

# The role of Electronic Payment Systems in the development of the Algerian Banking system

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## **Abstract:**

Due to the importance of the electronic banking provided by the economy and in view of Algeria's attempt to promote its economy from the abject recession and accelerate its movement, Algeria realized the necessity of developing its banking system and keeping up with what is new, This realization has resulted in the adoption of several projects, namely the adoption of electronic payment systems such as the immediate gross settlement system, the electronic clearing system for payments, The bank card system started in 2005, and these electronic systems are the first processes to modernize and develop the Algerian banking system.

**Keywords:** Electronic Payment, Development, Banking System

**Jel Classification Codes :** G21

## I- Introduction:

Today, the world lives many innovations and inventions in all fields. These changes have included the global economy, which has undergone rapid and significant technological changes, we are living in the era of the information technology revolution that has changed the course of the economy from the traditional to the electronic.

Since money is considered the most important basic daily needs as other commodity and service needs, As the main driving force of the economy, whether in terms of jobs or in terms of objectives, it should have been available in a timely manner and to the extent appropriate to meet these needs, Which led to the idea of developing its forms, and keeping pace with the technological revolution appeared so-called automated criticism.

In line with these technological developments in the field of economy, Algeria had to upgrade its banking system to the level of those developments and therefore the need to modernize the payment system, which suffers from a society that refuses to deal with modern means, but little priority to cash liquidity in its dealings,

### **What is the role of Electronic Payment Systems in the development of the Algerian Banking System?**

**1. Search Hypothesis:** The development and operation of modern electronic payment systems contribute significantly to the development of the Algerian banking system.

**2. Research importance:** The banking system in the digital economy faces major challenges posed by the conditions of globalization, economic openness and the tremendous progress in information and communication technology, It is expected that these challenges will become more acute during the current century, and therefore it is required to keep abreast of developments at all levels, Therefore, the importance of research stems from its focus on one of the most important data of the technological revolution, electronic payment systems and their role in the development of the Algerian banking system.

### **3. Research goals:**

Through this paper we aim to achieve the following objectives:

- ◆ The concept of the importance of electronic payment systems.
- ◆ Understanding the reality of electronic payment systems and their use in the Algerian banking system.
- ◆ Try to know the role of these systems in the development of the Algerian banking system.

### **4. Concepts About Electronic Payment Systems**

Banks have used systems that allow them to settle their financial transactions via electronic media, Where it helped to achieve the electronic transfer of funds, whether between the bank and its customers, or between a bank and another or between a customer and another, whether internally or externally, it is the infrastructure for the use of electronic payment tools.

#### **4.1. Definition of Electronic Payment Systems.**

The electronic payment system is an image of the traditional payment methods, but in a sophisticated way, which we use in our daily lives. The difference between them is that electronic payment systems are all electronically operated, so there are no remittances or coins.

The Egyptian electronic exchange law defines electronic payment as: 'In fulfillment of a monetary obligation by an electronic means such as electronic checks and magnetic cards.'<sup>1</sup>

Electronic payment systems reflect all systems used to settle financial transactions via electronic media, As they are adopted between banks, companies or individuals from within or outside one country.<sup>2</sup>

For the success of electronic payment systems must be a set of factors that affect the electronic payment process are<sup>3</sup>: Independence, interdependence, confidentiality, protection from deception, fragility, ease of use, fees.

#### **4.2. The importance of Electronic Payment Systems**

The expansion of electronic commerce has allowed the role of paper money and conventional payment to flourish in electronic payment, where money has been the main means of settling financial transactions. Payment was effected by liquid means or through alternative means such as checks and other traditional payment methods. But these means are not suitable for facilitating the dealings that are carried out in a remote environment, non-physical, such as electronic contracts concluded through the Internet, Where paper transactions disappear, hence the importance of devising means of payment compatible with the nature of electronic commerce, This was the payment electronically. The customer may pay the price of the goods or services in the same way as the contract between absentees. By mail or by fax, or to send data to his bank account. But these means do not fit the specificity of electronic commerce and the requirements of speed, Therefore, the importance of using electronic payment through the wireless network via computer.<sup>4</sup>

#### **4.3. Characteristics of Electronic Payment**

Due to the international nature of the Internet, the electronic payment methods used are also of an international nature, In the sense that it is accepted by all countries, as the contract of participation in the banks of transactions is conducted through an open electronic space between users from different countries.

