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Recommended Citation

Lyons, Kelly; Playford, Corrie; Messinger, Paul R.; Niu, Run H.; and Stroulia, Eleni, "Business Models in Emerging Online Services" (2009). *AMCIS 2009 Proceedings*. 105.

<http://aisel.aisnet.org/amcis2009/105>

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ABSTRACT

Due to advances in technology and the rapid growth of online services, a significant number of new and inventive web-based service models and delivery methods have been introduced. Although online resources and services are having an impact on more traditional service delivery mechanisms, it is not yet clear how these emerging mechanisms for online service delivery will result in profitable business models. In this paper, we consider emerging business models for online services and their implications for how services are delivered, used, and paid for. We demonstrate the changing roles of user / consumer and provider / seller. We also discuss the applicability of different business models for various domains.

Keywords

Business Model, Online Profit Model, Software-as-a-Service, Social Computing, Virtual Worlds.

INTRODUCTION

Web-based services are having an impact on more traditional service delivery mechanisms, raising questions concerning how these emerging mechanisms for online service delivery will result in profitable and viable businesses and how the availability of web-based services may co-exist with traditional service delivery models. In this paper, we address the following question: *What new business models are emerging and how are they influencing the way services are delivered, used, and paid for?* We explore this question by first presenting three case studies of emerging online services (software-as-a-service, social computing tools, and virtual worlds) which were identified during a workshop (CASCON, 2008) where participants considered several questions about the services defined by each case study: essential elements of the service type; current business models; current and potential target markets; vulnerability to other service delivery mechanisms; procedures for measuring the effectiveness of the associated business models; and, potential user concerns. Outcomes from the workshop were further researched and compared with a recent discussion of emerging online services business models (Rappa, 2008). The results of that analysis are presented in this paper as well as a description of how the typical roles of provider / consumer or seller / buyer are changing in the context of emerging online services. As we move from a goods-dominant to service-dominant world (Vargo & Lusch, 2004), these roles are becoming blurred and additional third-party participants are playing increasingly significant roles in successful online service business models.

Before we begin, it is important to clarify our meaning of *business model* in the context of this paper. Al-Debi, et al. (2008) define business models for the world of digital business by arguing that the dynamic environment, high level of competition, and uncertainty in the world of digital business have created a gap between business strategy and processes which requires new ways of thinking about business models. In this paper, we adopt a more narrow definition of business model:

In the most basic sense, 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 (Rappa, 2008).

With this definition in mind, we examine three case studies by focusing on the essential elements of each service type, the current business models around it, and its current and potential target markets. We also discuss vulnerabilities to other service delivery mechanisms and outline possible procedures for measuring the effectiveness of the associated business model and potential user concerns.

SOFTWARE-AS-A-SERVICE

Software-as-a-Service (SaaS) is defined as a model of software deployment where an application is hosted as a service provided to customers across a network. We differentiate between providing SaaS to consumers (in which case it is typically a web-based service with an associated end-user license agreement) and providing SaaS to enterprise customers (in which case, the service provided is described in a contract or service agreement).

In the SaaS model of software deployment, customers do not have to install and run the software application on their own system. This means they do not have to maintain, upgrade, operate and otherwise support the software application themselves or through service and maintenance agreements. These tasks become part of the service provided. However, this also means that they give up control over upgrades and specific change requirements. The cost of the software is on-going as compared with the typical one-time cost when software is purchased. This new model for software deployment has some authors comparing SaaS to other radical shifts that have affected the software industry such as PCs, client-server, and the Internet (Dubey and Wagle, 2007).

There are several organizations working to define levels of SaaS “maturity” (Ried, 2008 and Carraro, 2006). In the Forrester SaaS maturity model (Ried, 2008), the highest (most mature) level includes provision of user-specific applications based on packaged and custom business applications where these applications are orchestrated and provisioned dynamically in a multi-tenant environment. The lowest level according to Forrester’s maturity model amounts to outsourcing of information technology services. These levels of SaaS maturity differentiate current versus future SaaS vendors and the type of applications offered (such as customer resource management (CRM), payroll, human-resources, financial services, supply chain services, etc.) (Dubey and Wagle, 2007). Example services in this domain include Concur Technologies, Digital Insight, Digital River, Gmail for enterprise, Rightnow Technologies, Rypple, Salesforce.com, Taleo, Ultimate Software, WebEx, WebSideStory, and Workstream.

