

## A Review on various E-business and M-business models & Research Opportunities

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### ABSTRACT

A business model is a set of process/activities that results in sustainable profit through desired revenue and customer value. The business model spells out how a company makes money by specifying its position in the value chain. A business model which uses electronic communication technology such as internet for exchanging information is called e-business model. The e-business model includes the roles and relationships among a firm's customers, allies, and suppliers; the major flows of product, services, information, and money; and the major benefits to the participants. This paper contains review on various business models used in e-business, m-business, and m banking. All the major E-commerce business models which fall under 3 main categories : B2B - Business to business, B2C - Business to consumer, C2C - Consumer to consumer are also discussed with their benefits and limitations. Based on business model framework, various research agenda and opportunities are identified and elaborated.

**Keywords :** E-business models, M-business models, M-banking models, Business model framework.

### I. Introduction

A business model is a set of process/activities that results in sustainable profit through desired revenue and customer value. The business model spells out how a company makes money by specifying its position in the value chain. A business model which uses electronic communication technology such as internet for exchanging information is called e-business model. The e-business model includes the roles and relationships among a firm's customers,

allies, and suppliers; the major flows of product, services, information, and money; and the major benefits to the participants. The model include eight ingredients of business like value proposition, revenue model, market opportunity, competitive environment, competitive advantage, market strategy, organizational development, and management team. The model also includes the business elements such as customer management (including value proposition); product and service portfolio, processes, and activities; required resources, suppliers and business networks; and financial viability (including revenue sources). Various electronic business models used in practice fall under 3 main categories : B2B - Business to business, B2C - Business to consumer, C2C - Consumer to consumer, and MB - mobile business.

## II. E-Business Models

E-business and E-commerce models are commonly used interchangeably in many books, even though they have distinct definitions. E-business model is a 'framework' for classifying e-businesses in terms of strategic business objectives, and e-commerce model is a schema for business processes where the goods and money flow. All the business models used in practice mainly focus on the value proposition and revenue generation by using e-business processes.

**(a) Value proposition :** The focus of the value proposition is on the customer and hence firms have to define the value proposition from the customer's perspective. Value propositions may be based on lowest cost, superior customer service, reduction in product search or price discovery costs, product customization, or provision of niche products. The brainstorming session for writing the mission statement of the business firm supports the value proposition strategy of the firm. The firm should develop its business model in terms of product/service features, quality, sales support, and price in such a way that it describe the firm's ideal image from a customer's point-of-view. By choosing most important one or two processes, and then elaborate on it or them to create value proposition of the firm.

**(b) Revenue generation :** A revenue model of a firm identifies how its business will generate revenue. Examples of revenue models include sales, transaction fees, subscription fees, advertising fees, affiliate fees, consultation fee, and licensing fees. Considering these options for the business idea the firm has to identify its revenue model/models to be intended to use. Based on above principle, Rappa (2007), and Applegate (2001), identified some of the e-business models. The first approach of classifying e-business models as given in Rappa (2007), and Applegate (2001), is listed below :

**(1) Brokerage E-Business Model :** The Brokerage e-business model is a website that brings two parties together to conduct business. For example, online auctions, online real estate, business brokers, boat brokers etc. They generally collect a fee for their service which can be worked out with a percentage base or a set fee. Brokers are market makers. They bring buyers and sellers together and facilitate transactions in following way in B2C, B2B, or C2C markets :

- Marketplace Exchange
- Buy/Sell Fulfillment
- Demand Collection System
- Auction Broker
- Transaction Broker
- Distributor
- Search Agent
- Virtual Marketplace

**(2) Advertising E-Business Model :** The advertising e-business model is based on advertising in daily e-newspapers, monthly e-magazines or in place of the firm's web pages. The firm can collect revenue either by renting a small space on its web pages or getting paid for every click on the advertisement. There are many ways regarding online advertising firm to explore. Advertising should always be targeted directly at the readers to compliment websites content so that it will be more effective. This model is an extension of the traditional media broadcasting model. This model works effectively when the volume of viewer traffic is large or highly specialized and mainly used in following types of B2C market :

- Portal
- Classifieds
- User Registration
- Query-based Paid Placement
- Contextual Advertising
- Content-Targeted Advertising
- Intracommercials
- Ultracommercials

**(3) Infomediary E-Business Model :** The Information e-business model is largely based on specialized information on a particular subject. Such firms websites can attract a large

following of people interested in their specific field of knowledge and will use this E-business models to create revenue. Data about consumers and their buying habits are extremely valuable, especially when that information is carefully analyzed and used to target marketing campaigns. Infomediaries provide information to both buyers and sellers. Independently collected data about products are useful to consumers. This model is mainly used in following types of B2B, and B2C marketing :

- Advertising Networks
- Audience Measurement Services
- Incentive Marketing
- Metamediary

**(4) Merchant E-Business Model :** The merchant e-business model is the online version of local store. Some of these may have both brick and mortar store and brick and click internet store, but the great majority are solely online. They accept online payment methods and ship the merchandise to the customer, or they use a third party for online shipping and warehousing service. These firms warehouse and ship goods directly to the customer and is mainly used in B2B and B2C markets. These firms are classic wholesalers and retailers of goods and services in following areas called e-tailers.

