

# An investigation about obstacles of Mobile Commerce in Iran

## (A case study in Saravan City)

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### Abstract

The main purpose of the present paper is an investigation about obstacles and challenges in development of mobile commerce in Iran. To notice the present infrastructure and the ratio of high influence of mobile commerce and its availability and being at the hand of common people as one of main tools in mobile commerce, in the world as well as in Iran, people have tendency and are going for mobile commerce and it is also attracting general attentions of people.

In this paper it investigate the unique benefits of mobile commerce using a descriptive field survey to access barriers and obstacles which are facing to the development of mobile commerce.

Samples and statistical research population are teachers in Saravan city of Sistan and Baluchestan in south of Iran which are using mobile phone for paying light and water bills or doing business and financial transactions.

The samples were choosing among 300 of so-call teachers which selected in order random tools of data collection was questionnaire which collected after 15 days. The data were analyzed by SPSS software. The result of this analysis is showing that information technology, in the development of mobile commerce is facing many problems and challenges such as: the limitation in extension of internet band, inappropriate user accepted connector mobile equipments, none existence of using mobile commerce culture in trade, lack of the security feeling for users technical equipment limitations and also mobile network stability. And scale of importance of each one from the view of users is different.

At the end to overcome these problems and barriers and to accelerate the development of mobile commerce which is the requirement of the modern life, with the results based on and come out from the present paper some strategies are going to be shown.

**Keywords:** *E-commerce, Mobile commerce, Mobile devices, The challenges of technology, Mobile commerce applications.*

### 1. Introduction

With rapid advances in equipment and infrastructures, especially mobile internet and mobile phone equipment new developments in electronic commerce have been established. This means that your business is a result of new technologies and the changing shape of mobile commerce. What is certain is the tendency of trade companies and buyers in any level to the use of some mobile equipment which are smaller and most easy to handle and traveled the time and place limitation are from main reason of the formation of this modern commercial techniques.

What made the mobile commerce popular for all are as follow; easy and simple use, being personal, being beyond its time and place limitations and also without any delay in transportation and without the need of cash money.

Growth of mobile commerce has a direct proportion with the growth of mobile technologies like mobile phone and PDA machines that a great number of mobile phone users are amazingly adding to this proportion.

In mid 2005 it was estimated that the annual phone sales in 2009 will reach to 1 million devices but according to the

announcement of IDC research center until the end of 2006 something about 1/019 billion mobile phones were sold by vendors in all over the world and the sold number of mobile phone were four-times more than sold personal computers (Mojdehi and co-workers, 1386). Mobile commerce tools such as electronic commerce through the internet or other computer networks carry private lines and the natural result and consequence of the development of mobile commerce is electric commerce. Development of new mobile devices has created an opportunity to offer customers new services and also it will provide the opportunity to attract new customers in future. What make the research and growth of mobile commerce necessary are its special advantages in compare with other kinds of E-commerce. Using this phenomenon make an opportunity for customers and vendors to do their business easily while they are working, traveling and moving from one place to another with usage of location-based systems and global position finders companies can easily identify customers and give offers to them and also to advertise products properly. Big and small companies and customers both have access to this system because the infrastructure cost is lower than the e-commerce. Alongside all the benefits that mobile commerce has some limitation are also there such as; band with limitation, operational restrictions, limited screen size and the challenges in the field of mobile commerce security issues that are discussed and we should not be un aware of them.

In Iran as being a young country with regard to phenomenon requires more expert work and analysis of information technology challenges in the development of mobile commerce in the areas of corporate, commercial, technical, cultural and security.

Whatever exists now as an issue and problem is that as to pay attention to the development of infrastructures of information technologies and usage of mobile phones in country as well as in the state of Sistan and Baluchestan where is the research area and work field of the present researcher yet mobile commerce did not develop in this society or by this community. Researcher in this research is trying to analyses and to approach the subject of scientific research and to explain its reasons and provide solution to the obstacles of mobile commerce here. And the new nature of this phenomenon in this area is based on not finding of strong theoretical foundation which must be found in this study.

Theatrical basis and background of the research wireless technology and mobile commerce technology are the most interesting and important features of the history of technology which brought a great change and transformation in the style of economics from traditional form to the most advanced and digital form of economics.

