Mobile Commerce Success Factors for the Various Business Models

Ismail M. Romi, PhD
Faculty of Informatics
Palestine Polytechnic University, Palestine
E-Mail: ismailr@ppu.edu

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Abstract:

Fears about economic conditions and increasing competition create pressures to cut costs, which require businesses to seek for innovative ways to enter into a relationship with consumers. This study focuses on mobile commerce and its success factors, in conjunction with business models and mobile technologies, in order to achieve the best fit between business, customers, and technology.

To achieve these objectives, the current study reviews literature related to business models, m-commerce and its success factors, and formulates a matrix that help in matching between business models and m-commerce success factors.

Keywords: Mobile-Commerce, Business Models, M-Commerce Success Factors, Mobile Technologies.

1. Introduction

People around the world are making use increasingly of electronic communications facilities in their daily lives (Jahanshahi et al, 2011). Where over three billion mobile phones are used worldwide, and this means that over 40% of the world's population carries a mobile phone (GS1, 2008). Daily life already reflects the ubiquitous availability of mobile communication, where users are chatting, messaging, accessing data, and entertaining themselves (Schubert and Hampe, 2005). Literature in this area found that people do not like to carry multiple devices, and personal conversation is still the most important way of communication. Therefore it is expected that the use of mobile phones will be the most accepted mobile device for future.

Fears about economic conditions and increasing competition creates pressures to cut costs, which requires businesses to seek for innovative ways to enter into a relationship with consumers, where consumers respond positively to businesses that take the time to understand their needs and offer excellent customer service (GS1, 2008). To match between the needs of those different parties, companies required to select from the several available business models that can achieve high advantages, reducing costs, and increasing the interconnection with customers.

The main objective of this study is to provide a further insight in to mobile commerce, business models, and mobile commerce success factors, and integrates the results with the prior researches in this area. Therefore this study addresses the following questions:

1. What is m-commerce, and its success factors?
2. What are the dominating business models?
3. How to match m-commerce to businesses business models in order to achieve the best fit in this area?

To pursue these questions, a review to the prior researches was conducted about mobile

usage, and m-commerce success factors, then matching the results with the available business models, in order to find out the most suitable business model that achieves cost-reduction through increasing the interaction between business and customers.

2. Literature Review:

To achieve the research objectives, this study addresses the main parts in the communication business process, mainly; business through business models, customers through m-commerce success factors, and the communication medium through m-commerce.

2.1 Mobile Commerce (M-Commerce):

The exponential growth of wireless and mobile net-works has brought vast changes in mobile devices, middleware development, standards and network implementation, and user acceptance (Varshney et al, 2000).

Lyytinen(2001) defined M-commerce as a subset of electronic commerce that involves the use of mobile computing devices in carrying out different types of economic transactions (marketing, buying and selling products and services) or enabling them to take place over space and time. Where Sadeh (2002) defined m-commerce as the emerging set of applications and services people can access from their Internet-enabled mobile devices. Scornavacca et al. (2006), adds that m-commerce should not be viewed as e-commerce with limitations, but rather as a unique form of e-commerce with its own unique benefits.

(Cronin, 2003) points that Mobile commerce refers to all data-driven business transactions and exchanges of value by users of mobile devices via wireless telecommunication networks. Where Dhindsa and Aggarwal (2009) referred M-Commerce to commercial transactions being conducted over cellular and mobile devices.

Mobile commerce applications can be easily personalized to match individual situations. A mobile device can easily be carried around and gives its user the potential of being always available to transmit urgent information or support transactions (Schubert and Hampe 2005). Researchers point out the major mobile commerce applications, which include education, enterprise resource planning (ERP), entertainment, health care, travel and ticketing, traffic, inventory tracking and dispatching planning.

2.2 Business Models:

Timmers (1998) defines business model as an architecture for the product, service and information flows; including a description of the various business actors and their roles, a description of the potential benefits for the various business actors, and a description of the sources of revenues. Where Petrovic (2001) considered the business model describes the logic of a business system for creating value that lies behind the actual processes. It can be seen as a detailed conceptualization of an enterprise's strategy at an abstract level, which serves as a base for the implementation of business processes. In their research, Camponovo and Pigneur (2003) defines the business model as a model that provides a description of the roles and relationships of a company, its customer, partners and suppliers, as well as the flows of goods, information and money between these parties and the main benefits for those involved, in particular, but not exclusively the customer.

Timmers (1998) found that eleven business models have been used, including e-shop, e-procurement, e-auction, e-mall, third-party marketplace, virtual communities, value-chain service provider, value-chain integrators, collaboration platforms, information brokerage, and trusted and other services.

E-shop:

In first instance this is done to promote the company and its goods or services. Benefits sought for the company are increased demand, a low-cost route to global presence, and cost-reduction of promotion and sales. Benefits for the customers can be lower prices compared to the traditional offer, wider choice, better information, and convenience of selecting, buying and delivery, including 24-hour availability.