- Virtual Merchant
- Catalog Merchant
- Click and Mortar
- Bit Vendor

**(5) Affiliate E-Business Model :** The affiliate e-business model is based on commission sales. The affiliated company need not have to buy the product to resell, and it need not involved in the handling or shipping. All of this is done by the parent company. The affiliated company simply redirects the customer from its own website to the product on the parent company's website and if they make a purchase affiliated company earn a commission. Amazon is a good example of a parent company. They were, in fact, the first company to use this method of selling, allowing anyone to sell and get commission through Amazons merchandise. This model provides purchase opportunities from a number of different sites. The affiliate sites provide purchase-point click-through to the merchant and is used mainly in following B2B and B2C markets :

- Banner Exchange

- Pay-Per-Click
- Revenue Sharing

**(6) Manufacturer (Direct) E-Business Model:** This model is predicated on the power of the internet and Web to allow manufacturers to reach buyers directly (B2C) and thereby compress the distribution channel in following cases :

- Purchase
- Lease
- License
- Brand Integrated Content

**(7) Community E-Business Model:** Users who have a common interest in an area congregate at community Web sites can get benefit in this model. The viability of the community model is based on user loyalty and is can be used in following B2B, B2C, C2C marketplaces :

- Open Source
- Public Broadcasting
- Knowledge Networks

**(8) Subscription E-Business Model :** In the Subscription e-business model customers pay a set fee on a monthly or yearly basis to get access to the products or services of the company. Some good examples of this model are online newspapers or magazines, adult websites, and Internet service providers. In this model, users are charged a periodic fee to subscribe to a service and can be used in following B2C and C2C marketplaces :

- Content Services
- Person-to-Person Networking Services
- Trust Services
- Internet Service Providers

**(9) Utility E-Business Model:** A metered usage or pay-as-you-go approach is used in this model. This model is possible in following B2C and C2C marketplace :

- Metered Usage
- Metered Subscriptions

**(10) Focused Distributor E-Business Models:** This model provide products and services related to a specific industry or market niche in B2C marketplace.

- **Retailer:** Like brick-and-mortar equivalents, e-tailers assume control of inventory, set a nonnegotiable price, and sell physical products.
- **Marketplace:** Marketplaces make their money through commissions and transaction fees when they sell information-based products and services online at a nonnegotiable price, without taking control of physical inventory.
- **Aggregators:** Aggregators provide information on products or services for sale by others, but do not complete the final transaction. Their main revenue source is advertising and referral fees.
- **Infomediary:** This special class of aggregator unites buyers and sellers of information. Because no physical product is involved, the transaction can be completed online. Again advertising and referral fees are the main source of revenue.
- **Exchange:** These sellers may or may not take control of physical inventory and may or may not complete the final sales transaction online. The key differentiating feature of this model is that the price is not set; the buyer and seller negotiate the price at the time of the sale (Priceline, eBay).

**(11) Portal E-Business Models :** A portal is a gateway or entry, and on the Web a portal business model provides a gateway for consumers to gain access to content or services in B2B, B2C, C2C marketplace.

- **Horizontal Portals:** The giants of the portal model, these sites provide a gateway to the Internet's vast store of content, and also a broad range of tools for locating information (e.g., search engines) and Web services (e.g., e-mail, personalized pages, home pages). Their goal is to "attract eyeballs" to appeal to advertisers, which is their primary source of revenue.
- **Vertical Portals:** While horizontal portals try to appeal to everyone, a vertical portal specializes in a particular area. Lacking the huge traffic of horizontal portals, vertical portals cannot depend on advertising as a primary source of revenue. Instead commissions and referral fees take up a much larger portion of their revenue.
- **Affinity Portals:** These are the most specialized portals of all, offering deep content, commerce, and community features to a specific market segment. Like vertical portals, affinity portals must depend on a variety of revenue sources.

**(12) Producer E-Business Models:** Producers design, produce, and distribute products and services that meet customer needs. These are usually brick-and-mortar firms that are integrating the Internet into their core business activities and suitable in B2B, B2C marketplace.



