

# Mobile Banking and Electronic Commerce in the Kazakhstani Economy

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**Abstract.** This article is dedicated to examination of development of mobile technologies in the Kazakhstani business area. The purpose of the article is to understand an origin and nature of mobile technologies, their applications and nowadays experience. The following objectives as to reveal links between new technologies, business development and society construction, types of information and its meaning in an information society, role of e-commerce and mobile technologies in knowledge economy, the role of the Kazakhstani banking and electronic commerce efficiency of usage of mobile technologies were put and reached. The modern state of m-banking and e-commerce in Kazakhstan, their trends, advantages and disadvantages were analyzed. As a result of research benefits of mobile technologies as improvement of the service for customers; great flexibility in an economic activity; essential costs reduction; increased productivity were done.

**Keywords:** Knowledge Economy, Mobile Technologies, Mobile Banking, Electronic Commerce, Efficiency.

## 1. Introduction

Nowadays the Kazakhstani business operates in the post-industrial society. In an information society flexibility and integrity of business processes are more important than functional skills and their specialization as in an industrial period. Classical and neo-classical economics recognized three factors of production like land, labor and capital. The new economy considers information and knowledge as the primary wealth-creating assets along with transformation of physically-based work to "knowledge-based" one. Due increased mobility of information and the global work force a company may reach competitive advantages through innovation, first of all information and communication technologies.

Mobile technology has evolved rapidly over the past few years [1]. Development of such kind of technologies has a strong link with our reality as being an information society. Statistics tells that over 70 percent of the world's population now has a mobile phone, that's over 5 billion mobile subscribers; in Asia this figure is almost 3 billion, and in Kazakhstan- about 20 million [2,3]. Children now more likely to own a mobile phone than a book: 85 percent of kids owning a phone as to 73 percent having books [2].

Apple Inc., the prominent American multinational corporation, has sold almost 60 million iPhones world wide, while other corporation Google Inc. produced operating system Android OS which is growing at 886 percent year on year; activating over 160,000 devices a day; across 60 devices in over 40 countries [2].

In a business rather than personal context, more types and complexity of information are needed, ranging from access to documents and presentations, to status on initiatives and processes, and for specific application needs to perform various business intelligence functions.

The massive growth of adoption of these technologies around the world has many business managers wondering how to effectively position their firms to benefit from the trend. The drive for mobility is part of the business technology agenda for most companies today [4].

That is why research dedicated to mobile banking and electronic commerce in the Kazakhstani economy has been chosen with the purpose to understand an origin and nature of mobile technologies, their applications and nowadays experience.

## 2. Mobile Technologies: Nature, Types, Benefits

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## 2.1. Mobile Technology

The history of mobile computing has rooted around since the 1990s. Devices that have been developed for mobile computing have taken over the wireless industry. Mobile computing is defined as the ability to use technology that is not physically connected to any static network.

Mobile banking is based on the following stages in developing of their customers' need to be more convenient. Automated teller machine (ATM) was introduced to the American public in 1969 by New York's Chemical Bank and became a bank-away-from-bank, providing a full suite of financial transactions;

Internet banking was implemented in mid-1990s and enabled consumers to access their financial accounts using a home computer with an Internet connection [5]. Due Internet banking limitations like computer possession, Internet access and immobility, commercial banks make the mobile phone an ideal medium through which they can deliver a wide variety of services. Banks classify mobile services based on 2 dimensions: how information flows and the nature of the service.

From the view point of flows of information there are two types of transactions: a pull transaction and a push transaction. Inquiring about an account balance is a pull transaction.

A minimum balance alert is a good example of a push transaction. From the view point of the nature of the service there are two types of services as transaction-based services and inquiry-based services. A funds transfer or a bill payment, involves movement of funds from one source to another. Inquiry-based services simply require a response to a user [6].

Banks and other financial institutions use mobile commerce to allow their customers to access account information and make transactions, such as:

- check bank balances;
- process bill payments;
- transfer funds between accounts;
- to verify deposits and other transactions [4].

Mobile technology is the portable technology. Classification of these technologies is done in numerous references as the following:

- laptop and net book computers;
- palmtop computers or personal digital assistants;
- mobile phones and 'smart phones';
- global positioning system (GPS) devices ;
- Wireless debit/credit card payment terminals [7,8,9].

A variety of communications technologies may be used on mobile devices. Among them such as:

- wireless fidelity (Wi-Fi) - a type of wireless local area network technology;
- Bluetooth - connects mobile devices wirelessly 'third generation' (3G), global system for mobile communications (GSM) and general packet radio service (GPRS) data services - data networking services for mobile phones;
- dial-up services - data networking services using modems and telephone lines ;
- Virtual private networks - secure access to a private network. It is possible to network the mobile device to the internet or a home office while travelling [9].

