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LEGAL ASPECTS OF INTRODUCTION IN UKRAINE OF THE INTERNATIONAL EXPERIENCE OF INFORMATOZATION OF THE SEAPORT MANAGEMENT SYSTEM

Анотація: У статті досліджується питання удосконалення системи управління морськими портами, яка нині діє в Україні, вивчаються правові аспекти впровадження в Україні міжнародного досвіду інформатизації системи управління морськими портами, впровадження у національну систему управління морськими портами інновацій, новітніх розробок, приведення її до міжнародних стандартів, вивчається необхідність внесення змін у національне законодавство України з огляду на вимоги часу. У статті розглядається економічний потенціал морських портів України та можливі шляхи його розвитку. Досліджено питання причини занепаду морегосподарського комплексу України та досліджено шляхи вирішення наявних проблем, визначено шляхи виходу з кризи. Зазначено важливість розвитку сфери управління морськими портами України як складової ланки усієї вітчизняної транспортної системи та міжнародних морських транспортних перевезень. У статті розглянуто приклади позитивного досвіду морських портів світу стосовно інформатизації системи управління морськими портами. Наведено перелік існуючих інформаційних систем управління морськими портами та приклади їх використання у портах світу. Також зазначено успіхи України у сфері інформатизації системи управління морськими портами, а саме успішний досвід впровадження інформаційної системи E-PORT у спеціалізованому морському порту «Ольвія». Перераховано наступні етапи впровадження інформаційної системи E-PORT в морських портах України. Визначено що впровадження інформаційної системи E-PORT на Державному підприємстві «Стивідорна компанія «Ольвія» у спеціалізованому морському порту «Ольвія» дозволило оптимізувати процеси, пов'язані з доставкою та відправкою вантажів в даному порту. Досліджено інші позитивні спроби використання інформаційних технологій в морегосподарському комплексі, а саме Служби Транспортного Обслуговування Судна (VTS), Управління Інформаційною

Системою Руху Судна (VTMIS) та Управління Системою Інформації (MIS). Наведено приклад можливих основних етапів розвитку інформатизації системи управління морськими портами України. Перелічено закони України що регламентують роботу інформаційних систем та захисту інформації. У статті висвітлюються правові та технічні вимоги до нормативно-правового забезпечення роботи інформаційних систем та захисту інформації.

Ключові слова: морський порт, управління морськими портами, інформатизація, нормативно-правове забезпечення, інформаційна система, інфраструктура, морські перевезення, впровадження міжнародного досвіду.

***Annotation.** The article explores the issues of improvement of the seaport management system that is currently operating in Ukraine, are studied the legal aspects of introduction in Ukraine of the international experience in informatization of the system of management of seaports, introduction of innovations, new developments into the national seaport management system, bringing it to the international standards, examines the necessity to amend the national legislation of Ukraine in view of the time requirements. The article deals with the economic potential of Ukrainian seaports and possible ways of its development. The importance of the development of the management of the seaports of Ukraine as an integral part of the whole domestic transport system and international maritime transportations is noted. The article deals with examples of positive experience of seaports in the world regarding the informatization of the seaport management system. The list of existing seaport management information systems and examples of their use in the ports of the world are given. The successes of Ukraine in the field of informatization of the seaport management system, namely the successful experience of implementation of the E-PORT information system in the specialized seaport of Olvia, are also noted. Are listed The following stages of implementation of the E-PORT information system in the seaports of Ukraine.*

It has been determined that the implementation of the E-PORT information system at the State-owned enterprise «Olvia» Stevedoring Company» at the specialized maritime port of Olvia allowed to optimize the processes related to the delivery and shipment of cargo at this port. Other positive attempts to use information technologies in the marine economic complex have been investigated, namely Vessel Transport Service (VTS), Vessel Traffic Management Information System (VTMIS) and Management Information System (MIS). Is given the example of possible main stages of development of information system of management of seaports of Ukraine. Are listed The laws of Ukraine governing the operation of information systems and information protection. The article highlights the legal and technical requirements for regulatory support of information systems and information security.