**4.3.1 Extending an international character Electronic contract to electronic payment technology:** The international character of the contract, which takes place through the Internet, which assumes the separation of the parties where the absence of material presence at the negotiating table, The electronic payment method responds to this feature, as it is a means of payment for the settlement of remote transactions. Payment is made by giving a payment order which is made in accordance with electronic data that allows direct contact between the parties to the contract.

**4.3.2 In terms of the entity that provides the electronic payment service:** The nature of this nature is the presence of a banking system in advance in both parties to deal with this payment method, That is, the availability of devices that manage such remote operations and that will provide confidence to those involved. This role is originally associated with banks and other facilities that are established for this purpose.

**4.3.3 In terms of technical safety:** Electronic payment is made through an open information space, so the risk of card-card theft during electronic payment exists. This risk increases in online payment for other networks as a space that receives all people from all countries, It must therefore be accompanied by technical safety measures that would identify the debtor and the creditor, in an encrypted manner and special programs designed for that purpose.<sup>5</sup>

## 5. Types and tools of electronic payment methods

**5.1 Bank cards:** The French legislator defined the bank card in article 52-1 of the Legislative Decree of 30/10/1935, It can be issued by a loan organization, a financial institution or an authorized service, which may place and issue the card, such as banks, the public treasury, and the postal service.<sup>6</sup>

**5.2 Electronic check:** Is the electronic equivalent of the traditional paper checks that we used to deal with, and the electronic check is a documented and insured letter sent by the source of the check to the recipient of the check (holder), To be approved and submitted to the bank, which operates through the Internet to transfer the value of the financial check to the account holder check, The check will then be returned electronically to the check recipient (holder) to be proof that the check has been disbursed. The check recipient can electronically verify that the money has already been transferred to his account.<sup>7</sup>

**5.3 Electronic money:** A European committee composed of members from most European countries in 1997 defined electronic money as 'electronically stored units', In 1998, the European Central Bank prepared a report on electronic money, including a definition of 'electronic storage of financial value on a technical pillar such as memory cards or computer memory, and accepted as a means of payment by enterprises and traders.'<sup>8</sup>

## II- Results and discussion :

### 1. The use of Electronic Payment Systems in The Algerian Banking System

In light of the development of the banking system in the world, Algeria found itself compelled to take a stand on this development, which made the modernization and modernization of the Algerian banking system necessary and inevitable, and this is done by taking advantage of technological developments.

Algeria started implementing the modernization of means of payment starting in 2005 with the launch of the bank card payment and withdrawal project, and witnessed the implementation of several projects we will identify as follows:

**1- 1. Instant gross settlement system:** On 15 May 2006, the Bank of Algeria, in cooperation with the Ministry of Finance, introduced the system, also known as the immediate payment system for large amounts, It is a system of interbank payment orders using bank or postal transfers for large amounts or immediate payment, which is realized among the participants in this system (banks, financial institutions, public treasury and Algeria Post).<sup>9</sup>

As well as a system that includes funds that exceed one million dinars and for the operations that take place between banks, The electronic clearing operations of the Bank of Algeria, and even operations for the benefit of customers and financial institutions, such as those governing the capital market transactions, which are treated in real time as urgent and immediate operations and in total, In the sense of process, and what distinguishes the latter that if accepted by the system can not be canceled later.

➤ **Evolution of the overall adult adjustment system since its inception:** Based on the annual reports of the Central Bank, we will prepare the table 1.

The table below shows us that the availability and availability of the system is estimated at 99.77% in 2012, The same as in 2011, while in 2013 and 2014, the availability and availability ratio was 99.99%. This ratio indicates the relationship between the nominal opening time of the eight

hours of daily exchange and the few pauses. Finally, the relationship to the efficiency of the operational system, or the so-called job in the overall settlements and urgent payment. In the first two years, the system was known to have technical and criminal problems, so the ratio was not calculated.

As for the number of financial transactions, we note that they are increasing continuously, reaching 314357 transactions in 2014, after 142,373 transactions in 2006, which is a good indicator of the efforts in this area.

