

Mobile Banking, Challenges and Strategies in the Banking System of Iran

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ABSTRACT

Most of the researchers have predicted that the large changes in technology and globalization of financial markets will lead to the greater competition in the banking sector. This competition has closed the deposit rates to the rates of bank loan. Hence, the banks try to obtain a sustainable competitive advantage as well as better and more efficient services providing by the modern and various channels of banking. By new technologies, customers can use various banking services ranging from planning to pay their bills by their cell phones. Using the Internet is more complex than using the mobile and this leads to the superiority of mobile in this field. The executive challenges associated with the banking in Iran can be divided into two categories, first the executive challenges in terms of new telecommunication technology such as the public development of telecommunications networks, lack of fixed codified standards in the field of compatibility with devices and softwares, and lack of preparation and acceptance of active companies in the Radio Regulatory Authority organization and next the executive challenges in terms of the banking network such as reducing the power of controlling the central bank in releasing the physical money, lack of a common policymaking agency, inability to upgrade the software and hardware systems in banks, lack of codified legal and judicial regulations with international standard procedures in the field of IT and E-banking, absence of the adequate expert staff in banks in order to respond to the problems, and bank employees' inappropriate behavior towards the users' countless questions. Hence, in this study we evaluate the provided suggestions for improving the effect rate of mobile bank.

KEYWORDS: Electronic Commerce; mobile banking; E-banking.

INTRODUCTION

Most of the researchers predict that numerous technological changes and globalization of financial markets will lead to the greater competition in the banking sector. This competition has closed the deposit rates to the rates of bank loan. Hence, the banks try to obtain a sustainable competitive advantage as well as better and more efficient services providing by the modern and various channels of banking [2].

Commerce and banking methods is one of the areas which is severely rapidly and affected by using the modern information and communication technologies and Internet. Most of the traditional methods of making money have been transformed into the new methods and values of frequency [31]. From the mid-1990s, a fundamental movement has been formed in the banking delivery channels towards using the "self-service" service channels such as the E-banking services [58].

Between the years 2007-2015, most of the sights of customers' common transactions and payments will be changed and the modern electronic methods be replaced by using the cash. In an electronic environment, the geographical gap and time and place constraints lose their importance and the commercial transactions will be implemented based on the electronic information.

Emergence of E-banking

As we know, the philosophy of bank and the reason of its rise is holding the individuals' funds, and another major task, which was first appeared to offset the costs of keeping the deposits, is lending to the applicants. For several years they have only had these two crucial roles in the financial system. But in 1865 AD, this role was developed by creating the check, and the barter room was created in order to exchange the checks or in the other term barter them [5]. The need to quickly transfer the funds in the barter room as well as the drafts caused that the banks have quickly become embraced with them by the rise of communications equipment such as telegraph, telex, telephone, fax, etc and As the technology advances, they have equipped themselves with the newest system technology; therefore the computers and Internet today have changed the concepts of banking. Evolution of banking in the world since 1980 has caused the fundamental changes in the form of money and the way the banking transactions are done [5] and in fact these changes have created the concept of E-banking.

Benefits of E-banking

The e-banking has had vast and diverse benefits which can be summarized in three general categories. These are briefly mentioned below:

Advantages for customers:

1. Security: Studies have shown that the E-banking systems are more secure than the traditional methods. It seems that the possibility of theft and robbery will be reduced because of reducing the physical transportation of funds and commercial documents. In addition, the online and electronic thefts need to the expert hackers and even by these people the security filters reduced the probability of theft compared to the traditional methods.
2. Speed: The speed is the most prominent and important feature of E-banking and the most basic reason for making it comprehensive. It is worth noting that if the speed was the only advantage of E-banking practices compared to the traditional banking, it would be enough for developing the E-banking with the same speed and capacity.
3. Simplicity: The E-banking tools are usually designed in a way that it is easy to work with them and no special expertise is required, and anyone with any level of education could use them.
4. Low Cost: The electronic operations fees are much lower than the postal way because of the great savings in telecommunications and Internet sending compared to the postal sending. The reduction in costs due to the time savings despite going to the banks and standing in long queues can be added to the above advantages.
5. Wider range of choices: Since all banks will be available in the E-banking, customers are faced with more options for choosing the banking services and freely select any bank which provides more favorable services.
6. 24-hour access: customers are not limited to the business hours for their banking activities and they can receive and transfer funds in all hours of day and night.
7. Improving the liquidity management: Because of the fast money transfer, the time delay in transferring funds is reduced and customers can manage their liquidity more favorably.

