



# The reality and challenges of modern payment methods in Algeria

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## The reality and challenges of modern payment methods in Algeria

### واقع وتحديات وسائل الدفع الحديثة في الجزائر

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#### Abstract:

The process of digital transformation has become a necessity in many fields. The financial sector occupies the largest share of this process because the financial market is linked to the global market and what this imposes when keeping pace with the latest technological developments in this sector. The digital transformation has been accompanied by a major development in banking, leading to the emergence of modern methods of payment as models for electronic banking services in order to take the lead in providing better services to current and future customers. This research aims to highlight the reality of modern (electronic) methods of payment in Algerian banks and the challenges they face.

**Key words:** Electronic methods of payment; Algerian banks; risk of electronic banking.

**JEL classification:** E420; G13; E52

#### المخلص:

أصبحت عملية التحول الرقمي تشكل ضرورة في الكثير من الميادين، ويحتل القطاع المالي الحصة الأكبر من هذه العملية نظرا لارتباط السوق المالية بالسوق العالمية وما يفرضه ذلك من مواكبة لآخر التطورات التكنولوجية في هذا القطاع.

لقد رافق التحول الرقمي تطورا كبيرا في مجال العمل البنكي مما أدى إلى ظهور وسائل دفع حديثة كنماذج لخدمات الصيرفة الإلكترونية من أجل احتلال الريادة في تقديم الخدمات الأفضل للزبائن الحاليين والمستقبليين.

يهدف هذا البحث إلى إبراز واقع وسائل الدفع الحديثة (الإلكترونية) في البنوك الجزائرية والتحديات التي تواجهها.

**الكلمات المفتاحية:** وسائل دفع إلكتروني، بنوك جزائرية، مخاطر صيرفة إلكترونية

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## INTRODUCTION

The emergence of the digital economy and the shifts that have taken place in various aspects, such as e-commerce, have necessitated changes in the banking work in line with them. E-banking has been adopted to improve performance, provide better services to clients, and enhance the competitive advantage of the Bank. One of the new banking services is the use of electronic methods of payment. Algeria is witnessing a delay in this area compared to other countries. Thus, it has adopted a project to develop the payment system in 2001-2002 to modernize its banking system so that it can meet the challenges and developments of the banking work at the global level.

The main problem can therefore be presented and formulated as follows: **What is the reality and challenges of modern methods of payment in Algeria?**

### Study hypotheses

To answer the problem of research, the following hypotheses can be formulated:

- Electronic payment systems serve to reduce time and cost;
- The deficiencies faced by traditional methods of payment can be eliminated by electronic means of payment;
- The successful implementation of electronic methods of payment requires legal regulations.

### Study objective and importance

This study aims to highlight the role and importance of modern payment methods used by banking institutions, as well as the challenges they face in terms of their application and the risks associated with them.

### Study tools and methodology

Research has relied on the descriptive approach as it is the appropriate method for presenting all modern means of payment and on the analytical approach for analyzing the causes, difficulties, and risks associated with their application.

To address this topic, the research was divided into:

- I- General concepts of modern (electronic) methods of payment;
- II- The reality and challenges of modern methods of payment in Algeria;

III- Protection of electronic methods of payment in Algerian legislation.

### **I- General concepts of modern (electronic) methods of payment**

The concept, importance, characteristics of modern methods of payment and their most important types will be addressed.

#### **1- Concept of E-banking**

Electronic banking is defined as all operations or activities held, carried out or promoted by electronic means such as telephone, computer, ATM, Internet, and digital television by banks. (Jonathan R. Copulsky, 1990, p. 17)

According to another definition, E-banking is transactions that are conducted electronically via ATMs and the Internet, which are a new channel for the provision of bank services, and thus there is access to the service 24 hours a day, quickly and wherever the customer is. (Chencheh, 2011, p. 129)

#### **2- Concept of electronic payment methods**

First, electronic payment methods are defined, and then the most important ones are addressed.