As for the size of the amounts of operations of the system, we also notice that it was a continuous development from the year 2006, where it reached 169635 billion dinars to 2011, where it reached 680123 billion dinars, while the years 2012, 2013 and 2014, the decline in the amount of operations of the system and this refers to the operations of monetary policy and operations between Banks.<sup>10</sup>

### **1.2. Electronic Payment Clearing System:**

The electronic clearing system in Algeria is known as ATCI (Algérie-Télécompensation Interbancaire), The system entered into force on May 15, 2006, as it permits the exchange of all payment methods associated with public payments (checks, trade papers, automatic deductions, card operations). The most important developments can be included in the table 2.

The table below shows us that there is an evolution in the use of this system, noting that the number of operations is constantly evolving, Where in 2014 it reached 20.750 million transactions after it was 6.926 million in 2007, The table also shows clearly the evolution of payments. This is evidenced by the volume of payments checks, which amounted to 8.490 million dinars in 2014, after 5.6 million dinars in 2007, On the other hand, we note that transactions in the card, where the percentage of withdrawal is greater than the payment, also known as a continuous increase in the amount of transactions, except in 2012 there was a decline in the transfer of funds through this system.

Despite the development of this system in Algeria, its use is still relatively narrow compared with the use of similar systems in developed countries and even in some Arab countries, despite the efforts made in the development of payment systems and tools.

A report by the Algerian National Bank showed that most of the transactions were in cash, followed by the check as a second payment tool followed by cash transfers that represented 10% of the banking operations in 2000.<sup>11</sup>

### **1.3. Establishment and operation of automated cash network and automatic relations between commercial banks**

This national project is aligned with international automated cash systems. The most important networks and companies in the operation of ATMs in Algeria are SATIM.

#### **1.3.1 - Interbank ATM**

The Algerian Banking and Electronic Banking Company (SATIM) is among the companies that mainly guarantee the development and operation of the BIBNIC system based on the use of financial and banking information network and the diagnosis of bank cards in Algeria.

In order to manage the interbank ATM network, banks (BDL, CNEP, CPA, CNMA, ALBARAKA, BADR, BEA) established SATIM in 1995.

The number of participants in this company is estimated at 15 participants (14 banks including 8 public banks and 6 private banks), as well as Algeria Post. The Algerian Company for Brokerage and Electronic Banking is a branch of public banks.

### 1.3.2 - Operation of the card system in the banking system of Algeria

#### ♦ The concept of the card:

The bank card is a The card inter-bank CIB card, It has a small electronic chip, which provides all stages of financial payments. It should be noted that since the beginning of the issuance of the cards, and began to work in the withdrawal and payment of bank was in March 2005, The registration of three private banks is: Societe Generale Algeria, BNP Paribas, and Arab Bank AGB to the BNP. The table 3 shows the evolution of the number of cards in the year 2008.

The table shows that there is a difference between the number of cards issued, traded and used, and that the largest number of cards issued was in 2009, and the largest number of cards traded in 2013 was 128,730 cards, and the largest number of cards used in 2014 was 305882.

We also notice an increase in the number of traded cards from 2008 to 2010, and then in 2011, the increase in the years 2012 and 2013, as the pace of development has increased since the expansion by linking each bank account opened with a card,

As for the decrease in the number of cards traded to 850008 in 2011, and 635512 in 2014, this is due to the process of closing accounts not operated by the number of customers by banks. In addition to the arrest of cards as a result of the violations of the process or technology by the customer or at the request of the customer itself. This remarkable development in the number of cards, although the number of the number of aware of the awareness of a class of customers card importance as an important way to facilitate transactions. Just as the number of cards traded does not mean the number of cards used increases.

#### ♦ Types of cards used in the ATM system:

\* **The card inter-bank CIB** is a card for payment and withdrawal at the same time. This card is used by various banks and other financial institutions through its multi-bank symbol.

In addition to the services provided by the banks, to pay the bills of purchase and services provided at the level of the electronic payment device (TPE), which is located in the merchants' shops that are connected to the RMI network, and who are affixed to the front of their shops by the CIB sign.