- Manufacturers use the Internet to design, produce, and distribute physical products.
- Service providers produce and deliver a wide range of online service offerings.
- Educators create and deliver online educational offerings.
- Advisors provide online consulting and advice.
- Information and new services providers create, package, and deliver online information.
- Custom suppliers design, produce, and distribute customized products and services.

**(13) Infrastructure Provider E-Business Models :** Unlike previous business models that use the digital infrastructure of the Internet, these models provide that infrastructure in B2B and B2C marketplace.

- Infrastructure retailers sell the infrastructure.
- Infrastructure marketplaces take inventory and complete the sales transactions.
- Infrastructure exchanges.
- Horizontal infrastructure portals include, principally, Internet service providers, network service providers, and Web hosting providers.
- Vertical infrastructure portals host software applications for rent.
- Equipment/Component Manufacturers
- Software Firms
- Infrastructure Services Firms
- Custom Suppliers, Hardware
- Custom Suppliers, Software

The second approach is proposed by Weill and Michael Vitale (2001) offer eight "atomic business models." Instead of trying to specify a comprehensive list, as Rappa, (2007) and Applegate (2001) have done, these authors define eight models that can be combined (like atoms combine to form molecules) in multiple ways to represent virtually any kind of business model. The atomic business models are:

- (1) **Content Provider:** Provides content (information, digital products, and services) via intermediaries.
- (2) **Direct to Consumer:** Provides goods or services directly to the customer, often bypassing traditional channel members.
- (3) **Full Service Provider:** Provides a full range of services in one domain (e.g., financial, health, industrial chemicals) directly and attempts to own the primary consumer relationship.
- (4) **Intermediary:** Brings together buyers and sellers by concentrating information.

- (5) **Shared Infrastructure:** Brings together multiple competitors to cooperate by sharing common IT infrastructure.
- (6) **Value Net Integrator:** Coordinates activities across the value net by gathering, synthesizing, and distributing information.
- (7) **Virtual Community:** Creates and facilitates an online community of people with a common interest, enabling interaction and service provision.
- (8) **Whole of Enterprise:** Provides a firm-wide single point of contact, consolidating all services provided by a large multiunit organization.

The third approach of e-business model is suggested by Cisco managers Armir Hartman and John Sifonis (2000) who have developed "extended e-economy business models" and identified five extended business models that are changing the way value is delivered. Successful Net Ready organizations take on one or more of these models. Many business model experts consider their description of the infomediary model to be one of the best available. Their "extended e-economy business models" are:

- (1) **E-Business Storefront :** An entity in which commerce occurs, margin is created, and value is extracted using existing as well as new digital market channels. When end users need to buy something, chances are they go to an e-business storefront.
- (2) **Infomediary :** An entity that brokers content, information, knowledge, or experiences that add value to a particular e-business transaction; also known as a content aggregator.
- (3) **Trust Intermediary :** An entity that creates trust between the buyer and seller. These firms provide a secure environment in which buyers and sellers can confidently exchange value.
- (4) **E-Business Enabler :** An entity that creates and maintains an infrastructure in which product and service providers can conduct transactions reliably and securely.
- (5) **Infrastructure Providers/Communities of Commerce :** Members aggregated across a set of complementary interests (products, content, and services) and markets; communities of enterprises organized around common interests through a common infrastructure.

The fourth approach of classification of e-business models is Business Models for Electronic Markets: Perhaps the earliest attempt to construct a taxonomy of e-business models by Paul Timmers (1998). Timmers in his article, provides brief descriptions, benefits (for businesses, customers, suppliers), and examples of 11 models: e-shop, e-procurement, e-auction, e-mall, third party marketplace, virtual community, value chain service provider, value chain



integrator, collaboration platform, information brokerage, and trust services as explained below :

### **1. E-shop model :**

This is the most ubiquitous form of commerce on the World Wide Web. It involves a company presenting a catalogue of its wares to Internet users and providing facilities whereby such customers can purchase these products. Almost invariably such a site will contain facilities for ordering and paying for products by means of credit cards. The sophistication of sites described by this business model range from just the simple presentation of a static catalogue to the presentation of an interactive catalogue, the display of samples of products – for example the use of sound clips in a site selling CDs – the maintenance of mailing lists and the ability for customers to post reviews or customer reactions to specific products. Sites described by the e-shop model provide global presence, a cheap way to place products in front of an audience and decrease marketing and promotion costs.

### **2. E-auction model :**

This model describes sites which electronically simulate the bidding process in a conventional physical auction. Such sites can range in sophistication from those which present a simple catalogue of items to those which offer multimedia presentations. Most sites which are described by this business model are concerned with selling items to individual consumers. However, there are an increasing number of sites which provide facilities for businesses to auction products to other businesses. Revenues are raised by this form of site by charging for a transaction and for advertising. Some sites also sell the technology they use to other sites.

