of assigning tags or labels to websites is also often referred to as social bookmarking. The primary benefit is that users will find information more easily and accurately. Folksonomies have become part of social software applications such as photograph annotation and bookmarking, and have become an important alternative to search engines or other instruments for surfing the web. An empirical analysis of the complex dynamics of tagging systems has shown that consensus around stable distributions and shared vocabularies emerge, even in the absence of a centrally controlled vocabulary (Halpin, Robu, & Shepherd, 2007). Some popular tagging sites include Delicious: a social bookmarking system, Digg: a story sharing community in which submissions are voted upon by users, and Flickr: a photo publishing/sharing site.

**Wikis**

Wikis are easy-to-use, browser-operated platforms that enable collaborative publication on the Internet (Ebersbach & Glaser, 2005). Wikis also embody a specific mindset towards collective intelligence. They allow many individual participants to contribute to an online discussion, usually via centrally managed content management systems. Wikis are designed to make it easy to correct mistakes and track changes. In contrast to blogs, the content of wikis tends to be more unbiased, as the author allows the readers to co-edit the original content. Through multiple revisions of a document by a group of co-editors, the content becomes more credible (Kolbitsch & Maurer, 2006). A number of validity checks are implemented to the contributions made to a given wiki topic. One of the most successful applications of wikis is Wikipedia, a popular online encyclopedia for which any member can contribute and edit contents.

**Integrated Services**

Integrated services utilize Web services. A number of web applications are based on Web services and service integration among businesses and users. Mashups are aggregations of services from different online sources to create a new service. One example includes pulling store locations from a database and displaying them on Google maps to show where the stores are located. Salesforce.com is an example of companies hosting and integrating corporate mashups. A podcast is a series of digital media files (either audio or video) that are released episodically and often downloaded through web feed. They are often distributed through an aggregator, such as an iPod. Many businesses are leveraging podcasting to their customers. A web feed is a data format used for allowing people to subscribe to online distribution of news, blogs, podcasts, or other information. Content distributors syndicate a web feed, thereby allowing users to subscribe to it.
E-Commerce Business Models

A business model is a framework of how an organization generates revenue and involves a series of planned activities or business processes. The literature on business models has been abundant. Timmers (1999) proposes his definition of business models that is applicable for e-commerce environments: “A business model is defined as the organization of product, service, and information flows, and the sources of revenues and benefits for suppliers and customers.” Afuah and Tucci (2003) suggest that a business model is “the method by which a firm builds and uses its resources to offer its customers better value than its competitors and to make money doing so.” They note that business models are designed to make money for long term. Rappa (2004) stated that “a business model is the method of doing business by which a company can sustain itself (that is, generate revenue); the business model spells out how a company makes money by specifying where it is positioned in the value chain.

In summary, all of these definitions share a common idea: it concerns what to produce and sell, and how to sell and to whom. The business model also addresses the value proposition of the product or service and earnings logic behind the profit making. The business model is a representation of management thinking and practice that helps companies to see, understand, and run their activities in a distinct and specific way (Chararbaghi, Fendt, & Willis, 2003). Based on that management thinking and practice, each firm is likely to develop a unique business model. Afuah and Tucci (2003) suggest the following eight components of a business model:

1. **Customer value**: The description of target customer value. How can the firm deliver value to customers? Will the firm offer differentiated or lower-cost products/services?
2. **Scope**: Target the right market segments with products or services that have the appropriate value mix to customers.
3. **Pricing**: The development of proper pricing strategies.
4. **Revenue sources**: The determination of all revenue sources.
5. **Connected activities**: The determination and timing of activities that underpin customer value.
6. **Implementation**: The determination of organizational structure, systems, people, and environment needed to carry out the activities and deliver customer value.
7. **Capabilities**: The existing capabilities and the desired capabilities needed to execute the value-adding activities, and the capability gaps needed to be filled.
8. **Sustainability**: The strategies that help the firm sustain competitive advantages and make it difficult for competitors to imitate the sustainability.

The term, “e-commerce business model” has been widely used by researchers and practitioners to loosely describe a unique aspect of a particular electronic commerce business. E-commerce business models use the web to carry out their activities and generate revenue. E-commerce business models are important for companies to survive in the global economy and are a fertile ground for innovation (Amit & Zott, 2000). E-commerce business models constantly evolve to adapt to changing consumer demands. For example, Amazon.com was launched as an online bookseller in 1995, but today it sells practically everything. Priceline.com started as a “name-your-own-price” site hosting travel bidding services, but later expanded its business to fixed-price products as a regular online travel agency.