Benefits of mobile technologies:

Improvement of the service for customers, Company could access customer relationship management system over the internet and allow updating customer details whilst away from the office. Company could enable customers to pay for services or goods without having to go to the till. Company could realize solutions directly into the office network while working off site:

- set up a new customer's account;
- check prices and stock availability;
- place an order online.

Great flexibility in an economic activity:

- enabling home working, or working while travelling;
- supporting more flexible working practices by providing services over the internet due cloud computing.

Essential costs reduction. Mobile technology can allow employees to perform tasks in less time, and this increased efficiency reduces operating costs.

Increased productivity. Sharing information across the enterprise and decentralizing decision-making can result in fewer repeated tasks, making a business more productive and more profitable [10].

Simulation results of mobile banking effectiveness for business models of remote services allow doing the following conclusion:

- The level of penetration of mobile payments does the direct impact on profitability of bank with the set quantity of clients.
- Through 2 years of innovations' implementation negative value of ROI and NPV are observed only in 82 cases from 625 or 13.1 percent.
- Average value of ROI has made 11.7 percent. Average value of NPV has made US\$17,784.5 at a standard deviation US\$ 16,637.4. Correlation analysis shows the direct dependence of ROI and NPV from the level of penetration of service and quantity of the involved clients. In 2.5 years correlation factors are in 0.985476 to 0.994538.

### 3. Mobile Banking and Electronic Commerce in Kazakhstan

#### 3.1. Mobile Banking

Mobile banking or m-banking enables mobile phone users to remote access basic financial services. 27 percent of all survey respondents use mobile banking--far more than use m-commerce (13 percent), mobile coupons (11 percent) and mobile payments (9 percent).

It is estimated that users of m-banking and related services doubled between 2008 and 2009 to 55 million and will double again in 2010. In 2015 there will be 894 million users globally. Growth is being driven by efforts by operators and banks in developing countries (particularly in Asia) to bank the unbanked.

Yankee Group in 2011 predicts that there will be 500 million m-banking users globally by 2015. More than half of global MFS customers will be in Asia Pacific – Middle East and Africa is also expected to be important market – as mobile operators drive initiatives to bank the unbanked. Asia-Pacific will emerge as the predominant the Mobile Finance Services market in terms of customer base. In Middle East and Africa, the need to provide financial services to remote areas will be central to the growth of m-banking [6].

The mobile market in Kazakhstan is characterized as continuing to benefit from a diversified market that offered an energetic and competitive environment. Statistics says that total number of subscribers of mobile subscribers is estimated as 21 million in 2011 and 19.8 million in 2010. In comparison with the Internet services the mobile penetration is (129 percent) much more than the Internet subscribers (21percent) penetration [7].

Table 1: Key telecom parameters of Kazakhstan in 2010 – 2011

Category	2010	2011
<b>Internet</b>		
Total number of internet subscribers (million)	2.5	3.4
Fixed broadband subscribers (million)	0.75	0.85
<b>Mobile services</b>		
Total number of subscribers (million)	19.8	21.0
	123%	129%

The Kazakhstani citizens prefer mobile banking-about 900 000 people. The leader of mobile banking market is JSC Halyk Savings Bank. This structure has 450 000 clients of mobile banking. Internet-banking is used slightly less – about 600 000 people .Clients of the Internet banking of JSC Kazkommertsbank and

Homebank.kz reached 310 000. It is connected by that level of penetration of cellular communication in the country more than 2 times above, than number of the Internet connections.

Homebank.kz has introduced you a new version 2.0 of the mobile application for Android. The new version includes:

- the upgraded interface;
- the ability of the account review and record receipt;
- the instant payment for services of the mobile telecommunications, “Kazakhtelecom” JSC, cable TV.

The number of Mobile Homebank users on Android devices increased in 4 times and reached 5,500 people for 01.02.2012.

The number of the Internet users, according to Agency of Statistics of the Republic of Kazakhstan for December, 2011, exceeds 8 715 million thousands people or 53 percent. Level of penetration of cellular communication for January, 2012 made 142 percent, that is — 142 connections for 100 people [11].

Market participants expect the development of Internet banking to be one of the priorities for banks in the near future. Experts indicate the following realities in the field:

- This trend is more common for large cities and regions are lagging behind for the time being.
- The fact is that not all people in Kazakhstan are tech savvy.
- People rely on cash more than virtual payments.

However, the situation is changing for the better: now is the time for generation who believes that the Internet is an essential attribute of everyday life and cash money is a relic of the past.