### **3. E-procurement model :**

‘Procurement’ is the term used to describe the tendering of goods and services: a company decides that it requires some goods, say a fleet of cars for its sales force. It would then announce this publicly and invite a number of auto companies to bid for the business. Many companies are now switching to the Web for the procurement process. A Web site devoted to procurement will normally advertise current procurement opportunities, provide forms facilities for companies interested in tendering and provide facilities whereby the progress of a tender can be tracked. There are a number of advantages in carrying out the procurement

process electronically. For suppliers it means that there are often more tendering opportunities, lowered cost of tender submission and collaborative tendering with other companies. For the company offering tenders there is a major reduction in costs.

#### **4. E-mall model :**

An electronic mall or e-mall is a collection of e-shops which are often devoted to a specific service or product, for example an e-mall might be devoted to selling goods associated with a leisure activity such as fishing. Usually e-malls are organized by a company which charges the e-shops for administering their presence: maintaining the Web site, hosting the e-mall, and providing payment and transaction facilities and marketing. The e-mall operator gains revenue for charging the e-shops; the individual e-shops have the benefits normally associated with e-shops, plus the fact that they are clustered together with other shops which operate in the same market segment and hence attract customers who might be browsing from shop to shop.

#### **5. Virtual communities model :**

A virtual community is a Web site which sells some product or service. In this respect there is no difference from an e-shop. The feature which distinguishes a virtual community is that the operator of the Web site provides facilities whereby the customers for a product or a service interact with each other, for example by pointing out ways a product can be improved. Technologies used for this interaction include mailing lists, bulletin boards and FAQ lists. The theory behind virtual communities is that they build customer loyalty and enable the company running the Web site to receive large amounts of feedback on the product or service they sell. A typical company that might run a virtual community would be a software supplier. Customers for software products manufactured by the company might post bug reports, bug fixes and work-around on a set of FAQ pages. Staff from the company would participate in the bulletin boards and also organize the FAQ lists.

#### **6. Third party marketplaces model :**

A third party marketplace is characterized by Web sites which offer access to a number of related companies, for example companies that are wholesalers of office stationery. A distinguishing feature of this model is that the companies delegate the marketing and sales of their products to the company that administers the marketplace. Typically a Web site which

operates as a third party marketplace would provide a common interface to the products or services which are being sold, together with facilities for payment and delivery. A third party marketplace is similar in some ways to the e-mall. The main difference is the fact that the product or service providers within the marketplace are more closely integrated, for example by virtue of the fact that there is a common catalogue interface to the products or services offered.

### **7. Information brokerage model :**

Web sites described by this business model offer access to information – usually business information. For example, a Web site which offers the results of surveys of customer satisfaction for a product such as a car would be used by car hire companies, auto companies and consumer organizations. Major providers in this area provide information derived from financial data such as company performance figures, pension fund performance figures and financial market trends such as the growth of different types of mortgage. Companies whose Internet presence can be described by this business model usually raise revenues by subscription or by a per-transaction charge.

### **8. Trust brokerage model :**

This business model describes those companies or organizations who provide some service connected with security or trust. For example, copyright is a major issue for the Internet. A company might develop a sophisticated graphic which could easily be copied by another company that would then claim that they developed the graphic. A trust company might offer the facility for companies to register their work with them and then be able to testify to the date that the work was registered. Other trust brokers are associated with computer security and, for example, certify that a particular Web site run by a company is in fact associated with that company.

### **9. Collaboration platforms model :**

Companies whose Internet offerings can be described by this business model provide sites which enable companies to collaborate with each other, usually when the companies are spread over large distances. For example, a company which runs a collaboration platform might provide facilities for companies which wish to come together in order to tender for a complex project in a particular market sector such as aerospace.

## 10. Value chain service provider model :

Specialize in providing functions for specific part of the value chain such as the logistic company United Parcel Services.

## 11. Value chain integrator model :

They offer a range of service across the value chain.

The fifth approach of classifying e-business models based on the strategy of providing service as:

### 1. Dynamic pricing model :

The dynamic pricing model is one which has a number of different instantiations. Basically, such models treat the price of a product or service as variable and open to negotiation. The name-your-price instantiation of this model is where the customer of a site offers the price that he or she thinks is reasonable for a product or service. The administrator of the Web site will pass on this bid to the provider of the product or service who will decide whether to accept it. The comparison pricing sub-model encompasses Web sites which provide an interface to e-shops that sell a specific product. The model provides the facility for the customer to interrogate a database of product catalogues to look for the cheapest price for a particular product such as book or a CD. The demand sensitive pricing sub-model is based on the fact that suppliers of a product will lower the price of a product if a number of units of that product are included in a single sale. Web sites which employ this model provide facilities whereby consumers can notify each other of their interest in buying a particular product such as a freezer. The site keeps a database of current products that have attracted a number of buyers with a predicted price and allow users to join the database of buyers who are committed to a sale. The bartering sub-model allows consumers to barter services or products for other services or products. A site devoted to this form of economic activity will keep a structured database of items for sale and allows a buyer to barter with a seller.