Key words: seaport, management of seaports, informatization, regulatory support, information system, infrastructure, sea transportation, maritime transport, introduction of international experience.

Problem statement and its connection with world trends. The seaport has always, since the earliest epochs of human civilization, occupied a leading place in the development of trade, economy, stability, was the leading stage of financial and, as a consequence, political independence of the region. Nowadays, it is difficult to overestimate the importance of seaports for the economic stability of an individual state and the world economy as a whole. Seaports with their extensive infrastructure are a leading link in the world transport system, the international system of freight and passenger transport, global trade and trade.

The maritime industry in the world is developing at a rapid pace. The general trend for seaport management systems in the most developed countries of the world is their rapid focus on the needs of the world market, adaptation to modern needs, their desire to meet international criteria of speed and reliability of transport, quality and safety standards.

Currently, the system of seaports in Ukraine, unfortunately, is significantly inferior in development to the seaports of Asia, Europe and North America. Which makes them uncompetitive in the global transportation market. A significant problem is the significant deterioration of infrastructure facilities in most domestic ports or their inadequacy for existing cargo flows, the lack of a single nationwide computerized seaport management system.

Analysis of research and publications. Working on this topic, we considered many works of Ukrainian and foreign scientists who have conducted research in this area, in particular: Ilchenko SV, Karpenko OO, Shulyak V., Naumov OB, Bodelan IV, Mezina LV, Shpachuk VV, Datsiy OI, Lander IY, Demyanchenko AG, Goss R., Verkhoven P., Sudarev VO, Smekhov A. AND. and others who have explored various aspects of the development of Ukraine's maritime port economy and management systems.

The purpose of this article is to identify and analyze the main directions of development of information systems for management of seaports of Ukraine in accordance with global trends, study of legal aspects of implementation in Ukraine of international experience in informatization of management systems for seaports.

Presenting main material. The maritime transport complex is a multifunctional structure that meets the needs of the national economy in transport, promotes international trade and implements the obligations of Ukraine as a maritime state. Water transport served in the seaports of Ukraine is the cheapest and most environmentally friendly compared to other modes of transport, which makes it competitive within the country for domestic and international trade. Seaports of Ukraine are an integral part of the transport and production infrastructure of the state due to their location on the roads of international transport corridors. The competitiveness of the domestic transport complex on the world market depends on the efficiency of the seaports of Ukraine, the level of their technological and technical equipment, compliance of the management system and infrastructure development with modern international requirements [1].

Sea trade ports play an important role in providing transport links and international trade, which is especially important in connection with Ukraine's integration into the world economic space. However, the problems of port

management, the search for the most effective forms of interaction between seaports remain unresolved in both practical and theoretical terms [2].

One of the significant stages in the development of the seaport management system in Ukraine is the introduction of a single information system. The international experience of the world's largest ports shows the high efficiency of such systems.

Currently, Ukraine is in the process of developing and disseminating such a system - the implementation of the E-PORT project, which was launched on the basis of the State Enterprise "Olvia Stevedoring Company" in the specialized seaport "Olvia", at the initiative of the Ministry of Infrastructure of Ukraine in late 2015. The introduction of the E-PORT information system at this enterprise allowed to optimize the processes related to the delivery and dispatch of goods at the port. Given the novelty of the idea of developing and implementing an E-Port system, features and difficulties in the process of reforming the port industry, it was decided to start with a pilot project - to automate all the work of one particular port. Olvia port has become such a test site for the E-Port system. The project proved to be successful - cargo clearance and cargo handling times were accelerated by 34.4%.