\* **Types of cards:** There are two types of cards, namely:

♦ **Classic Card:** Interbank payment and withdrawal services are offered to customers according to the criteria set by the Bank.

♦ **Gold Card:** also offered to customers according to the standards set by the bank, regardless of being a card of payment and withdrawal, this card offers additional functions of withdrawal and payment more important than the first.

#### ♦ Evolution of the performance of ATMs and POS terminals in the banking sector

The purpose of operating the dispensers and automated windows is to reduce the number of transactions within the Algerian banks, while enabling the client to get his money as quickly as possible and reduce costs.

Through the table 4 we will follow the development of the number of distributors and finals starting in 2008.

The table shows that the number of ATMs in Algeria reached 647 ATMs in 2011, and the decline in the following years is known. This means that Algeria is still far from controlling these new technologies and transactions.

Algeria has known a continuous increase in the integration of sales terminals to traders, until the number of devices in 2011 an estimated 1047 devices, while 2012 was a decline of 2.7% for the number of finals electronic sales where it reached 2965 devices, The decline in 2013 and 2014, as the decline in the number of distributors or finals due to the failure of that year or canceled accounts by customers regarding the finals.

## **2. The Role of using Electronic Payment Systems in the development of the Algerian Banking System**

The means of payment used in the Algerian banking system are characterized as being mostly traditional and not commensurate with the new world reality, However, due to Algeria's keenness to keep abreast of events and technological developments in banking, especially in the field of banking industry, and its efforts towards electronic banking has begun to introduce and adopt some modern means of payment.

### **2.1 Aspiring to develop and operate Electronic Payment Systems in the Algerian Banking System**

#### **2.1.1 Develop fund-raising from agencies at the finals level**

♦ **Launch of international electronic payment cards:** The Visa and MasterCard payment system has been launched for Algerian customers who own foreign exchange balances. The system will be linked to Visa, MasterCard and American Express in connection with the international card processing process. BNA, BEA, BDL, AGB, Société Générale Algérie, BNP Paribas, Housing Bank, but until 2016 the number of operations remained very modest.

♦ **Development of the normal savings book to the electronic savings card:** Many Algerian banks have begun to operate electronic savings cards and the gradual abandonment of regular savings books, Each new request to open a savings account will receive the cardholder instead of the book. This card has many advantages:

\* Allow all providers to withdraw and deposit funds to and from the Fund's savings and reserve agencies through all of the Fund's electronic withdrawals on a 24-sa / 24-day basis, enabling them to withdraw from the various distributors of all banks.

\* Allow the best customer service and greater independence, by reducing the length of time to withdraw or pay money without waiting in the agencies of the National Fund for Savings and Reserve, where the process is fast and high accuracy.

\* Electronic savings card, which lasts for 5 years, is insured from all risks. It has a secret number. In the case of any problem, the customer can file a complaint at the level of the agencies of the Fund. How can the card service be frozen in case of theft or loss.

♦ **Operating cash-advance mechanism in banks:** This technology enables card inter-bank holders to withdraw funds from the finals available in all agencies, This technique allows the withdrawal of funds from bank agencies if the check is not available.

♦ **Operation of the electronic card Naftal Card :**The Bank of Algeria launched an external agreement with Naftal as part of an agreement between the two parties to generalize the use of the smart card, the electronic card **Naftal Card**, Fuel and service at the gas station level, especially

aimed at phasing out fuel coupons, and this card will also allow its holders to pay other non-oil services provided at the level of petrol stations.

### **2.1.2 Development of banking services through smart phones and adoption of electronic banking**

♦ **Domestic banking and electronic payment by telephone:** The majority of Algerian commercial banks contain the electronic banking service in simple form (check the balance, request a check book) but with the establishment of banking applications for smart phones in the future will be able to dealers in the Algerian economy to use banking services provided by banks across the Internet and mobile devices easily, Including the query on the balance, the transfer of funds or the payment by The card inter-bank, The telephone payment system will enable all customers to pay or collect regardless of the existence of bank accounts or not, The business sector will achieve better returns than it does when using the payment card. It will also provide individuals with a convenient mechanism for instantaneous payment at any time and place.