Investigation of the literature of technology is indicating that till now technology has passed three different periods; first period of time was started from the year 1972 and it was the period of personal computers. The second period was started from the year 1990 and it continued to the year 2000 and it was the period of internet. The third period was started from the year 2000 and it is predicted to be continuing to the year 2014 and it is called the period of mobile internet and technology which caused the formation and development of mobile commerce (Mahatanankoon, 2005).

Chang-Tseh mentioned some reason as reasons for the development of mobile commerce and as some of those problems is mentioned as follow:

- 1). the number of available mobile terminals were bigger and more than the number of PC users and they grew up more faster.
- 2). familiarity of users with terminal is more and services do show a personal and comfortable compound.
- 3). All time and place they are available and reachable easily.
- 4). Employees can acquire information immediately as they are and get decision without any computer limitation and also inflexible program performances (Chang-Tseh Hsieh, 2007).

## 2. Description and definition of mobile commerce

We define a mobile commerce trade as follow:

Each and every trade which has an economical value and it is done and guided through a mobile terminal, a terminal which is using wireless telecommunication network communication which is used for mobile commerce basis (Veijalainen&Pitoura,2003).

In the definition of mobile commerce some one can say "mobile commerce is any kind of electronic transition and change of information which is done by one mobile tools or by mobile network and through that the real value or money payment can be done instead of receiving goods and services and also transferring information (Nambiar & coworkers,2004).

As mobile commerce is a developed phenomenon but until yet mobile commerce is at a starting level. Although with the growth and development of wireless network there is an expectation that the creation of wireless networks and mobile networks will cause and will bring a new and good income to the development of mobile commerce business and will be given new and modern methods for mobile operations and have new applications and results for customers (Chang-Tseh Hsieh, 2007).

With having all unique and exclusive features mobile commerce is facing some serious challenges and obstacles are in the way of development in different countries (Jia Jinnan, Zhou Shan-liang, 2010).

Investigating some factors which are not allowing mobile commerce to grow up and develop in China with all potentials China has. So, factors and causes are as follow:

- a) Mobile network and its equipments are backward from development.
- b) Conservatism in using values and inappropriate understanding.
- c) Pressure of difficulties and problems is a real fact which is stopping the development of e-commerce.
- d) Negative affection of lack and absence of value.
- e) Approval of constitution delay.

While the development of mobile commerce technology is having a great effect on the market of internet and mobile phones, the development of these equipments is one of the important factors which is helping for the development and growth of electronic mobile commerce.

In recent years mobile phone has developed rapidly in China and China became one of the super-powers of the world in the production of mobile phones (the production of more than 70 million pieces in July 2009).

Now mobile phone users in China are more than 700 million people and from them more than 150 million people are using WAP mobile phone. About 200 million of those users are using (sending) SMS system regularly and more than 600 billion SMS has been sent in these years and the average growth rate per years is estimated more than 16%.

Prevalent wireless tools are mobile phones, PCs, laptops and installing intermediaries on transporting vehicles. Though, mobile terminals are showing a big range and size of flexibility but when they are compared with personal computers they are in a lower level from different respects. Their screens are smaller and the showing stability is lower. Their small and multiplex keyboards make the entrance and usage of users more difficult.

Because of having small but not heavy mechanisms of entrance and exit there will be an obstacle for the development of adaptable confrontations with users and geographical using of these movable tools. Mobile machines are also limited in calculation, memory and disk capacity, cell (battery) life and searching for information. These obstacles in mobile machines do not support users and complex tasks and the result is that using of mobile commerce will make the chain of demands and need limited in management environments (Keng Siau, Ee-Peng Lim, 2003).

The affections of different elements on services and usage of mobile commerce according to the view of (Veijalainen & Pitoura, 2003) in chart (1-1) had been shown. As we see in the chart the direction of most of arrows are in both two-ways. More especially mobile network limitations (i.e. the extension of band is nearly below) and hand terminal limitations (like board of small monitors) impose some requirements for services and mobile commerce usages and also the limitations of the present usages requires more developments from the side of networks and hand terminals. The arrow which is down from the mobile network substructures toward hand terminals is showing the fact that if hand terminals want to use from the facilities of advanced network technologies (like WAP) they must change accordingly.