People actively make online payments through their smart phones. 15 percent of the total number of users connects to the Internet via smart phones to make payments. This growth is due, first of all, to the increasing number of active users of the Mobile Internet and the improved quality of access to the World Wide Web.

The number of people using e-banking via android smart phones is twice as much as those who use iPhones, which is quite an interesting pattern. Online banking is a safe service, if one observes simple security measures in the Internet. So there is no need to respond to different messages sent by the alleged partner bank and it is prohibited to click on unknown links [7].

### 3.2. Electronic Commerce

Development of electronic commerce in Kazakhstan is characterized by the following data: approximately \$200 million of the goods and services were sold via the Internet in 2010. The annual growth is 15–20 percent. The structure of goods and services purchased through the Internet shows the largest share is belonged to price of them more than \$170 of the U.S.- 44, 6 percent; \$33-170 – 37,9 percent; \$13-33- 7,6 percent; up to \$132, - 7 percent [11].

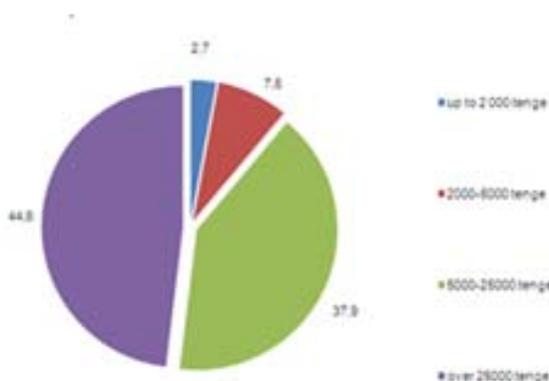


Fig. 1: Sale via the Internet in Kazakhstan, 2011

The largest vendors are Air Astana and Технодом. Air Astana sells electronic tickets for \$22-25 million a year or 10 percent of the market.

The Air Astana website is one of the major communication vehicles and an additional channel for direct sales. A wide range of services are online booking and purchase of air tickets; online check in; reservation of

hotels worldwide; monitoring of flight arrivals/departures; check of the reservation status; online hotel reservations; online booking service for Nomad Club members; Web Check-In (WCI).

Using the Air Astana website, tickets can be purchased by both Air Astana and interline partners [12].

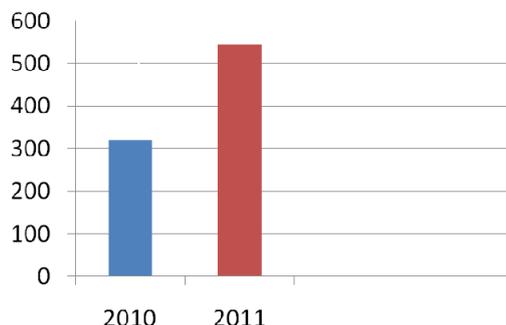


Fig. 2: Website Visitors of Air Astana. Web Check-In Tendency

Today there are about 1200 of the Internet shops in Kazakhstan. About 250 of them are really operating, doing at least one transaction per day. Among shops 80 percent is belonged to small and medium business, they generate about 20-25 percent of electronic transactions [11].

Types of products of electronic commerce are the following:

- electronic tickets;
- a hosting and domain names;
- the discount services (kupikupon.kz, chocolife.me, freemania.kz);
- household appliances (as these goods are standardized);
- books.

The most developed segments of the market are:

- the segment «travel»;
- the segment of payments for mobile communication;
- household appliances and electronics;
- books;
- flowers delivering [13].

#### 4. Efficiency of Mobile Technologies

Usage of mobile technologies allows reaching substantial increase of efficiency of the company activity due to increase in sales volume at 40 percent; increase in quantity of the points served by one trading agent for 40-50 percent; reduction of time of registration of trading operations on a route for 80 percent; reduction of quantity of mistakes for 95 percent; increase in an indicator dropped out to 97 percent; reduction of expenses on communications for 80 percent; reduction of time of input of information for 85 percent; reduction of the staff of operators on information input for 50 percent; reduction of time for training of sales representatives for 30 percent; payback of system can make less than 6 months.

At the same time several limitations in development of e-commerce may be figure out as a lack of confidence in the Internet shops' quality; the Internet transactions are closed for the bank cards; a lack of infrastructure of the Internet shops including methods of payment, e-money, legislation.

Automation of activity of trading agents on the basis of this technology allows solving a set of problems of the effective distribution:

- Organization of ideal deliveries.
- Effective management and control of activity of trading agents.
- Analysis and planning.
- Merchandizing.
- Improvement of quality of service and loyalty of consumers [14].

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