A number of researchers have presented high-level e-commerce business models that have been influential in shaping strategy development and implementation of many online businesses. Their list of the
e-commerce business models is not exhaustive. As shown below, their differing views on e-commerce business models are complementary with each other. Weill and Vitale (2001) identify the following eight e-commerce business models.

1. **Content Provider**: Provides content (information, digital products, and services). Examples include America Online (AOL) and accuweather.com.
2. **Direct to Customer**: Provides goods or services directly to the customer, often bypassing traditional channel members. An example is Dell.
3. **Full Service Provider**: Provides a full range of services in one domain (e.g. financial, health, application services). Examples include E*TRADE and Scottrade.
4. **Intermediary**: Brings together buyers and sellers by concentrating information. Examples include Expedia.com and eBay.
5. **Shared Infrastructure**: Brings together multiple competitors to cooperate by sharing common IT infrastructure. An example is CourseSmart, which is a venture supported by the leading publishers in North American higher education.
6. **Value Net Integrator**: Coordinates activities across the value net by gathering, synthesizing, and distributing information. An example is Cisco, which designs, manufactures, and sells networking equipment. Cisco utilizes resellers to install and support the configurator to reduce errors and collect market information.
7. **Virtual Community**: Creates and facilitates an online community of people with a common interest enabling interaction and service provision. Examples include Facebook and LinkedIn.
8. **Whole of Enterprise**: Provides a firm-wide single point of contact, consolidating all services/business models provided by a large multi-unit organization.

Rappa (2004) presents a collection of nine e-commerce business models:

1. **Brokerage**: Brokers are market-makers: they bring buyers and sellers together and facilitate transactions. Brokers play a catalyst role in business-to-business (B2B), business-to-consumer (B2C), or consumer-to-consumer (C2C) markets. Examples include marketplace exchanges (Orbitz, ChemConnect), auction brokers (eBay), and transaction brokers (PayPal, Escrow.com).
2. **Advertising**: The web advertising model is an extension of the traditional media broadcast model. The advertising website provides content and services (such as email, instant messaging, blogs) mixed with advertising messages. Examples include portals (Yahoo!), classifieds (Craigslist), and content-targeted advertising (Google).
3. **Infomediary**: Data about consumers and their consumption habits are valuable, especially when that information is carefully analyzed and used to develop targeted marketing campaigns. Examples include advertising networks (DoubleClick) and metamediaries (Edmunds).
4. **Merchant**: Wholesalers and retailers of goods and services. Sales may be made based on list prices or through auction. Examples include online merchants (Amazon.com) and bricks-and-clicks (Barnes & Noble).
5. **Manufacturer (Direct)**: The power of the web allows a manufacturer to reach consumers directly and thereby compress the distribution channel. Dell Computer is a well-known direct manufacturer.
6. **Affiliate**: In contrast to the generalized portal, which seeks to drive a high volume of traffic to one site, the affiliate model provides purchase opportunities wherever people may be surfing. The af-
7. **Community**: An online community is an electronically supported social network. It can be seen as a group of people who have regular social interaction, independent of time and space, because of a common interest such as a problem, task, or feeling exchange. Examples of online communities are Internet forums, where users can gather to share information.

8. **Subscription**: Users are charged a periodic (daily, monthly, or annual) fee to subscribe to a service. Subscription and advertising models are frequently combined. Examples include content services (Netflix), internet services providers (America Online), and treasure hunting games (Geocaching).

9. **Utility**: The utility or “on-demand” model is based on metering usage, or a “pay as you go” approach. Unlike subscriber services, metered services are based on actual usage rates. Examples include metered usage (utility computing by Hewlett Packard).

As web technologies advance, new e-commerce business models continue to emerge. From the previous discussion, field studies, and examples, it is easy to conclude that at present many businesses explore and utilize Web 2.0. However, Web 2.0-based business models have not been fully investigated. In order to help businesses to utilize Web 2.0, the next section explores a basic classification of the Web 2.0-based business models.

