

Article submitted on 2009. 11. 16.  
Examination completed on 2009. 12. 07.  
Publication accepted on 2009. 12. 18.

## Dynamic Perspectives on the Advancement of Korea's Electronic Customs Clearance System

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### I. Introduction

The Revised World Customs Organization(WCO) Kyoto Convention, which addressed the standardization, speed and simplification of customs formalities and the best use of information technology, entered into force in February of 2006. Presently, 42 countries around the world follow this convention, reforming their own customs laws to conform to the convention. In fact, they have accepted the revised convention in order to simplify and standardize their complicated customs procedures, which have frequently been implicated as a significant obstacle to international trade. Considering the application of new

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innovations in the international trading environment of Korea and the Korean economy's relatively high dependence on imports and exports, it seems quite natural for us to actively accept the principles of this revised convention. As trade liberalization has become less important as the result of the reduction and elimination of trade barriers, new trade promotion plans – such as trade facilitation – have emerged as hot issues.

Thus far, the information that should be provided upon customs clearance has included specifications concerning cargo, final destination port, shipper, carrier, and destination. Now, customs houses focus on improving information quality in order to provide support for more accurate risk assessment and to enhance transparency throughout the entire supply network. In particular, customs has come to require a more diverse and broader range of high-quality information, including the transport route of cargo (current location, destination, etc.), information as to who is involved in each supply stage and what types of cargo, assets, and support systems are involved, in order to secure a swift logistics flow and to strengthen the safety of international cargo loads.

In accordance with these international trends, the Korea Customs Service has developed an Internet-based electronic export/import declaration system (called 'UNI-PASS') and prepared plans for smoother customs clearance. As one approach, an electronic method has been developed which requires a submission of trade-related information and data just once at a single entry point. It appears that this new method may lower costs and increase efficiency, and may contribute significantly to the simplification, standardization and computerization of clearance procedures.

For example, the Korea Customs Service, in 2008, launched a mid- and long-term customs administration improvement strategy (called 67 Tasks for WBC 2012+) in 2008 to realize the objective of World's Best Customs. Furthermore, the government agency has also exerted its strongest efforts to attract new customers by launching the new 'UNI-PASS' brand.

Therefore, this paper has attempted to analyze the problems of current e-clearance system and to propose improvement plans from the perspective of

the computerization of the Korea Customs Service. Also, the aim of this survey is to publish its results widely both domestically and overseas, and to provide materials for constructive discussion on how systems, government regulations and business practices should be in Korea. This paper is organized as follows. First, we are going to evaluate the transition and current trends in e-clearance system. Then, the problems of the systems will be analyzed in detail. After that, we are going to provide suggestions for improvement on the basis of our analysis. For the research method, a literature review(on those papers and journals specifically related to the computerization of domestic customs clearance and reports on the projects promoted by the Korea Customs Service) has also been conducted.

## **II. Overview of the Computerization of Customs Clearance and e-Customs Clearance System**

### **1. Overview of the Computerization of Customs Clearance**

#### **1) Efforts for computerization of customs clearance**

In recent history, international trade has concentrated on prompt cargo transport effected via the standardization and simplification of customs-related regulations. Additionally, the use of information technology and the global standardization of various customs data have become the mainstream in international trade.

Since the 1990s, the simplification of clearance procedures has been discussed through international organizations, including the United Nations(UN), the World Trade Organization(WTO), the World Customs Organization(WCO) and Asia-Pacific Economic Cooperation(APEC). These organizations have agreed to establish a mutual international system predicated on a single window for the legal international trade of goods.

The international standard(UN/EDIFACT) for electronic data interchange (EDI) recognized by the UN was initially established by CEFACT(Center for

Facilitation of Procedures and Practices for Administration, Commerce and Transport) in 1987. Since that time, CEFACT has exerted strong efforts to simplify and improve efficiency in transaction procedures and to facilitate international trade through data standardization with the goal of reducing transaction costs. Furthermore, the inter-governmental body has been involved in legal problems that were caused by the actions taken for the purpose of trade facilitation and has established international rules to facilitate trade in cooperation with UNCITRAL and ICC. In service of this goal, the 'Recommendation on E-Commerce Agreement' was officially announced in May of 2000.

With regard to customs administration, APEC adopted its Trade Facilitation Action Plan (a total of 14 lists) in 2003 in order to establish a rapid and accurate customs information system and to simplify intra-regional customs procedures. In an APEC member state meeting convened in 2007, the APEC Trade Facilitation Action Plan – Stage II (TFAP II) was agreed upon with the goal of an additional 5% reduction in intra-regional business transaction costs by 2010, which appears to have exerted a positive impact on the computerization of customs procedures. This action plan includes the observations of the Revised WCO Kyoto Convention, paperless international trade, cooperation between customs unions, transparent clearance procedures, prior inspections for classification and the introduction of clear appeal systems. Additionally, APEC's Single Window Initiative was established, and the related guideline and roadmap drafts were prepared in 2006. However, as these guidelines were not legally binding, the specific plans for the establishment of this initiative have yet to be mutually agreed upon.