##### **2-1- Definition of electronic payment methods**

Electronic methods of payment have been defined as a method of transferring money according to electronic technology, thereby facilitating the exchange in a safe and fast manner at the lowest possible cost. (S Fatonah, 2018, p. 1) Or they are the tools that financial institutions and banks issue to customers to ensure the electronic transfer of money that is essentially the price of a commodity or service from one end to another, using modern technologies prepared by the source of these tools. (ICC Working Group on E-commerce, 2020, p. 6)

##### **2-2- types of Electronic payments methods**

Electronic means of payment have known many types as online credit card transaction, electronic wallet (e-wallet), electronic cash (e-cash), online stored value systems, digital accumulating balance systems, digital checking payment systems and wireless payment systems. (S Junadi, 2015, p. 215)

**2-2-1- Bank cards:** are small personal cards issued by banks or international financial institutions to people with continuous bank

accounts (check or current account). (Paul, 1999, p. 2) Each card carries the customer's name, address, and card number. The holder can pay the value of his current purchases to a certain extent without having to pay money or write a check, as he can also withdraw cash from the bank or the ATM.

Bank cards are divided into two main types, credit cards and debit cards. The main differences of which can be presented in the following table:

**Table (01): Comparison between credit cards and debit cards**

Parameters	Debit card	Credit card
<b>Definition</b>	Deducts money directly from your saving's bank account or your current account.	Allows you to borrow funds to pay for goods and services.
<b>Source of funds</b>	Your savings bank account or current account.	Credit extended to you by your card issuer. It gives you access to money you otherwise do not have (like a very short-term loan).
<b>Spending advantage</b>	You can only spend how much you have.	Can spend more than what you have.
<b>Who pays for the purchase</b>	You pay for your purchase.	The credit card company pays the vendor for your purchase. You pay the credit card company.
<b>Payment</b>	There is no payment that needs to be made since you are using your own money.	A bill needs to be paid each month since it is being borrowed.
<b>Interest</b>	There is no interest that is charged.	Interest is charged on the outstanding amount if it hasn't been paid by the due date

**Source: (bankbazaar, 2022)**

**2-2-2- Electronic money:** Electronic money is defined as a set of digital protocols and signatures that allow an electronic message to effectively replace traditional currency exchanges. It is an encoded string of digits, can be carried on a smart-card, or stored on a computer disk. (Mohebi, 2004, p. 547)

**2-2-3- Electronic Check (e-check):** The electronic check can be defined as the electronic equivalent of the traditional paper checks that we used to deal with. It is a documented and secured e-check, which includes a secure electronic file containing the special information of the checkwriter and destination, as well as other information, such as the check cash date, value, beneficiary, account number, and transferee account number.

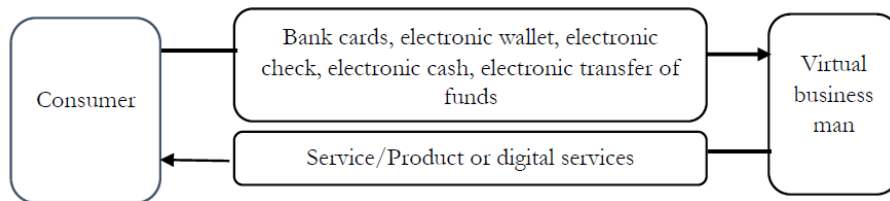
**2-2-4- Electronic wallet:** It is an online advance payment system, which enables an individual to keep money in digital form and use these funds

for daily payments, shopping, bookings, etc. (G. Ambika, 2017, p. 151) It can be digital coupons, digital money, or digital cards.

**2-2-5- Electronic remittances:** Transfer of funds from one bank account to another bank account, whether the account is for the same person or another person, and whether in the same bank, another bank, or several other banks through the use of network technology tools and electronic operations. Here, physical operations are transferred to digital operations by the so-called e-banks, which are mostly via communication channels and online data correspondence. (Zakhoufi Nouredine, 2018, p. 256)

The following figure illustrates the types of electronic methods of payment.

