

Digital infrastructure for the internationalization of small and medium-sized enterprises in the Republic of Korea

Joonho Lee



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Joonho Lee



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Acronyms

ADB	Asian Development Bank Institute
APEC	Asia-Pacific Economic Cooperation
APIS	Advanced Passenger Information System
ASEAN	Association of Southeast Asian Nations
B2B	Business to Business
B2C	Business to Consumer
B/L	Bill of Lading
BMS	Business Matching Service
CLIS	Client-Oriented Logistics Information System
C/O	Certificate of Origin
C/S	Customer Service
CUPIA	Customs UNI-PASS International Agency
D/A	Document against Acceptance
D/O	Delivery Order
D/P	Document against Payment
EDIFACT	Electronic Data Interchange For Administration Commerce and Transport
ERP	Enterprise Resource Planning
EU	European Union
EXIM Bank	Export-Import Bank of Korea
FKI	Federation of Korean Industries
FTA	Free Trade Agreement
F/X	Foreign Exchange
GLC	Global Competency Level Test
GMD	Global Market Developer
GOMD	Global Online Market Developer
GVC	Global Value Chain
ICT	Information and Communication Technologies

IRM	Integrated Risk Management
I/V	Invoice
KBIZ	Korea Federation of SMEs
KCCI	Korea Chamber of Commerce and Industry
KCS	Korea Customs Service
KEB	Korea EDIFACT Board
KEC	Korea EDIFACT Committee
KFS	Korea Forest Service
KFTC	Korea Financial Telecommunications and Clearing Institute
KIBO	Korea Technology Finance Corporation
KIEC	Korea Institute for Electronic Commerce
KIPO	Korean Intellectual Property Office
KISED	Korea Institute of Start-up and Entrepreneurship Development
KITA	Korea International Trade Association
KODIT	Korea Credit Guarantee Fund
KOREG	Korea Federation of Credit Guarantee Foundations
KOSBI	Korea Small Business Research Institute
KOSME	Korea SMEs and Startups Agency
KOTEC	Korea Technology Credit Guarantee Fund
KOTRA	Korea Trade-Investment Promotion Agency
KSURE	Korea Export Insurance Corporation
KTNET	Korea Trade Network
KVIC	Korea Venture Investment Corporation
LAC	Latin America and the Caribbean
L/C	Letter of Credit
L/G	Letter of Guarantee
MAFRA	Ministry of Agriculture, Food and Rural Affairs
MCN	Multi-Channel Networks
MFCS	Manifest Consolidation System
MOEF	Ministry of Economy and Finance
MOLIT	Ministry of Land, Infrastructure and Transport
MOTIE	Ministry of Trade, Industry and Energy
MSIT	Ministry of Science and ICT
MSME	Micro, Small and Medium Enterprise
MSS	Ministry of SMEs and Startups
NABO	Korea National Assembly Budget Office
NIA	Korea National Information Society Agency
NSW	National single Window
O ₂ O	online to offline marketing
OECD	Organization for Economic Cooperation and Development
OGA	Other Government Agency
PAA	Pan Asian ecommerce Alliance
P/L	Packing List
PTP	Paperless Trade Platform
SBC	Korea Small and Medium Business Corporation
SBDC	Korea Small Business Distribution Center
SEMAS	Korea Small Enterprise and Market Service
S/I	Shipping Instruction
SMBA	Korea Small and Medium Business Administration

SME	Small and Medium-sized Enterprises
SNS	Social Network Sites
S/R	Shipping receipts
SSO	Single Sign On
SW	Single Window
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TIPA	Korea Technology and Information Promotion Agency for SMEs
UNECE	United Nations Economic Commission for Europe
VAN	Value Added Network
VAP	Visitor Assistance Program
WEF	World Economic Forum
WCO	World Customs Organization
WTO	World Trade Organization

Introduction

The term “internationalization” refers to “the process of increasing involvement in international operations” (Calof and Beamish, 1995; Welch and Luostarinen, 1988). Theories around internationalization began to emerge in the early 1960s. Hymer (1960) emphasized the intangible assets related to the size of the company as an essential condition for the internationalization of the company. For his part, Vernon (1966) linked the process of internationalization to multinational firms.

Theories and models applicable to the internationalization of SMEs emerged in the mid-1970s. The Uppsala Model, developed in the 1970s, describes internationalization as a succession of incremental decisions, being a process of “acquisition, integration and gradual use of market and international operations intelligence, and knowledge of continual involvement in the foreign market” (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). The innovation model constructed by Bilkey and Tesar (1977) also views internationalization as a sequential and cumulative process. These internationalization models applied to SMEs as well as large firms, with exports as the preferred method of expansion for SMEs.