The WTO has attempted to establish standards designed to reduce transaction costs and promote international trade by clarifying Article 5, Article 8 and Article 10 of the General Agreement on Tariffs and Trade (GATT), and by improving customs procedures through discussions regarding trade facilitation. In 2006, the Korean government submitted a proposal on a single window, time-release study and risk management as components of preparation for rule-making negotiations. In fact, Korea has exerted a

continuing effort to have its opinions reflected in the rule-making negotiations as much as possible by actively participating in the negotiations.

The WCO has discussed customs systems such as customs procedures, assessments, classifications, and rules of origin, as well as technical issues such as the computerization of administration, standardization and customs cooperation. For example, the Kyoto Convention on the simplification and harmonization of customs procedures was established in 1973 and partially revised in 1999.<sup>1)</sup> In June of 2002, the Resolution on Security and Facilitation of the International Trade Supply Chain was established for trade facilitation and border safety. Furthermore, the SAFE Framework which requires the simplification of customs procedures via improvements in predictability of the risks involved with customs clearance of export and import goods and travelers' border crossing, as well as the acceptance of various needs associated with international trade, was approved in June of 2005.<sup>2)</sup>

Meanwhile, the achievements accomplished by the WCO in the computerization of customs procedures are as follows: First, the basis for the improvement of work efficiency and the construction of a fast and accurate clearance system has been established. Second, improved customs services have been provided to both exporters and importers, and international competitiveness has been enhanced by the reduction of logistics costs. Third, a new export-import environment which does not require a standard visit to customs and a world-class paperless inspection system has been established.

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1) The formal title of the Kyoto Convention is internationally recognized for the agreement including simplification and harmony of the customs procedures, and Korea has submitted documents agreeing to the ratification of the Convention in 2003, since which time Korea has been preparing for the introduction of the system on trade revitalization which will be proscribed from the treaty hereafter.

2) The proposals of this convention are as follows: ① A standard thesis which provides safety and speed of international supply-chain management ② Integrated supply-chain management comprising all kinds and forms of transportation ③ Cooperation reinforcement between mutual customs officials to deal with the increase in highly dangerous freight disclosure capability ④ Cooperation improvements between customs officials and private citizens ⑤ Speeding up of movement continuously through international trade supply-chains.

Fourth, with the launching of new system connections and information systems, an effective illegal and unfair trade response system has been established. Finally, with the incorporation of the Internet-based method into the conventional EDI system, e-commerce has been facilitated, and Internet-based technology has been developed further as it becomes increasingly common. Based on the expertise on customs-related trade facilitation as shown above, the WCO has maintained its firm standpoint. Therefore, some countries have insisted that the WCO should play a lead role in facilitating customs-related international trade. However, the rules and principles of trade facilitation are still established by the WTO, whereas specific plans are elaborated by the WCO.

## 2) The requirements and achievements of computerization for customs procedures

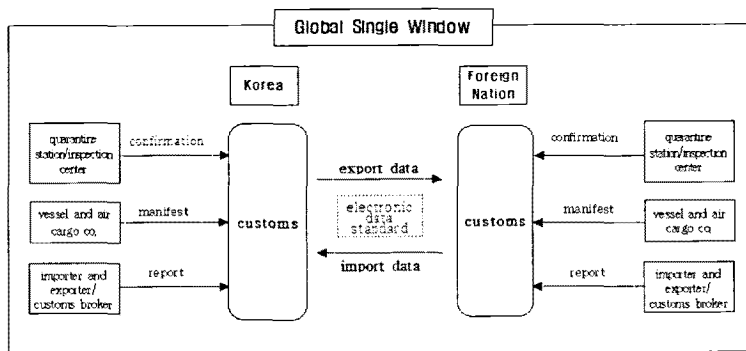
International trade can be expected to further increase trade quantity with the current climate of globalization. As a part of this process, governments in all countries have tried to increase efficiency in distribution processes based on reducing costs and lead times. A large part of this process is the computerization of trade-related government procedures, which are pointed out by exporter and importer as complicated and costly.

In an effort to facilitate customs clearance, the WCO, in June of 1999, established the International Convention on Simplification and Harmonization of Customs Procedures. Its standard guidelines are as follows:

First, user convenience should be emphasized. For this to be realized, information technology should be introduced through sufficient discussion with all parties concerned. Second, process innovation should be conducted via the standardization, simplification, and introduction of efficient management techniques. Third, the customs authorities should permit the submission of e-document evidence and stipulate e-authentication methods. Fourth, the required information should be disclosed and provided appropriately in a timely and accurate fashion. Fifth, the customs authorities should inspect the documentary evidence in person, and the information related to customs

administration should be shared mutually.<sup>3)</sup> Sixth, private information should be properly protected, and a third-party system should be made mutually available. Seventh, cooperation with customs authorities should be promoted, and a mutual administrative support agreement should be signed in order to promote customs control.