Suggested Pricing/Delivery Structures

The basic method of charging for SaaS is on a per time-period basis using a periodic fee structure (i.e., leasing of software in lieu of owning licensed copies). Another model uses on-demand pricing based on per-use, per-transaction, or per-feature. SaaS vendors can also include targeted advertising in the software service delivery paid for by a third party, which is frequently the case for the consumer-oriented SaaS.

Target Market Segments

In this paper, we have defined the target segment for SaaS as businesses or large enterprises. However, SaaS shares similarities with consumer-oriented web-based applications; therefore, future analyses may benefit from considering consumer-based applications together with SaaS applications. Service providers may target the consumer market by providing a service for free in order to create demand within organizations for enterprise-wide use of the service – examples of this include Google’s enterprise Gmail service (Press Release, 2007) and Rypple, a recent innovative offering that provides feedback and rating services to individuals and organizations (Economist, 2008).

Procedures for Assessing Business Model Effectiveness

In the SaaS model, from the client perspective, the cost arising from a subscription or pay model should be less than the cost of owning and maintaining the software. Effectiveness may also be measured by the ability to achieve better service delivery through SaaS. From the perspective of the SaaS provider, the effectiveness of the business model is measured by the cost of providing the levels of service required relative to the income generated from customers. SaaS vendors are less profitable than some traditional software vendors today but this should change as SaaS vendors scale (Dubey and Wagle, 2007).

Vulnerability to or Threat to Other Business Models

Traditional delivery mechanisms of software development and sales and out-sourcing models provide alternatives to the SaaS business model. The SaaS model, however, is starting to threaten the out-sourcing environment and traditional licensed software. Gartner predicts that 25% of new business software will be delivered as SaaS by 2011, and IDC forecasts a compound annual growth rate of 32.2% for SaaS over the next four years (<http://www.hroassociation.org/file/4035/software-as-a-service-.html>).

User Concerns

Businesses moving from in-house IT installations to acquiring IT services through SaaS may have concerns such as potential or perceived lack of customization, ongoing cost, lack of ownership, issues of data security and reliability, and complicated service contracts. Loss of control over software applications has been cited as a top concern among potential SaaS users (Ma and Seidmann, 2008). An additional concern is the difficulty faced by users when attempting to make non-customized software applications fit smoothly within existing IT systems (Ma and Seidmann, 2008).

SOCIAL COMPUTING TOOLS AND SERVICES

Social computing tools and services can be differentiated from other kinds of services on the web by their use of user profiles, articulated social networks, discovery of common interests, and collaborative processes to facilitate social activities through computing technologies. Social computing tools and services tend to focus primarily on communication systems that allow users to interact and share data, and collaborative systems that enable information sharing and collaboration among users (Wikipedia, 2009). Within this space, we see social-networking sites (i.e., LinkedIn, MySpace, Meetup and Facebook), information and media sharing sites (digg, reddit, Flickr, YouTube and Blogger), and extensions to commercial sites (i.e., the rating systems of Amazon and eBay). Some of these systems are very lightweight, such as the voting and tagging systems of digg, reddit and Delicious; others support collaboration and complex content creation, such as Wikipedia and Google Docs (Chi, 2008). Example services in this domain include Blogger, Delicious, Digg, Facebook, Flickr, LinkedIn, Live Journal, Meetup, MySpace, Nexopia, reddit, Twitter, wikis, Youtube, etc.

Suggested Pricing/Delivery Structures

Some social computing services have adopted traditional business models such as advertising. Indirect ads are high volume and low price and are not targeted to users or specific content on the site. They appear as banners or pop-up on the site and are provided alongside content or as click-throughs before accessing content. Targeted ads (such as Google Adwords) make explicit use of the context or exchange on the site or the demographics of a site's members. These work well for social networking sites that bring people together on a specific topic or theme. Facebook does this through their automated marketing (Facebook Ads, 2009). The social networking site is typically paid by advertisers when users click on the ad using a cost-per-click or cost-per-impression model. Some brands engage with users of a particular site through email, messaging, contests, and polls to raise the brand's profile. This kind of advertising is low volume but high price. Social networking sites also use the subscription-based fee model, where users pay a fixed amount each time period. In some cases the basic features of the site are provided for free and a premium version is available through subscription. In some cases, the site is free but extras are provided on a pay-per-feature or pay-per-use basis. In other cases, merchandise is sold that is affiliated with the site but this method is more effective for advertising and building loyalty than making money.