Advantage for the banks:

1. Reducing the costs of Marketing and advertising: In the e-banking, websites and other automated banking services introduce different 24-hour banking services to the customers; in the other words, by using the electronic catalogs they provide the more comprehensive 24-hour information in type of banking services with less cost banking services for clients and customers.
2. Improving the relationships with customers: In today competitive and fast business arena, customers prefer to work with banks which offer faster, more accurate and efficient financial services. Therefore, the E-banking improves the relationships with customers by providing better services.
3. Security: Security resulted from using the information technology is even more useful and effective for banks than the customers, because the losses caused by fraud, theft, embezzlement, etc are noticed more than others by the banks.
4. Speed: Doing fast services will increase the productivity and efficiency of banking system.
5. Reducing the cost: includes the reduction in the costs of paper and printing, advertising promotions, staff and time. It greatly reduces the need for less staff and more limited branches because of mechanized banking systems, and current costs (costs of personnel, office, etc.).
6. Reducing the human errors: Entering the information for several times in the traditional system causes a lot of mistakes. By eliminating the reworking, and using the appropriate methods of control, the electronic system can prevent such errors.
7. Globally 24-hour access: The website of bank is in fact a bank branch which provides the 24-hour banking services around the world and without the current and personnel costs. In addition to the internet services, most of the E-banking tools have these features.

Advantage for the society:

The E-banking improves the banking activities and has advantages for customers as well as the unintended advantages for the society; from which the following advantages can be pointed:

1. Higher public productivity due to the improved time management;
2. Economic savings resulted from the reduced costs of paper and printing;
3. Better management of funds and efficient use of liquidity;
4. Lower social costs such as the traffic, air pollution, and noise pollution especially in the big cities.

E-banking channels:

Electronic channels, known as the online banking distribution channel, refer to the transferring method of financial products by using the electronic media such as the personal computer, telephone and the internet. In addition, the ATM (Automatic Teller Machine) is one of the best electronic distribution channels which enable the bank customers to do their banking transfers during the 24 hours.