In the 1990s and 2000s, globalization and the spread of global value chains (GVCs) placed the concept of internationalization in a broader perspective. The holistic view does not only consider its external dimension, such as the exports of goods and services but also its inward aspect in terms of imports (Fletcher, 2001). Recent studies on internationalization analyze trade in value-added instead of gross terms and track how firms integrate into GVCs (OECD, 2013).

In many countries, support programs for the internationalization of SMEs focus primarily on export promotion. In member countries of the European Union (EU), for example, support instruments for firm internationalization emphasize export promotion, without necessarily promoting innovation activities of SMEs needed for this process (Lilischkis and others, 2016). A survey by OECD and APEC (2006) showed that over 70% of the SME internationalization support programs of surveyed countries support the SMEs’ exports.

Korea's government created in 1965 the "National Council for the Promotion of Export and Investment", which has met every month until today.¹ This Council has discussed government measures to promote exports and support exporting companies. Private sector representatives have reported obstacles to exports to the country's President and proposed possible solutions.²

The Ministry of SMEs and Startups (MSS)³ and other ministries also promote exports of SMEs' in the sector they support.⁴ Each agency has its policy implementation agencies, programs, and services to support SMEs' exports. Over the last 20 years, most ministries and agencies have digitalized their services to facilitate the access of SMEs to their trade support programs.⁵ Due to their overlapping roles and functions, however, these agencies have been criticized for their inefficiency and overly complex instruments (Lee and Ko, 2009; Cho and others, 2014; KIET, 2018).

The development of new digital technologies and the internet have greatly enhanced the adoption of e-commerce, e-payments, and e-documents. This digitalization has increased business efficiency and transparency, improved access to information, and reduced the time and cost of running a business. Moreover, this has changed the way to conduct trade, interact with marketplaces, and develop marketing strategies.

The government started the transformation of the trade-related infrastructure services using digital technologies in the early 1990s. In 2013, Korea ranked 3rd globally in terms of ease to trade across borders (World Bank, 2013), while in 2017, the country ranked second in the overall implementation levels of trade facilitation and paperless trade measures among 44 Asia-Pacific countries (UNESCAP, 2017).

This report reviews the development of Korea's national digital support system for SMEs' exports. It also examines how the digitalization of this support has increased the country's export competitiveness of SMEs, looking for possible lessons for countries in Latin America and the Caribbean (LAC).

¹ This Council was chaired by the country's President, while its participants came from most ministries and private sector. In 1977, its name changed to the "National Council for Promotion of Trade and Investment". Except an interruption between 1986 and 1998, the Council has functioned until today.

² Policies related to export promotion, coordinated by the Ministry of Trade, Industry and Energy (MOTIE), continue to be one of the key areas within the government. Most support instruments refer to "SMEs' export support" instead of the 'internationalization' of SMEs".

³ This Ministry was created in 2017 and replaced the Small and Medium Business Administration (SMBA), which was an affiliated government agency.

⁴ For example, the Ministry of Agriculture operates export support programs only for the SMEs in agriculture, while the MSS targets all SMEs.

⁵ Digitalization is defined in broad terms, including the establishment of web-based information, web-based application systems for government services and automated trading systems. Service platforms include both public and private trade support programs and services.

I. Digitalization, digital trade, and export

A. Digitalization and digital trade

The term “digitalization”⁶ refers to the process of integrating digital technologies, such as the internet, into everyday life. The digital transformation has reduced the costs and time required to engage in international trade, facilitated the coordination of GVCs, helped to diffuse ideas and technologies, and increased connections between businesses and consumers across the globe.⁷

The term “digital trade”, however, has no single, globally accepted definition. Therefore, discussions on digital trade are fragmented, and studies on the topic follow different approaches. A narrow definition refers to trade in digitized products, while a broader definition suggests the use of digital technologies to conduct business (OECD, 2019). Instead of “digital trade”, the World Trade Organization (WTO) uses the term “electronic commerce” (or “e-commerce”), defined as the “production, distribution, marketing, sale or delivery of goods and services by electronic means”.⁸ The scope and definitions of “digital trade” or “trade digitalization” vary across countries and organizations. This report uses “digital trade” and “electronic commerce” interchangeably.