**Figure (01): Electronic payment methods**



**Source: (AL-khouri, 2014, p. 177)**

## 1- Importance of electronic methods of payment

E-commerce has played a prominent role in the development of electronic payment tools. The importance of electronic methods of payment is reflected in the following points (USAID's Global Development Lab and NetHope, 2016, p. 6):

- Short geographic distances;
- Reduce the expenses incurred by banks as a result of traditional service delivery;
- Keeping up with the World's Banking Business;
- Publicize banks and promote their services;
- Eliminate the problem of fake banknotes and protect customers from theft;
- Protect large enterprises from employee errors that cost some companies significant losses.

## 2- Characteristics of electronic methods of payment

From the above it can be said electronic means of payment have several characteristics, including:

- Electronic payment is international in nature, that is, a method acceptable to all States, where it is used to settle the account in dealings conducted through electronic space among users around the world;
- Payment is made through the use of electronic money;
- Payment is made via two networks: a private network with only contact with contracting parties, assuming prior business and financial transactions and relationships, and a public network with many individuals who do not previously have certain links;
- Electronic payment is done according to one of two styles:
  - \* Through pre-allocated money, in which payment is made only after the deduction of this money, and other transactions cannot be settled otherwise. This is similar to contracts where the price is paid in advance.
  - \* Through regular bank cards, where there are no pre-allocated money for this purpose. The amounts withdrawn with these cards are withdrawn by other means, such as checks, to settle any transaction.

## **II- The Reality and Challenges of Modern Methods of Payment in Algeria**

The reality of modern methods of payment in Algeria will be addressed from its emergence to the current time.

### **1- Signs of electronic banking in Algeria**

SATIM, a joint-stock interbank company, was established in 1995 (Mehdi, 2015-2016, p. 95) to improve banking service, facilitate cash transactions among Algerian banks, and provide them with ATMs (DAB). (Zerhouni, 2016, p. 18) SATIM Company manufactures the bank card for withdrawals and prints the high sign under a partnership contract with the French company Ingenico Data Systems to generalize electronic cash.

A mixed company called “Algeria E-Banking Service” (AEBS) was also established by a partnership between the French group Diagram-Edi, which specializes in software related to electronic banking and security of the financial exchange, and three Algerian foundations: Soft Engineering, Multimedia Magact, and The Centre for Research in Scientific and Technical Information (CSIT), and Groupement d’Interet Economique (GIE) in Jun 2014 to achieve the online banking project in Algeria.

The electronic clearing system and a new payment system for large amounts were introduced in 2006. At the beginning of 2013, financial

institutions began preparing for the Algeria e-project by introducing Internet and mobile payment services for many services, such as payment of phone bills, as well as electricity and water bills. They also proposed a ticket purchase service for flights and cruises via the Internet and the completion of financial transactions.

**Table (02): The chronology of electronic banking development in the Algerian banking system**

<b>Developments in electronic banking at the Algerian banking system</b>	
1990	The appearance of the first bank card CPA (Cash Withdrawal Card).
1991	Inclusion of the first helpful system for external banking operations (SWIFT).
1992	Inclusion of information programs to examine and analyze credit and foreign trade operations
1993	Generalization of the IT program to all banking operations.
1994	Begin working with debit and payment cards without distributing them to all banking agencies.
1995	Establishing a joint banking and monetary company (SATIM).
1996	SATIM's contribution to the establishment of an interbank electronic money network.
1998	The launch of the withdrawal system for financial settlements between different commercial banks.
2002	Commissioning the joint banking and monetary transactions company SATIM to manage the interbank payment system.
2003	A contract was concluded between SATIM and the French company IngenicoData System for the generalization of cash.
2004	Issuance of the first international payment card.
2006	Start working in accordance with electronic clearing and immediate total settlement systems(RITGS).
2008	Production of smart e-card by Algerian company HB Technology and the beginning of using the electronic card CIB between banks.
2010	The number of e-cards traded between banks reached one million cards (CIB).
2013	Inclusion of e-banking project in e-government program.
2014	The availability of immediate total settlement system (RITGS)almost entirely in the Algerian banking system and the largest number of operations completed.