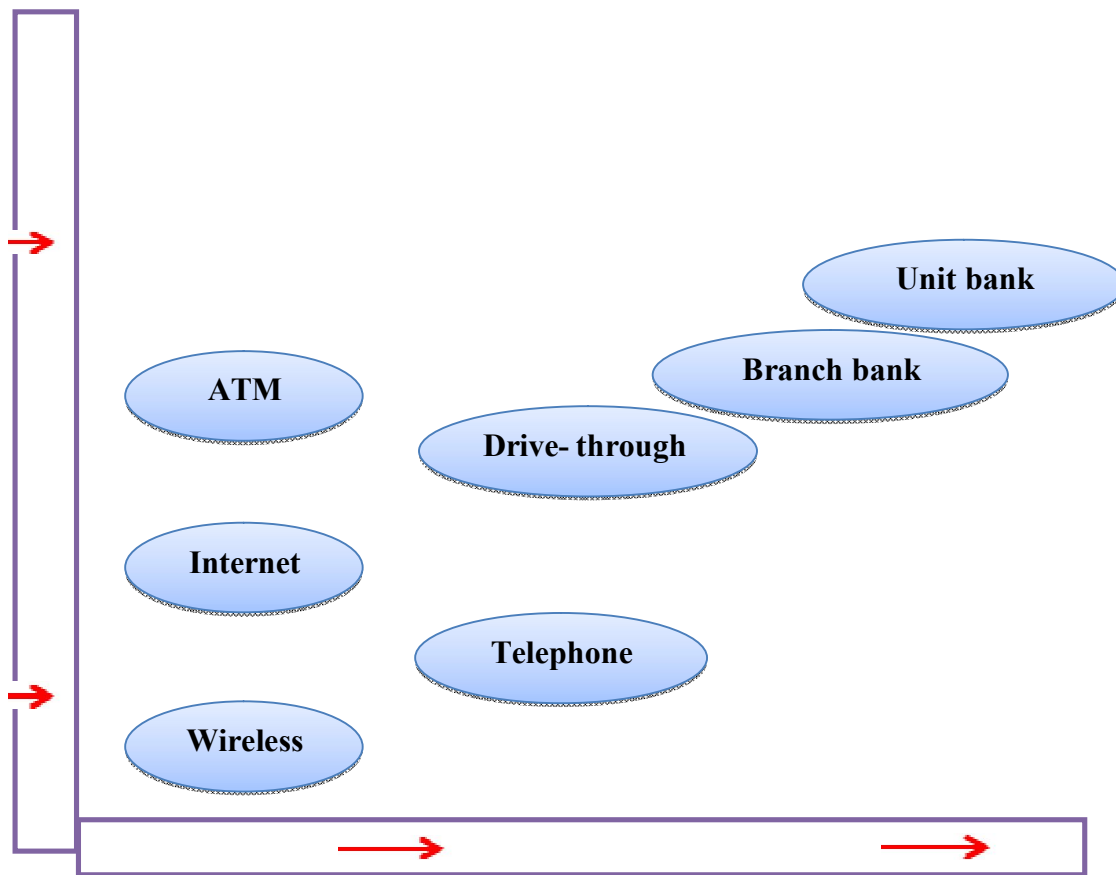


Figure 1: Banking delivery channels

Despite the fact that the new techniques of electronic channel are providing the easy and available services, and reducing the costs of operation, implementing the electronic channels involves the high risks and costs [61]. The above chart indicates the banking delivery channels according to the distance which customers need to pass for using them (vertical axis) and the amount of services which customers receive (horizontal axis).

As the combination of bank delivery channels moves from high to low, it will have advantages for the customer and bank and increase the customer comfort because the customer does not need to pass a far distance and the banking costs will be reduced.

According to recent estimates, a cost equivalent to \$1.07 will be spent for each transaction in the branch banking, while \$0.55 for phone bank, \$0.27 for ATM, and \$0.09 will be spent for the Internet. [44]

E-banking in Iran

Since the late 60s, and according to the emergence of personal computers and the need for mechanized banking operations in this field, banks have begun their activities. During the years 1370 and 1371, the informatics departments in most of the banks were involved in the various mechanization projects at the level of bank. This plan was mainly formed for mechanizing the status quo and according to the available technical facilities at that time, and the comprehensive software system and the automation widespread plan did not find a way in any banks. Swift implementation, which was common in the banks in these years, was perhaps the first sign of E-banking which brought the future image of electronic communication for doing the transactions. In order to implement this vision, the environment and tools were needed but there were not available for the banks at that time [6].

Using the card services and telephone banking were the next moves in the E-banking. The speed of increasing the number of companies which provide the internet services indicates the increased demand for these services. This group of applicants is the potential customers for the e-banking.

During the solar years 72 to 73, the spark of creating a national switch for the E-banking network was provided when the a communication network was created between Bank Melli and Shahrvand chain stores, and individuals who had a bank card could use the services of this store. In Khordad 1381, a set of rules governing the center of Interbank Information Exchange, known as "Shetab Banking system" (Interbank Information

Transfer Network) was approved and began its activities from Tir 1381 with aims to provide the infrastructure of e-banking [20].

The comprehensive automated banking system plan is one of the most important projects of Iran in implementing the E-banking. Such a plan was first imposed to the Iranian banking system exclusively by the central bank involvement. In the recent years, banks have been responsible for implementing this project and several facilities have been provided in the field of new banking by creating the competitive condition in our country.

The project has several objectives which have been proposed by studying and reviewing the experience of different countries. In addition, these objectives include all aspects of banking system and ultimately ensure the implementation of modern banking system. The major objectives of plan were determined as follows:

1. Reducing the executive problems in the branches and head offices of banks and increasing the performance of system;
2. Describing the operation of banking system and improving its quality;
3. Providing the accurate and timely services for customers;
4. Creating the necessary background for reducing the cash transactions and physical transfer of money;
5. Timely access to information for making decisions about the monetary and financial policies;
6. Saving the bank employees and customers' time, reducing the physical transfer of documents in the branches, reducing the commute and ...
7. Creating the necessary coordination for communicating with banks abroad.

