

Digitization of Algerian Customs as a Means to Streamline Exportation Processes of Non-Petroleum Goods in the Context of Foreign Trade Resurgence

رقمنة الجمارك الجزائرية كألية لتسهيل الإجراءات التصديرية للمنتجات غير النفطية
في ظل انعاش التجارة الخارجية

RAHMANI Bouziane¹, ABDEL DJEBAR Souheyla²

¹ Tahri Mohamed University of Bechar, bouziane_iyad@yahoo.com,

² Tahri Mohamed University of Bechar, abdeldjebarsouhila@univ-bechar.dz,

Received on: 10/11/2025

Accepted on: 22/11/2025

published on: 15/12/2025

Abstract:

Algeria is trying to drive its foreign trade sector to the level at which it will thrive and eliminate all the obstacles that keep it from prospering, following the developed countries in this regard. Among the measures by Algeria to promote the sector is customs modernization in an attempt to adapt to economic conditions overseas. Thus, the current research highlights the instrumental function of customs modernization through digitization in the context of enhancing efficiency in foreign trade. It points out that digitization is a key catalyst for optimizing export operations in the non-hydrocarbon sector and refers to the most significant achievements of digitization in Algerian customs and the fallacies of adopting modern technologies and practices in an attempt to close the gap.

Keys words: Customs Digitalization, Export Procedures, Non-Petroleum Products, Foreign Trade, Customs Clearance.

JEL classification codes: F1 ; Y5.

ملخص:

تسعى الجزائر لتطوير قطاع التجارة الخارجية وترقيته إلى المستوى المطلوب وإزالة كل العقبات التي تحول دون نجاحه ومواكبة الدول المتقدمة في هذا القطاع، ومن بين مساعي الجزائر للنهوض بهذا القطاع هو الاهتمام بعصرنة الإدارة الجمركية من أجل التأقلم مع الأوضاع الاقتصادية الخارجية، ولهذا سلطنا الضوء في بحثنا هذا على الأهمية الكبيرة لدور رقمنة قطاع الجمارك في تعزيز كفاءة التجارة الخارجية، والتأكيد على أنها تعد عنصرا حاسما في تسهيل الإجراءات التصديرية خارج قطاع المحروقات، والوقوف على أهم إنجازات الرقمنة في قطاع الجمارك الجزائرية وتحديات التحول إلى تكنولوجيا حديثة وطرق التغلب عليها.

الكلمات المفتاحية: رقمنة الجمارك؛ إجراءات تصديرية؛ منتجات غير نفطية؛ تجارة خارجية؛ تخليص جمركي.

تصنيف JEL: Y5؛ F1.

Corresponding author: RAHMANI Bouziane, e-mail: bouziane_iyad@yahoo.com,

1-Introduction :

Customs operates in a highly dynamic, fast-evolving environment, particularly in the field of international trade. It is therefore also compelled to react to a series of challenges, such as increasing burdens, material and manpower resource constraints, and imbalance of capacity provided. It is also required to function in harmony with supply chains, particularly with carriers and shippers. It is even compelled to balance competing national interests, e.g., revenue protection while, at the same time, trade facilitation.

With all these problems which customs is suffering from because of its supreme position in any country, there is a growing need to apply information and communication technologies (ICT) in customs operations to organize and optimize its performance. On this note, most countries in the world have made attempts to develop information systems based on their own needs, objectives, and the unique character of their customs procedure. This has led to the necessity of upgrading these systems and constructing them based on international best practice and the World Customs Organization (WCO) guidelines.

The context within which customs administrations operate is constantly changing and at a very rapid rate. Besides, the World Trade Organization (WTO) Trade Facilitation Agreement signed in December 2013 commits governments to going extra miles towards simplifying customs procedures and making trade regulations clearer. Another such driver for this drive towards modernization was the initiative by the World Customs Organization to have the year 2016 declared as the year to accelerate the digitalization of customs procedures, thus encourage customs administrations to initiate a process of modernization. This leads to the following research question:

What attempts to digitize Algerian customs to facilitate export processes outside the hydrocarbon sector and what obstacles hinder their success?

This general question can be broken down into some sub-questions, namely:

- Has digitization been a necessary demand in order to limit infringement and obstacles at the border crossing points?
- What are the challenges and problems faced by the Algerian customs department in the digital era?
- In what manner does digitization play a role in facilitating export customs procedures in Algeria?
- How does the new customs information system help facilitate customs operations in terms of digitization of the Algerian customs sector? Does it meet the required specifications?

1-1- Importance of the Study:

The significance of this study is to explain the role of digitalizing Algerian customs administration in aiding exports and revitalizing foreign trade.

It deals with the problem of trade facilitation and initiatives by the Algerian government to streamline the customs department and identify the challenges and obstacles of digitalizing Algerian customs administration. In addition, it covers international practice and modern procedures that may drive export facilitation beyond hydrocarbons through digitization of customs administration, ultimately reducing effort, cost, and removing bottlenecks.

