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DIGITAL TRANSFORMATION AND SYSTEMATIC ANALYSIS OF INFORMATION EXCHANGE PROCESSES IN CUSTOMS CARGO CONTROL

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Customs Cargo Control

The third article of the Law "On Electronic Commerce" defines electronic commerce as "entrepreneurial activity carried out through information systems for the sale of goods, the performance of works, and the provision of services." This provision serves as evidence supporting our argument. To fully implement the formation of the national information system, it is essential to ensure the enforcement of the above-mentioned laws [2,3].

The creation of a unified economic information system in our Republic is considered one of the key factors in establishing the national economic information space. The primary objective of developing such a system is to organize the interactions among ministries, agencies, and the banking system in accordance with modern requirements. This involves the collection, accumulation, storage, and analysis of information. The main prerequisite and necessity for establishing a unified economic information system in the Republic of Uzbekistan lies in ensuring that existing ministries, agencies, and financial sectors are supplied with reliable information to secure sustainable economic growth. Consequently, this will make it possible to implement a comprehensive balance of payments database.

Studies have shown that the informational foundation of the balance of payments of the Republic of Uzbekistan is primarily provided by various ministries, organizations, and institutions. This is clearly illustrated in the informational structure of the balance of payments of Uzbekistan (Figure 1). The sources mentioned constitute the primary information base, with the Ministry of Finance serving as one of the main providers of data.

In our view, the concept of establishing a unified economic information system in Uzbekistan requires that the following ministries and agencies play a central role in its creation:

- Ministry of Economy (ME);
- Ministry of Finance (MF);
- Ministry of Labor and Social Protection of the Population (MLSPP);
- State Tax Committee (STC);
- State Customs Committee (SCC);
- State Statistics Committee (SSC);
- Foreign Economic Relations Agency (FERA);
- Central Bank (CB).

The establishment of a unified economic information system within the Ministry of Economy is one of the decisive factors in shaping the national information system. The Ministry of Economy, recently reconstituted through the reorganization of the Ministry of Macroeconomics and Statistics, serves as a central body that receives data from all ministries and agencies, processes and analyzes the information, and provides a foundation for decision-making. Research into the country's main information base indicates that the banking sector plays a leading role in this domain.

The introduction of a unified economic information system within the Ministry of Economy ensures the rapid acquisition of data and offers practical assistance to employees by reducing the burdensome task of manual report collection. Since 2000, the Ministry of Finance of Uzbekistan has launched a

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globally integrated information-analytical system, which supports budget-related activities of the Republic and provides for the following tasks: the formation of expenditures of the Republican Budget (RB); the identification of RB expenditures; and the planning and determination of indexation within the RB framework [4,5].

Systematic Analysis of Information Exchange Processes in Customs Cargo Control

The procedure for transporting goods under customs control has been simplified. The Cabinet of Ministers adopted a resolution "On Simplifying the Transportation of Foreign Trade Goods under Customs Control in the Territory of the Republic of Uzbekistan, as well as on Further Supporting Participants of Foreign Economic Activity."

The document approved the following:

- Regulations on organizing customs escort monitoring of goods transported on automobile roads under customs control;
- Regulations on ensuring the payment of customs duties during the transportation of foreign goods through interaction with authorized persons in real-time and in an interactive format.

Customs clearance of goods and vehicles under customs escort is carried out as a priority at the sending and destination customs posts, as well as at handover-reception points. Expenses incurred by the carrier, consignor, or consignee during customs escort monitoring are not reimbursed by customs authorities. Vehicles under customs escort monitoring are not permitted to stop at internal affairs checkpoints or to have their cargo compartments opened for inspection.

The payment of customs duties during the transportation of foreign goods is carried out electronically online by authorized bodies. Customs escort monitoring must begin within no later than six hours after the arrival of the vehicle at the consignor's customs authority and is conducted during daylight hours.

The Regulations also provide for:

- the organization of customs escort monitoring;
- the procedure for payment of customs fees;
- the rights and obligations of officials carrying out customs escort monitoring.

Since the second half of 2018, the Customs Risk Management System (RMS) has been introduced into the activities of the customs authorities of the Republic of Uzbekistan. Before its implementation, the experiences of developed countries such as Korea, several EU states, Turkey, China, and Russia were thoroughly studied. The RMS information system was developed and introduced by specialists of the State Customs Committee of the Republic of Uzbekistan. Following its implementation, international experts were invited to study and evaluate the system, and their conclusions confirmed the feasibility of its practical application.