♦ **Operation of the Algerian Electronic Banking Services:** The company has signed a partnership agreement between the French group DIAGRAM EDI, a leading provider of e-banking software and data exchange security, And three Algerian institutions: MAGACT MULTIMEDIA, SOFT ANGINERING and CERIST. The establishment of a joint venture called Algeria for Electronic Banking Services. This company provides its services related to remote banks and the management and security of the exchange of financial data for all banks and financial institutions according to different types of customers Major, groups of companies, traders, professionals, properties), Providing a range of services with a high level of security and safety in the performance of operations. The company was established in January 2004, Initially, it focused on development and consolidation processes aimed primarily at modernizing banking services and electronic payment systems.

♦ **Operation of eStrom technology for packing using bank card:** The Ooredoo mobile phone operator runs eStrom, an exclusive, secure and free online credit card payment solution with an interbank payment card. This innovative packaging solution comes in the context of the partnership between OERIDO, SATIM and the Gulf Bank of Algeria (AGB).

### **2.1.3 - Develop the payment process through the Internet in the framework of electronic commerce**

The Algerian economy does not have electronic payment methods through the Internet, which made electronic commerce a distant dream, However, this did not prevent Algerian websites from providing online services, although payment was made through classic channels (transfers via postal accounts more).

## **2.2. The impact of electronic banking work in Algeria**

The adoption of the electronic banking system in Algeria will lead to many positive changes to the economy in general and the Algerian banking system in particular.

The adoption of electronic banking in the Algerian banking system will allow the system to enter modernity from its wide doors whether it is commercial banks or the Bank of Algeria or other financial institutions, and it gives several privileges such as:

♦ Reduce the costs of exchanges between banks and agencies in the performance of services and the establishment of new branches in different regions.

- ◆ Reduce costs of managing payment systems and manage liquidity, and more control in risk management associated with them.
- ◆ Improving the quality of operations and reducing the processing time.
- ◆ Improving procedures for studying loan files, collecting debts and developing new banking products.
- ◆ Control the liquidity of banks, while reducing pressure on them by the public.

This is at the operational and operational level in agency departments and interests. The importance of adopting e-payment systems at the local level:

- ◆ Developing and modernizing the means of exchange between banks, and deleting the physical exchange of securities and trade
- ◆ Reducing collection times between banking and financial institutions, and settling clearing operations in a standard circumstance.
- ◆ Development of banking services offered to customers.
- ◆ Development of electronic payment methods such as bank cards for withdrawal and payment, and the generalization of the use of credit cards.
- ◆ Stay away from the use of cash outside the banking channels, with the elimination of parallel markets.
- ◆ Updating and modernizing the information system of the Bank of Algeria for the effectiveness of banking supervision, good management of monetary policy and monitoring the liquidity of the economy.
- ◆ Improved liquidity and loan risk management and operational risk protection.
- ◆ Fighting money laundering and tax evasion and reducing the intensity of informal markets.

#### **At the international level:**

- ◆ The globalization of banking and financial exchanges, and keeping pace with the development of the global economy.
- ◆ Modernizing the banking and financial payment system and keeping it in line with the global development.
- ◆ Access to the system of payment and transfer of information and funds in a fast, efficient and secure.
- ◆ Keeping up with Algerian banks on global developments in the field of electronic banking services in order to integrate into the global economy and seek to attract foreign investment.

Despite all these advantages offered by electronic banking, we must not lose sight of the magnitude of the risks generated by this type of services if adopted in a hasty and unconscious manner.

### **3. Results**

- The Algerian banking system knows several reforms in the recent era.
- Electronic banking has no significant presence in the Algerian banking system.
- In order to modernize the Algerian banking system, two systems are adopted: the system of immediate gross settlement and remote clearing.
- In terms of electronic payment methods, there are efforts by the authorities to issue some electronic bank cards.

- Algeria has entered the banking world on line through the Algerian Electronic Banking Services and has provided banks with this technology.
- The Algerian economy is still suffering and will continue to suffer as long as the banking system is far from interest and far away from everything that is developed and unless it gives it importance and role in this economy, so we will come up with some suggestions.

#### **IV- Conclusion:**

The development of information technology and modern communication systems has led to the creation of a digital economy based on the production of knowledge, flexibility and rapid exchange of information without regard to temporal and spatial barriers and the lowest costs, This sector has attracted the attention of economic institutions and stimulated them to integrate these technologies into their various activities.