[Figure 1] The Construction Plan of Single Window



Meanwhile, the concept of the single window is one of the major principles of the Revised Kyoto Convention, which entered into force in February of 2006. According to Standard 7.4 of the Annexes of the Revised Kyoto Convention, in summary, each country is required to enact or revise domestic laws to give the customs authority the right to keep information for internal use and to share it with other authorized parties via e-commerce techniques. Additionally, the WCO has made the following three different efforts before the Revised Kyoto Convention was announced for the facilitation of information exchange between concerned parties:

First, the development of the Customs Data Model(CDM) in December of 2003 has made it possible to improve the safety of cargo in international trade

3) Customs itself should confirm the data of the concerned agencies when a trader reports to customs through the single window. Goods should be inspected by an authoritative agency, and when a customs authority plans the inspection date, he should control the inspection of those goods and perform the said inspections as soon as possible.

and to enhance information exchange between the custom houses prior to the arrival of cargo. In particular, the CDM has been required to submit documents to the customs authorities just once in order to fulfill all export- and import-related requirements. Therefore, owing to the CDM, it has become possible to establish a more efficient single window with international standardized data sheets and standardized digital messages. Second, in January of 2004, the Unique Consignment Reference(UCR)<sup>4</sup> established a control system through which customs can improve international trade and maintain efficient management techniques. As a result, UCR has made possible inter-state information exchange, as an electronic staple through which the movement of goods can be tracked at all times. Third, the Information and Communication Technology(ICT) guidelines which were announced in June of 2004, have been established to assist customs authorities in making the correct decisions for the improvement of services to concerned parties and customers. Because the efficient information exchange between customs and other governmental bodies has been rendered possible using mutual communication technology, it has become easier to create a favorable environment for the single window.

## 2. Overview of e-Customs Clearance System

The advancement of information and communication technology has made possible a swift and autonomous clearance system. With an increase in international trading volume, in particular, it has been crucial to maintain a scientific customs clearance system for the facilitation of customs clearance with limited resources. Therefore, customs clearance policy has also emphasized the improvement of the customs system for paperless e-clearance.

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4) The UCR(Unique Consignment Reference Number) is the number used to chase and connect with data associated with trade transactions according to the time frame established for exporters' freight as delivered to importers; and ACI(Advance Cargo Information) is the supply of information on a pre-declaration basis regarding the exporter's declaration and freight, for the purpose of better controlling possible risk to the importing country.



In this paper, we have attempted to evaluate the changes and achievements in customs clearance from the perspective of science and computerization.

1) Transitions in e-customs clearance system

The history of e-customs clearance is similar to that of e-trade. In accordance with the 'Six-year EDI-type Customs Administration Automation Plan,' the total customs clearance procedure was simplified and computerized in the 1990s. Since that time, an information and inspection system has been established for exporters, importers, and associated governmental authorities.

The Korean Customs Service initially introduced, in July of 1996 a national EDI clearance system, and improved the basic export-import clearance system from a permit system to a report system. Presently, once import requirements are confirmed according to the legal import declaration, the customs inspection is immediately completed to prevent clearance procedures from presenting an obstacle to the logistical flow. In most items, only formal and legal conditions are inspected. Import declaration prior to arrival or departure can be conducted before the actual delivery of goods.

Since July of 1999, a paperless import clearance system through which import declarations can be filed through a computer network for those businesses designated as 'sincere companies' has been in operation. Since 2000, the customs clearance process has been computerized through the Three-year Customs Administration Computerization Plan(2000), the CMP Action Plan(2005) to modernize customs procedures, and the IT Strategic Plan(2006) to be prepared for the emergence of the ubiquitous environment. Then, the Customs Data Warehouse for the analysis of internal and external data in the Korea Customs Service, Customs Knowledge Management for the creation of new knowledge, and Customs Risk Management have all been established.

To realize e-customs authority, the Korea Customs Service has pursued a user-centered information environment, enhanced the competence of relevant customs administration personnel, and supported e-trade since 2003. In addition to the existing VAN/EDI system, the Internet system was additionally applied to export in July of 2004 and to imports in October of 2005. Because

excessive costs including declaration system establishment costs and transmission costs in VAN/EDI-based export-import clearance systems have emerged as significant problems, it has been recognized that the Internet-based system which is free of time and space restrictions, is considered more advantageous in terms of costs and benefits.