Another frequently used term in the area is “paperless trade”. When goods and services cross borders, information and forms exchanged between private firms and public institutions, including sellers and buyers, suppliers, logistics operators, customs, and regulatory agencies. Paperless trade refers to the digitization of these information flows, including the exchange of electronic trade-related data and electronic documents (UNECE and WEF, 2017).⁹

⁶ Digitalization differs from digitization, The latter is the process of converting something to a digital form (see <https://www.merriam-webster.com/dictionary/digitization>).

⁷ For more information, see “The Impact of digitalisation on trade”, www.oecd.org/trade/topics/digital-trade/.

⁸ For more information, see https://www.wto.org/english/thewto_e/minist_e/mc11e/briefing_notes_e/bfecom_e.htm.

⁹ A more formal definition is “taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form”, see the Framework Agreement on the Facilitation of Cross-border Paperless Trade in Asia and the Pacific (FA-PT) adopted by Member States of UNESCAP in May 2016 (Duval and Mengjing, 2017, p. 1).

In 1989, the Korean government introduced the term “trade automation” with the adoption of its “Basic Plan for Comprehensive Trade Automation”. After 2005, it started using the word “electronic trade” until the term “digital trade” appeared in the title of the government plan “Digitalization of trade infrastructure of Korea” in 2019. Recently in 2020, Korea has promoted the establishment of a paperless trade system based on digital technologies. In this context, it has mixed the terms “trade automation”, “electronic trade”, and “digital trade” such that “Electronic commerce” refers to all kinds of on-line transactions.

In this report, a digitalized “trade-related system” covers three categories:

- the digitalized “trade processing system” (or paperless trade system) covers all administrative processes carried out by trade-related organizations involved in cross-border transactions, such as banks, customs, and freight forwarders;¹⁰
- the “trade support system” includes websites that provide trade (or internationalization) support programs and services, operated by public/private business promoting organizations. These public platforms offer various kinds of information and are available around the clock to carry out administrative procedures in a digitalized environment;¹¹
- websites for online transactions, including public and private online shopping malls. Their purpose is to encourage SMEs' e-commerce exports. These online shopping malls increased after the early 2010s.

B. A firm’s value chain and export

1. A firm’s value chain

For an SME, selling abroad instead of in the domestic market requires more sophisticated capabilities. Entrepreneurs face diverse and complex challenges and responsibilities in their export processes. Diagram 1 shows a general description of an export process within a firm’s value chain (Porter, 1985).

A firm’s value chain refers to “a manufacturing (or service) organization made up of subsystems with inputs, transformation processes, and outputs. These subsystems require resources —money, labor, materials, equipment, buildings, land, administration, and management.”¹² Porter (1985) defined the following primary activities:

- inbound logistics: all activities required to receive and store inputs;
- Manufacturing and operations: processes to convert inputs into a final product or service;
- Outbound Logistics: delivery of goods and services to customers.

The value chain also includes secondary or support activities that increase the efficiency of primary activities:

- Marketing and sales;
- Services: activities to maintain products and enhance relations with customers;
- Procurement: the acquisition of inputs;

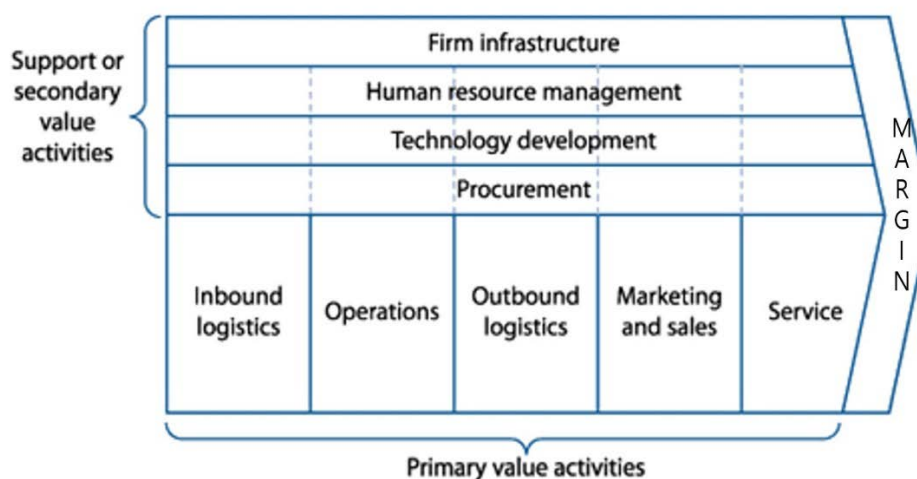
¹⁰ In 1991, the government created the Korea Trade Network (KTNET) to accelerate the digitalization of the trade processing system. KTNET operates the web-based digital website ‘UtradeHub’, which is a single window for paperless trade.