**Source: (Ben Omar Khaled, 2019, p. 100)**

## **2- Electronic banking access in Algeria**

Electronic banking services are distributed through several channels: (Leila, 2017, p. 176)

### **2-1- Electronic communication network**

Some banks and financial institutions have begun to develop electronic payment networks, which are only sparsely distributed across the country. However, the inability to control and manage them has led some of them to stop performing their services because of they relied on imported solutions and systems that are incompatible with the characteristics of the Algerian market, as well as the lack of demand for



these services. Some organizations have also issued debit cards such as DAB, GAB (for ATMs), and TPE (for electronic payment devices). (Francese Prior, 2007, p. 10)

## **2-2- Internet**

Algeria has started to develop various electronic payment mechanisms via the Internet, which has opened the way for many websites that offer convenient, safe, easy, and 24-hour payment channels for customers. However, the use of the Internet in Algerian banks has remained limited.

## **2-3- Banking telephone**

The bank telephone was created to facilitate customer management of their bank operations and to avoid customer queues when inquiring about their accounts. This service lasts 24/24 hours. (Rachedi Fatiha, 2018, p. 69) However, Algerian banks do not use the telephone to provide their services, either fixed or mobile. Even if used, it is only for some limited operations, such as checking the balance of the account.

## **3- The reality of modern methods of payment in Algeria**

Despite global developments in electronic methods of payment and the expansion of their use, Algeria is still lagging. The modern methods of payment applied in Algeria are:

**3-1- Bank card:** Each bank's debit card was created after the creation of the inter-bank public company SATIM in 1995. This company makes debit bank cards according to international standards and prints the high sign. This service is established through a contract concluded by the Bank with SATIM, which determines the commitment of the parties, particularly with regard to delivery deadlines and procedures, as well as the process of linking automated distributors with SATIM interests through a network, allowing withdrawals, whether internal or transferred, as well as a register linked to the Interbank Clearing House.

Among the cards used are: classic bank card, golden bank card, Visa card, Max card, MasterCard, JCB, Amex, and Uni Pay.

Withdrawals on the cash machine can be explained using cards through the following table.

**Table (03): The withdrawal activity on the cash machine**

Year	Total number of withdrawal transactions	Total amount of withdrawal transactions(DZD)
2016	6 868 031	98 822 524 500.00
2017	8 310 170	126 398 291 000.00
2018	8 833 913	136 233 452 000.00
2019	9 929 652	164 116 233 000.00
2020 (*)	58 428 933	1 073 004 953 000.00
2021	87 722 789	1 728 937 064 000,00
2022	Total number of withdrawal transactions	Total amount of withdrawal transactions(DZD)
Jan 2022	8 847 484	165 164 603 000,00
Feb 2022	8 481 494	159 076 057 000,00
Mar 2022	10 040 909	185 207 332 500,00

Source: (giemonetique, 2022)

The table shows that the total amount of withdrawal transactions increased by 94% between 2016 and 2021. In addition, the total number of withdrawal transactions increased by 92% over the same period.

The total number of functioning ATMs can be illustrated through the following table:

**Table (04): The total number of functioning ATMs**

Year	2016	2017	2018	2019	2020	2021	Mar 2022
total number of functioning ATMs	1370	1443	1441	1621	3030	3 053	3191

Source: (giemonetique, 2022)

It is noted from the table that the number of banking ATMs operating was 3191 in March 2022, while in 2016 there were 1370 and only 544 in 2008.