In 2005, a single window was added, which integrated all export and import procedures throughout government organizations. As a result, the e-clearance portal system (referred to as 'UNI-PASS') which provides a one-stop control service by unifying all customs clearance procedures was completed. UNI-PASS is the brand name of the world's first 100% electronic clearance portal system of the Korea Customs Service. Under this system, export-import clearance, cargo management, tariff collection and refunds, and statistical information will all be available. In sum, UNI-PASS is a comprehensive network which facilitates the planning of optimal transportation, export and import, delivery, and customs clearance by providing timely and accurate cargo-tracking information to concerned parties after connecting all export- and import-related parties including carriers, trading companies, customs brokers, bonded warehouses, banks, customs and government agencies in cyberspace.

In 2007, the Korea Customs Service acquired a business model patent from the Korean Intellectual Property Office after establishing an FTA Information Website. Additionally, a cargo management system through which the export and import of bonded cargo which would be declared only through EDI, the loading of shipping instruments, and the sales in a bonded sales network for declaration through the Internet have all been developed.

## 2) Current trends of e-customs clearance system

In late 2008, the Korea Customs Service established its CLEAR Rules of Conduct (Creativity, Listen, Energy, Action and Relationship) and has since promoted 67 specific action plans to realize the objective of achieving the "World's Best Customs" by 2012 in accordance with its mid- and long-term customs administration improvement strategy. The major development

directions are as follows: First, the customs administration system will change from a direct control system to an autonomous management system. Second, the customs administration service will be transformed from an exporter- and importer-oriented service to a public-oriented service. Third, the customs domain will be expanded abroad via the introduction of WCO-centered customs forms and the standardization of e-documents. Fourth, efficient customs will be realized through the development of creative and practical organization and the promotion of human competence.

For this purpose, the Korea Customs Service has continuously promoted 'e-Customs'. For example, the Broadband Convergence Network(BcN), through which telecommunication, broadcast and Internet services can be made available, has been developed. Additionally, the introduction of a wire-wireless integrated clearance information service for the supply of diverse information services and Radio Frequency Identification(RFID) for the management of export-import cargo and vehicles has been promoted.<sup>5)</sup>As a component of resource management techniques to establish a base for a more global clearance environment, enterprise information technology architecture<sup>6)</sup> and an information service management automation system are currently under development.

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5) The BroadBand Convergence Network is a next-generation united network which can be used for BroadBand Convergence constantly and safely, anytime and anywhere ubiquitously as a multimedia platform for guaranteed quality. RFID(Radio Frequency Identification) is a technique for data communication between movable objects and recognition machines via the use of radio frequency.

6) This is the architecture by which systems for the systematic management of information assets can be designed. This guides the system for the projection of management results and the measurements of outcomes, which can assist in the monitoring of unit exploitation business.

### III. Problems of e-Customs Clearance System

#### 1. Problems in Laws and Institutions

##### 1) Deficiency of legal provisions

To transfer collected information to the other customs, risk-related information regarding export-import goods should be shared appropriately between the customs houses. For this purpose, the Revised Kyoto Convention and the WCO SAFE Framework have stipulated regulations for exchanges of information between customs houses. However, Korea has yet to establish a legal basis for the international exchange of information for customs purposes.

In accordance with the Electronic Trade Facilitation Act revised in December of 2005, e-documents and e-signatures have become legally enforceable. However, as the scope of international trade-related laws stipulated in the Enforcement Decree of the Electronic Trade Facilitation Act is governed by Article 248 of Customs Law, however, there may be no legal protection when a legal dispute occurs with regard to e-documents in the customs-related sector. Therefore, it is difficult to expect that Internet-based documents will be properly protected under the current Electronic Trade Facilitation Act, in which the effectiveness of e-documents is partially admitted. Additionally, the critical point is the transmission of documents(ex: customs export and import declaration, special bonded area permission, customs duty notice, etc.) through the communication line in a paperless fashion. The current Electronic Trade Facilitation Act is not sufficient to render these e-documents legally binding.

##### 2) Deficiency of institutional equipment

International organizations, including the WCO and those in many other countries, have operated a variety of programs and systems to promote the customs process. However, officials from the Korea Customs Service remain unenthusiastic regarding the introduction and application of these programs and systems. In particular, many customs officials from the Korea Customs

Service have proven reluctant to change, instead cleaving to old methods.

Even though each main customs station across the nation has been authorized to perform an internal audit and inspection of the customs houses by the Korea Customs Service, there is a great deal of overlap in these duties with a similar level of policy. Despite the computerized customs clearance system, furthermore, the confirmation of international trade, which has been assigned to the Korea Customs Service by other government agencies, has been inappropriately fulfilled.