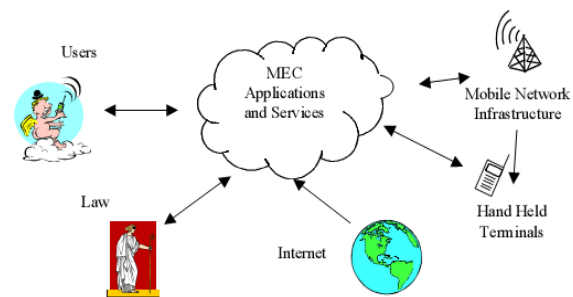


Chart (1-1): the affection of different elements on services & mobile commerce usages (Veijalainen & Pitoura, 2003)

Present rules involve some limitations for mobile commerce. For example; in some countries private support is not giving this right and permission to identify the location and condition of users to service providers. From another side, unique and interesting features of mobile commerce (like the topic that the user can stop any contract in any country) needs some definition about some rules and regulations which are supporting mobile system and definitely requirements of users for the development of services and usage of mobile commerce will be effective. For example; the user is enjoying the benefit of regional services and can request for guidance of some directions to reach in a particular place and situation. The user also wants to have regional services with his own mother tongue while he is outside of the country and want to be reachable and available with a very clear and understandable method.

### 3. Research Hypotheses

- 1). There is a relationship between the development of mobile commerce and internet band width.
- 2). There is a relationship between the development of mobile commerce and the rate of mobile networks stability.

- 3). There is a relationship between the development of mobile commerce and the culture of using mobile equipments.
- 4). There is a relationship between the development of mobile commerce and feeling of security of users.
- 5). There is a relationship between the development of mobile commerce and technical limitations of mobile equipments.
- 6). There is a relationship between the development of mobile commerce and users satisfying intermediates of mobile equipments.

**4. Statistical Hypothesis**

First Hypothesis	H0	There is not a relationship between the development of mobile commerce and internet band width
	H1	There is a relationship between the development of mobile commerce and internet band width
Second Hypothesis	H0	There is not a relationship between the development of mobile commerce and the rate of mobile networks stability
	H1	There is a relationship between the development of mobile commerce and the rate of mobile networks stability
Third Hypothesis	H0	There is not a relationship between the development of mobile commerce and the culture of using mobile equipments
	H1	There is a relationship between the development of mobile commerce and the culture of using mobile equipments
Forth Hypothesis	H0	There is not a relationship between the development of mobile commerce and feeling of security of users
	H1	There is a relationship between the development of mobile commerce and feeling of security of users
Fifth Hypothesis	H0	There is not a relationship between the development of mobile commerce and technical limitations of mobile equipments
	H1	There is a relationship between the development of mobile commerce and technical limitations of mobile equipments
Sixth Hypothesis	H0	There is not a relationship between the development of mobile commerce and users satisfying intermediates of mobile equipments
	H1	There is not a relationship between the development of mobile commerce and users satisfying intermediates of mobile equipments

**5. Research Methodology**

This is a descriptive field study survey. Because after the collection of data the researcher was using the library based methods (referring to books, articles, digital texts and national and international magazines and journals) and with survey of the statistical population for the answering to the questions of the present research and the description of the present situation he did the field study work and while researching he collected some data from those questionnaires which were given to people. Also the present research was happening in a particular period of

time (in the year 1389) was sectional according to the time (data are changeable from time to time).

Result from the analysis of data

In this research after the distribution of questionnaires between people the data which came out were under analysis through SPSS software and in this software output of following tests also have been used.

- 1). Examination of T students.
- 2). Analyses of Varian Friedman.

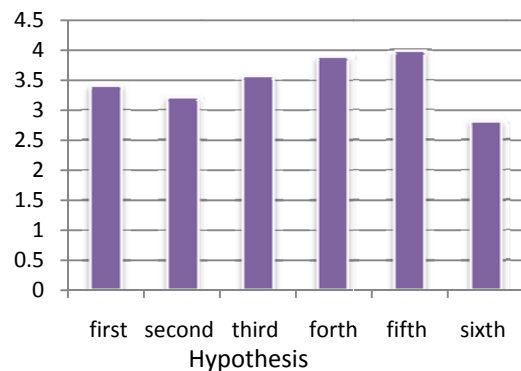
**6. Result of T test**

the result of test	level of error	level to mean	degree of liberty	T- test	Hypothesis
Rejected of null	0.05	0.000	179	36.709	First Hypothesis
Rejected of null	0.05	0.000	179	31.490	Second Hypothesis
Rejected of null	0.05	0.000	179	49.660	third Hypothesis
Rejected of null	0.05	0.000	179	52.752	forth Hypothesis
Rejected of null	0.05	0.000	179	58.542	Fifth Hypothesis
Rejected of null	0.05	0.000	179	40.523	Sixth Hypothesis