**Table (05): Payment activity on the electronic payment terminal**

Year	Total number of payment transactions	Total amount of payment transactions(DZD)
2016	65 501	444 508 902.40
2017	122 694	861 775 368.90
2018	190 898	1 335 334 130.76
2019	274 624	1 916 994 721.11
2020 (*)	711 777	4 733 820 043.01
2021	2 150 529	15 113 249 499,92
2022	Total number of payment transactions	Total amount of payment transactions(DZD)
Jan 2022	202 992	1 502 034 810,36
Feb 2022	200 670	1 602 074 900,82
Mar 2022	230 051	1 795 760 352,79

Source: (giemonetique, 2022)

The table shows that the total amount of payment transactions on the electronic payment terminal increased by 97% between 2016 and 2021, while the total number of payment transactions on the electronic payment terminal increased by 96.9% during the same period.

For the total number of operating electronic payment terminals, it can be illustrated by the following table:

**Table (06): number of operating electronic payment terminals (TPE)**

Year	2016	2017	2018	2019	2020	2021	Mar 2022
total number of operating electronic payment terminals	5049	11985	15397	23762	33945	37 561	38562

Source: (giemonetique, 2022)

According to table (06), the number of electronic payment terminals was 38562 in March 2022, while in 2016 it was 5049 and in 2008 it was only 1984.

**3-2- Interbank money network:** In 1996, SATIM prepared a project to find a solution to interbank money. The first phase of this project, which began in 1997, was the development of an electronic money network between banks covering only services related to the issuance of bank cards for withdrawals from local ATMs. SATIM also ensures that the withdrawal process is well conducted, the automated distributors are integrated with the number of banks, the card is accepted in all participating banks, the clearing of interbank withdrawal transactions is conducted, and financial flows are exchanged between participants and the institution responsible for clearing. This company also monitors fake cards and detects all manipulations.

SATIM oversees the Inter-Bank Money Processing Center and works to connect distribution centers with the various institutions involved in the withdrawal function. The Center connects the automated distributor with the service provider online across the national network. There is also a center dedicated to lost or forged cards. The withdrawal process is made by a license request addressed to the Agency's licensing center, which accepts or rejects the request. On admission, the center monitors the weekly allowed ceiling for each customer, as well as the high sign. Following that, at 0:00, the center processes all the transactions that were

made that day and organizes them according to each bank in the network between the center and all participating banks, as well as registers operations in all banks. Clearing is conducted at the postal instrument center, which has all bank accounts.

**3-3- Online Banks:** One of the most important aspects of electronic banks is online banking. Algeria has sought to adopt the e-banking project by establishing the company “Algeria for E-Banking Services” (AEBS) in January 2004 with the primary objective of meeting the needs of financial institutions by proposing software that provides multi-software services via e-banking solutions and simplifying and securing electronic multi-sectional exchanges. The evolution of online payment activity can be illustrated by the following table, showing that since October 2016, online payment by bank card has become operational in Algeria. This service was opened in the first phase to billing operators (water and energy distribution companies, gas and electricity, fixed and mobile telephone, insurance companies, air transport, and some departments).

Currently, there are 184 web traders involved in the electronic banking payment system, resulting in about 14766370 transactions distributed according to the following table:

**Table (07): Development of online payment activity during 2016-2021**

Year	Phone/ telecom	Transportat ion	Insurance	Electricity /Water	Admini strative service	services	Selling products	Total number of transactions	Total amount (DZD)
2016	6 536	388	51	391	0	0	0	7 366	15 009 842,02
2017	87 286	5 677	2 467	12 414	0	0	0	107 844	267 993 423,40
2018	138 495	871	6 439	29 722	1 455	0	0	176 982	332 592 583,28
2019	141 552	6 292	8 342	38 806	2 432	5 056	0	202 480	503 870 361,61
2020*	4 210 284	11 350	4 845	85 676	68 395	213 175	235	4 593 960	5 423 727 074,80
2021	6 993 135	72 164	8 372	120 841	155 640	457 726	13 468	7 821 346	11 176 475 535,68
2022	Phone/ telecom	Transportat ion	Insurance	Electricity / Water	Admini strative service	services	Selling products	Total number of transactions	Total amount (DZD)
Jan 2022	569 264	9 680	1 807	11 123	370	32 174	1 208	625 626	1 118 251 079,58
Feb 2022	483 764	10 225	962	16 398	322	36 987	1 904	550 562	1 027 661 384,39
Mar 2022	591 426	14 190	981	27 019	431	44 353	1 804	680 204	1 358 789 240,84

Source: (giemonetique, 2022)

\* After Algeria's Post has joined the GIE Monetique (Electronic Banking Services) and achieved the exchange of transactions between the bank/golden card, which has been in effect since 05 January 2020,

statistics published will henceforth include the electronic payment activity via the bank card and the golden card.

**3-4- Distance clearing system:** The process of modernizing the payment system knew a new development by creating the ACTI system, which is concerned with the automated processing of public payment methods, including postal checks, transfer, deductions, withdrawals, and bank card payments, using sophisticated methods such as scanners and various software. The system entered into force with the participation of the Bank of Algeria, all Banks, Algeria's Telecom, Algeria's Post, SATIM, Association of Banks and Financial Institutions (ABEF) with all its branches and offices across the entire national territory. This system relies on the information exchange system for digital data and images. It came into effect on May 15, 2006, on the first day of exchanges. The beginning was to address the checks, with the process evolving to represent the remaining methods of payment by the end of 2006. This system aims to:

- Conduct daily accounting and give a comprehensive and real view of the treasury's position in the financial and national market.
- Reducing processing period;
- Securing public payment systems;
- Restoring customer confidence in methods of payment, especially checks.

The year 2006 is the year of payment system modernization and the subsequent development of effective and secure bank mediation for quality banking services that serve customers within a guaranteed and controlled framework.

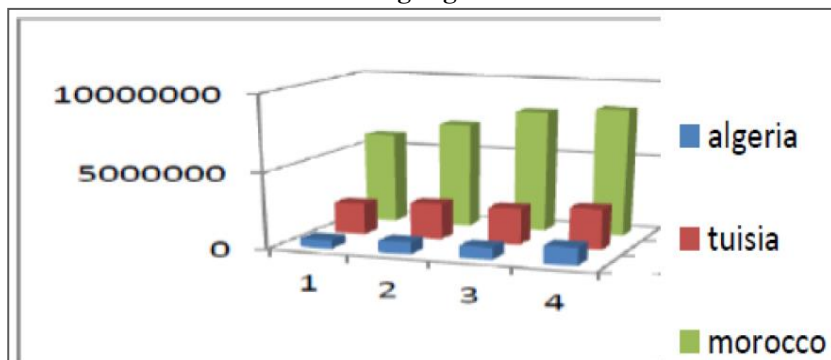
**3-5- ARTS system (Algerian real-time settlement):** The system came into force in February 2006 in accordance with Regulation No. 05-04 of 13 October 2005. This system responds to all the principles recommended by the Committee on Payments & Settlement Systems of the International Settlements Bank and ensures transparency of operations from first to last. One of the main functions of this system is to process urgent payments and settle the balances of traditional clearing houses operated by the Bank of Algeria and the balances flowed by the electronic clearing system. The objectives of this system are:

- Reducing the total cost of payments;

- Reducing settlement deadlines and encouraging the use of electronic money;
- Control of remittances;
- Keeping pace with global developments.