### 2. B2B exchanges model :

A B2B exchange is a Web site or collection of Web sites which make the process of carrying out business to business transactions much easier. Under this banner comes sites which enable multiple companies to procure services and products from each other; help businesses

form temporary alliances to carry out activities such as joint marketing or project bidding, and enable a marketplace in raw materials to function.

### **3. Online trading model :**

This business model encompasses the trading of financial instruments such as bonds and stocks via the Internet. Online trading has been a feature of the financial industry for some time. However, it was carried out using internal networks. The Internet has enabled the individual user to trade stocks and shares from home and has given rise to the term day trading.

### **4. E-learning model :**

This term is used to describe companies or organizations who offer educational courses via the Web. The quality and features found in sites which can be described by this business model can vary. At its simplest such sites offer students the ability to download conventional texts. More complex instantiations of the model offer the students facilities to read individual lessons, try out online multiple choice questions and experience simulations relevant to the topic being taught.

### **5. Free products and services model :**

It might seem paradoxical to include sites which provide free products or services under the category of business models. Typical sites which come under this category include gaming sites where users can play computer games using their browser, sites which run free games and sites which offer free software. Such sites do not earn any revenues from the products or services they offer; revenue is earned indirectly, for example by means of banner adverts or by receiving revenue from sites which you have to visit before experiencing a service or buying a product. One of the largest free product areas is that of free software. Organizations in this area include those who raise revenues and those who do not. An example of a company in the former category is Red Hat. This is a company that provides free versions of the LINUX operating system. One can download LINUX from the Red Hat Web site and install it on their computer without paying a penny to the company. Red Hat raises their revenues through support, packaging distributions onto CDs and providing services to companies who employ LINUX for application development.



Another effort of identifying New Business Models for E-Commerce is made by Dennis Viehland (1999) who has identified three new or emerging business models that the Web made possible—**virtual retailer, distributed storefront, and buyer-led pricing.**

Kenneth C. Laudon and Carol Guercio (2003) in their e-commerce textbook, E-Commerce: Business, Technology, Society, take a slightly different approach to classification of business models. They list and describe various models by type or mode of electronic commerce—B2C (portal, e-tailer, content provider, transaction broker, market creator, service provider, community provider), B2B (e-distributor, e-procurement, exchanges, industry consortia, single-firm networks, industry-wide networks), and others (C2C, peer-to-peer, mobile commerce). For each model, the authors include variations ("submodels"), examples, a description, and revenue model(s).

Another way of classification is given in the book "A Managerial Perspective", published by Turban et. al. (2006) includes a list of 17 typical EC business models. While some models on this list are similar to others listed previously, there are some new twists and an emphasis on auction-type models. This list of typical EC business models includes online direct marketing model, electronic tendering systems model, name your own price model, find the best price model, affiliate marketing model, viral marketing model, group purchasing model, online auctions model, product and service customization model, electronic marketplaces and exchanges model, information brokers model, bartering model, deep discounting model, membership model, value-chain integrators model, value-chain service providers model, and supply chain improvers model.

### III. Mobile Business Models

There are various Mobile Business Models that can be used to generate revenue (Rob Woodbridge, 2010). Some of the popular mobile business models are listed below :

#### 1. Selling Your Application Model :

This is the most obvious and the one that is most widely leveraged today: Build an app that everyone will want and sell millions of licenses and reap the rewards.

#### 2. Freemium Model:

Freemium is not one single model for mobile, it really encompasses a number of opportunities to generate revenue. The goal of freemium is to distribute free mobile app in as many hands as possible and once it is successful, try to generate revenue from one of the following ways:

#### *2(a): Sell an enhanced version of that mobile app*

This is the most widely used model. After free distribution of a limited version of the product and when the company is in hope to attract enough people to download it and then convert a percentage of those into paying customers.

### ***2(b) Sell in-app advertising***

The second most popular approach to freemium is selling advertising in such app. Using third party advertisements along with a successful product with hundreds of thousands or millions of downloads it is possible to make a decent amount of revenue.

### ***2(c) Up-selling content packs***

Once the company installs application on millions of devices they can start offering content packs (additional levels for example), additional functionality or even have people pay to remove the in-app advertisements.