As it can be concluded from the objectives, this plan has met the banking services suppliers' interests as well as services applicants' interests; and all the mentioned goals are about accessing to the modern banking system or E-banking [23].

According to the statistics provided by the Central Bank and by banking tools and electronic equipment by the end of 1389, the status of Iran is as follows in terms of using the e-banking:

Table 1: Statistics of electronic payment tools and equipment

	Esfand 85	Esfand 86	Esfand 87	Esfand 88	Esfand 89
Card	23,437,601	38,593,283	60,099,867	87,425,263	128,412,931
ATM	7,468	9,917	12,959	17,133	20,623
Sales Terminal	192,765	427,082	763,938	1,147,602	1,513,318
branches Terminal	15,692	21,707	27,048	31,853	43,046

As it is obvious, the tools and electronic equipment of banks have grown increasingly over the years. From the number of delivered cards by the end of 1389, 93570210 or more than 70 percent are the debit cards. More than 26 percent (33,475,199) of delivered cards are shopping and gift cards. In addition, approximately 1,367,522 credit cards and 10,218 e-wallets are delivered in the banking network of Iran and have provided for the customers. It should be noted that among 20 active banks in Iran, so far only 13 banks have delivered the credit cards.

Mobile Banking

According to the available statistics, the effect coefficient of using the mobile devices has always been higher than any other technologies; and this has globalized the mobile business which is occurring in the developing countries with the same rate in the developed countries. Predictions of a Research Institute (Accenture) indicates that by the end of 2005 the number of users of mobile devices has been reached to about one billion and 400 million people of which 684 million people have access to the Internet network through the mobile tools [24].

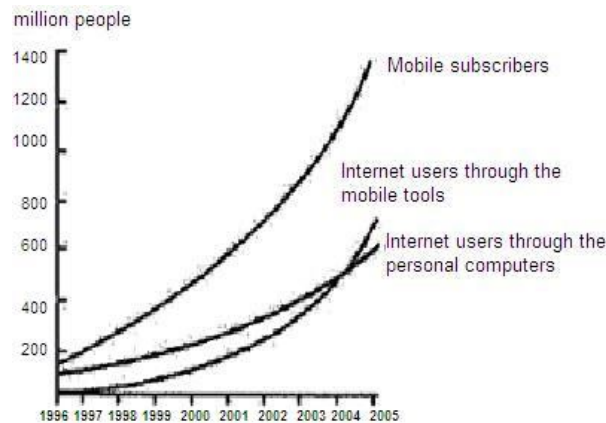


Figure 2: Increasing the number of mobile devices users

The history and expansion of Mobile Banking services is short-lived, and perhaps it can be considered as the most emerging service of E-banking. These services has a lifetime shorter than 5 or 6 years even in the most advanced countries since these services have began by offering the mobile generations 2 and 3, and their protocols used in these generations can also be implemented. In the new generations of mobile phones, it is possible to conduct the transactions at much higher speed than before and this possibility has made the opportunity for the customers to do their shopping at the minimum time and to achieve the main objective of E-banking which is "reducing the cost and avoiding from wasting time".

Mobile Banking can be defined as "Doing any financial, banking and credit operations by the mobile tool which is the intermediate of that bank or the financial and credit institution and/or an identity verification center." Nowadays, mobile banking is often done by SMS or Internet. It can also be done by running the special applications on the mobile phone [30].

Mobile Banking Cycle

Like other services of mobile commerce, the mobile banking service is provided by different institutions and in order to complete a banking transaction via the mobile communication, its customers should have interactions with them; and the mobile service providers, mobile operators, and content providers can be cited from them [17].