## 2. Problems in Operation

### 1) Significant expense

It appears that Korea has recently achieved marked growth in the computerization of the customs clearance process. In customs import clearance, however, the paperless clearance rate remains at just 80%. Additionally, financially unstable small and mid-sized export and import companies and customs houses have made expenditures to purchase computers and to educate and train their personnel after introducing new computers and systems. If the customs administration service changes from an EDI system to an Internet portal system, problems may occur in retrieving the investment made by KTNET for the initial adoption of the current EDI system.

With regard to the international trade statistics service, the Korea Customs Service has provided yearly export and import data to the Korea International Trade Association (KITA). On the basis of these data, KITA has proven able to provide export-import international trade statistical services. Because the same international trade services have been provided by both government agencies, a certain amount of budgeted government funds have been wasted and misused.

### 2) Insufficient systematic management

The current information analysis conducted by the Korea Customs Service has been based largely on operational information, rather than strategic

information, regarding customs administration. Additionally, a professional staff base who would be capable of analyzing information over a long time period is lacking. Even though a risk management team has been organized in terms of division of work load, there has, thus far, been no specific work plan or comprehensive management implemented. Therefore, the information analysis-based risk management system has generally performed poorly. Furthermore, its unfamiliarity with the application of security systems in the ubiquitous environment remains a profound limitation.

In the process of switching to an outsourced system in terms of the customs information system, the weakening of basis caused by the reduction of internal information manpower has been pointed out by other researchers. In other words, outsourcing management manpower has proven absolutely insufficient in the Korea Customs Service. Therefore, it is probable that the employees of the Korea Customs Service may have become less competitive than the potential outsourced employees. In addition, the current 1-year outsourcing contract may pose an obstacle to the provision of stable high-quality services. Furthermore, outsourcing companies can handle security duties on export-import clearance. Problems in communication may arise between an employee from the Korea Customs Service and an outsourcing company, as well. In other words, a lack of information sharing with an outsourcing company, compounded by poor education and training, may cause failures in outsourcing.

### 3. Problems in Cooperation

#### 1) Lack of mutual recognition function

In Korea, the e-trade platform was established in 2008 by the Ministry of Knowledge Economy, and the e-customs system has been operated by the Korea Customs Service. As a consequence, there have been two single windows, and this has caused a dispute between the governmental bodies(Ahn and Han, 2006).

From the international perspective, no agreement that admits e-signatures

has yet been signed between Korea and a foreign country. However, this has nothing to do with the government's position. Many advanced countries have developed e-commerce protocols, which are led by the private sector rather than by the government. In fact, most certification organizations originate from private companies. When an e-document with an e-signature issued by a foreign private certification organization is received, it comes down to whether or not the document is legally binding according to domestic law.

## 2) Lack of cooperative system

Recently, the demand for information between government bodies and exporters and importers has increased since the establishment of the current single window clearance system. However, the Korea Customs Service has provided only basic-level services. From the internal perspective, the individual information systems of the Korea Customs Service have been developed over a long period of time. Additionally, they have been operated by different departments. Therefore, it has proven difficult to create any synergy effect, despite strenuous efforts to integrate the user environment.

Previously, customs administrations has been handled individually by each division, with a marked lack of cooperation between divisions. Furthermore, they were reluctant to request help from independent experts. Even though each declaration can be individually calculated with a computer, information and knowledge systems, and intelligence systems through which comprehensive assessments and risk management can be conducted remain in their embryonic stages in terms of utilization. Owing to individual system developments for each task, a lack of connection between systems and the poor performance of cooperation systems in the computerization of customs clearance, the required papers have become both complicated and redundant, which has consequently slowed the process of simplification of customs procedures.

## IV. Improvement Plans for a Facilitated e-Customs Clearance System

The Korea Customs Service has significantly improved work efficiency via the development and implementation of criteria and standardized procedures via an e-customs clearance system. This computerized customs system has saved time, reduced cost and improved transparency in customs administration. With the introduction of a risk management system, furthermore, each duty has been handled through selection. On the basis of these improvements, this paper has attempted to discuss new plans for the establishment of a smooth e-customs clearance system.

### 1. Establishment of a Global Single Window

Countries with single windows have either integrated the existing computer network of governmental organizations or have jointly established and operated an integrated system after acquiring mutual consent from the associated governmental bodies. To avoid redundancy and confusion in an investment for a single window, therefore, the Korean government must keep itself well prepared against the establishment of a u-trade platform by the Ministry of Knowledge Economy and interconnected operations with the e-customs clearance system of the Korean Customs Service. Furthermore, it will be crucial to standardize and computerize related documents in order to unify and simplify customs clearance procedures. Also, data exchange should be promoted with countries from which great efficiency is anticipated. For all these efforts, well-designed infrastructure through which information resources which could be essential in establishing a global single window could be appropriately managed should be developed in advance.