In 2018, the Ministry of Infrastructure of Ukraine announced its intention to scale the successful experience across the maritime industry of the State Enterprise "Stevia Company Olvia" to introduce an electronic port management system E-Port, in order to make other seaports more transparent and efficient. The next steps in the development of this electronic system were the ports of Nikolaev, Odessa, Yuzhny, which were included in this project. The next stages will be: introduction of the e-Port system in all state enterprises of Ukraine in the maritime industry, as well as implementation of the latest E-Port 4.0 system. [3].

The next significant steps in the informatization of Ukraine's seaport management system should be:

- ensuring the functioning of seaports on an innovative basis in accordance with the concepts of "smart port" (application of the latest technologies), "energy efficient port" (implementation of measures for resource conservation, recovery and rational use of resources) and "green port" (reducing the negative impact on the environment) environment).

- introduction of modern information systems with a high level of protection against cyber threats, which allow customers of port services to carry out registration and monitoring of cargo, vehicles from anywhere in the world;

- Implementation of joint procedures with the EU to ensure the safety of navigation, monitoring of maritime traffic, assistance at sea, maritime communications, response to pollution from ships and the creation of a national segment of the information exchange system SafeSeaNet on vessel traffic and accidents [3].

At the present stage of development of the domestic management system of seaports is not possible without borrowing international experience. Logistics, information and communication systems (HAPAG-LLOYD, COAST, IS DAKOSY, ACTION Container Transport Improving and Organizing Network), ZAPP (export) - ZODIAK (import), HABIS, etc.), AGV (Automated Guided Vehiels) and information and communication systems used at container terminals (Gate System,

OCR Handling) , TOS systems (Terminal Operating System), Ancillary System, etc.).

These systems provide for the availability of modern databases using the latest information and communication technologies, through which the accumulation, processing, storage, protection, efficient search and timely provision of the necessary information to all participants in the logistics process. In general, the successful operation of seaports largely depends on their interaction, on the one hand, with land transport infrastructure, and on the other hand, with shipping companies. Accordingly, a flexible logistics strategy is needed, which should be largely based on a high degree of computerization, continuous information support, coordination of business transactions and optimal integration of port logistics functions, relevant activities and operations. Information and communication systems combine elements of the organizational structure of the port, the work of freight forwarders and logistics operators, carriers, cargo storage, insurance, financial flows and customs activities [4].

As noted in his work Lypynska OA Despite the lack of significant changes in the information support of Ukrainian seaports, there are still some attempts to use information technology. These are the Vessel Transport Service (VTS), the Vessel Traffic Information System (VTMIS) and the Information System Management (MIS) [5]. In addition, the sea trading ports of Ukraine have a main platform, namely the dispatching apparatus and an effective information system that allows you to plan and manage transportation, but for its development it is necessary to improve other components to create a single information system [6].

Given the international experience of the world's largest ports, which shows the high efficiency of such systems, we can conclude that there is an urgent need to develop existing and introduce new such systems in Ukraine. One of the significant stages in the development of the seaport management system in Ukraine is the introduction of a single information system. The introduction of a single information system for the management of seaports in Ukraine, according to experts, will allow:

- Carry out effective monitoring of passenger and freight traffic.
- Get the latest statistics on the increase or decrease of freight and passenger traffic in a particular port.
- Respond quickly to the needs of the transportation market, namely in the event of a rapid increase in demand for a particular type of transportation to quickly increase the production capacity of relevant transport terminals, if necessary, temporarily attract ancillary equipment, spare port facilities, additional equipment and labor.
- In the event of a steadily growing demand for freight and passenger traffic in a certain port area of Ukraine to respond quickly and decide on the construction of new transport, freight terminals or the opening of new ports.
- In the event of a situation where the port of acceptance is temporarily unable to accept vessels, such as the threat of a terrorist act or the threat of an emergency due to damage to a ship with explosive cargo, respond quickly and redirect vessels to nearby ports capable of receiving vessels of appropriate class and tonnage.