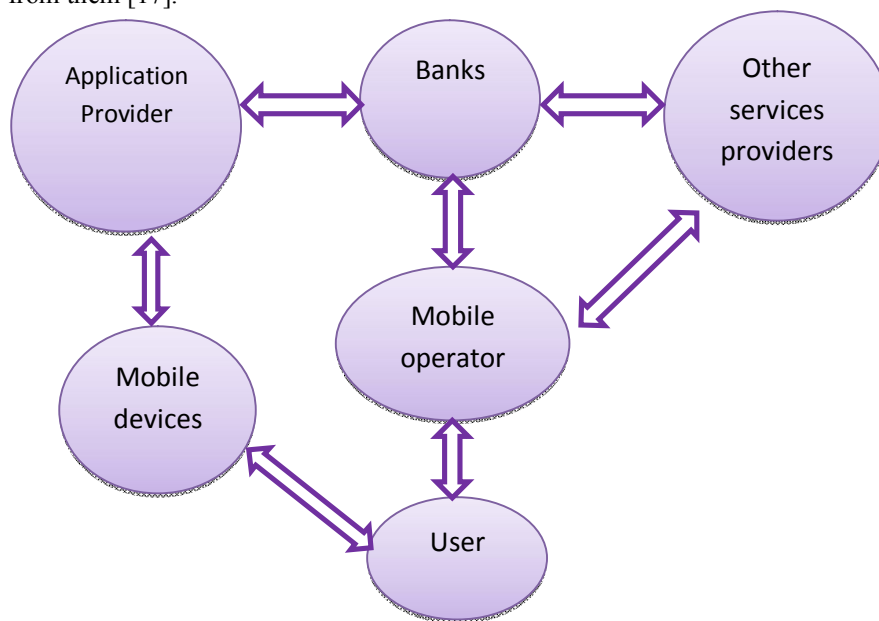


Figure 3: Mobile Banking Cycle

Therefore, in the Mobile Banking cycle any institution should cooperate with other institutions in order to attract customers more.

Mobile Banking Technologies

By new technologies, customers can use various banking services ranging from planning to pay their bills by their cell phones. Mobile technologies used in the mobile banking include the SMS (Short Message Service), WAP (Wireless Application Protocol), and mobile applications which are described here. [50]

SMS:

SMS allows the financial institutions to communicate with their customers. Almost all mobile phones have the ability to use SMS. SMS is so suitable for sending messages from banks and also for a number of banking operations. In order to create a query, the customer sends an SMS containing the service request to a special number which is considered for this purpose.

SMS has also the limitations. In this service, message delivery is not guaranteed and there may be delays in delivery time, or part of the message is not sent. In addition, the financial institutions cannot provide the proper user interface to complex services for customers through the SMS. Messages are not partly encrypted and

this is a security problem. Ultimately, the SMS has a relatively high cost for both customers and banks. Despite this, the simplicity and widespread use of SMS for Mobile Banking service users has been useful and attractive.

WAP:

WAP is a global standard for providing the internet communications on the digital mobile phones, personal digital devices, and other wireless terminals. WAP has been designed for safe and efficient use of bandwidth, low-speed connections, small screens etc. Mobile users can access to the financial institutions for doing the transaction as well as the Internet users' access to the portal of institution for using the financial institution services via the WAP. WAP enables the authentication which needs the online banking. However, entering the information in the mobile phone is limited for its keypad.

WAP provides major advantages for users. The WAP products can be very complex and they provide various services for customers, and clients use these services through a form-based interface which they are familiar with in the Web.

By the emergence of WAP standard, now people do not need to take their own laptop or personal computers in travels in order to perform the actions such as checking the e-mail, getting the stock information, performing the business and banking practices, reservations, etc. But by using the PDA which are the very small handheld computer devices or through the mobile devices can wirelessly do all their activities with the Internet and by these tools; nowadays, most of the systems or mobile phones are equipped and can be connected to the Internet.

Mobile Banking Applications:

From a security perspective and according to the users' experiences, it is difficult to accept that about the mobile banking applications the users should download the application on their phone. Using the properties of these applications, transactions can be encrypted completely in both source and destination sides using the SSL. Since these softwares have been designed for special purpose, mobile banking application designers can optimize the applied interface for the financial transactions.

The independence of application is one of the advantages of these applications for financial institutions. Once customers have downloaded the software on their phone, they can use the Mobile Banking application. In the other words, the application should be compatible with the various needs and functions for a large number of mobile phones and this is expensive. Phone also should support one of the environments such as the Microsoft Windows Mobile or.... Another problem of mobile banking applications is that the customers should download the software, install it on their devices, and update its new versions, and maybe this is a new matter for some of the customers.