1-2- Methodology:

In solving the research problem, the research uses a descriptive theoretical framework in its methodology by solving problems and ideas pertaining to the topic of study. In practice, the research relies on an analytical framework, which relies on the analysis of data and results that are collected.

1-3- Previous Studies:

This study borrows from several studies, as discussed below:

- Issa Bouraoui (2017), "The Transition to Digital Customs as a Means to Achieve Strategic Vigilance: A Case Study of Algerian Customs." This paper analyzes the application of digitizing customs administration in enhancing the performance of the customs department, that is, how strategic vigilance can be applied to build digital customs in Algeria. The research identifies that it is only through concerted efforts in achieving the desired alignment of the modernization of customs with strategic vigilance needs that can be accomplished. For the customs institution to be effective in a market economy, it must address several challenges including a lack of resources and tools needed to empower customs officers to effectively carry out their job.
- Abdelkader Helis (2021), "Digital Customs: A Case Study of Algerian Customs." The study aimed at assessing the extent to which digitizing Algerian customs had reached. The researcher utilized historical research in an effort to establish important milestones related to the subject, and descriptive research to venture into and scrutinize in detail the subjects under discussion. The research identified that the customs department is beginning to build its technological platform, with the vision of a digital customs regime. This would enhance and facilitate customs services in line with the strategic plan for performance enhancement. The organization seeks to attain better communication and stakeholder relations by making its policies transparent and taking their interest into account, as reflected through the community outreach activities conducted by customs administrations.
- Farid Rabahi (2023), "The New Information System as a Mechanism for Digitizing Customs Procedures in Algeria." The research question was raised in the research by using the descriptive-analytical method in discussing the trend of transition towards digitizing customs procedures, their importance, advantages, and potential uses of the new information system. The report discovered that Algerian customs procedures would be

completely re-engineered in the new system, with new control methods implemented based on risk management and distant movement of goods across borders and simplification of customs procedures. Essentially, this will bring total digitization of customs regulation and operations associated with it.

- Osama Ghazlani (2024), "The Role of Digitizing the Customs Sector in Facilitating Algerian Foreign Trade Operations: Proposing a Framework for Digitizing Algerian Customs Based on International Experiences." This study aimed to propose a framework for Algerian customs digitization, emphasizing that the use of high-tech technology in Algerian customs activities is crucial to facilitate foreign trade. In order to achieve this, the researcher contrasted key global digitization experiences in order to identify means of incorporating new digital technologies into customs operations. The study also examined the Algerian customs environment in an attempt to measure its ability to incorporate modern technologies into its activities. The research concluded that Algerian customs is not yet ready to adopt digitization due to poor IT infrastructure, outdated regulatory and legal systems, and the lack of highly technical individuals to ensure successful digitization programs.

1-4- Comparison with Our Study:

The previous studies share the same background as our study in the sense that they all focused on Algerian customs administration digitization. They contrast the current customs information system (SIGAD) as well as the new one Algerian customs plan to implement. However, our study is unique in examining export procedures and facilitation measures within the framework of customs administration digitization. We also assess the current level of digitization and learn from two cross-border digital customs clearance experiences, and the single window system to manage non-petroleum product flows across the border, with an eye on learning from these best practices in the world.

2- Concept of Customs Digitization:

The customs officials aspire to simplify clearance and reduce unnecessary procedural delays in commercial promotion without jeopardizing control over compliance. The aspiration is to increase revenue, ensure the security of the supply chain and protect national interests all in an effort to stay abreast with technology in our modern age.

2-1- Definition of Digital Customs Administration :

Electronic customs administration is the application of information and communication technologies (ICT) to achieve the mission and vision of customs administration. It enables the entire process of customs from receipt of the requests, accepting and processing imports and exports, transit, payment of the payable duties and taxes, up to the end of customs controls or just a segment of the process.

According to the World Customs Organization (WCO) definition, "digital customs" refers to any automated or electronic action that makes customs operations more efficient and effective, such as customs activity coordination (automated customs clearance systems, single window systems, electronic data interchange), and information delivery platforms enhancing transparency and smartphone utilization (Issa Bouraoui, 2017, p. 711).

2-2- Objectives of Customs Administration Digitization:

The purpose of using new technologies, cloud computing, image recognition, and other emerging technologies is to boost information exchange between customs authorities and the quality of users' experience. For these reasons, the digitalization objectives of customs administration are:

- Bringing main reforms into customs administration and customs procedures to boost customs clearance speed while improving control, with a final result of more state revenue in the form of more customs revenues.
- Assisting in the simplification and harmonization of customs procedures and documentation.
- Assisting in the application of global policy and standards, for instance, the electronic data interchange (EDI) system, referred to as EDIFACT, for simpler international trade transactions.
- Improving the timeliness and integrity of providing foreign trade information.
- Increasing customs revenues, which are usually a significant part of national budgets in the majority of nations. This is achieved by:
 - Libertying all goods in good time.
 - Precise calculation of customs duties and taxes.
 - Ensuring exemption and preference regimes, among others, are well managed.