**7. Results according to the analysis of T test**

According to the result of the analysis it shows 95 percent confidence.	First Hypothesis
According to the result of the analysis it shows 95 percent confidence.	Second Hypothesis
According to the result of the analysis it shows 95 percent confidence.	Third Hypothesis
According to the result of the analysis it shows 95 percent confidence.	Forth Hypothesis
According to the result of the analysis it shows 95 percent confidence	Fifth Hypothesis
According to the result of the analysis it shows 95 percent confidence	Sixth Hypothesis

**8. The analysis of data for average of grade in Friedman's test**



It can be observed that the best grades are related to the index of technical mobile equipment limitations and the worst grades are related to the users satisfying terminators.

Review of truthfulness and untruthfulness of hypotheses is important for any kind of research work.

Now days in most of researches which are depended to collection of data from the mentioned topic of the research work the analysis of data is one of the most important parts of the research work. Raw data can be under analysis by statistical techniques and after the process of analysis they will be given to the hand of users.

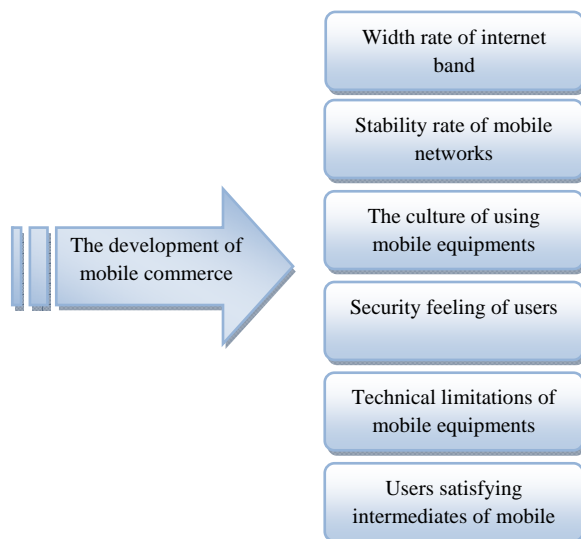
In this part at first data were analyzed by descriptive method and then with the use of charts, ratios and diagrams the general and the main result of the research work studied and then reported.

Finally with the use of inferential statistics, the results and analysis had been given. So, the collected data which were available by statistical population they are questionnaires analyzed by SPSS16 software. Also for the grading each one of the following indexes used Friedman exam test related to the development of mobile commerce in Saravan city.

To clarify the aim of this research about that whether these indexes were effective for the development of the mobile commerce in Saravan the related and mentioned model and its components were analysis by T test.

## 9. Results

After investigation and analysis of the result of the following model as a conceptual model was given by the present researcher.



1). To refer to the confirmation of the first hypothesis and the results of questionnaires research and statistical data had shown that there is a relationship between the mobile commerce and the internet band width. And as much the width of internet is more with the same rate receiving and

sending of data will develop and increase in mobile internet and this issue will decrease the time of doing a transaction, searching on internet a good, loading of bulky sites and with the same ratio of the increasing of the quality of the graphic of sites. Financial transactions will be done with a high speed and users will find a better chance and satisfaction.

2). To refer to the confirmation of the second hypothesis and the results of questionnaires we can understand that mobile commerce has a direct relationship with the stability ratio of mobile network and as much as this network is widen and more of areas are under its coverage and also the cost which is given for the foundations and substructures of the network that much this network will get free form being busy and disturbed from the traffic and also the cutting of phone network will reach to the least.

The matter will cause that all users do their transactions and businesses easily without any time limitation and place limitations, without being worried about that whether the message is sent or failed or that the speed of network is low. This will be very useful for a successful and effective mobile commerce.