Table 2: Mobile technologies used in the phone banking

	SMS	WAP	Application
Common cost for financial institutions	Too low - 4 Euros for sending each SMS	No cost	No cost
Common cost for customer	too low - about 10 Euros for each message	too low - about 1 euro for each kilobyte	too low - about 1 euro for each kilobyte
User's attempts to set up and install	No need to install	No need to install	User should make the relatively modest effort for installation
User's attempt to use	It is simple for tasks like paying bills, but is difficult for activities such as financial desires	It is relatively difficult because of the need for password in order to enter, and increases the user's attempt because of its versatility	It is very simple like using the keyboard
Security and encryption issues	Lack of Full encryption, and low security	Full encryption	Full encryption

Advantages of Mobile Banking

Using the Internet is more complex than using the mobile and this leads to the superiority of mobile in this field. In addition, most of people live with their mobile phone while most of people around the world are still unfamiliar with the computer and the Internet. Most people do not have the Computer Literacy, but they can work simply and easily with the mobile phones. In fact, the largest internet banking restriction is the need for a computer and connecting line to the Internet. However, it has not been a very big issue in America or Europe, but it has been an issue in the developing countries.

Mobile phone is a handheld device which can be used at any time and place, but computer, even in type of portable, needs a big space and cannot be used anywhere.

Unlike the Internet Banking which is done only by a fixed location and a constant connection line, in the mobile banking it is possible to do all activities in any place which is covered by mobile network. In other words

the main reason for the superiority of Mobile Banking to the Internet Banking is providing the "Everywhere Banking" [16].

Moreover, the mobile phone works according to a system named as the SIM (Subscriber Identification Module) and common identification and provides a much higher safety level than the Internet. Thus, the banking operation of this way is associated with the greater safety support [15].

In general, the effect of mobile is much more than the computers and Internet. According to the statistics of GSM Institute about 800 million mobile phones have been sold around the world in 2006. This institute also predicts that by 2010 all people either have mobile or easily have access to a mobile device. The high effect coefficient of mobile phone indicates the fast compatibility of this device with the culture of different societies [25].

One of the financial institutions (WIZZIT), which is currently the only provider of mobile banking widespread model in the world, has conducted a survey among its own members and those who were familiar with this technology about four criteria of price, safety, convenience and speed, and has obtained the remarkable results as follows:

- 70 percent believed that these services are cheaper and 90 percent also believe that these services are not expensive.
- 69 percent believed that these services are safer.
- 68 percent believed that using these services is easier.
- 68 percent believed that these services are faster.

According to what was expressed, it seems that using the mobile phone technology is currently the best solution for improving the banking actions. Besides, the mobile banking can be replaced with the electronic commerce, which needs the regular communicating structure, due to the lack of using the cable in countries such as Iran which does not have the regular and coherent communication infrastructure. [16]

Moreover, offering the banking services through the mobile phones will bring many advantages for banks, and some of them are mentioned below: [13]

- Reducing the management costs
- Reducing the personnel costs
- No need for a large number of branches in different regions
- Customer satisfaction
- Providing the banking services at different hours of day and night
- Providing the banking services at any place which the customer needs
- Usability in all covered areas
- No need to connect to internet by current techniques
- Better speed and security than the Web
- Ease of working and learning compared to the computer and Internet

Mobile Banking in Iran

Nowadays, providing the banking services via the mobile phone is one of the requirements and needs of modern banking industry. But before the creation and implementation of banking system, the feasibility of implementing it in the banking network should be assessed; it means that we should be assured that this project can work in the technical, economic, financial and manpower environments. The technical feasibility includes the availability of hardware, software and knowledge of how to develop the mobile banking system in order to meet the users' needs. In addition, the feasibility of manpower about the effect of individuals on the banking system and vice versa the effect of modern banking methods on the people who are supposed to work with the system, are discussed.