The specific plans in this regard are as follows: First, with regard to clearance-related e-documents, the international standards recommended by the WCO or the UN should be accepted. Then, the work process should be redesigned in order to implement export-import clearance procedures that



meet the relevant standards. Second, the distribution base for the computerization of customs clearance should be developed. In other words, BcN, through which communication, broadcast and the Internet services can be made available should be developed. Furthermore, the wire-wireless integrated clearance information service for the provision of diverse information services and Radio Frequency Identification(RFID) for the management of export-import cargo and vehicles should be introduced as soon as possible. Third, the Korea Customs Service must foster cooperation with a professional private company with full support, in order to provide valuable information and knowledge from the customs single window. Concurrently, improvement plans should be developed via internal computer-assisted audits or independent information systems management techniques for a comprehensive analysis of the current information system. Furthermore, the latest information regarding the customs administration information system should be disclosed in order to prevent any errors in advance, and an independent expert should be scouted in order to improve and maintain transparency.

## 2. Development of Legal and Institutional Equipment

In the future, in order to promote the construction of single-window system, cooperation between government agencies will be an important issue. In the construction of automated systems that go beyond port and customs procedures to link government agencies and the private sector from now on, it will be necessary to take into account and balance the interests of government agencies and private sector firms. It is hoped that the government will exercise it initiative forcefully. For this level of coordination and initiative, the necessary legal and institutional apparatus, as well as sound infrastructure, should be developed. For this, the following actions will be required:

First, with regard to advanced electronic submission, Korea has not yet been able to meet international standards and trends. In order to overcome this, the Korean government must effectively control customs and promote the

facilitation of clearance procedures through the establishment of laws that would back up the transfer of collected information to the customs house of the other country.

Second, in order to eliminate any obstacles to the clearance procedure, clearer legal grounds regarding legitimate controls and minimum necessity must be established(Lee, 2005). Therefore, an e-customs clearance system requires verification of the legal validity of Internet-based digital documents between the Korea Customs Service and users.

Third, laws should be revised to admit mutual recognition between certification organizations, in lieu of international agreement-based mutual recognition between governments. Flexible and prompt responses should follow(Ahn, 2004).

Fourth, Korea must develop its own institutional equipments through which trading companies can send information to a single window system and rapidly receive an approval from the Korea Customs Service and other governmental authorities. In other words, because it is certain that CDM and UCR, which are targeted toward providing customs clearance procedure and tracing routes until the goods are delivered to an import shipper would become international standards, the Korean government must necessarily improve its own institutions. For this purpose, an assistance center and education and training services should be established prior to execution and taken advantage of as a means of responding to system errors. Furthermore, in order to establish a standardization that meets the single window environment, a mutual cooperative network with related domestic organizations should be developed(Lee, 2006).

### 3. User-centered Quality Management

The final purpose of computerization of customs clearance procedure is to reduce costs and lead-times to a minimum, and it is important that users can receive the benefits of this. In order to eliminate users' dissatisfaction and allow more trade related enterprises to utilize the system, it is imperative that

great efforts be made to improve the quality of user-centered management. In service of this objective, the specific plans required are as follows:

First, a system which can monitor and remotely diagnose and resolve system errors should be established to provide tailor-made services and improve operational efficiency. At the same time, it is necessary to build a cooperative system to share information and promote comprehensive management for efficient operation.

Second, the knowledge management system of the Korea Customs Service should evolve from a simple knowledge warehouse to an intelligent base connected with an individual work system on a realtime basis, in order for appropriate decisions to be made. Thus, a special knowledge management division should be organized, or a professional agency should be outsourced(Kim, 2007).

Third, the standard manual of clearance procedures should be employed across all sectors and approved as international standards. Additionally, the UN 'Excellent Administration' prize should also be obtained. For this purpose, user-centered contents(Import: loading of cargo, customs import permits and domestic transaction/export: transfer of cargo into bonded area, customs export permit, shipping, and departure from port) should be secured.

Fourth, there is an urgent need for the adoption of a stronger authentication system to secure stability in terms of between-user security. Furthermore, it is important that authentication system be designed to create more attractive plans and participation incentives into smaller companies that at present have a low level of participation. The design of authentication system must be optimized to provide maximum benefit to both users and government agencies.

#### 4. Enhancement of an International Cooperative System

Korea needs to make an accurate diagnosis and develop tailor-made countermeasures, and also needs to develop competencies for the improvement of clearance procedures in consideration of different conditions pertaining among countries. For this, an inter-state cooperative system will be essential.

In particular, it is important that the core principles discussed in international organizations to improve customs clearance and strengthen international cooperation be actively accepted and fulfilled. Then, goals and priorities should be established and the information should be disseminated to the countries concerned. For this purpose, the specific plans required are as follows:

First, cooperation between concerned parties including exporters and importers should be enhanced, and a cooperative governance regime should be established to provide tailor-made services on a realtime basis.