### 3. EMERGING WEB 2.0-BASED BUSINESS MODELS

Web 2.0 is moving beyond the early diffusion stage and best practices emerge. Many new pure-play Web 2.0 business models arise by leveraging Web 2.0 technologies such as wikis and blogs. In addition, bricks-and-clicks organizations try to leverage Web 2.0 technologies to improve their business processes. Organizations must understand the impacts of Web 2.0 technologies on their existing business model in order to be competitive in this fast-paced environment. In this section, we investigate the emergence of new Web 2.0-based business models in which the use of Web 2.0 is the primary driver of revenue and corporate existence. Based on the analysis of popular Web 2.0-based organizations, we identified the following six Web 2.0-based business models.

#### Broad Online Community

A broad online community is an electronically supported social network of a wide range of user groups. It can be seen as a group of people who have regular social interaction but without any specific idiosyncratic group characteristics. The broad online community allows individuals to form or maintain online social connections and share their skills, talents, knowledge, and/or preferences with other members. The viability of this community model is based on user loyalty, since users need to invest both time and emotion to the community. Revenue can come from the sale of products, information services and/or advertising. A large community may expect revenue from subscriptions for premium services. Examples include Twitter, Facebook, Bebo, and Friendster.
Focused Online Community

A focused online community is a niche/specialty online community dedicated to people with a common interests and needs such as professions or hobbies. One of the major distinctions is in professional and private users (e.g., business social network services as LinkedIn and private social networking services as Blackplanet targeted at African American users). Users add their profile and portfolio to the community and become part of a common interest such as a problem, task, hobby, or business. Revenue can be based on the sale of specialty advertising, premium services, specialty-related products and services or contributions. Shopping communities bring like-minded people together to discuss, share, and shop. Using the wisdom of crowds, users communicate and aggregate information about products, prices, and promotions. An example of a focused online community is an Internet car forum, such as NASIOC (North American Subaru Impreza Owners Club, forums.nasioc.com). In this forum, members of the community can gather to share information such as car pricing, purchasing tips, technical details/troubleshooting, and events the community may hold in their region. They can also post products for sale or trade with other members. Like most focused online communities, forums.nasioc.com is funded through banner advertisements, as well as sponsors who sell their products on the forum.

Social Shopping

Social shopping, also called social commerce, brings buyers and sellers together and facilitates transactions by providing a method of e-commerce where shoppers’ social interactions are emphasized in the shopping experience (Wikipedia, 2010). Social shopping attempts use technology to mimic the social interactions found in physical malls and stores. Social shopping can largely be divided into two categories: (1) Group shopping sites and (2) Social shopping marketplaces. Group shopping sites group individual consumers to purchase products and services together from merchants at discount prices. Examples include Groupon, Gilt City, LivingSocial, and BuyWithMe. Shopping marketplaces bring social shopping sites, merchants, and consumers together to connect and transact. The marketplace brings together independent buyers and sellers and creates a forum for them to conduct business transactions. Examples include Sttorenvy and Jasmere. Social shopping also encourages people to exchange information about products and services. The revenue sources include sales commission and advertising. Social shopping sites develop Android and iPhone-based mobile apps to provide location-based services.

The success of the social shopping sites depends on the customer satisfaction, customer loyalty, partner management, and quality policy, including refund policy. As the number of the social shopping sites grows rapidly, the competition intensifies and social shoppers’ complaints increase about overbooking, poor product/service quality, and stockout. Participating companies usually pay a high rate of commission to social shopping sites. Many social shoppers are bargain hunters.

Content Intermediary

Content intermediaries are businesses that function as a third party between content generators and content users. Sometimes, users serve as both content generators and content users. Content intermediaries aggregate content and deliver it to users. In addition to written content, content generators often contribute to the sites with video, audio, or other types of rich media. Product reviews, comments, recommendations, and news or information posted on the sites represent high quality market information
and an unbiased customer voice. Three types of content intermediaries are: 1) blog sites, 2) collective intelligence sites, and 3) content aggregating/sharing sites.

Blogs are online journals that are characterized by short entries and regular updates. Blogs are inherently flexible and can be used for a variety of purposes, ranging from personal opinions of the contributor to knowledge management initiatives and customer relation tools. Personal or public blog sites are used to host blogs and the posted messages can be distributed to other sites or readers via RSS. Examples include political blog sites, such as HuffingtonPost.com, consumer electronics blog sites, such as engadget.com, and entertainment blog sites, such as perezhilton.com.