In addition, the software and hardware problems can lead to the disorder and inefficiency in mobile banking of Iran, and on the other hand the lack of designing the comprehensive information systems in banks and lack of proper infrastructure such as the lack of effective communication networks and disorder in the communication networks makes obstacles for implementing this kind of new banking. Weaknesses in training the staff also delays using the mobile banking because it is seen that even by establishing the mechanized systems, sometimes the staff do things manually as well as using these systems [16].

Generally, the Internet lines and their connections are the prerequisite of electronic commerce in Iran, but eventually this leads to the restriction of this phenomenon in places which cannot meet this prerequisite. Using the internet can be used in order to activate the financial transactions, but its use is not mandatory and along with it any other network can be used for transferring the information. With regard to this issue that the number of mobile phones (42 million mobile phone subscribers by the end of 1389) is higher than the total number of personal computers and fixed telephones, we conclude that despite the fact that the mobile phones are still on their first steps, they promise the dramatic and increasing growth. The mobile phone has the ability to be considered as one of the main way for transferring the bank funds and as a tool for efficient and easy payment

because "the future belongs to the mobile banking." superiority to the PC, powerful system study, system security, availability, simplicity, speed, and efficiency are the unique features of mobile phones compared to other equipment and tools of modern banking services [4].

Nowadays, the mobile communication network and mobile phone technology is increasingly growing and is used in a wide range by people and this can provide a good background for using the modern banking services.

The mobile banking service eliminates the place restrictions caused by the presence of internet lines, and provides the activation possibility of any financial transaction. According to the article 7 of the E-banking regulations, the banks should activate at least a payment terminal, except the ATM and POS, such as the phone banking, mobile bank, and the Internet in terms of security issues in a way that they are capable of electronic transfer of funds between the accounts and electronic payments until six months after the notification of regulations [4].

Having the information about the account balance, last three turnovers of inventory, fund transferring between the internal accounts, getting the inventory, blocking the card, changing the PIN, approving the amount of check, and paying the of bills are the available services in the Mobile Banking. Some of the potential services such as the small ATM for deposits and cash withdrawals, payment at the time of good delivery, replacing the cash payment in the delivery of good, demanding the fax of account, and P2P and P2B payments are the mobile phone services which can be provided in Iran. Some of the necessary prerequisites for the implementing the mobile banking in Iran are as follows: Strengthening the relationship of data center of bank with mobile satellite networks, providing the high-speed telecommunication background for mobile communications, attempting to reduce the cost of connecting to the Internet via the mobile, and expanding the wireless equipment. Regulation and legislation of related legal laws, observing the international standards in the national laws, clarifying the interaction method between the banks and operators in the executive, security, and education fields, and training the specialists in the banks in order to respond to the problems are other necessary requirements for expanding the use of mobile phone in the banking [4].

In order to exchange the information with the customer, the services such as SMS and Multimedia Messaging Service (MMS) can be used. But in Iran services such as the WAP have not been much welcomed due to their high costs. Such problems as well as other problems such as the low-speed Internet through the mobile phone and frequent disconnection of Internet have caused that the mobile banking in Iran becomes limited to the services such as the banking via the SMS. Now, the account holders can receive the following services through the SMS:

- Account Balance and the last three turnovers
- Card and checks services (check state inquiry, cost of check approval, information of centralized card, and card inactivation)
- Possibility to transfer the funds (bank transferring within and between the banks)
- Possibility to buy the mobile phone charge
- Possibility to pay bills
- Possibility to Archive (save) the received message

RESULTS

Barriers and strategies for developing the mobile banking

Administrative challenges of mobile banking in Iran can be divided into two categories, first the executive challenges in terms of new telecommunication technologies and then the executive challenges in terms of banking network. Lack of public development of telecommunication networks in Iran, high costs for upgrading Hamrahe Aval (First operator) telecommunication networks and infrastructures, lack of codified fixed standards in the field of compatibility with the devices and software, and lack of preparation and adoption of active companies in the Radio Regulatory Authority organization are the challenges facing the Mobile Banking from the aspect of the new telecommunication technology.