More novel business models include the brokerage and the affiliate-marketing models. In the former, web applications bring buyers and sellers together and take a percentage of each transaction that goes through, as is done by Paypal or eBay. An analog for social-networking sites is the infomediary model, where the site monetizes the value of the data collected from either users or producers including demographic and browsing information or product information. In the affiliate-marketing model, one (affiliate) website is used to drive traffic to another such that the target website company compensates the affiliate website company. This kind of model is also manifested as referrals in Amazon or iTunes, for example. Many community sites are free but benefit from the value created by that community (for example, Wikipedia). Some sites allow users to create applications that serve as ads or channels (e.g., Facebook) by having a viral effect among connections when popular participants use or talk about products. Note that targeted advertising based on analysis of content submitted by the user as is used in Gmail can be met with resistance in social networking sites.

Target Market Segments

The target market for social computing tools is primarily consumers although many enterprises make use of internal social computing tools to connect employees and enable collaboration. In this paper, we limit our discussion to social networking sites for the consumer market.

Consumers are motivated to participate in (sometimes more than one) social network for different reasons and multiple social networks often overlap in their populations. For example, there are people on both LinkedIn and Facebook but there are people on LinkedIn who do not participate in Facebook. Facebook is primarily about connecting and sharing with friends and others in one's life (Facebook, 2009). LinkedIn is primarily about connecting one's professional network to help in career advancement (LinkedIn, 2009).

There are also specific target markets for social networking sites. Some target people within a geographic location, others bring people in a specific demographic together, others are promoted as environments for a particular activity or theme, and some social networking sites target specific media such as video (YouTube) and photographs (Flickr). A large demographic of users of many social networking tools are young people. As these people enter the workforce, the target segments for social computing tools will change and their use in corporate settings may grow.

Procedures for Assessing Business Model Effectiveness

From a user perspective, the models are effective if they provide enhanced interactions and data sharing and ways for people to connect with others without excessive cost (through subscription or up-front monetary costs) or overhead (too many or obtrusive advertisements or a feeling of loss of control of user information). From the perspective of the social networking site, business model effectiveness depends on the ability to attract a sufficient number of users, such that revenue (from any of the various methods employed by the site) exceeds the cost of providing the services. Effectiveness may also be measured by users' loyalty, as indicated by the length of their membership history, the frequency with which they log on the site, and time they spend on it.

Vulnerability to or Threat to Other Business Models

Most models rely on a large number of participants; therefore, social computing sites can compete with one another for their user base. With the low cost of entry, many sites are emerging that provide free services. Sites that provide a base service for free and charge for features or a premium service risk charging for what others are providing for free. They also risk alienation by subscribers when service levels change. Since the user base is drawn from the world's population, there can also be problems administering online payments of some users and with some forms of advertising.

User Concerns

A primary concern of users of social computing sites is privacy and having their information exploited by the service provider (Schmidt, 2006 and Baute, 2009). Nearly 700,000 Facebook users complained when Facebook launched a feature called NewsFeeds that sent a notice to people's friends registered with the service when their profile was updated (Solove, 2008). Facebook was met with another privacy objection when it attempted to launch a two-part advertising system. Whenever users wrote something positive about a product or a movie, Facebook would use "Social Ads" to send friends their names, images and positive endorsement in advertisements. "Beacon" was used to allow data-sharing among Facebook and other commercial Web sites such that if a user made a purchase on one of the networked Web sites (for example, bought a movie ticket on Fandango), that information would pop up in that person's public profile (Solove, 2008). Both of these applications were changed after the ensuing user outcry and an online petition (Solove, 2008). Providers of social computing services must be careful not to violate the trust of their members.