3). To refer to the confirmation of the second hypothesis and the results of questionnaires we can understand that there is a relationship between mobile commerce and the culture of the commercial use of mobile commerce and as much as the general culture is advanced and people do know the importance and benefits of using mobile and if the financial way is defined properly so, people do know about mobile internet and its benefits, mobile banking will develop generally and too much great changes can be created for the growth and development of mobile commerce.

4). To refer to the confirmation of the fourth hypothesis and the results of questionnaires it can be claimed that there is a relationship between mobile commerce and users security feeling and as much as mobile users do trust to the mobile system and they will be secured by their passwords or while they are facing problems and contradictions they must be treated well and supported legally to solve all problems. So, they prefer to use mobile phone for doing their financial transactions and this task also will make the way of mobile commerce smooth toward success.

5). To refer to the confirmation of the fifth hypothesis and the results of the questionnaires it can be understand that the users of mobile commerce give value and importance to the technical equipments and limitations. In fact, some cases are like small size of screen and limitations of keyboard also the obstacles and shortages of some mobile phones and their incompatibility with new software and the system of new elements are some of obstacles which decrease the interest rate of users to use mobile phone for

business and banking efforts. Therefore, any decision and action for removing and abolishing of all these mentioned problems and obstacles will be a positive step for the development of mobile commerce.

6). To refer to the confirmation of the fifth hypothesis and the results of the questionnaires it can be understand that whatever the relationships are simple and understandable and there is not too much need of wasting time for typing and etc, they will be most popular and workable by users . Some abilities like installing simplicity, similarity with the most models of mobile phones and the interesting work environment of software have a great effect for the increasing of the number of users and the development of such a kind of business.

### 10. Conclusion and final suggestions

Whatever were studied in this research work are that the effectiveness and capability of mobile commerce as an alternative for the old and traditional method of commerce.

The increasing of the number of mobile phone users, who are using wireless internet facilities and special mobile phone machine facilities for business and commercial transactions, created a good chance for the society to go forward for the new method of business which is called mobile commerce.

Day by day development of the number of users of mobile internet and mobile phone caused a new wave in the banking system and payment system of the country and challenges which were studied in this research were more appeared.

To make the result of this development better there are some techniques which are useful and effective and they are as follow:

- Substructures development of telecommunication network for the length of mobile internet band which will be in service of users will cause the high speed of receiving and sending of information on internet. This task is possible by the use of new and modern technologies like WIFI, WIMAX and etc.

- Development of telecommunication network as the way all place must be under the coverage and all users will be able to do all work and use mobile phone to do mobile financial transactions or control the account and bank balance and also use from other modern facilities of the mobile phone. Not having network or cutting connections and network traffics are from problems which can be removed by increasing of the quality of telecommunication equipments with the way of using potentials of the private sectors.

- The increasing of general awareness advertisement about benefits and usage of mobile commerce through national media's in present and the development of trainings in all schools of the country as a part of educational syllabus by the ministry of education. Because this method can be useful for the next generation of the country .

- Removing of legal defects in this area and having cooperation with international system in approval of some special international rules and regulations and also the training of special judges and lawyer with having a good knowledge and power in this field, for checking and controlling all national and international activities. And checking and looking after the companies, users and customers.

- In technical limitation discussions mobile banking equipments and institutions can design their software and programs by understanding the need of customers/users. Using from a technology which can recognize the voice for decreasing of keyboard using ratio and increasing of screen capabilities, using of touch screen by producers of mobile phone.

- Development and advertisement of the culture of using PDA machines in commercial and educational units is also a useful step toward the development of mobile commerce and decreasing its limitations.

- To produce and effect each other (between the ministry of information technology and relationship with banks, financial institutions and also private sectors or companies) for developing standards of services and providing such services in country which are having international standards.

Suggestions for future researches and studies

Whatever is clear is that mobile commerce is toddler and the shortage of strong theoretical bases in country there is need for research and more survey about the topic and its limitations

Topics for future researches are suggested as follow:

- 1). the cooperative impact of private sector in the development of mobile commerce.

- 2). Comparative review of obstacles of mobile commerce development in Iran and developing countries.

- 3). the affect of the review of traditional banking systems in the development of mobile commerce.

- 4). Review of affect of externality information technology services in the development of mobile commerce in other trade agencies.

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