2-3- Requirements for use of Information Technology and Customs Digitalization :

Use of information technology in customs operations entails great financial investment, both in the use of equipment and maintenance expenses. Customs information systems are on the business market, but impossible to implement in developing countries due to the absence or insufficiency of IT infrastructure needed for their implementation.

To others, use of information technology and communications involves streamlining of the current customs procedures, perhaps controversial. Any alteration to the design of the customs procedure may require alterations in government policies, legal frameworks, or human resource management reform practices (Ossama Ghazlani, 2024, p. 61).

A key determining factor for the success of customs digitalization projects is the financial aspect. They typically involve enormous costs for the implementation of information technology or upgrading IT infrastructure. World

Bank experts recommend financing such ventures internally, i.e., by reinvesting sector revenues in the development process. Part of the spending on upgrading IT infrastructure, however, has to be funded from outside because it involves higher costs outside of the sector's financial resources. It must also consider the long-term maintenance cost as maintaining information technologies current and functional can be expensive. Not budgeting for maintenance within the project can jeopardize the success of the project because it can fall short of the funds needed.

Thus, several pillars must be present while transitioning into digital customs administration (Abdelkader Helis, 2021, p. 610), including:

- The need that customs administration possesses a comprehensive and safe database.
- The requirement of possessing effective human resources that are technologically skilled and familiar with recent developments.
- Creating a consultative and knowledge-sharing relationship with other international customs administrations with a view to tapping into their experience.
- Leveraging the training facilities and experience offered by the World Customs Organization (WCO) in this regard.
- Inking cooperation agreements with commercial banks.

2-4- Digital Customs Services:

The digitalization of customs administration aims at improving the performance of customs services by offering electronic customs services at various levels. Some of them include:

First: Electronic Collection of Duties and Taxes: The electronic collection of customs duties and taxes, as well as the full digitization of accounting processes in customs offices, ensures real-time tracking of customs revenue through electronic payment of taxes. This refers to the use of electronic payment through credit cards, debit cards, bank transfers, or online payment to settle taxes and charges on customs duties for import or export of goods. Electronic payment of customs duties helps the economic operators save time when clearing customs and avoid the risk of theft or loss in the use of physical payment means. On the other hand, it also helps fight corruption by safeguarding state revenue, port efficiency of timely release of goods, avoiding congestion in the ports, streamlining import and export activities, and safeguarding goods (Douini, 2022, p. 677).

Second: Electronic Customs Clearance: This involves providing a unified electronic system for customs declarations, accepting all customs procedures of goods on import and export, including economic systems.

Third: Electronic Portal: There are two types of portals—internal and external (Douini, 2022, p. 678):

- **Internal Portal:** It is aimed at computerizing the work of the customs administration personnel, where all the customs officers will have an electronic account.
- **External Portal:** This is meant for non-customs stakeholders and provides economic operators, declarants, and transit agents real-time information on their interests (e.g., status of goods declaration, date and time of container inspection, and customs clearance outcomes).

As discussed above, customs' use of high-tech information technologies is crucial in simplifying customs procedures, enabling economic operators to carry out the majority of procedures remotely from their locations and obtain the necessary documents and certificates without actually having to travel or unnecessary formalities.

3- Measures to Algerianize Customs:

In accordance with the customs modernization program, the following were undertaken (Farah, 2021, p. 191):

- The establishment of the National Center for Information Systems (CNIS) through Executive Decree No. 93-335, 27/12/1993.
- The establishment of the National Center for Documentation and Training (CNTD) through Executive Decree No. 93-334, 27/12/1993.
- The establishment of the National Center for Technical Support and Information Systems (CNTSID), after the merging of the two previous centers by Executive Decree No. 17-92, 20/02/2017. It is an external service of the General Directorate of Customs with national jurisdiction.

The most significant milestones of Algerian customs' digital transformation are the following:

- **October 1995:** Introduction of the Automated Customs Management System (SIGAD) in lieu of the system in place since 1986 in an attempt to speed up customs.
- **2019:** From this year, and as stipulated within Article 43 of the Finance Law of 2019, a dedicated unit to collect visitor data was established in collaboration with the border police in order to facilitate their transit.
- **2004:** First installation of the SIGAD customs information system at the Port of Algiers, followed by its extension to customs bureaus throughout the country.
- **March, 2014:** To support the cooperation of customs and banks, the Professional Association of Banks and Financial Institutions and the General Directorate of Customs signed a memorandum of understanding on the exchange of information about foreign trade operations (Ghazlani, 2024, p. 198). The new platform enhanced the reliability and transparency of banking transactions and saved money and time that could otherwise be spent on sending customs documents by mail.