Second, a cooperative system with other countries should be enhanced via the gradual introduction of the clearance procedure standardization and simplification projects that have been suggested in the Revised Kyoto Convention, including the Customs Data Mode(CDM), which has been promoted by the WCO for the implementation of advanced customs administration.

Third, cooperation with related governmental authorities such as the Ministry of Foreign Affairs and Trade and the Ministry of Knowledge Economy should be strengthened in an effort to thoroughly reexamine the contents of the 'WTO Doha Development Agenda negotiations for trade facilitation', and these should be reflected in the international rules.

Fourth, the export and advertisement of an e-customs clearance system should be promoted further through the UNI-PASS system. For this, strategic export activities including information-technology consulting on exporting countries, invitational seminars and the dispatch of experts are required with regard to Korea's UNI-PASS clearance system<sup>7)</sup>

Additionally, the UNI-PASS export package, which meets the customs administration environment of exporting countries, should be developed in order to retain competitiveness. Based on these export projects, the Korea

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7) Customs services can be improved via study and training by inviting personnel working in the customs offices of the major export countries and informing them about the merits of UNI-PASS at WCO and ASEAN meetings on customs as a major public relations activity developed for international organizations.

Customs Service will be able to improve its international reputation and to create a favorable atmosphere for the adoption of a Korean e-customs clearance system that fully meets international standards. Finally, a smooth and rapid e-customs clearance procedure should be promoted via the establishment of mutual recognition arrangements on export-import logistics security systems between the customs houses.

## V. Conclusion

It has no doubt that the e-trade system, which has developed in the wake of advances in information technology and the proliferation of the Internet, has contributed significantly the facilitation of international trade. In particular, this system has been applied to the core duties of e-trade, customs export-import clearance, reduced customs clearance time, and improved individual productivity. Considering these trends, it appears desirable that the new Korean e-customs clearance system should be promoted via an integrated approach in terms of the supplier's and user's aspect, system and service infrastructure.

The Korean government has supported international organizations' move to simplify customs clearance protocols, and has exerted continued efforts to assist in this process. The Korea Customs Service has also focused on shortening customs clearance time, reducing logistics costs, customer support, fair international trade, the development of a digital export-import environment that does not require a visit to the customs, and the establishment of an Internet-based customs clearance system.

The principal objective of this paper was to investigate the duties of top priority from the perspective of the development of an e-customs clearance system. In service of this goal, the progress and trends of the simplification and improvement of the efficiency of customs clearance procedures, which have been previously discussed in many international organizations, have been assessed. Concurrently, the problems inherent to the existing e-customs

procedures and the plans to improve the e-customs clearance system have been under review. As a consequence, the following results have been obtained:

First, the substructure of the e-customs clearance system, which is the basis for the establishment of a global single window, should be developed into a modern and advanced system to secure stability and reliability for the systematic management of information resources.

Second, additional improvement of the law will be required to render the Internet-based export and import documents legally binding. Furthermore, a tailor-made systematic education and training program will be necessary to assist concerned parties in gaining basic knowledge of the e-customs clearance system.

Third, customized services should be provided to improve the operating efficiency of the e-customs clearance system. Additionally, user-centered quality management protocols should be established via connections with the systems already existing in governmental bodies.

Fourth, the reputation of Korea's e-customs clearance system should be improved by strengthening the cooperative system between concerned parties including exporters and importers.

As shown above, it appears that a variety of innovations of Korea's e-customs clearance system will be required to overcome the problems that currently hinder the development of a smooth and simplified customs clearance system. Additionally, if the plans suggested in this paper are considered within the context of the Korean customs clearance system, an information technology-based system must be developed that features close cooperation with associated industries.

## REFERENCES

- Ahn, Byung-Soo(2004), "A Study on the Utilization of Electronic Documents in the Import/Export Clearance Procedures", *The Journal of Korea Research Society for Customs*, Vol. 5, No. 2, pp. 1-20.
- Ahn, Byung-Soo and Min-Chang Han(2006), "A Study on the Requisites of Single Window for International e-Trade in Korea", *The e-Business Studies*, Vol. 7, No. 5, pp. 309-329.
- Goh, J.(2000), "Trade Facilitation in the Asia Pacific: New Directions and the Development Challenge in Customs Modernization", Paper presented at World Bank and APEC Workshop on Trade Facilitation.
- ICC(2003), *ICC Customs Guidelines*.
- Kim, Joong-Gyen(2005), "A Study on the Single Window in Electronic Trade", *The journal of Korea Research Society for Customs*, Vol. 6, No. 1, pp. 83-102.
- Kim, Tae-In and Su-Young Kwak(2008), "A Study on Electronic Clearance System(UNI-PASS) in Korea", *The Journal of Korea Research Society for Customs*, Vol. 9, No. 4, pp. 69-87.
- Kim, Young-Chun and Geun-Woo Ryu, Seoung-Ho Shin(2007), "A Empirical Study on the Modeling Risk Management for Customs Administration", *The Journal of Korea Research Society for Customs*, Vol. 8, No. 4, pp. 113-132.
- Korea International Trade Association(2006), *History of Korean Trade*.
- Korea Customs Service(1999), *Plans for Reformation of Tariff Administration in 21st Century*
- Korea Customs Service(2000), *Three-year Comprehensive Plans for Tariff Administration Computerization*.
- Korea Customs Service(2005), *CMP Action Plan Investigations for a Customs Modernization*.
- Korea Customs Service(2006), *Computerization Strategic Planning for a Ubiquitous Environmental Confrontation*