¹¹ For example, SMEs can apply for government support programs and submit necessary documents online.

¹² See Institute for Manufacturing, “Decision Support Tools: Porter’s Value Chain”, Cambridge University, <https://www.ifm.eng.cam.ac.uk/research/dstools/value-chain/>.

- Infrastructure: functions or departments such as planning, finance, legal affairs, quality control, and management;
- Human resource management;
- Technological development and innovation.

Diagram 1
A firm's value chain



Source: Porter (1985), *Competitive advantage: Creating and sustaining superior performance*, New York: Free Press.

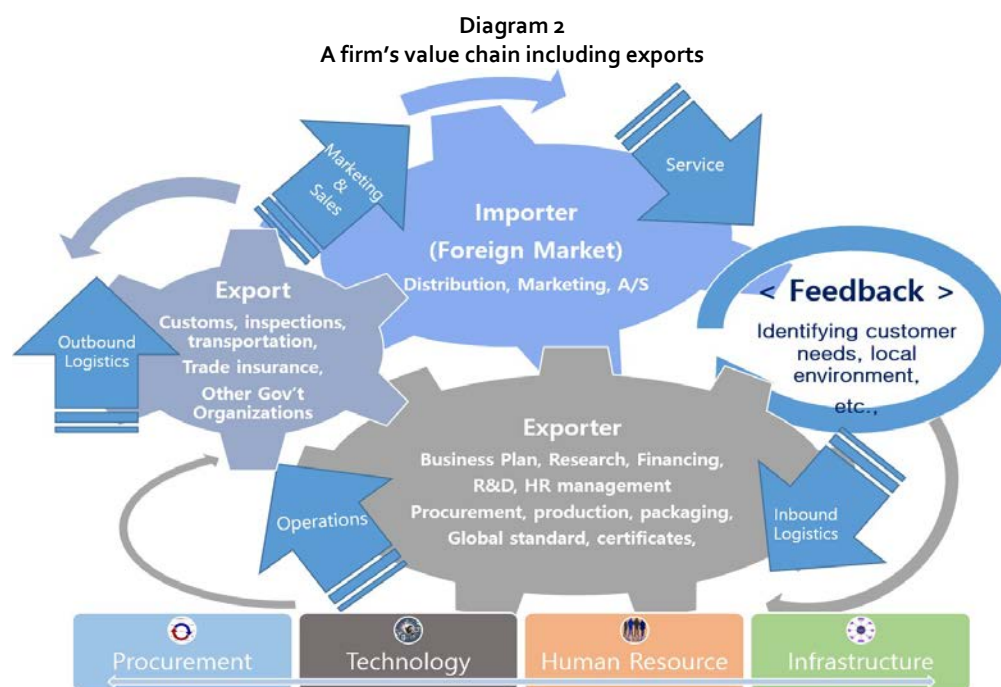
2. A firm's export value chain

A firm's export value chain includes activities beyond the country's border (see diagram 2). All primary activities include actions outside the national territory, including logistics abroad for the delivery of goods and services to foreign customers, marketing, sales, and services. For SMEs, these international tasks are difficult and complicated.

The secondary support activities of an exporting firm also take place within an international context. Procurement, human resource management and innovation should take into consideration the value chain beyond the border. A firm's support infrastructure, including functions such as planning, finance, legal, quality control, and management, also must be designed and operated as an international business.

A firm's value chain requires several transformations when it starts selling abroad. First, outbound logistics in the export value chain include the delivery of goods and services to clients abroad, which requires many new activities. Second, the scope of the business value chain becomes much broader, requiring knowledge on export rules and terms, cultures, and foreign customer's preferences. Moreover, the company needs to know about issues like international suppliers, products, technology, financial abilities, and foreign partner companies.

A firm's value chain, including exports, is a circular chain of activities (see diagram 2). Firms need to collect different types of information on, for example, customer preferences, technology, business customs and laws, and nontariff barriers. In turn, the firm needs to incorporate this information into its international business strategy.