However, ordinary money remains the most commonly used in transactions between Algerians because of a lack of confidence in other means, indicating that the Algerian banking system is still lagging in this field. Despite the attempt to reform and introduce modern methods of payment, Algeria remains late compared to the countries of the world and, for example, to neighboring countries. The number of cards issued can be illustrated in the following figure:

**Figure (02): Volume of bank cards issuance to a group of Maghreb countries, including Algeria 2009-2012**

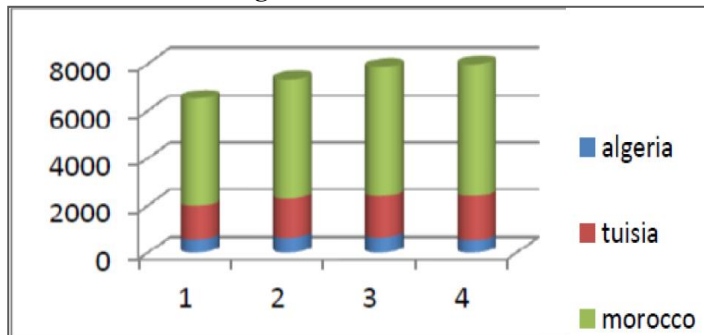


Source: (Abdelkarim, 2019, p. 100)

The figure shows Algeria's weak issuance of bank cards compared to Tunisia and Morocco. Only 1 million cards were issued by 2012, while in Tunisia, 260,000 cards were issued, and in Morocco, 9 million cards were issued. In addition to the low number of cards issued, it should be noted that cards are limited in use as they are not used in electronic operations such as access to credit and some withdrawals for fear of piracy, especially in the case of international cards.

The number of DAB automated teller machines(ATMs) in Algeria, Morocco, and Tunisia 2009-2012 can also be compared through the following figure:

**Figure (03): Development of the number of DAB automated teller machines in Algeria, Morocco, and Tunisia 2009-2012**



Source: (Abdelkarim, 2019, p. 101)

The figure shows Algeria's weakness in placing ATMs, with only 650 distributors in 2012, reaching 1922 in Tunisia and 5655 in Morocco.

#### **4- Challenges and Future of the Electronic Payment System in Algeria**

Algeria's electronic payment system faces many challenges that must be eliminated to ensure better application of these methods in the future.

##### **4-1- Challenges that face the electronic payment system in Algeria:** they are Represented in:

- Poor demand for electronic payment methods due to the absence of banking culture.
- Problems associated with the use of electronic methods of payment, whether because of not knowing how to use them, or too much disruption at the level of ATMs, or lack of liquidity.
- Unclear laws and legislation governing electronic transactions as well as risks associated with the provision of electronic banking services.
- Algerian banks have not yet reached the level required to practice electronic banking.
- Risks associated with electronic methods of payment, such as piracy.

##### **4-2- The Future of Algeria's Electronic Payment System**

For Algerian banks to modernize their work and services, move to the information age, and maximize the benefits of the science and technology revolution, they must take a number of measures to ensure that they adapt to developments by allocating the necessary financial and human resources. The most important of these measures are as follows:

- Setting targets with great precision and identifying exact deadlines so that there is no disruption in implementation.
- Providing a clear legal environment supported and motivated by an appropriate industrial and political environment.
- Building the human component and developing possibilities to keep pace with banking technological developments by relying on international expertise and consulting offices to train bank officials in the use of modern banking systems.
- Paying attention to information technology investment spending.
- Expanding the use of the Internet to deliver a variety of bank services at higher efficiency and lower cost.
- Activating the role of the network between the maincenter of each bank and its other branches to speed up the circulation of customer information and make the necessary adjustments, as well as connecting the electronic networks of banks and other financial institutions.
- Providing bank information security.