The digital economy came with new concepts, foundations and new systems that were the result of the use of information and communication technology, namely e-commerce and e-business, which necessitated the development of the financial sector, especially the banking system and the application of information in the field of banks or what is called electronic banking,

Which provided the economy in particular strong support and contributed to the further development and movement by facilitating transactions and shorten the place and time and bring the largest number of customers with the achievement and gain their satisfaction through the use of electronic payment methods.

In view of Algeria's attempt to boost its economy from the abject recession and to accelerate and revitalize its movement, Algeria saw the need to develop its banking system and keep abreast of what is new, and initiated several reforms to prepare it for this event.

Those familiar with the reality of the Algerian banking system find that there is mismanagement of resources and failure to follow an effective policy in financing this economy on the one hand, and the spread of scandals and corruption on the other hand, Which requires a re-examination of the system as a whole by its policies, institutions and functions by adopting different methods and means As for the modernization of this system is still in a backward rank compared to other banking systems Arab, This is reflected in the lack of electronic means in its activities by adopting electronic banking, which is still only a project that knows many delays and procrastination. Despite Algeria's adoption of the system of gross settlement and remote clearing and the issuance of some e-cards and development of the communications network and mail, All the dimension of the development in the field of banking.

#### **Suggestions:**

- ♦ The privatization of the Algerian banking sector and the necessary reforms to integrate this sensitive sector into the virtual economy.
- ♦ Work on the need for human resources qualified to use information technology and maintenance of devices and create a kind of public awareness among companies and the public of the importance of technology and the benefits it can bring.
- ♦ Electronic payment is linked to electronic commerce, so it is necessary to establish laws governing this type of trade.
- ♦ To benefit from the experiences of the leading countries in this field, to update programs and to include standards and research related to electronic payment systems.

## Appendix:

**Table (1): Evolution of the performance of the overall settlement system in the period 2006-2014**

Unit: billion dinars, thousand operations, percentage

The year	2006	2007	2008	2009	2010	2011	2012	2013	2014
availability of the system	-	-	99.34%	99.56%	99.93%	99.77%	99.77%	99.99%	99.99%
Number of transactions	142373	176900	195175	205736	211561	237311	269557	290418	314357
Amount of amounts	169635	313373	607138	649740	587475	680123	535234	358026	372394

Source: Bank of Algeria, Economic and Monetary Developments in Algeria, Report June 2007 - July 2015.

**Table (2): Evolution of the payment method of clearing the means of payment in the ATCI system in the period 2006-2014**

The years	2007	2008	2009	2010	2011	2012	2013	2014
Number of transactions Billion	6.926	9.320	11.139	13.818	17.062	17.387	19.470	20.750
-Checks	5.6	6.6	7.023	7.252	7.667	8.034	8.210	8.490
-Conversions	1.011	1.530	2.101	3.687	4.406	5.227	6.479	7.470
-the card Billion	0.315	1.161	1.915	3.758	4.848	3.953	4.570	4.560
Amounts Billion dinars	5452.19	7188.22	8534.73	8878.14	10581.6	11766.1	12661.6	13979

Source: Bank of Algeria, Economic and Monetary Developments in Algeria, Report June 2007 - July 2015.

**Table (3): Number of issued and traded bipolar cards in the period 2008-2014.**

Unit: Thousands

The year	Number of cards issued	Number of cards traded	Number of cards actually used
2008	177737	339374	-
2009	677487	569558	-
2010	213753	979933	-
2011	203724	850008	-
2012	215190	1178243	133380
2013	187621	1287330	94268
2014	277104	635512	305882

Source: SATIM Database, Algeria, 2017

**Table (4): Evolution of the number of distributors and finals in the period 2008-2014.**

The years	2008	2009	2010	2011	2012	2013	2014
DAP	544	572	636	647	543	534	539
TPE	1984	2639	2946	3047	2965	2904	2737

Source: SATIM Database, Algeria, 2017.

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- 11 CIB is a logo intended for the network of cards, which consists of automatic windows for banks, machine dispensers for banknotes and electronic payment devices, used by the bank card holder with the approval of the bank.

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