VIRTUAL WORLDS

Virtual worlds provide an online three-dimensional environment where thousands of people interact simultaneously through their avatars (representations of themselves). The history of virtual worlds can be traced back to their precursors in electronic gaming and online social networking (Messinger, et. al., 2009). Now, virtual worlds blend synchronous 3D video engagement with social computing functionalities, enabling people to interact with each other in settings where users are free to pursue their own personal objectives for participation. Many companies have a presence in virtual worlds and use these spaces for brand awareness, advertising, selling (virtual and real goods and services), and communication with customers and among employees (DMD, 2007). These varied uses are resulting in many unanticipated implications for how we work, learn, interact, use the Internet, shop, and play (Messinger, et. al., 2009). Several different kinds of virtual worlds exist for different

target markets and with varying kinds of business models. A typology of virtual worlds is presented in (Messinger, et. al., 2008); two of the five dimensions that define this typology consist of the profit model and the target population. Here, we provide a brief overview of this work. Example services in this domain include ActiveWorlds, Club Penguin, Entropia, Neopets, Habbo Hotel, Second Life, WebKinz.

Suggested Pricing/Delivery Structures

Several of the pricing and delivery structures presented in the previous two sections are also used in virtual worlds including providing a free basic service and charging for a premium service (ClubPenguin), advertising (ActiveWorlds), and charging for features (such as Land in Second Life). Virtual worlds mimic real world spaces and many physical advertising features also exist in virtual worlds such as billboards and kiosks. One distinctive model, used by Webkinz, targets children and creates a strong link between the virtual and the real world. To obtain an avatar in Webkinz, a stuffed animal plush toy is purchased which comes with a login code onto the Webkinz World. The child's avatar is a matching virtual pet, which "lives" in a pet-oriented virtual world. This world, which monetizes its value through the sale of ancillary objects, constitutes an additional kind of business model.

Target Market Segments

Several different kinds of virtual worlds target users by age, gender, activity, and geography demographics. There are education-focused virtual worlds, which provide opportunities to achieve training in specific areas such as architecture and design, procedural skill development, and language learning. There are also theme-based virtual worlds designed to support a particular type of media content (e.g., vSide promotes music through audio and video). Geographic-focused virtual worlds target members within a particular country or geographical region and use the national language for in-world interactions and communications (e.g., the HiPiHi interface is in Mandarin, targeting users from China). Some virtual worlds provide environments for children or teenagers (Whyville) and focus on a particular in-world population such as animals (Webkinz, ClubPenguin). Finally, some virtual worlds do not target any particular market but provide a self-determined or open-objective environment that can be used in creative ways by its participants to augment their real social or business lives (e.g., Second Life, Kaneva).

Procedures for Assessing Business Model Effectiveness

Several factors may influence the effectiveness of virtual worlds' business models. For example, it should not be too difficult to become proficient in experiencing the world. Furthermore, several popular business models provide opportunities for users to create value by creating their own virtual objects or by doing work, giving rise to a business ecosystem. Finally, providing social networking elements together with the ability to accomplish tasks (as in online games) and the opportunity to transcend physical barriers makes virtual worlds attractive for many people; thus, supporting pricing strategies which rely on large numbers of participants.

Vulnerability to or Threat to Other Business Models

Simpler 2D social-networking sites provide similar value and benefits to users with less overhead. Online games can provide a social interaction along with quests or specified goals that attract some users. However, virtual worlds provide a distinctive environment with many potential benefits and issues that have not yet even been explored.

User Concerns

A primary concern is the high level of technical ability and set-up required for some virtual worlds. Users can also encounter in-world behaviors and environments that may make them feel uncomfortable.

IMPLICATIONS OF EMERGING BUSINESS MODELS

In the previous sections we described business models used for three types of new online services. In this section, we synthesize salient features of these business models in a larger context. In Table 1, the rows describe four generically different classes of service. For each, we describe the nature of the value exchange and common fee structures. The four classes of business models consist of the following: (1) computational processing and database services, offered as old-style utilities; (2) content providers from the old media (gathered by news teams and shared through wire services) and new media (gathered from the Internet or created by online communities); (3) transactional services for physical products and packaged software information, or media products; and (4) brokerage or affiliate models that help bring partners together to make their

own transactions or barter. The value exchange column largely follows Rappa's (2008) categorization of business models. The fee structures provide ways to monetize the value created by the business model.