- In addition, there was provided an interface for limited access to banks for the Algerian Customs Information System. The SIGAD system can also be installed on the initiative of economic operators at an annual subscription fee of 30,000 Algerian Dinars pursuant to Article 74 of Official Gazette No. 81.
- **2023:** Algeria now has two customs data centers as repositories for the storage of vast amounts of customs data, such as import/export declarations, trade transactions, tariff codes, and the rest. One is owned by Sonatrach, the state-owned oil and gas company, and the other by Algerian Telecommunications and was inaugurated on February 23, 2023, in Constantine.
- **November 15, 2023:** Opening of the National Center for Signals and Customs Information Systems, launching the customs digital transformation program (Ministry of Finance press release).

4- Algerian Digital Customs Facilitation for Non-Hydrocarbon Exports:

Hereinafter, we will submit several measures in relation to the export process outside the hydrocarbon sector, whose purpose is to enhance foreign trade. We will also deal with the most significant measures in relation to the digitalization of customs management and its processes in relation to exports.

4-1- Customs Clearance Process for Exports:

To better understand the export customs procedures digitized, let us discuss first Algeria's export procedures, which are two main sections:

First Part: Goods Arrival and Customs Submission

All export commodities ought to be brought to the relevant office of customs for inspection before their export. Such an office may either be the border office (departure office) or the office nearest to the export firm, depending on which regime it falls under. For this reason, certain locations are made available for goods deposit for export in port zones, dry ports, and other locations under customs watch.

Second Part: Actual Customs Clearance Procedures

Export customs clearance is carried out in three stages, as follows:

- **Stage 1: Declaration Submission**

Each export shipment must be declared with a full customs declaration. The declaration may be registered at any of the offices (departure center, company headquarters, or internal office). The export customs declaration amounts to a travel permit if submitted at any office other than the departure office. It should be declared by a licensed owner, an authorized customs agent, or a certified transporter. Advertising material, spare parts, samples, and goods worth or less than 100,000 Algerian Dinars can be brought for simplified declaration. Exportation involves the submission of several documents, including:

- The commercial invoice;
- Permits (special or administrative procedures) needed;
- Certificate of origin (proof of origin) for exports to countries that are eligible for tax relief, the European Union, Arab Free Trade Area, African Free Trade Area, Tunisia, and Jordan.

- **Stage 2: Examination of Goods**

The articles subject to the export declaration are checked physically in the form of selective pre-shipment inspection, which is also conducted inside the exporter's premise. Merchandise is exempted from office of departure inspection if inspected beforehand at an internal office.

- **Stage 3: Export Shipment**

Following inspection and release of the goods, the customs office clears the exporter to proceed with the shipment. The products may be shipped immediately or warehoused in designated places in ports, dry ports, or any other customs-regulated facilities to be used in the future for export.

4-2- Customs Facilitation for Non-Hydrocarbon Exports:

Customs facilitation of export is very typical in all countries and a very vital part of international trade. Customs facilitation are processes, practices, and measures by customs organisations to make crossing of merchandise borders simple and quick without compromising on compliance with relevant legislations and regulations.

The purpose of export customs facilitation (Ghazlani, 2024, p. 217) is to reduce trade barriers, maximize efficiency, and promote economic growth by simplifying customs procedures, removing unnecessary administrative burdens on exporters, promoting the free flow of goods, streamlining clearance procedures, and reducing delays and costs associated with customs inspections and procedures.

Facilitation steps offered by Algerian customs to exporters are as follows (M.A.J.J., 2023):

- Access to the green lane with immunity from immediate scrutiny and same-day completion of customs formalities for fresh fruits, vegetables, and other perishable products;
- Completion of customs formalities within a timeframe of up to two days in the case of other products;
- The export of products can be licensed pending disputes with customs
- Authorized economic operators are exempt from scanning via the scanner or, if physically examined, when presenting goods at the departure office with proper customs clearance.

Be aware that the level of customs facilitation is also not the same across nations. Some nations are more efficient in their systems and processes compared to others. Consequently, the facilitation measures currently being used

by Algerian customs reflect the existing capability and resources within the nation.

These steps of facilitation are used to reduce bureaucratic obstacles and offset the challenge of a weak information technology infrastructure. Whatever, exporters need to understand the respective customs procedures and requirements in target countries they are exporting to along with any facilitation programs available that can make their export activities easier.

4-3- The Automated Customs Management System (SIGAD):

The SIGAD system is an automatic system for treating customs files in a bid to accelerate the process and ensure clarity of transactions towards distant customs clearance without physically visiting the customs administration bureau. It was implemented in 1995 (Abdelkader Helis, 2021, p. 610). To improve service, Algerian customs continues to widen and unify the system with all customs revenues.

In the early phase of its development, SIGAD aimed at:

- Reducing use of paper-based documents in customs operations.
- Saving on writing, transfer, and storage expenses of customs documents.
- Reducing direct interaction with customs officers in order to reduce exposure to corruption.
- Enhancing accountability, quality of monitoring, and combating corruption.
- Monitoring the movement of goods in terms of legal and physical dimensions and improving cross-border control.

