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Digital Customs: Intelligent Systems and Technologies

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Abstract

The processes of digitalization have covered all spheres of economic activity in the states. Undoubtedly, customs operations and customs control at the crossing of goods and citizens across customs borders today is accompanied by the use of software products and digital customs technologies. The current system is of great importance for ensuring economic security of the Republic of Uzbekistan, as this system provides not only the automation of document flow between participants of foreign economic activity and customs authorities, but also in tracking the movement of goods across customs borders using digital control units.

Keywords: customs authority, Uzbekistan-2030, artificial intelligence, IIR data analysis, AI customs responder, smart Bodyscanner, Blockchain technology.

Introduction

Modern customs business is a key link in cross-border transportation and a system of socio-economic phenomena, covering the totality of social relations in the sphere of movement of goods, vehicles and other valuables across the customs borders of the Republic of Uzbekistan. Since ancient times, customs has represented various institutional forms with politically and economically justified content. One way or another, the convenience and speed of movement across the borders of our republic largely depends on the customs authorities.

In recent years, on the initiative of the President of the Republic of Uzbekistan Sh. M. Mirziyoyev, large-scale reforms have been carried out in our country in many areas, including customs. At the meeting "Transforming the customs system into an area free of corruption has been identified as a priority," which was held on February 17, 2022, he emphasized that: "Customs posts are the face of our country, this is where the first impression is formed. They should have convenient conditions for the population and entrepreneurs."[1] During the meeting, he outlined the achievements achieved in this industry in recent years, and additional measures and tasks were identified aimed at further improving the activities of the customs authorities of the Republic of Uzbekistan. Improving the infrastructure of customs posts, digitalizing customs services, creating automated systems and, most importantly, "customs without customs" systems at airports remained one of the most important tasks. Indeed, in his speeches, the President of the Republic of Uzbekistan wanted to show that the processes of digitalization and automation are proceeding at a rapid pace in our country, along with many developed countries of the world. At the same time, President Shavkat Mirziyoyev, by decree of September 11, approved the Uzbekistan-2030 Strategy. The document states that it was developed "based on the experience acquired during the implementation of the Development

Strategy of New Uzbekistan and the results of public discussion."[2] Within the framework of which the goal was set of "Entering full members of the World Trade Organization" and performance indicators of the goals that will be achieved by 2030, which consists of the following:

- Bringing national legislation and law enforcement practice into compliance with the rules, regulations and agreements of the World Trade Organization;
- Completion of negotiations with at least 10 foreign countries per year on entering their market;
- Systematic negotiations with WTO member states on entering markets, effective completion of the process of joining the Organization.[3]

I am confident that the implementation of Strategy 2030 will significantly improve the economic situation in the Republic of Uzbekistan. Thanks to this, fair businesses will receive clearly defined fiscal requirements and fast and comfortable customs procedures. The customs system will be reformed so that it becomes invisible to business and productive for the state, by building an almost completely paperless environment, introducing methods for analyzing and processing data in large quantities. A clear example of the transformation of customs will be the passage of checkpoints in a short period of time. In fact, the very perception of the border checkpoint is changing: it is becoming intelligent and will represent a unified information system that receives data from inspection and weight control systems, radiation control systems, and other customs control means. Further, this information will be automatically analyzed, and electronic queuing and dispatch systems will be launched in parallel. The coordinated work of all these components should ensure non-stop passage of the checkpoint for goods consignments with a low level of risk. For the state, the reconstructed customs will become a guarantor of the protection of the domestic market, a system that meets the interests of the country and a body ensuring economic security.

Customs is being improved every year and a comfortable environment is provided for citizens crossing customs borders, and at the same time the work of customs officers is simplified. The term "Digital Customs" implies the use of information and communication technologies, databases, cloud technologies, combining information obtained through electronic customs technologies, as well as the global Internet. It facilitates efficient processing of big data (Big Date) and effective control of the supply of goods, as well as interaction with other customs administrations. In order to speed up trade turnover and simplify customs procedures, customs authorities actively use modern information technologies, for example: artificial intelligence, IDK data analysis, AI customs responder, smart Bodyscanner and Blockchain technology.