Table 1: Service Classes, Business models, and Fee Structures

Service Class	Value exchange: Business Model	Fee Structures (with Examples)
Computational processing and database services – offered as old-style utilities	Utility Model: User pays \$ to provider; provider provides service to user.	<i>Fee-for-Access:</i> Various forms of SaaS. <i>Fee-for-Service:</i> Salesforce.com, Concur Technologies, Digital Insight, Digital River, Rightnow Technologies, Rypple, Taleo, Ultimate Software, WebEx, WebSideStory, Workstream
	Advertising Model: Third-Party (advertiser) pays \$ to content provider; provider places advertising in media; end-user receives services for free and is exposed to advertising.	<i>Fee-for-Service:</i> Google, Yahoo, Standard newspapers such as the New York Times. Applies for advertising, wherein
Content providers in the old media (gathered by news teams and shared through wire services) and new media (gathered from the Internet or created by online communities)	Subscription Model: User pays \$ to provider; provider provides service to user.	<i>Fee-for-Access:</i> Standard newspapers and cable TV. SaaS applications. <i>Fixed Fees:</i> World of Warcraft
	Infomediary Model: Third-party service provider pays \$ to info provider; info provider consolidates list of service providers; user selects service provider; third-party provides service to user. (User may also co-create the service and provide ratings of service providers.)	<i>Fee-for-Service:</i> Doubleclick, Cnet. (the only difference from traditional media is the nature of the content).
	Community Model: Provider makes available service to user; users create content which attracts other users; third-party pays \$ to provider (advertising); user may pay \$ to provider (subscription).	<i>Free:</i> Wikipedia, Facebook, Youtube, Amazon customer review <i>Fee-for-Access:</i> Second Life, LinkedIn, Cyworld, ClubPenguin, ActiveWorlds, World of Warcraft <i>Fee-for-Service:</i> Facebook Ad, Youtube Ad, Second Life Land, ActiveWorlds Land, Webkinz Toys (Ancillary objects), World of Warcraft merchant (in-world)
Transactional services for physical products and packaged software information, or media products, and	Merchant: User provides \$ to provider; provider makes available products or services to user; provider may create service or procure products or services from third-parties for \$.	<i>Fee-for-Service:</i> Most standard eCommerce: 1800flowers.com, Apple's iTunes Store, Borders.com, sears.com, runningroom.com.
	Manufacturer (Direct): User pays \$ to provider; provider sells product or service to user	<i>Fee-for-Service:</i> Ikea, SaaS.
Brokerage or affiliate models that help bring partners together to make their own transactions or barter.	Brokerage: User pays \$ to broker; broker facilitates match-up of users and service providers (which may involve a service exchange).	<i>Free:</i> FriendFeed. <i>Fee-for-Service:</i> eBay (auctions), expedia.com (travel), Comfree (real-estate). Often commission based.
	Affiliate: Users click through to third-party for service; third party pays \$ to provider; user pays \$ to provider.	<i>Fee-for-Access:</i> Google Affiliate Network <i>Fee-for-Service (per click):</i> Amazon Affiliate Program

In the value exchange, we consider three main parties (user, provider, and third-party). The third-party category can take on several different roles: broker, advertiser, infomediary, sponsor, and affiliate. The category denoted as users can also be referred to as buyers, consumers, customers, end-users, subscribers, community-of-users, or audience. Providers are also

referred to as sellers, firms, wholesalers, retailers, e-tailers, merchants, applications, or website owners. In addition to identifying the roles of the three parties, in our analysis, we consider business models that include both financial and service exchanges. Our summary synthesis in Table 1 shows that for different business models each of the three parties can be providers or receivers (exchangers) of value and the value exchanged might be money, services, or both.

Table 1 also highlights three types of fee structures – fixed fees, fee-for-access, and fee-for-service – chargeable with online services, provided that proper metering technology is available. This contrasts with traditional broadcast media for service delivery, such as radio and TV over the airwaves, which is not metered when used. If fee-for-service is not metered, then a fixed or periodic fee may be the only alternatives available. Periodic payments may be suitable when users are loyal to particular content or service stream, and for which there are periodic updates.