### **III- Protection of electronic methods of payment in Algerian legislation**

Information security consists of four main components: confidentiality or reliability, complementarity and integrity of content, availability of information or service, and non-denial of conduct associated with information. The most important manifestation of the security of electronic transactions is the recognition of electronic proof and electronic signature and certification. (Hammoudi, 2020, p. 102)

#### **1- Electronic proof**

In 2005, the Algerian legislator amended the Civil Law under act No. 05-10, amending and supplementing the civil law, which included new provisions on electronic writing and electronic signature. To avoid controversy over the recognition of electronic writing as evidence, the legislator defined writing that could be used as a means of proof for legal conduct in general and electronic conduct in particular, because writing in its “traditional” sense was closely linked to the material or paper support. Thus, the law did not recognize the writing on a virtual electronic aspect, which has no physical effect such as that written on paper in the proof.



## 2- Electronic signature and certification

After the recognition of electronic signature, the latter was defined by Executive Decree No. 07-162 of 30 May 2007 amending and supplementing Executive Decree No. 123-01 of 09 May 2001 as follows: "It is data in electronic form, attached or logically linked to other data, used as an authentication tool." This means that the purpose of the signature is to identify the signatory and accept the content of the contract. The decree referred to the ordinary electronic signature, which is used to authenticate the signatory's identity and prove his acceptance of the content of the writing in electronic form.

Electronic certification is a secure means of verifying the validity of a signature or signatory, where it is attributed to a particular person through a trusted party or by an impartial party, called a certification service provider or supplier. Integrity and credibility in the data provided require the intervention of an impartial intermediary, who gives a digital certificate or an electronic document, attesting to the validity of the data.

Electronic certification is an ID of the signatory through which others verify the identity of the signatory. This certificate is a security instrument that demonstrates the validity and security of electronic transactions so that the transaction can be legally protected.

## 3- Information security

Algeria does not have a banking Code that unites and includes all provisions on information security, but rather texts scattered between the different laws and regulations of the Bank of Algeria. The Algerian law on electronic information security refers to the legal protection of electronic information in a variety of respects, including subversion of the information system, fraud in the information system, and the introduction, removal, and modification of data in the information system.

The regulations of the Bank of Algeria are among the legal texts that address information security. Order No. 05-07 was issued in 2005, dated 28 December 2005, which includes the security of Algeria's payment systems, namely, the system of real-time settlement of large amounts and urgent payment (ARTS) and the electronic clearing (ATCI), as well as the security of payment methods such as bank cards and electronic bank transfers. The order states: The security of payment systems shall be the

responsibility of its operators and participants in such systems, while the Bank of Algeria shall ensure that such systems are well functioning and secure.

Security of payment systems infrastructure includes the availability of systems, the validity of information exchanged, the mapping of mutual data, confidentiality, and auditing. The concept of security of payment systems also includes the recruitment of qualified payment personnel. Participants in payment systems are also required to develop recovery systems and provide adequate human resources to ensure the continuity of banking operations.

The Algerian legislature has drafted a cybercrime law under Law 09-04, which contains special rules for the prevention and control of ICT-related crimes. It also provided for the establishment of a national body for the prevention and control of ICT-related crimes, intending to revitalize and coordinate the work of the authorities charged with combating crimes related to information and communication technologies.

Law 18-04, which sets out the general rules on postal services and e-communications, and Law 18-05 on E-Commerce in Algeria, were passed in 2018, noting that electronic payment is made through dedicated payment platforms. These platforms are controlled by the Bank of Algeria to ensure that they meet the requirements of interoperability, confidentiality, integrity, and security of exchange.

### **Conclusion:**

The application of modern methods of payment in Algeria has become an urgent need to keep pace with developments in the global environment. Through this research, a set of **findings** has been reached:

- The poor number of electronic payment tools;
- The reluctance of individuals to use electronic methods of payment because of the absence of banking culture and fear about the dangers of such methods;
- The difficulty of applying electronic methods of payment is due to the absence of a clear legal and regulatory environment.

### Recommendations:

- Developing infrastructure to facilitate the application of electronic methods of payment and promoting electronic commerce;
- Enacting special laws for the protection of electronic payment card users to limit Criminal Activity and Breach of Privacy;
- The need to enact a law on information security to eliminate the ambiguity of the existing law.

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