

# Features Electronic Payment Systems in The Information Economy

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**Abstract.** The paper substantiates the relevance of non-cash payments and transactions in the formation of the modern information economy. Modern electronic payment systems are classified, and requirements to them are shown. The process of improving payment systems through POS terminals and the foreign experience in this process are analyzed. A number of proposals and recommendations are put forward basing on a real statistic as the result of the analysis of non-cash transactions in Azerbaijan.

**Key words:** *electronic payment systems, non-cash payments, non-cash transactions, POS terminals, ATM, payment cards, Internet banking.*

## I. INTRODUCTION

In accordance with the development trends of emerging knowledge-based economy in the world, the modern and dynamical development strategy of the economy of Azerbaijan is based on the national development model determined by the national leader Heydar Aliyev. The source of this strategy is based on socio-economic policy of new content, which is implemented by the follower of the political and statehood legacy of the great leader, the President Ilham Aliyev. This policy has recently led to the division of the economy, to the rapid growth rate of the non-oil sector on its structure, to the development of high-tech industries, to the enhancing of international ratings of the national economy, and ultimately, to the inclusion of the country into the group of countries with middle-income [1].

Knowledge and information is a source of the development of ICT at the present stage, while an important component of economic strategy is monetary and fiscal policy, main directions of which is aimed at ensuring macroeconomic stability, stability in the banking sector, and deepening financial intermediation. To achieve these goals, monetary policy and banking supervision is improved continuously, as well as the further development of the coordination of macroeconomic policy is supported, and most importantly, comprehensive measures are taken to increase the circulation of non-cash money.

As a result of the recent globalization of the national economy and the development of ICT, the volume of non-cash payments has increased significantly, which are carried out in domestic and international financial transactions through various types of plastic cards, the Internet and other

electronic payment systems. Despite extensive reforms and achievements in the context of the formation of information society and information economy, a number of problems still remain in an efficient and absolute use of infrastructure opportunities and the capacity, technological integration of the related organizations into electronic payment systems, as well as providing access to electronic financial services in the regions.

The analysis the money circulation in the country shows, that the number of cash transactions is significantly higher than of non-cash transactions. An increase in the share of non-cash amount in general amount, on one hand, is substantiated with the urgency of new management of the economy and its monitoring, on the other hand, with the expansion of transparency in taxing and economic relations [2].

## II. THE FOREMOST FUNCTION OF NON-CASH PAYMENTS

The foremost functions of the activities carried out in connection with the expansion of non-cash payments in the country, include the transition of the economy to the new stage of quality, achieving transparency within the entities of the economic system, restricting the volume of the "shadow economy", which cannot be observed, minimizing the tax evasion. At present, non-controlled economic transactions, on one hand, lead to the reduction in tax revenues in the state budget, on the other hand, to the reduction of effectiveness of the economic regulation methods by the state through economic mechanisms.

*Classification and requirements of modern electronic payment systems.* According to defined rules the payment system includes financial institutions realizing financial transactions between economic entities using a full set of methods and tools (bank and telecommunication transfer systems, technical equipment, payment tools, etc.). All of the elements of financial institutions are participating in the payment system. These institutions have certain organizational and management mechanisms ensuring stability and further development of the economic and social system.

The payment systems are a set of internal and external regulations, technical component elements, payment methods, technology, organization, and the rules, which

enable all participants to realize financial operations and transactions with each other (Figure 1).

Electronic technology-based payment systems must comply with the following requirements [3, 4]:

- confidentiality. Only legally relevant and allowed persons are informed about financial information;
- ensuring the integrity of information;
- authentication – confirmation of identity of the system user;
- authorization - confirmation of the transaction availability;

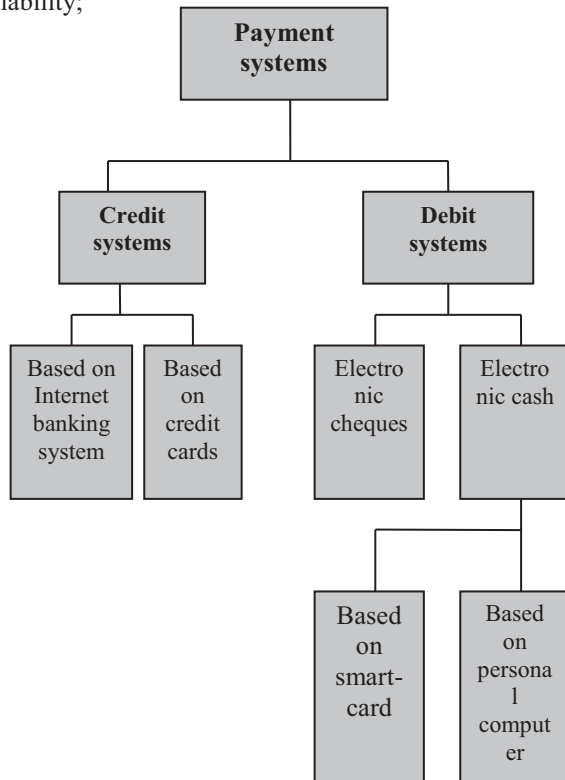


Fig.1. Elements of payment systems

- security;
- supporting a wide range of payment tools;
- reducing transaction costs and expenditures;
- verification and confirmation of the information accuracy about the payments to the participants of external arbitration and audit process during any conflict, etc.

Payment mechanisms are divided into three main groups depending on payment systems: 1) Internet payments; 2) mobile payments; 3) e-money payments.