The SIGAD system has been the sole customs information system used in Algeria since 1995 and has only had limited upgrades at various times to become what it is now. The first version of SIGAD was for computer and electronic processing of customs declarations.

At the second stage, within the framework of modernizing and updating the Algerian customs machinery, SIGAD was created in order to allow electronic access to customs economic systems and computerized processing of customs disputes. It was the first time that multiple customs operations were computerized simultaneously, creating SIGAD 2, and its implementation was initially in 2004 at the Port of Algiers and later expanded to customs houses throughout the country.

Despite the benefits of this system, it has faced a series of criticisms, including:

- Limited coverage for every professional activity and support for customs operations, with outdated workstations, leading to data archiving issues and loss of data;
- Absence of coding standards and documentation threatening the sustainability of advanced units and slowing down maintenance and development of the source code.
- Inadequate functional documents for the database and no standards for database component names;

- No automatic checking of data correctness and lack of reporting tools and automatic data selection tools;
- Logistical expenses high for document preparation, long processing times for merchandise, and intricacy of customs handling.

4-4- Algerian Customs Information System:

Since 2018, Algeria has been taking initiatives towards digitizing its customs activities through the launch of a new information system, which constitutes the initial steps towards digitalization. The initiative aims at enhancing the functioning of the customs apparatus to facilitate international commerce as well as the overall national economy (General Directorate of Customs). The system connects the main regional customs office for hydrocarbons of the largest industrial complex to the customs database and plays a significant role in combating cross-border offenses as well as ensuring effective assistance to economic operators. The system is aimed at connecting all ports with customs, commerce, agriculture, and security services for customs declarations and improved information on the value and quantity of commercial products, including hydrocarbons. Moreover, it makes the transportation of merchandise, reduces logistics costs, and makes Algerian foreign trade possible (Omar H., Director of Customs).

Algerian Customs Administration has encouraged mutual cooperation and experience sharing in the field of data analysis and risk management within the context of the 2016-2019 customs strategic plan. It aims to be totally embedded in the world of information and communication technology and to minimize the digital divide, and to focus on data analysis for effective border management.

The Customs Director underscored the prospective initiative with South Korea, regarded as one of the globe's foremost models, specifically because it underwent similar challenges to those which Algerian customs are indeed confronting (Algerian News Agency, 2019). In order for the project to succeed, the General Directorate of Customs has entered into a protocol agreement with the institution that champions digitalization and a co-operation agreement with express mail companies to support and manage the information system, manage the electronic interface for data transmission, and provide real-time monitoring by customs. The objective of this project is also to combat administrative bureaucracy through sophisticated monitoring procedures.

According to Executive Decree No. 18-63, Article 02 of which defines the legislator of Algeria to define the customs information system as "a set of structured software, human resources, material resources, and procedures allowing the Customs Administration to collect, store, process, and disseminate customs-related information." Accordingly, the new Algerian customs information system relies on information and communication technology to process customs information electronically, mechanize customs clearance procedures, and utilize a variety of computer programs, such as electronic declarations, electronic invoices, online fees payment, electronic certificates of

origin, and integrated risk management systems. It also provides electronic interfaces to clear customs and manage release of goods, as well as monitoring and follow-up checks.

Algeria has made a move towards ease in non-hydrocarbon exports and international trade by bringing the transit time in ports down from 21 days to 5 days. This is aimed at decreasing transit costs and eliminating processing that begins even before the containers arrive in the country in order to improve flow management.

The system has its roots in three basic elements that are being adopted by the Algerian Customs Administration (Douini, 2022, p. 676):

- **Algerian Customs Software Project:** This will replace the current information system, which was introduced in 1995.
- **Data Center:** Its construction was awarded to the Chinese digital solutions provider "Huawei." It will serve as the focal point for the automatic management of customs software. The data center will also be equipped with state-of-the-art data transmission and network connection to improve its integration with local operators.
- **Network Reform Program:** The program is in the process of being established with the Algerian Telecommunications Group ("Atheeb") and is funded by the Technology and Communications Development Fund (Fodtech) under the Ministry of Postal Services and Telecommunications with oversight by the Public Finance Information Agency.

4-5- Single Window:

For better digitalizing customs procedures, opening up foreign trade, and integrating electronic data exchange, Algeria has implemented the provisions of Article 3 of Executive Decree No. 21-146 dated April 17, 2021. The decree regulates the arrangements for activating and running the single window for the processing of customs formalities for imports, transit, and exports. The single window system supports the exchange of information via a single entry point among various stakeholders in the supply chain of foreign trade. The purpose of the single window is as below:

- **Harmonize Customs Procedures:** Make customs procedures simpler in terms of foreign trade control at border points.
- **Promote Cooperation:** Encourage cooperation among agencies handling cross-border flows.
- **Foster Better Communication:** Ensure improved communication among all the parties involved in the foreign trade process.
- **Streamline Border Control:** Harmonize border control and management.
- **Avoid Data Duplication:** Avoid repeated entry of data and filing of papers.