- In case of emergencies in the seaports of Ukraine to respond quickly and eliminate the consequences of man-made disasters, natural disasters, terrorist or military threats, etc.

- In the event of an emergency situation in one of the ports, which will temporarily threaten the already accepted port and vessels that are permanently moored in this port, will allow to react quickly and either take the vessels to a safe distance in territorial waters, or redirect vessels to the nearest ports capable of accepting vessels of the appropriate class and tonnage.

- In case of emergencies, namely man-made disasters, natural disasters in seaports of Ukraine to respond and eliminate the consequences in a short time, with the involvement of additional units of equipment and labor from other ports to quickly eliminate the consequences of natural disasters or man-made disasters in the affected port, for example, cleaning the port area from the consequences of oil spills from a damaged tanker, icebreaking works due to significant icing of the coastal strip due to critically low temperatures or a strong winter storm, etc.

Implementation and operation of any information, telecommunication and information-telecommunication systems in public authorities, state enterprises, institutions and organizations requires the mandatory development of regulations that will regulate the creation, deployment and operation of these systems, as well as the order of processing and circulation of information flows between the information resources of public authorities [7].

The introduction of information systems for the management of seaports in Ukraine is no exception. Implementation of information systems for management of seaports of Ukraine is impossible without a strong regulatory framework, with clear regulation, clear definition of officials, departments, departments and organizations responsible for the development, creation, commissioning, data entry, systematization and processing of information, technical support of such information systems. Regulatory prerequisites for the functioning of information systems for management of seaports of Ukraine should primarily be based on current legislation in the field of information relations and information protection, such as the Law of Ukraine "On Information Protection in Information and Telecommunications Systems", the Law of Ukraine "On Information", the Law of Ukraine " On Personal Data Protection ", Law of Ukraine" On Access to Public Information ". Among the regulations governing the functioning of information and information and telecommunications systems should be noted the Law of Ukraine "On protection of information in information and telecommunications systems", which regulates relations in the field of information protection in information, telecommunications and information and telecommunications systems [8].

Also, when developing regulations that will regulate the creation, deployment and operation of information systems for management of seaports of Ukraine should take into account the following technical requirements. A multifunctional information and telecommunication system of a public authority is a set of interconnected information, telecommunication and information and telecommunication systems, which includes: hardware and system component (servers, computer equipment, system software, etc.); information protection systems (information systems for user identification and authentication, monitoring,

anti-virus protection, operating system updates, etc.); telecommunication system (network equipment, communication channels, local networks, e-mail, etc.); central database, electronic document management system; electronic digital signature system; risk management system; various departmental information systems [7].

Currently in our country the following problems of development of information systems of management of seaports of Ukraine can be defined: lack of uniform standards and regulations of functioning of information and telecommunication systems, and also the state information resources adapted to international; imperfection of the normative-legal and methodological base, which does not allow state authorities and local self-government bodies, citizens and business entities to function in the information society; lack of an integrated system of national information resources and information interaction of state authorities and local self-government bodies.

Conclusions. Seaports are an integral part of the transport and production infrastructure of the state due to their location in the directions of international transport corridors. The competitiveness of the domestic transport complex on the world market depends on the efficiency of seaports, the level of their technological and technical equipment, compliance of the management system and infrastructure development with modern international requirements.

The study showed that the system of seaports of Ukraine has a high economic potential, but requires sustainable development of all components of domestic infrastructure. There is a need to introduce the latest developments to keep up with the times. Given the significant positive changes in recent years, it is necessary to continue to actively implement innovative technologies and positive international experience in seaport management, accelerate the introduction in Ukraine of a single national computerized seaport management system.

The introduction of information systems and digital technologies in the management system of seaports of Ukraine requires the development and creation of regulations that will regulate the creation, deployment and operation of these systems, as well as a set of organizational and technological measures, clear delineation of powers local self-government on the implementation of information policy and coordination of their activities at all levels.

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