Artificial Intelligence

Artificial intelligence is a technology, or rather a direction of modern science, that studies methods of teaching computers, robotic technology or an analytical system to think intelligently like a person. One of the main goals of which is to create assistant robots that have certain qualities of people: to understand, learn, think and undoubtedly carry out the tasks assigned to them. Artificial intelligence is gradually coming to all sectors of human activity, turning ordinary software systems into intelligent ones, including medicine and healthcare, online retail sales, politics, industry, education and, of course, the customs system. Currently,

automation of customs control processes is reaching a high-quality level. In general, the registration of declarations for goods and the release of goods that do not have the risk of violating the law are carried out automatically. However, in the near future, a digital transformation of the customs system is expected, through the introduction of artificial intelligence at border posts and airports, where the processing of large volumes of data and a full-scale transformation of customs clearance technologies are being implemented. At the same time, the solution to the problem of data analysis without the human factor will be reduced, which helps reduce corruption when importing and exporting goods through the customs posts of the republic.

Analysis of IDK data

Inspection and screening complexes are one of the types of technical means of customs control used by customs authorities, which are complexes of electronic equipment for customs control of large objects. The use of methods for filtering radiographs in the frequency and spatial domains, as well as histogram analysis and segmentation of image textures, makes it possible to identify inhomogeneities to increase its diagnostic potential. But what is required is the development of an integrated intelligent platform for analytics and monitoring of images received from inspection and inspection complexes, which makes it possible to centralize the process of processing received images from IDK and simplify the analysis by bringing the images into a universal format. This approach can increase the efficiency of customs control and minimize the human factor that contributes to violations of the law.

Customs responder AI

This is a program based on artificial intelligence that allows you to simulate a live dialogue with users, where they can turn with questions that interest them. It helps automate communication and reduces the workload of customs officials by providing citizens with information around the clock, providing advice, simultaneously conducting hundreds of dialogues, registering and reporting details regarding customs services. They are able to answer frequently asked questions and, if necessary, translate the dialogue with a customs officer to resolve a complex issue. This significantly saves physical and time costs on both sides. Customs responder AI works on the basis of artificial intelligence, which is capable of understanding and processing live speech, and at the same time generating responses, in accordance with the legislative framework of the Republic of Uzbekistan and the customs service. This automated system will allow problems related to citizen requests to be resolved without worrying about the growing number of chats and calls from interested people.

Smart "Bodyscanner"

An X-ray body search scanner is a device designed to detect prohibited and dangerous items that have been swallowed or hidden in natural body cavities. X-rays pass through a person and produce a detailed image. It is a detector, emitter or array from different sides, along which a person moves on a conveyor belt, or vice versa, they go around a person on both sides. This technology helps to detect objects that are not characteristic of human biology, located not only on the human body, but also swallowed inside or hidden in the natural cavities of the body.

The improvement of “Bodyscanner” is still ongoing, the development of remote scanning is expected, using artificial intelligence to detect prohibited items on people hidden from customs officials, which will simplify the customs activities of the state.

Blockchain Technology

The essence of blockchain is to create a decentralized network consisting of a chain of blocks containing information. Each block contains any information: records, events, transaction data, which are linked by cryptographic methods that can automatically verify the accuracy of the information. Decentralization in the blockchain means making decisions and transferring control from a centralized entity to a distributed network, which allows participants to level out trust in each other and preserve the functionality of the network. In the customs system, this technology helps to exchange data not only within the territory of our country, but also with partners in foreign trade, and at the same time ensures the integrity and transparency of all documents relating to customs procedures.

In modern conditions, the customs sphere is important not only in ensuring national security, but also in the development of foreign economic activity of the state. It should also be noted that these concepts have a general purpose and goal to improve the activities of customs, first of all, this serves to prevent violation of customs and other legislation in force on the territory of the state, it also helps to increase the efficiency and speed of work of customs administrations and, of course, improve the global economic situation and promotion of international trade. If a law-abiding declarant whose goods cross the border today could time travel ten years into the future, he would see a completely different customs office. In 2030, the speed, convenience and simplicity of customs clearance will reach a completely new level - the main elements will be digital technologies and artificial intelligence.

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