### **3. Extend an existing business into the mobile world Model :**

The two main business goals for extending an existing business into the mobile model are :

*3(a) Enhancing an existing line of business to the mobile world.*

*3(b) Extending existing business to reach new customers*

### **4. Build an App as a subscription Model :**

Like e-business subscription model, one can build an application in mobile business model in which a customer must pay a subscription price to have access to the product/service. Initially, the model is pioneered by magazines, newspapers and e-books etc., but now is used by many businesses and websites through mobile devices.

### **5. Build an application as a service Model :**

Using ubiquitous property of mobile technology, one can build an application to serve customers while they are moving and engaged in other works. Such service model will identify the customers' location, identified their needs and provides location based services. This kind of mobile application is the future of productive mobile business models – filling a need that is best-suited for our mobile lives.

### **6. Mobilize an existing technology Model :**

Most companies are now extending mobile versions of their software which they are already using in their business applications. This idea will enhance the performance efficiency of their employees/other stakeholders. Based on such benefits, this model is becoming more popular in the industries.

### **7. Build an app that extends a web business Model :**

The entrepreneurs can extend their service (or a bunch of services) into the mobile world as a new level of value like offering some attractive prizes/points to the some priority customers.

#### **8. Sell affiliate products through app Model :**

This model becoming a popular application in order to generate substantial revenue from the referral fees but it could compliment another stream from one of the other business models. This model integrates two or more affiliate products through a single app. For example, the application emphasizes music and photographs – both of which are available for purchase through a single app itself.

#### **9. Advertising Mobile Business Model :**

Advertising works best when the application is a utility as the users open it every day and ideally put it on their mobile home screen of apps. Advertising also works best when the application session times are long. Advertising also works when it is native to the mobile experience. Now a days mobile advertising model becoming more popular business model.

#### **10. If all else fails, build an app for someone else Model :**

This old service model is still alive and one of the fastest growth segments in the mobile world is actually helping companies who don't have the expertise to build mobile applications for them.

#### **11. Transaction Mobile Business Model :**

Using a transaction-based business model, a firm can make money when a user makes a purchase or completes a transaction using firm's application. Transaction models work best when the application is simple and has single-purpose functionality.

#### **12. Paid Mobile Business Model :**

In paid mobile business model, a customer/user has to pay for purchasing and installing an application in his mobile device. Although historically popular, paid apps have underperformed relative to their freemium or advertising-supported counterparts. A paid business model is best when either (a) it is unique, differentiated content or (b) it has business application or utility with short session length and can't get advertising to work.

### **IV. MOBILE BANKING MODELS**

#### **1. Core Capabilities Model :**

Banks that are equipped with a good grasp of the e-banking phenomenon will be more able to make informed decisions on how to transform them into e-banks and to exploit the e-banking to survive in the new economy. Given the e-banking is a financial innovation (Liao and

Cheung, 2003), the change may render the organizational capabilities of the traditional banks obsolete. From the resource-based view (Mahoney and Pandian, 1992), in such a context, the banks must constantly reconfigure, renew, or gain organizational capabilities and resources to meet the demands of the dynamic environment. Developing core capabilities can help the banks redeploy their resources and renew their competencies to sustain competitive advantages and to achieve congruence with the shifting business environment.

A firm's ability to embrace and exploit an innovation is a function of the extent to which the innovation renders the firm's existing capabilities obsolete (Afuah 2003). The foregoing discussions show that e-banking is a disruptive innovation that will render the incumbent banks' established capabilities obsolete. In other words, e-banking will overturn the existing technical knowledge related to network infrastructure, service offerings, and transaction security mechanisms and will lead to a radical overhaul of the way of doing business for the traditional banks. In facing the change, the incumbent banks need to undergo business transformation in order to exploit e-banking. To do this, banks have to change their conventional mindsets and reconfigure their capabilities around the needs of e-banking. It requires careful coordination with the development of core capabilities in order to successfully respond to the technological and business changes (Wheeler, 2002; Daniel and Wilson, 2003).

## 2. Disruptive Innovation Model :

Clayton Christensen's Disruptive Innovation Theory (DIT) is one of the most influential theories in the recent academic and management literature. This is reflected not only in his bestselling books "The Innovator's Dilemma" and "The Innovator's Solution", but also in the discussion and follow-up work that his theory created among academics and managers alike.

Christensen suggests a broad definition of the concept of innovation. To him, innovation refers to all changes of "processes by which an organization transforms labor, capital, materials and information into products or services of greater value" (Christensen 1997/2002). Thus, in addition to creating new processes and products, innovation also includes new types of business models. The DIT recognizes two types of innovation: on the one hand, sustaining innovations generate growth by offering a better performance in existing markets. Usually, regardless of whether they are incremental or radical, these innovations are exploited successfully by the established players in an industry and do not lead to revolutionary changes in an industry's landscape. On the other hand, compared to existing

products and business models, disruptive innovations initially have a lower performance in the traditionally most important performance criterion (such as functionality, speed, or size).