- **Simplify Physical Inspections:** Harmonize and simplify on-field inspection processes.
- **Simplify Processing Time and Charges:** Shorten processing time and lower the cost of procedures and inspections.
- **Better Fraud Risk Management:** Enhance fraud risk management and simplify enforcement.

4-6- Algerian Customs Directorate Digital Platform:

Algerian Customs Administration has developed a free site, www.douane.gov.dz, which serves as the publication point and dissemination of all customs-related information that concerns the users or is relevant to the applicable customs regulations (Article M of the Customs Law). The site is updated regularly as and when needed, with information in the form of documents, data, and laws on exports, documentary publications, customs tariff, customs transit documents, the compulsory RTC identification details, questions, and other electronic services.

5- International Experiences in Customs Administration Computerization and Measures to Facilitate Exports:

The introduction of electronic customs clearance systems has fundamentally transformed the environment in international trade by significantly simplifying the process of exportation and importation of products. The systems have not only reduced time and cost associated with traditional customs processes, but also enhanced transparency and compliance, resulting in an increase in the number of successful clearance cases. Businesses and entrepreneurs globally have used these online platforms to streamline their businesses to ensure that their products reach international markets fast and effectively.

5-1- Singapore's TradeNet System:

Singapore experienced its first economic downturn in the mid-1980s. The government of Singapore reacted by establishing a high-level economic committee to examine the nation's economic weaknesses and develop strategies for improving its competitiveness. To be more competitive in business, Singapore accelerated its use of information technology. In 1986, its main competitor, Hong Kong, publicized its plan to develop an electronic data interchange system for trade (TradeLink), which further spurred Singapore to develop its own TradeNet network. The Singapore Trade Development Board (STB) was charged with liaison with the trading community and acted as the coordination point between various agencies, including customs, tax authorities, the Singapore Port Authority, and the Civil Aviation Authority of Singapore.

A steering committee was established in 1986 to oversee the TradeNet project, and Singapore Network Services Pte Ltd (which subsequently renamed itself CrimsonLogic) was established in March 1988 to build and operate the TradeNet system, the world's very first electronic single window. On 1 January

1989, Singapore launched its TradeNet system and was among the first to enjoy electronic customs clearance (K Sathasivam, 2009, pp. 9-10).

One of the strengths of Singaporean trade includes its fully digitalized customs processes that are efficiently administered by TradeNet (Majid Al-Jamil, 2021). TradeNet is the national single window for trade declarations that enables a number of public and private sector organizations to exchange trade-related information in an electronic manner. TradeNet integrates the processing of import, export, and re-shipment documents and enables trade and logistics communities to comply with customs procedures. Through TradeNet, Singapore Customs and other agencies monitor the movement of goods and enforce health, safety, and other regulatory requirements.

As highlighted in McKinsey Quarterly (2001, No.2): "Putting citizens online, not in queues" – A few years ago, applying for an import or export license in Singapore involved applicants completing 21 different forms and waiting 15 to 20 days for 23 government agencies to process the application. But since TradeNet has been online, applicants now submit one electronic form and receive their license in just 15 seconds (SINGAPORE CUSTOMS, p. 9).

With TradeNet online (SINGAPORE CUSTOMS, p. 10), access is possible from anywhere as it is a web-based system. The service is round the clock, 24/7, with the ability to submit and process permit applications at any time. With an enormous user base of 8,000 users, TradeNet's online service has offered greater efficiency and cost savings.

TradeNet, the world's first national electronic trade documentation system, has been hailed as a vital contribution to Singapore's pro-business infrastructure, making it more efficient and cost-saving for the trading community. It offers transparency through electronic submission and automated processes, and tax and levies are easily collected from traders at speed and precision. The payment system is linked directly to banks to allow direct debits and credits in the accounts of governments and traders. Overall, TradeNet has automated and improved trade operations significantly, that has a very high pertinence to the Singaporean economy, and provided for proper and timely preparation of trade statistics to analyze trade patterns and forecast future trade flows.

5-2- The UNI-PASS System in South Korea:

The economy of South Korea has grown rapidly since the 1970s (OMD, 2024). As a result, the trade volume, previously 2.8 billion USD, expanded 316 times to 885.8 billion USD during 2015. The number of overseas trips by South Koreans also expanded 117 times from 460,000 to 53.97 million. To cope with this boom, the Korea Customs Service (KCS) started developing an electronic customs clearance system called UNI-PASS that will enable customs procedures to be computerized and automated. With its limited resources, the platform enables coping with the challenges created by both the boom in the number of travelers and the boom in the volume of trade.