The use of the RMS information system during 2018–2020 produced the following results (Table 1):

Table 1. Results of Customs RMS Activities in 2018–2020

Period	Green line %	Yellow lane %	Red line %
2018	0	70	30
2019	20,99	38,48	40,53
2020	25,37	42,58	32,04

In 2018, as the RMS was in a trial phase, certain restrictions were applied to the volume of goods released through the "green lane." From the beginning of 2019, however, the system was fully operational. Nevertheless, comparative analysis of RMS results with those of other countries revealed certain discrepancies, particularly concerning goods directed to the "red lane." Although the RMS of customs authorities is intended to create favorable conditions for law-abiding participants in foreign economic activity (FEA), it imposes significant adverse effects on businesses whose goods fall under

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the "red lane." The consequences of such outcomes can be unfavorable, long-term, or even sometimes catastrophic for the enterprises involved.

It is noteworthy that in the early years of RMS implementation in other countries, similar situations were observed, where the share of goods assigned to the "red lane" was relatively high—approximately 50%. However, over time, these parameters decreased and stabilized. Considering this, it can be concluded that studying methods for further developing the customs risk management system is a pressing issue to stabilize the proportions of "green, yellow, and red lanes."

Formal description of the problem. It is no secret that for the practical implementation of any technology, it must first be thoroughly studied and all its nuances understood. The application of RMS technology by the customs authorities of the Republic of Uzbekistan is no exception. Scientific literature often confirms that RMS constitutes a fundamental principle of modern customs control technologies, enabling the optimization of customs resource utilization. Such definitions of RMS generally reflect the perspective of customs services or entrepreneurs. From the standpoint of state administration, however, today there is already a rich body of accumulated experience, with developed countries having established a solid legal and regulatory framework for RMS application, supported by international instruments [8].

At the time when these studies were conducted, the activities of the customs authorities of the Republic of Uzbekistan were regulated by more than 330 normative documents, including:

- 6 laws;
- 3 codes;
- 23 presidential decrees and 38 presidential resolutions;
- 172 Cabinet of Ministers resolutions and 16 Cabinet orders;
- 47 interdepartmental decisions and other instructions registered by the Ministry of Justice.

This list does not represent the complete set of normative documents regulating the activities of customs authorities. Nevertheless, although a sufficient number of regulatory documents exist, the functions of customs authorities may be broadly divided into two main tasks:

- management of foreign trade operations;
- management of the human resources potential of customs authorities.

Although these tasks are relatively independent from the standpoint of automation, in practice they are interconnected and produce effective results only when addressed together (Figure 1). In other words, when managing customs officers, their performance in managing foreign trade operations is necessarily taken into account. For example, decisions regarding the appointment of an employee to a responsible position, awarding bonuses, promotion or demotion, or disciplinary actions leading up to dismissal are directly linked to the decisions they make in managing foreign trade operations. Conversely, the quality and management of foreign trade operations, as well as the effective execution of the responsibilities assigned to customs authorities, are fully dependent on the qualifications and fair management of customs officers.

At the same time, the task of managing foreign trade operations is aimed at addressing two main issues:

a) **the fiscal function** – ensuring the proper and complete collection of customs duties;

b) **the preventive function** – preventing, detecting, and eliminating customs violations, including smuggling.

Although these tasks are closely interrelated, there exists an irreconcilable procedural contradiction between them. This contradiction is manifested as follows:

The primary indicator of increasing customs revenue is the time spent on customs clearance of foreign trade goods. The shorter the time required for the customs clearance of a particular consignment, and the more consignments that can be cleared within a certain period, the higher the customs revenue

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collected by the state budget for that period. However, in such cases, the incidence of customs violations tends to rise, as there is insufficient time for a thorough inspection of each consignment.
Conversely, the key indicator of reducing customs violations is the time allocated for inspection of goods. The more time spent on customs inspection of goods and verification of the documentation for specific consignments, the fewer foreign trade consignments can be processed during a given period. As a result, the likelihood of undetected violations decreases, but at the same time, the volume of foreign trade transactions declines, leading to a reduction in customs revenue for the state budget.
Reconciling, or rather optimizing, these conflicting objectives requires the application of internationally recognized methods of trade facilitation. One of the most effective approaches, widely applied in developed countries, is the use of **risk management systems** (Figure 2).
An analysis of the results of the first two years of the operation of the risk management system within the customs authorities of the Republic of Uzbekistan shows that one out of every four consignments assigned to the "red lane" was associated with the misdeclaration of the customs value of goods.
When discussing the control of the reliability of customs information, the term generally refers to the detection of false or unreliable declarations of goods. In practice, this means identifying and separating all "unreliable customs declarations" submitted electronically to customs authorities via the Internet.