As users contribute new content to the web, the web of connections and associations among users grows stronger as a result of their collective activities. Collective intelligence is formed out of massive user participation and collaboration via the web. Innovative web business models such as social bookmarking and online encyclopedias take advantage of the network effects: the more people participate in generating and refining content, the more useful they become to the users. The ease of content generation and the speed of content sharing are critical to the success of collective intelligence sites. Another innovative collective intelligence business is an online reputation system. Online reputation systems are based on intelligence of crowds. People provide opinions of the products, services, or users they have experienced in the form of scores, rankings, and comments. The reputation systems collect and publish reputation scores and comments to a community or general public. While most reputation systems are product review systems, the objects of the reputation system used by eBay are transaction participants who provide ratings of the transaction party after they conduct a transaction. eBay’s reputation system is designed to reward good behavior and punish bad behavior. Examples of collective intelligence sites include online encyclopedias, such as Wikipedia, social bookmarking/tagging sites, such as del.icio.us and Digg, and online reputation systems, such as Epinions, Bizrate, and Yelp.

Content gathering/sharing sites gather web content (and/or sometimes applications) from users. The value of the sites depends on the quality and quantity of the content contributed by the users. This content is in the form of video, audio, music, images, and text. Compared to the blog sites, the journalistic function is limited. Examples include video-sharing sites, such as YouTube, event sharing sites, such as Upcoming, and photo publishing/sharing sites, such as Flickr.

**Virtual World**

Virtual worlds are persistent virtual reality spaces (Schroeder, 2008). Virtual world enables users to interact with each other without geographical barriers. In virtual worlds or games, it is possible for users to interact using avatars. Avatars are the representations of users in virtual worlds, often graphically displayed as 3-dimensional characters and completely customized according to the user’s preferences. These worlds are available 24/7 – users can explore, socialize, and solve collaborative challenges. Virtual world technologies have affected education, information, and gaming industries. From a marketing perspective, virtual worlds create opportunities for a new form of commerce – virtual or v-commerce (Nasco, Boostrom Jr., & Coker, 2010). V-commerce is an alternative and/or supplement to traditional forms of commerce. Virtual commerce is a viable type of commerce in which products are created with infinite virtual resources and exchanged for real world money.

One of the more successful virtual worlds is 3-dimensional Second Life, created by Linden Lab in 2003. Avatars are central to the way that users interact with people and objects in virtual spaces. Second Life centers on socializing within communities, the sale and resale of goods, and the advancement of its
virtual economy. Virtual characters known as Residents run businesses, own land, travel, and buy and sell goods and services with the Linden Dollar. Virtual worlds represent a significant Web 2.0 business model due to its business potential. The worldwide virtual world economy is valued at approximately $1.8 billion (Dibbell, 2007). Other virtual worlds include Smallworlds, Zwinktopia, ActiveWorlds, and Twinity.

Shared Web 2.0 Services

Shared Web 2.0 Services facilitate the growth of Web 2.0 populations by providing sharable services in the form of software and hardware. Using the shared Web 2.0 services, users/groups can develop their own Web 2.0 applications at minimum costs and technical skills. For example, users/groups may set up their own wiki sites using wiki development tools provided by wiki hosting sites such as Wikispaces and Wetpaint. WordPress is a popular blog hosting site available to individuals and firms. The revenue sources include advertising, premium services, and subscription fees. Examples of shared Web 2.0 services include social networking host services for private specialty social networking, mashup platform vendors, Widgets, wiki host services, Google apps for social networking and collaborations, blog host services, and collaborative host services.

4. CONCLUSION

In this study, we discussed major Web 2.0 applications including social networking sites, blogs, folksonomies, wikis, and integrated services. We also identified six Web 2.0-based business models: 1) broad online communities; 2) focused online communities; 3) social shopping; 4) content intermediaries; 5) virtual worlds, and 6) shared Web 2.0 services. These Web 2.0-based business models continue to grow in size and number through the interaction with individual users and business customers.

Web 2.0 has not only engendered Web 2.0-based businesses, but has also affected the other existing businesses. Existing businesses must understand the impacts of Web 2.0 technologies on their existing business models in order to be competitive in this fast-paced environment. Managers should clearly identify and prioritize their business model components that require Web 2.0 technologies to improve organizational performance. For instance, certain organizations may decide to incorporate Web 2.0 only as part of their information sharing and collaboration initiatives with partners whereas others may use it as a means to network with their customers. The overall business strategy will help determine Web 2.0 initiatives and implement them.

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