### III. CLASSIFICATION OF PAYMENT SYSTEMS

Modern methods of electronic payment are divided into traditional and innovative methods. Traditional payment methods include traditional payment tools (credit cards, credit transfers, etc.) that contribute to the payment exchange through traditional means of payment (deposit money) for the transfer of payment information in electronic form. Innovative methods use the following payment

means: 1) new payment tools (payment portal service, cell phones, etc.) that contribute to the payment exchange through traditional means of payment (deposit money) for the transfer of payment information in electronic form. 2) new means of payment (e-money). The first group of the innovative payment method is based on bank deposits. The main common innovation of these methods is the use of web-sites and e-mail for the communication between payment providers and consumers [5, 6].

The second group of innovative payment methods is based on new means of payment, i.e. electronic money. Electronic money represents the value of the money presented in accordance with the relevant requirements, stored in the specific device in electronic form, and used for the payment to the third party. Deposit money, that is transaction or cash stored in current accounts of credit institutions act both in traditional, and new means of payment methods. However, the use of e-money as a new means of payment is the most important recent innovation.

The most important factors for the development of new payment methods include functional abilities such as security, reliability, low transaction costs, anonymity, and so on. An extensive and intensive use of these methods is significantly dependent on these factors.

Improving modern electronic payment services through POS-terminals. The development of financial market, extended opportunities of investment in the economy, formation of unite e-payment space and improvement of modern e-payment services in regard with limited cash circulation, non-cash payment stimulation and so on are of great importance. These measures contribute to strengthening financial discipline in enterprises, improvement of transparency in the corporate sector, including the elimination of tax evasion.

Development of national payment system has led to the formation of a new service area. Thus, application of POS-terminals is the source of additional revenue of banking institutions. Banks receive appropriate service fees from enterprises for the use of POS-terminal and for the operations carried out through POS-terminals. This service is called acquiring in the international sphere. Thus, the entities are charged monthly fixed fee for the transactions carried out via POS-terminals, the monthly volume of which is 1000 AZN per month averagely. The monthly service fee is about 50 AZN. The monthly transaction service fee of the entities of more than 1000 AZN is 1-3 percent. Purchase and installation of POS-terminals, as well as communication services for equipments are covered by the bank service.

Note that the highest rate of tariffs reduces direct use of POS-terminals. Consequently, sellers do not tend to influence consumers to take advantage from plastic card payment, and ultimately it leads to the application of cash payment. The high rate of service tariffs can be regarded as one of the main factors preventing the expansion of non-cash payments.

#### IV. INTERNATIONAL PRACTICES ON THE USE OF POS-TERMINALS

In Russia, acquiring amount required from the entity for the bank card payment via the same bank POS-terminal is 1-1.5 percent, acquiring amount for the card payment via other bank POS-terminal is 2 percent. These service fees are 0.5-2 and 1.5-3 percent accordingly in Kazakhstan. In Moldova, the service fee for POS-terminal transactions carried out by local banks is 1.8 percent, but by the foreign banks is 2.8 percent.

For comparison, note that in Ukraine acquiring amount required from the entity for the bank card payment via the same bank POS-terminal is 1-2 percent, acquiring amount for the card payment via other bank POS-terminal is 2-2.8 percent.

In Turkey, the situation is slightly different. Low tariffs are applied relatively for business entities in this country. So, this service fee 1.25-1.4 percent for the transaction conducted by the bank card, which installed POS-terminals, 1.7-1.85 percent for the transaction conducted by the other local bank cards, 1-1.7 percent for foreign cards. In Bulgaria, the citizens of the country are charged 0.7 percent for the card payment through POS-terminal, but juridical persons pay relatively more (1.7 percent).

Obviously, comparing to CIS member states, the rate of tariffs for POS-terminal transactions is low in other countries (Turkey, Bulgaria), which provides reduction of the bank costs of economic entities and increases their financial capacity [7, 8, 9].

#### V. ANALYSIS OF NON-CASH TRANSACTIONS IN AZERBAIJAN

So far, the number of plastic cards used in electronic systems of Azerbaijan reached 5301 thousand by June 2013. 4665 thousand out of them are debit cards, while 636 thousand are credit cards. Many transactions are carried out through these cards. To analyze the characteristics of cash and non-cash payments, first of all, the structure and properties of plastic cards in circulation are of great interest.

Plastic card payments are carried out by social and salary cards. Thus, these transactions amount 70% of all transactions. Thus, credit card transactions were equal to 3 %, to 5.6% in 2012, and more than 11% in 2013. This rapid growth in early 2013 occurred as the result of the closure of credit services in the retail trade points, and due to mass distribution of small amount of cards.

Another point is the form of transactions via payment cards. In other words, the purpose of the user is cash withdrawal or non-cash payments.

#### CONCLUSIONS AND RECOMMENDATIONS

Increasing the volume of domestic non-cash payment, developing card payment market, widening the scope of card payments for purchase transactions are of great importance for the country. Increasing the role of Azerbaijan in the modern globalized world, ranking 39th among 148 countries at many international ratings, including the Global Competitiveness Index, Azerbaijan raised its image in the international world. Restricting cash payments and stimulating non-cash transactions may cause further progress of Azerbaijan in this area, strengthening its position in the international economic relations.

In general, the status of the field of non-cash payments does not coincide with the rate of economic development of the country, large-scale reforms, the goals and objectives of the development concept adopted by the president "Azerbaijan 2020: Vision to the Future". In the globalized world economy, where non-cash transactions are dominating, the high rate of cash transactions in Azerbaijan proves to take imperative steps in this direction. The complex measures should be taken as soon as possible, in order to achieve transparency in the economic system, and the reduction of the "shadow" economy, and the strengthening of the financial system, as well.

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