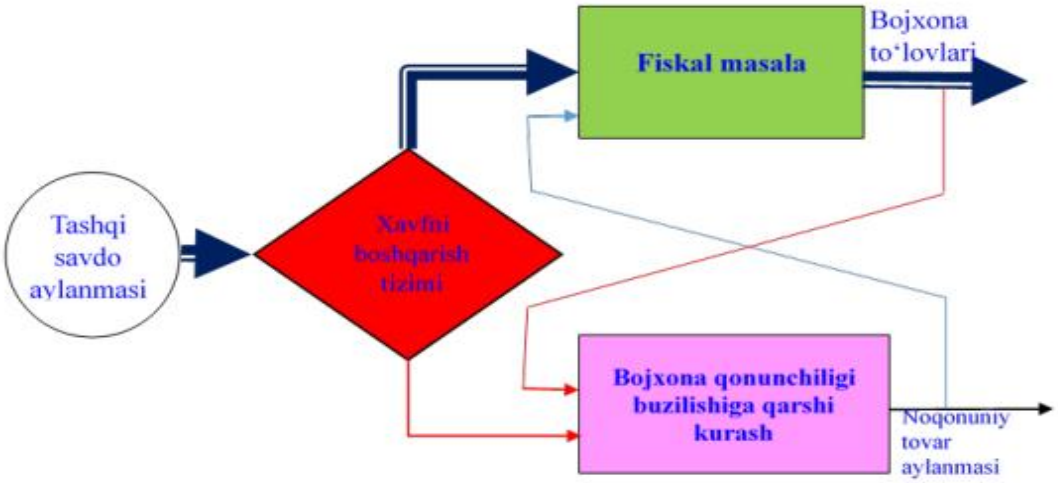

Figure 2. Trigger-based model of managing foreign trade operations
An analysis of violations of customs legislation in the Republic of Uzbekistan over several years shows that, in order to ensure the reliability of declarations, the accuracy of information about goods must be evaluated across all their parameters, meaning that a multidimensional analysis of data regarding goods is required. Information about goods is fully reflected in the customs cargo declaration (CCD). It is known that the data from CCD can be formed in the shape of a multidimensional matrix **D**, which serves as the sole and complete source of state customs statistics [9].
A brief description of the CCD is as follows: the number of its columns is 58. The details of each column are determined depending on the complexity of the level of analysis but do not exceed 40. The serial number **L** of the CCD is updated annually. The customs authorities of the Republic of Uzbekistan receive approximately five million CCDs per year, and this number is steadily increasing each year. For the information about goods to be reliable, the data in each column of the CCD must be trustworthy and meet specific reliability criteria (2).

Conclusion

The conducted analysis shows that modern technical systems require effective and reliable approaches to data storage, processing, and analysis. In particular, in the field of foreign trade operations, the

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customs cargo declaration plays an important role as the primary source of information, ensuring the accuracy and reliability of data. The multidimensional analysis of CCD data allows the identification of violations of customs regulations and contributes to strengthening transparency in trade processes. In addition, the increasing number of CCDs every year necessitates the development of automated systems for managing large-scale data and implementing trigger-based management models. Such approaches make it possible to improve efficiency in decision-making, ensure the accuracy of information, and provide full compliance with established requirements. Overall, the application of modern database management systems and trigger-based mechanisms demonstrates that digitalization processes can significantly enhance the efficiency and reliability of foreign trade operations in Uzbekistan.

Refereces:

1. Decree of the President of the Republic of Uzbekistan No. PQ-3351 of November 3, 2017 “On measures to further liberalize foreign trade activities and support business entities.”
2. Decree of the President of the Republic of Uzbekistan No. PQ-3665 of April 12, 2018 “On the organization of the activities of the state customs service bodies of the Republic of Uzbekistan.”
3. Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 “On the Strategy of Actions for the Further Development of the Republic of Uzbekistan.”
4. Law of the Republic of Uzbekistan “On the State Customs Service” (October 18, 2018).
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