Even though, in most cases, disruptive innovations are less complex from a technological viewpoint, they are usually brought to the markets successfully by new entrants. Christensen posits that this is due to the behaviour that incumbents and new entrants typically display. Managers in incumbent firms are unwilling to support disruptive innovations because: (1) they usually do not fulfill the needs of the firm's existing and most profitable customers and (2) they offer a much lower profit margin than sustaining innovations do (Enders et al., 2006).

### 3. Self –Service Model :

Self-service technologies are technological interfaces that enable customers to produce a service independent of direct service employee involvement (Meuter et. al., 2000) [16], i.e. person-to-technology service delivery (Dabholkar, 1994) [17]. Self-service technologies are viable for banks and other financial intermediaries because information processing is essential to their services. Automation of standard services is expected to reduce the need for financial intermediaries while there will be continued demand for nonstandard, differentiated transactions and services (Emmon & Greenbaum, 1998).

The current consolidation in banking (Davis, 2000; Mishkin, 1998), together with an expected technology driven globalization of banking infrastructure, threaten to marginalize the parties who choose not to participate in the game. Use of information technology and self-service has the potential for order-of-magnitude reductions to the cost of processing and transmitting information (Emmons & Greenbaum, 1998). *Self-service banking* is the use of self-service technologies in banking. Examples of self-service banking include banking by telephone and the Internet, EFTPOS (Electronic Funds Transfer at Point Of Sale) terminals, automated teller machines and other interactive kiosks.

The review of literature includes three main areas that are deemed important in conceptualizing a framework of self-service banking. First, literature in strategy, particularly about firm level value creation (e.g. Stabell & Fjeldstad, 1998) combined with bank specific issues (e.g. Crane & Bodie, 1996) provides a basic understanding of bank strategic issues. Second, literature on information exchange (e.g. Grover, Ramanlal, & Segars, 1999) enables us to discuss the implications of self-service banking on information asymmetry and its



implications on the customer relationship. Third, literature on self-service technology (e.g. Meuter et al., 2000) add to a principal understanding of technology-based service encounters in a customer viewpoint.

#### 4. Consumer Oriented New Mobile Banking Model :

The emergence of mobile banking will increasingly be intertwined with the emergence of mobile commerce and mobile payments. M-banking, rather than driving m-commerce, will in fact be driven by the increasing availability of mobile-focused, user-friendly content. And because the rise of m-business will be based on the inclusion of a strong payments engine, which can provide better payment transaction processing services. Regardless of the bright future of mobile banking, its prosperity and popularity will be brought to a higher level only if information can be securely and safely exchanged among end systems (mobile users and banking service providers). Online banking through mobile service providers is more secure than online banking through internet because of the usage of private network of the service provider (PNSP) and the users' personal mobile device. The existing electronic authorizations for mobile payment security are based on account - holder authentication by the payment system. The use of secure and convenient mobile personal devices through PNSP could revolutionize the payment, banking and investment industries worldwide.

In consumer oriented model proposed the year 2007 by Aithal and Varambally (2007). In this model, the mobile banking services are provided through mobile network service provider PNSP, either by collaboration or by strategic alliance. A consumer can use any private mobile network to access a particular real or virtual bank. The consumers and businesses in emerging markets are likely to find *mobile* financial services more attractive than do their counterparts in developed markets, because they have fewer alternatives. For many remote or low-income consumers, *mobile* handsets and the *mobile* Internet could for the first time provide access to financial services such as basic banking and electronic payments; otherwise financial-services providers find such segments impossible to serve cost-effectively. *Mobile* networks are cheaper to build than fixed-line networks, and *mobile* services are generally cheaper to roll out than their precursors. A *mobile*-payments network, for example, can cost less to create and operate than an electronic point-of-sale (POS) merchant network. This means that some countries will be able to leapfrog over intermediate technologies and move directly from a paper-based payments system to a *mobile* one, without ever having to build an extensive wired POS or automated-teller-machine network. In this model, based on user request, the

device identifies the user through physical possession of mobile phones, passwords, or biometrics such as voice recognition. The mobile banking service provider authenticates the transaction request from the device via either subscriber identification (as with existing phones) or cryptographic mechanisms such as digital signatures or secure protocols, like the Wireless Transport Layer Security Specification through private network service provider PNSP. The users can perform secured operations on account balance or loan account statement, transfer money between two accounts in the same bank (internal transaction), loan payment, or payment of electricity, water, phone, credit card and cellular phone/pager bills, through the bank. The financial transaction can be also performed between the mobile banking service provider, and the merchant for m-commerce payment through PNSP and/or other financial institution(s) for bill payments or interbank transfer through PNSP (path 3b) and may involve secure payment protocols such as Internet Keyed Payments/Secure Electronic Transactions, or iKP/SET (MacGregor, 1997). After completion of requested transaction, the mobile banking service provider delivers a confirmation of transaction to the user.