E-procurement:
Benefits sought are to have a wider choice of suppliers which is expected to lead to lower cost, better quality, improved delivery, reduced cost of procurement.

E-auction:
Electronic implementation of the bidding mechanism. Benefits for suppliers and buyers are increased efficiency and time-savings, no need for physical transport until the deal has been established, global sourcing.

E-mall:
A collection of e-shops, enriched by a common - guaranteed – payment method. Benefits are sought in services, or in advertising space and/or brand reinforcement or in collective benefits for the e-shops that are hosted such as increased traffic, with the expectation that visiting one shop on the e-mall will lead to visits to 'neighboring' shops. Benefits for the e-mall members are lower cost and complexity to be on the Web, with sophisticated hosting facilities such as electronic payments, and additional traffic generated from other e- shops on the mall, or from the attraction of the hosting brand.

Third party marketplace:
Suitable in case companies wish to leave the Web marketing to a 3rd party. They all have in common that they offer at least a user interface to the suppliers' product catalogues. Several additional features like branding, payment, logistics, ordering, and ultimately the full scale of secure transactions are added to 3rd party.

Virtual communities:
Virtual community focuses on building and adding value to the community by building customer profiles, and communications between members.

Value-chain service provider:
Supporting parts of value chain.

Value-chain integrators:
Focuses on adding value: by integrating multiple steps of the value chain.

Collaboration platforms: These provide a Set of tools and an information environment for collaboration between enterprises, such as collaborative design and engineering.

Information brokerage, trust and other services:
A whole range of new information services are emerging, to add value to the huge amounts of data available on the open networks via trust providers, business information and consultancy.

Attempts have been made to distinguish several different types of business models on the Internet. According to Wirtz(2001) business models can be distinguished into four different types mainly Content (e-information, e-entertainment, e-education), Commerce (attraction, bargaining/negotiation, transaction), Context (search engines, web catalogues), Connection (virtual communities, online networks).

Stahler (2001) reviewed the definition of business model in the literature, and found that; a business model is a model of an existing business or a planed future business – a simplification of the complex reality. It helps us understand the fundamental components of an existing or future business activity. Stahler (2001), came up with a definition of business models which comprises four main components: value proposition, product or service, value architecture revenue model.

Value Proposition:
The description of the value a customer or a partner receives from the business. The corresponding question is: What value does the business create for its stakeholders?

Product or Service:
A business model contains a description of the product or services with which the company is present on the market.

Value Architecture:
The value architecture describes the value chain, the economic agents that participate in the value creation and their respective roles.

Revenue Model:
Value and sustainability of the business is being determined by its revenue model. The revenue model answers the question: Where and how do profits accrue?

GS1 Mobile Com group, (2008) found that; companies that want to take advantage of the opportunities presented by the mobile

technology will have to understand how this technology fits with existing business models or provokes new ones. Therefore, this study will focus on this point of view, in order to find how to match between the mobile technology and the business models.

2.3 M-commerce Success Factors:

Shrestha and Alexandra Road (2007) found some of the important considerations for designing mobile friend pages , which includes: font, background, Labeling all the input fields and form controls, Limiting the number of links in the list and group them and label with appropriate title, adding search function on the page.

Dai and Palvia(2009) developed an integrative research framework that identifies ten major factors (table 1) as significant factors affecting intention to use m-commerce. Based on Theory of Reasoned Action (Fishbein and Ajzen 1975), intention to use is a consequent of the attitude toward m-commerce adoption.

In their research, Al Hosni et al (2010) examined several factors concerned with the successful mobile commerce adoption to how extent they will be applicable in the Middle East. Table (2), provides illustrations about those factors and their concepts.

Chua et al (2011) examines factors that affect fulfilling mobile information needs. They found that the main factors affects users' perception and action are proficiency, perceived ease of use, conduciveness of the environment, accuracy of information, cost of services, urgency of information needs, responsiveness of mobile phones, and privacy of personal data. Where the factors affects Technical Aspects includes search engines, web-enabled mobile applications, emails, traditional mobile phone features such as voice calls, SMSs and calendars. Furthermore, the factors related to the contexts are includes, location, activity, time, social surroundings.

Table (1): Factors Affecting Intention to Use M-Commerce

Factors	Conceptual definition
Perceived Value-Added:	Means that m-commerce creates value for customers in a different manner than conventional business.
Innovativeness	A personality constructs that has been employed to predict consumer innovative tendencies to adopt a wide variety of technological innovations.
Security Perceptions	The extent to which one believes that the World Wide Web is secure for transmitting sensitive information.
Privacy Perception	The demand of users privacy protection.
Perceived Usefulness	Refers to a prospective user's subjective probability that using a specific application will increase his or her performance.
Perceived Ease of Use	The degree to which the prospective user expects the target system to be free of effort.
Perceived Cost	Payments for mobile phone services.
Compatibility	Implies to whether a user perceives an application/service to be compatible with his/her needs or lifestyle.
Perceived Enjoyment	The extent to which consumers find the service to be enjoyable, fun and pleasant to use.
Subjective norm	Refers to the perceived social pressure to perform a certain behavior (Ajzen 1991).