It is worth acknowledging that a key advantage of offering computational processing and database services online consists of centralized economies of scale for the provider on the supply side, with remote dissemination on the demand side. The first online service class described in this paper, software-as-a-service, falls under the first class of business models (online computational processing). By contrast, a key advantage of new media consists of decentralized content creation by users themselves on the supply side (and again remote dissemination on the demand side). The second and third online services described above, social computing and virtual worlds, fall under the second class of business models (specifically new media content co-created by users). In distinct contraposition relative to these first two classes, the last two classes of business models (transactional services and brokerage models) were among the first tried on the Internet and are also common to old-style commerce.

Firms with monopoly power are often in a best position to charge fixed fees for bundled services. In the presence of competition, one may expect de-bundling and sales of products and services on the basis of fee-for-service. Also, the availability of substitutable online services may influence the fee structure a competitor can charge, especially when similar services are available for free. Finally, fee structures are also influenced by the target market, which may be consumer or business-to-business markets.

According to old-style “Product Dominant Logic”, products are transacted between buyers and sellers (either manufacturers or distributors). According to “Service-Dominant Logic,” users participate in co-creating value with service providers. In the former, buyers pay sellers. In the latter, the party that “should” pay for service is far less clear-cut. When users are creating content, themselves – and the content is what attracts traffic – it may be best for the service provider to allow users to create content for free (or in extreme cases pay users for creating content). Generally, we think that the party who receives the service tends to be the party that obtains greater value from the relationship or exchange. In many situations, several parties contribute services and create value.

Note that advertising and subscription models tend to work in tandem, whereby fees are charged to advertisers for access to the subscribers, and fees are charged to subscribers for access to the content. These models are traditionally for older media, such as newspapers, cable TV, radio, and movies. Many services provide a basic version for free and a premium for-fee service. This can encourage loyalty from users and help build a community. Other factors that contribute to different fee structures include competition in the market, allocation of value between the receivers, levels and update frequency of service, and content generation mechanism.

Clearly, a particular service may combine several different business models, and it is the target market that influences the choice. Services used by enterprise or business customers use different business models than services for consumer markets. The willingness to pay by business customers may be influenced by the availability of in-house IT services and out sourcing arrangements. In addition to these factors, the amount of customization available to users can influence choice of business model. Finally, we note the low cost of entry for many online services often prevails such that different services with varying business models can be tested and evaluated with low initial investment.

CONCLUSIONS AND FUTURE WORK

In this paper, we analyzed three types of online services and their corresponding business models. The variety of services offered, the range of their domains, and the complexity of the business models they adopt highlight the movement from goods-dominant to service-dominant logic as described in (Vargo & Lusch, 2004). There is opportunity for new online services to emerge that make use of the large numbers of people, openness, globalization, and low cost of entry to be successful by employing new and creative business models on the web. However, it will be interesting to see what effect the global economic downturn will have on the business models and services described. As funding sources dry up it will become less attractive for entrepreneurs to create a new online service with the hope that a large company will buy it. In the future, we plan to extend our analysis to additional domains such as gaming, dating services, telecom services, and 3D design

and manufacturing and to examine additional success factors such as those reported for user-community-driven Internet ventures (Loebbecke and Huyskens, 2008).

ACKNOWLEDGMENTS

The case studies presented in this paper are based on the results of a workshop held at the Centers for Advanced Studies Conference in October 2008 (CASCON, 2008). The authors acknowledge the input from presenters and participants at the workshop. Specifically, the contributions of Paul Sorenson (University of Alberta) to the section on Software-as-a-Service, the contributions of Sasha Chua (IBM) and Timo Ewalds (founder of Nexopia.com) to the section on Social Computing, and the contributions of Henry Kim (York University) and Stephen Perelgut (IBM). We also thank the reviewers for useful comments that improved the presentation of this paper. The authors' research has been supported by NSERC, the IBM Centers for Advanced Studies, iCORE, Alberta Advanced Education and Technology, the Social Science and Humanities Council of Canada, and the University of Alberta School of Retailing.

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