### V. Ideal Mobile Business Model

As per the ideal business model developed by Aithal P.S. (2015), the various ideal properties are separated under input conditions, market conditions, system requirements, and output conditions and is shown in figure 1. The various properties of ideal business are listed below :

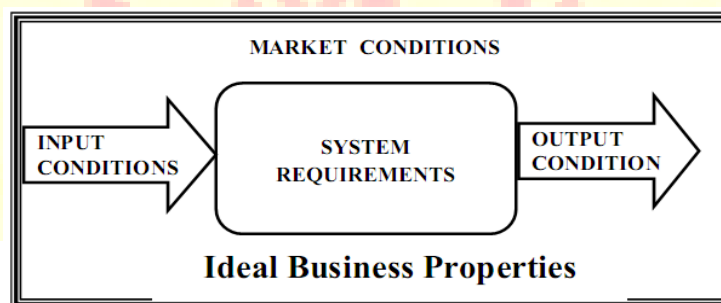


Figure 1 : Categorization of ideal business properties/characteristics (Aithal et. al., 2015)

#### A. Market Conditions :

- 1) The Ideal Business sells its products/services to the entire world rather than a single neighborhood and hence it has an unlimited global market.

2) The Ideal Business offers a product/service, which enjoys an inelastic demand in the market. (inelastic refers to a product that people need or desire almost at any price.)

3) The Ideal Business markets a product/service that cannot be easily copied. This means that the product/service is an original or, at least, it is something that can be copyrighted or patented.

### **B. Input Conditions**

1) The Ideal Business has minimal labor requirements. The fewer personnel, the better is the business.

2) The Ideal Business operates on a low overhead. It does not need an expensive location. It does not need large amounts of electricity, or advertising, or legal advice, or high-priced employees, or a large inventory.

3) The Ideal Business does not require big cash outlays or major investments in equipment or product. In other words, it does not require huge capital.

### **C. System Requirements**

1) The Ideal Business is relatively free of all kinds of government regulations or restrictions.

2) The Ideal Business is portable or easily moveable. This means one can shift his business and himself anywhere he wants to.

3) The Ideal Business satisfies its owner's intellectual needs. There is nothing like being fascinated with what he does.

4) The Ideal Business leaves enough free time to its owner. In other words, it doesn't require his labor and attention of 12, 16, or 18 hours a day.

5) The Ideal Business is one in which the income is not limited by personal output (Leverage). In the Ideal- Business, one can have 10,000 customers as easily as can have one."

6) The ideal Business will not have any liability after sales.

7) The ideal Business will not have problems like seasonality, perishability and price drop

### **D. Output Conditions**

1) In ideal Business the demand is always very high than supply and the efficiency of production is always 100%.

2) The ideal Business will be sustainable for long time.

The above properties are ideal in nature and cannot be completely realized in practice. However, many of the ideal business model properties can be closely achievable in mobile business models for intangible products.

## VI. Research Opportunities

Based on above electronic and mobile business models, one can identify research opportunities to improve such models towards ideal business model. By means suitable modifications/innovations in mobile business model, we can achieve many of the ideal business characteristics. The research opportunities include the improvement in input characteristics, system requirements, market conditions and output characteristics of practical mobile business model towards ideal business input characteristics, system requirements, environmental properties and output characteristics. By analyzing the current business models and the ideal business model using various business model analysis frameworks like ABCD analysis, one can identify various determinant issues, various factors affecting the determinant issues using four constructs of advantages, benefits, constraints, and disadvantages. The constituent critical elements of these factors can be studied to improve and elevate the current business models towards ideal business models. Such opportunities are listed below :

- Discovery of new business models with tangible & intangible products with characteristics close to ideal business model
- Discovery of new business models for various services with characteristics close to ideal business model
- Analyzing the business models for their advantages, benefits, constraints and disadvantages and factors affecting various determinants as well as identifying critical constituent elements to know the insight of the model.
- Effect of changes and breakthrough technology on existing and newly proposed business models.
- Analysis of various B2B, B2C, and C2C business models.
- Impact of technology on various business models etc.

- Security aspects of mobile business financial traction models and their analysis
- Legal aspects of online global mobile business transactions etc.

## VII. Conclusion

The paper reviews various business models used in e-business, m-business, and m banking. All the major E-commerce business models which fall under 3 main categories : B2B - Business to business, B2C - Business to consumer, C2C - Consumer to consumer are also discussed with their benefits and limitations. Based on business model framework, various research agenda and opportunities are identified and elaborated.

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