UNI-PASS is an integrated customs solution that simplifies the administration of the entire customs process. It involves application of new customs law, business practices, and organizational structure through application of international standards, automation software, digitalization, advanced risk analysis, big data, and artificial intelligence (CUPIA).

The primary operations of UNI-PASS are (OMD, 2024):

- **Unified Customs Clearance System:** UNI-PASS greatly improved the speed and efficiency of customs service. It offers single-stop declaration, taxation, and clearance service and reduced the customs clearance time on average from 2.5 days to 10 minutes.
- **Single Window Service:** The system provides single-window service to all the customs clearance processes and integrates 39 government services. It ensures the exchange of information among the regulatory authorities, customs, and other interested parties (e.g., private organizations undertaking requirements of checks). The system not only facilitates regulatory approvals but also data collection and analysis for the purpose of decision-making. The platform also links 430,000 organizations, including trading firms, customs brokers, shipping companies, airlines, courier companies, and warehouses.
- **Physicalization of All Customs Procedures:** Export customs clearance, which used to take more than one day, is completed in 1.5 minutes.
- **Shipment Tracking and Documentation:** The system records shipping documents from shipping companies, airlines, and freight agents and allocates a tracking number to each shipment. The goods management system is integrated with courier companies, warehouses, and other organizations responsible for delivering goods. This allows customs staff and operators to fetch information regarding goods processing, trace the goods at every stage of the process, fetch real-time information, fetch the handling customs official, and locate where the goods are. Fetching of the cargo manifest, customs declaration, and other documents that can be needed for customs procedures is also facilitated. Additionally, the system calculates the time for delivery or customs clearance in order to avoid delivery logistics problems, such as bottlenecks.
- **Integrated Risk Management System (IRM-PASS):** The system processes not just customs information, but also that of other organizations to generate statistics, construct risk profiles, and establish targeting criteria for commodities, firms, and visitors. The data is provided to customs officers at the different levels of inspection and surveillance procedures to enable them to make informed decisions.

6- Conclusion:

The shift towards digitalizing customs processes has become an imperative in the era of the digital revolution of economies in the contemporary era of digitalization and modernization, which has been successful in creating and

strengthening international trade processes. Through investing adequately in information and communication technology, the customs authorities can meet the needs of contemporary trade, drive economic development, and modernize periodically to remain current with evolving world trade. As more countries adopt and enhance their electronic customs systems, world trade becomes increasingly efficient, secure, and receptive to opportunity.

With respect to customs agencies, electronic systems have facilitated the management of resources and risk evaluation, enabling more targeted effort to be devoted to inspection and verification processes. Traders, on the other hand, have had certainty and reliability from the systems, thus incurring fewer charges and delays. Still, the environmental aspect cannot be ignored, as minimizing paperwork supports sustainability initiatives. In the wake of the Algerian state's efforts towards accelerating the digitization of customs administration, we here present a series of findings based on the current state of digitization in this regard in the following way:

- Engineers and technicians are helping customs administrations to work diligently with an iron resolve for sticking to timetables for full digitalization of state institutions and deploying the new customs information system across the country.
- There are individuals, like economic operators and customs officers, who are inexperienced and are not sufficiently conversant with information technology and hence pose resistance to the change from manual to electronic customs operation.
- The weak infrastructure or information technology system installed leads to weak connectivity and constant server (platform) malfunctioning. The absence of available alternatives in case of technical malfunctioning in the new information system also deters the necessary evolution and management of digital customs.
- There is a weakness in the cyber sphere, especially considering the fact that some Algerian official institutions have been under the attack of several cyberattacks, such as the hijacking of the Ministry of Finance's website, the official Facebook page of the National Center for the Commercial Register, and the official Twitter page of the Ministry of Justice. All these institutions are related to customs activities.
- To move towards digitalized customs and encourage the development of customs services, the administration of customs is trying to develop technological infrastructure and facilities that provide conformity with international developments.
- Algerian Customs Directorate's new platform has increased the credibility and transparency of banking transactions, particularly for imports, with time and postage expenses saved in mailing customs documents. Nevertheless, apart from banks, there is no other platform linking customs to other players in customs transactions.

Thus, it is essential to enhance sharply the customs apparatus, which plays the first role in serving the nation's economy and citizens, taking into account its role in executing the nation's economic, fiscal, and security policies and accomplishing the strategic objectives aimed at smoothing initiatives and establishing a smooth, transparent, and dynamic economic landscape. This stimulates local production, stimulates non-hydrocarbon export economies, and improves the investment climate in Algeria in a secure economic and trade environment that is backed by strict monitoring procedures against illegal trade and tax evasion. This is also in line with facilities extended by the government to economic operators under a variety of tax benefits. Therefore, we recommend the following:

- **Adopt Digitization as a Fundamental Tool for Modern Monitoring:** This should act as a counter to bureaucracy and address the complexity of customs activities along borders, and also the inefficiency of many administrative procedures at custom controls. This can be achieved through smart monitoring based on risk management and forward-looking data analysis to handle risks, specifically those associated with illicit trade in banned goods and smuggling.
- **Strengthen Full Digitization of Algerian Customs:** This should be included as part of an action plan towards complete digitization of the entire financial sector. This entails following closely the digital transformation process in all financial departments, promoting and spreading the utilization of electronic payment channels, and achieving financial inclusion.
- **Combine All Agencies Involved in Customs Activities:** Banks, trade departments, transport agencies, insurance companies, etc., into a single platform. This will be cost-saving and time-saving for economic operators and will improve the investment environment as well as increase the local export competitiveness.
- **Enter into Bilateral Agreements between Algerian Customs and Automated Clearing Companies:** There should be automatic connections between banks to cover electronic payments in the proposed digital customs system.
- **Provide a Favorable Legislative Environment:** There should be an electronic framework within a well-organized system of law that caters to the use of electronic models rather than paper. This involves developing existing laws and drafting new laws on matters regarding e-commerce transactions, such as e-signatures, the legality of electronic transactions, and cyber fraud legislations.
- **Develop a Fully Automated Customs Clearance Process:** A system should be developed to support trade as part of World Customs Organization (WCO) and World Trade Organization (WTO) trade facilitation projects, including pre-arrival rulings, approved economic

operators, pre-arrival processing, risk management, post-clearance audits, the single window, expedited shipments, appeals requests, and electronic payments.

7- Citations:

- **Haj Ali Badr Eddine, Rabahi Farid.** (November 30, 2023). *The New Information System as a Mechanism for Digitizing Customs Procedures in Algeria*. *Journal of Legal and Political Thought*, 7(2).
- **General Directorate of Customs.** (No Date). *Cooperation Between Algerian and South Korean Customs*. Retrieved from [Coopération entre les douanes algériennes et sud-coréennes - Direction Générale des Douanes](#)
- **General Directorate of Algerian Customs (M.A.J.J.).** (2023). Retrieved November 3, 2024, from <https://www.douane.gov.dz/spip.php?article70>
- **Ministry of Finance Press Release.** (No Date). Retrieved from *Official Inauguration of the National Center for Signals and Customs Information Systems*: <https://www.mf.gov.dz/index.php/ar/espace-medias-ar/communiqué-de-presse-ar/1451-2023-08-02-13-01-83>
- **Abdelali Bourouis.** (March 2023). *Customs Development and Its Impact on Trade Facilitation – The Case of Algeria*. *Journal of Economics, Business, and Accounting*, 8(1).
- **Abdelkader Helis.** (December 31, 2021). *Digital Customs (Case Study of Algerian Customs)*. *Journal of Business Administration and Economic Studies*, 7(2).
- **Omar H., Director of Customs.** (No Date). *The New Law Introduced Modifications of 45% – Digitalizing Algerian Customs Activities Since 2018*. Retrieved from *Algerian Newspaper*: <https://www.eldjazaironline.net/Accueil>
- **Ghazlani Osama.** (2024). *The Role of Digitizing the Customs Sector in Facilitating Algerian Foreign Trade Operations – Proposing a Framework for Digitizing Algerian Customs Based on International Experiences*. Faculty of Economic, Commercial, and Management Sciences, University of May 8, 1945, Guelma, Algeria.
- **Feryal Farah.** (October 2021). *Digitization of Algerian Customs Administration and the Necessity of Transitioning from SOGAD to E-DOUANE*. *Journal of Economic Thought*, 4(4).
- **Kenza Ben Milouda and Mokhtar Douini.** (2022). *Digitization of Customs Administration and Its Impact on Attracting Foreign Investment*. *Algerian Journal of Law and Political Science*, 7(2).
- **Majid Al-Jamil.** (September 26, 2021). *Singapore's Economy Expands Through "Warehouse Trade" – Goods and Services Represent 320% of GDP*. Retrieved November 29, 2024, from *Al-Eqtisadiyah*: https://www.aleqt.com/2021/09/26/article_2177851.html

- **Omar Meloudi, Issa Bouraoui.** (December 2017). *Transition to Digital Customs as an Entry Point for Strategic Vigilance*. *Journal of Financial, Accounting, and Administrative Studies*, (8).
- **Algerian News Agency (APS).** (January 27, 2019). Retrieved November 3, 2024, from <https://www.aps.dz/ar/economie/66017-2019-01-27-10-05-50>
- **CUPIA.** (No Date). Retrieved December 2, 2024, from *Customs Uni-Pass International Agency*: <https://www.unipass.or.kr/uni-pass/>
- **K Sathasivam.** (July 15, 2009). *The Single Electronic Window – Singapore’s TradeNet – Scope of Services and Pricing Model*. CrimsonLogic.
- **World Customs Organization (WCO).** (2024). *UNI-PASS, The Tool for Modernization of Korean Customs*.
- **Procedures & Processing Branch, SINGAPORE CUSTOMS.** (No Date). Singapore.