The executive challenges of mobile banking from the aspect of banking network are the reduced power to control the central bank in distributing the physical money, lack of common policymaking body, inability to upgrade the software and hardware systems in banks, lack of codified, legal, and judicial regulations with international standard procedures in the field of IT and E-banking, absence of adequate specialists to respond to the problems in banks, and bank employees' inappropriate behavior towards the users' numerous questions. Moving towards the mobile banking as a long term plan and not the periodic and temporary, adoption of appropriate methods for attracting and retaining the skilled labor, inviting the professionals from abroad in order to benefit from their new knowledge, providing the appropriate legal contexts and standard procedures for developing the telecommunications network and mobile banking in order to retain and determine the privacy, protecting from the personal information, and preventing the possible misuses are the strategies by which the mobile banking can be institutionalized in Iran [4].

Barriers

In order to promote the mobile banking services in our country and implement the new services, there are barriers which have caused that until now the mobile banking could not reach its true place compared to the developed countries. Undoubtedly, understanding these problems and trying to fix them can manifest a bright future for mobile banking services. The most important barriers can be classified to 4 sectors including the institutional, operational, financial, technological and legal ones. In this section, the mentioned barriers are described separately: [25]

- **Technical barriers:**

Providing the network security which depends severely on the technical level of network; In addition, the data transfer speed and confidentiality of personal information are related to the level of technology; and the lack of providing the adequate security and speed in the network leads to the users' unwillingness for using these services. On the other hand, the network management will not have the necessary efficiency due to the lack of sufficient technical knowledge and will prevent the network development.

- **Organizational barriers:**

Implementation of mobile banking network requires designing and implementing a new organizational structure. For this purpose, it is necessary that the operational principles and administrative processes to be organized and the responsibilities and tasks be specified. Lack of a primary goal and clear institutional framework cause the activity interference and creating a negative reaction in the internal and external sections of network. The only benchmarking of models related to other countries is a double mistake which can lead to a conflict in the entire banking network and social system.

- **Operational barriers:**

In implementing the mobile banking services, there are factors which are outside the influence field of a bank such as poor mobile phone coverage which prevents the spread of mobile banking services. Physical and technical limitations of mobile phones are also the internal factors for the lack of rapid growth of network. Besides these mentioned cases, the employees' low-level technical knowledge can also be considered as a limiting factor.

Strategies

The above barriers and problems are the main obstacles to expanding and promoting the mobile banking network in our country; and eliminating them is the main and fundamental prerequisite for implementing an efficient banking system. For this purpose, the following suggestions are offered and they should be considered by the authorities at the macro level of decisions and policy making as well as the executive and operational low level:

1. **Developing and promoting the telecommunications network:** Wide coverage and high speed of data transferring are two fundamental factors which should be considered in the telecommunications network of Iran.
2. **GPRS:** Implementing this system in a data network is essential for the development of mobile banking.
3. **Promoting the use of PDAs:** In order to overcome the problems and technical and physical limitations of mobile phones, users should be encouraged and guided about using the new tools of PDA.
4. **National mobile payment system:** For proper management of business and mobile banking, it is essential that a national mobile payment system should be designed and all the mobile payments of Iran should be conducted and monitored through it.
5. **Implementing the rules:** In order to create a systematic and efficient infrastructure, the related laws should be implemented accurately and comprehensively and as soon as possible.
6. **Connecting with the international networks:** After connecting the mobile phone network to the international networks it will be possible to provide and receive the international banking services internationally.
7. **Education:** Technical and practical trainings should be considered for both business networks staff and mobile banking services.
8. **Technical Knowledge:** Updating the know-how of mobile banking networks through the technology imports and by relying on the domestic technical capability should be severely considered.
9. **Marketing:** The market analysis and assessing the development opportunities in the market of mobile banking services should be done by governmental agencies at the macro level and these services providers at the micro level.
10. **National and international standards:** The standardization of services and E-banking activities should be done both nationally and internationally.
11. **Support:** Preserving, supporting, and promoting the systems should be received enough attention after installation.

Finally, it should be noted that implementing these suggestions is only possible through the interaction and cooperation of state agencies and organizations on one hand, and companies and private institutions on the other hand; and in this way the government and especially the Ministry of Information and Communication

Technology has an essential role in providing the infrastructure and contexts; in addition, the companies and institutions especially the banks, which provide the services, play a key role in coordinating the activities, standardizing the processes, and providing the security for the Mobile Banking network [25].

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