Source: Dai and Palvia(2009).

Table (2): Factors Concerned With the Successful Mobile Commerce Adoption

Factors	Conceptual definition
Mobility	The use of mobile services supported by providers.
Security	Ensure the secured transactions for safe payment and interaction.
Location	Identifying locations and enabling business to deliver location-sensitive services to users.
Time	The need to have on time critical information such as breaking news, market stock prices and the emergency accidents.
Suitable Cost Mechanism	Charging suitable mobile applications' fees in order to increase the practices and technical understanding of mobile commerce usage.
Customized services	Providing mobile services with the customer's mother language will increase mobile commerce adoption.
Specialized cultural and valuable services	Shared values, religious and cultural aspects could be programmed in acceptable applications and behavior for consumers.
Stable application infrastructure	The appropriate base, services and supportive standards such as bandwidth and data transmission rate since most of mobile.

Source: Al Hosni et al (2010).

Coursaris and Kim (2011), conducted a meta-analysis to mobile usability measurement dimensions measured in empirical mobile usability studies, which serve as the basis for a research agenda in this field. They found that the main usability measures studied in mobile usability studies are satisfaction, efficiency, errors, ease of use, usefulness, satisfaction, accuracy, learnability, workload, accessibility, reliability, attitude, problems observed, enjoyment, acceptability, quality, security, aesthetics, utility, operability, memorability, responsiveness, content, attractiveness, flexibility, playfulness, technicality, availability, functionality.

3. Matching Business Models to Success Factors:

Companies that want to take advantage of the opportunities presented by the mobile technology will have to understand how this technology fits with existing business models or provokes new ones (GS1, 2008). To achieve this objective, companies must match between the mobile commerce success factors, and the used or planned business models.

Depending on prior researches, two dimensions can be formulated, the first one includes business model, and the other includes success factors. Business models discussed in-depth in the literature, and the most used business models are those defined by Timmers (1998), including: e-shop, e-procurement, e-auction, e-mall, third-party marketplace, virtual communities, value-chain service provider, value-chain integrators, collaboration platforms, information brokerage.

Where the mobile commerce success factors discussed in the literature includes: acceptability, accessibility, accuracy, aesthetics, attractiveness, availability,

compatibility, cost , customized services, ease of use, efficiency, enjoyment, errors, flexibility, functionality, infrastructure, innovativeness , learnability, location, memorability, mobility, playfulness, privacy, proficiency, quality, reliability, responsiveness, satisfaction, security, specialized cultural , subjective norm, technicality, time, usefulness, utility, value-added, workload.

Matching business models to m-commerce success factors (table3), requires defining the best measurement scales for each of the success factors, and then implementing the measurement process in a suitable context to the business model. This matching will result in developing business models taking into consideration all parties requirements, which will result in producing technology that most suits mobile commerce.

4. Conclusion and Recommendations:

This study reviews literature related to business models, m-commerce and its' success factors. The main findings can be summarized in two points:

First: Specifications for business models to gain the required success from m-commerce remains fuzzy, because there is no clear links between mobile technologies and the working business models, with conjunction to the users' requirements in both aspects.

Second: There is a rapid revolution of the mobile technologies, while the area of business models remains focusing on old technologies.

The current study tries to match between the three parties of the business process; mainly, customers, business, and technology, through establishing a matrix that enables in reducing the gap between those parties, and achieves the best fit, between a business model, mobile

technology, and the different users' of m-commerce.

Further researches required to fill-in the matching-matrix with the required specifications that enables the best selection of a business model in relation with the technology that achieves success to mobile commerce.

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Table3: Matching Business Models to M-Commerce Success Factors

Business Model Success Factors	e-shop	e-procurement	e-auction	e-mall	third-party marketplace	virtual communities	value-chain service provider	value-chain integrators	collaboration platforms	information brokerage	new models
Acceptability											
Accessibility											
Accuracy											
Aesthetics											
Attractiveness											
Availability											
Compatibility											
Cost											
Customized											
Services											
Ease of Use											
Efficiency											
Enjoyment											
Errors											
Flexibility											
Functionality											
Infrastructure											
Innovativeness											
Learnability											
Location											
Memorability											
Mobility											
Playfulness											
Privacy											
Proficiency											
Quality											
Reliability											
Responsiveness											
Satisfaction											
Security											
Specialized cultural											
Subjective norm											
Technicality											
Time											
Usefulness											
Utility											
Value-Added											
Workload											