- Korea Customs Service(2008), *The Mid-long Term Tariff Administrative Development Strategy for World Best Customs Realization*
- Mann, L. C.(2000), "Electronic Commerce and Trade Facilitation in APEC", Paper presented at World Bank and APEC Workshop on Trade Facilitation.
- Lee, Nam-Koo(2005), "A Study on WTO Trade Facilitation and its Policy Implications for Korea", *The Journal of Korea Research Society for Customs*, Vol. 6, No. 1, pp. 139-162.
- Lee, Bong-Soo(2006), "A Study on the Innovation of Export and Import Conditions for Electronic Trade", *Journal of International Commerce and Law*, Vol. 31, pp. 137-153.
- Lee, Bong-Soo(2008), "A Study on the Improvement of Clearance Procedure for Electronic Trade", *Journal of International Commerce and Law*, Vol. 37, pp. 257-277.
- Ryu, Geun-Woo and Young-Chun Kim(2007), "A Study on Acceptance of CDM/UCR as e-Customs Clearance Procedures", *International Commerce and Information Review*, Vol. 9, No. 2, pp. 327-350.
- Sohn, Byung-Jo(2007), "An Empirical Analysis on Factors Affecting the Usage of Single Window Customs for Global e-Trade", Ph.D Dissertation, Yeungnam University.
- Song, Seon-Uk(2006), "Understanding and Application of Unique Consignment Reference(UCR) for Security and Trade Facilitation", *The Journal of Korea Research Society for Customs*, Vol. 7, No. 2, pp. 411-432.
- Song, Seon-Uk(2007), "A Study on the Advance Electronic Submission of Customs Data for Efficient Customs Control", *The Journal of Korea Research Society for Customs*, Vol. 8, No. 4, pp. 1-22.
- UN/CEFACT(2005), *Recommendation and Guidelines on Establishing a Single Window(Recommendation No. 33)*.
- UN/CEFACT(2006), *Single Window and Data Harmonization*.
- Um, Kwang-Yeol and Seon-Uk Song(2003), "A Study on the Electronic Clearance System of the Advanced Countries and Korea", *International Commerce and Information Review*, Vol. 5, No. 2, pp. 185-204.



- WCO(1999), Kyoto Convention General Annex Guidelines.
- WCO(2003), Customs Guidelines on Advance Cargo Information(ACI).
- WCO(2003), WCO Customs Data Model Handbook.
- WCO(2004), WCO Unique Consignment Reference(UCR).
- WCO(2004), Kyoto ICT Guidelines.
- WCO(2005), Framework of Standards to Secure and Facilitate Global Trade.
- WCO(2007), SAFE Framework of Standards.
- WTO(1999), Protocol of Amendment to the International Convention on the Simplification and Harmonization of Customs Procedures.
- WTO(2001), WTO Workshop on Technical Assistance and Capacity Building in Trade Facilitation.

## ABSTRACT

### Dynamic Perspectives on the Advancement of Korea's Electronic Customs Clearance System

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This thesis examines the problems faced in the clearance procedures of Korea's e-customs system for which improvements are necessary, and suggests various ways of overcoming those problems.

Practical implications regarding the advancement of Korea's e-customs system are as follows. First, the substructure of the e-customs clearance system, which is the basis for the establishment of a global single window, should be developed into a more modern and advanced system. Second, additional improvements in the law are required to render the broad array of Internet-based export and import documents legally binding. Third, customized services should be provided in order to improve the operating efficiency of the e-customs clearance system. Fourth, the reputation of Korea's e-customs clearance system should be raised via the strengthening of a cooperative system between concerned parties, including exporters and importers.

This innovative approach to systematic improvements will come about when we can simplify current customs clearance procedures and establish a fairer customs inspection administration regime. Additionally, when we review the methods intrinsic to our customs system, we must emphasize the urgency of proper completion of related systems and arrangements in the trade business and similar fields.

Key Words : Trade Facilitation, e-Customs Clearance System, Single Window
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