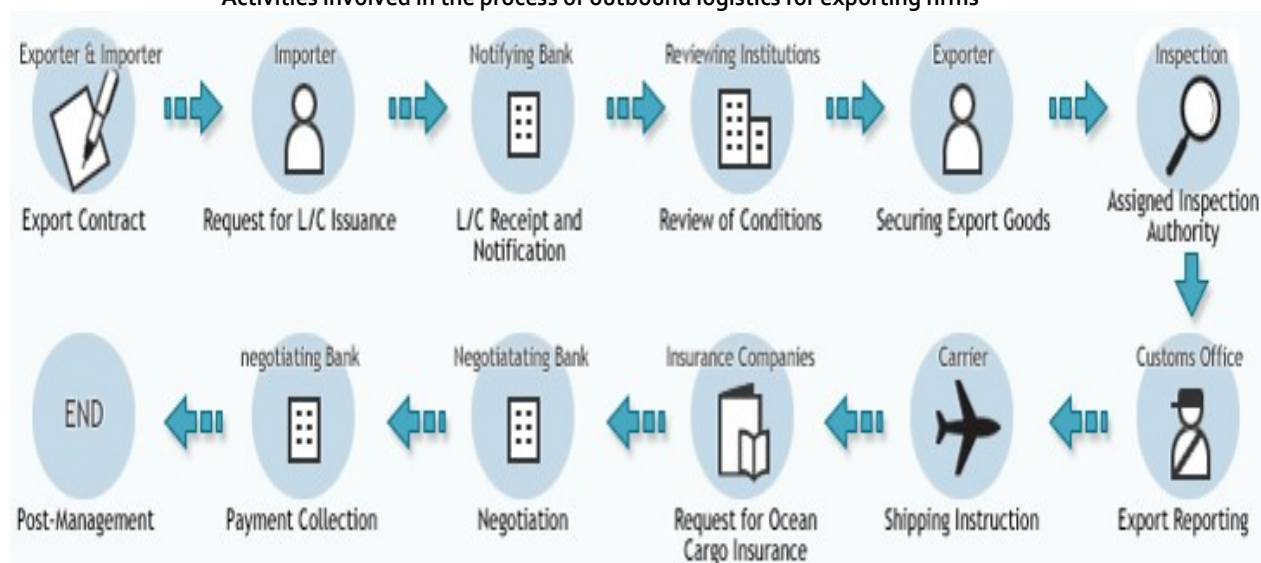
Source: Elaboration by the author.

Within a firm's primary activities, outbound logistics requires specific attention because of its technical nature. Diagram 3 depicts the general process and associated activities of selling products abroad. A manager must deal with many complex issues. These include arranging a Letter of Credit (L/C) with a bank, contracting international freight transport and insurance for its exported products, clearing customs, and collecting international payments. For SMEs that start selling abroad, these activities are complex and often require the hiring of experienced workers in international business or subcontracting of specialized service providers.

Selling in foreign markets requires much more knowledge than selling at home. An SME needs to develop an international business strategy based on information about clients in foreign countries. For a small company with limited resources, hiring workers with international experience is often too costly. Moreover, the required knowledge is often too demanding for managers and business owners.

In the context of complex export operations and limited resources, SMEs require government support to assist these firms in their export-oriented value chains. Therefore, in many countries, various organizations support SMEs' exports through various policy measures. The diffusion of digital technologies has facilitated an increase in the volume of public support services through digital platforms. These digital platforms include websites that provide information and export support services, as well as websites that handle export processes known as paperless trade or the digital trade system.

Diagram 3
Activities involved in the process of outbound logistics for exporting firms



Source: Export Process (www.utradehub.or.kr/porgw/english/html/eng_services_o2.html).

II. Development of digital trade system in Korea, and SMEs

A. Development of digital trade system in Korea

1. Initiation and expansion

In 1989, the Ministry of Trade and Industry started to implement its “Basic Plan for Comprehensive Trade Automation”. In the same year, it created a Working Group to implement this plan, which prepared a draft law on trade automation. In April 1990, it established “Project Group for Prosecution of Comprehensive Trade Automation” to monitor the implementation of this plan.

In 1991, the government promulgated the “Act on the Promotion of Trade Automation”. This Act aimed to promote the competitiveness of the Korean export sector by facilitating the use of electronic documents and promoting office-automation for trade. Since then, it has implemented various legal reforms and practical initiatives to enhance paperless transactions of Korean companies.

Based on this 1991 Act, the Korea International Trade Association (KITA) created the Korea Trade Network (KTNET) for the automation of trade processes as a Trade Automation Business Operator. The 1991 Act established a framework for Electronic Data Interchange (EDI), which has facilitated paperless trade and automated administrative processes of many public and private export supporting organizations, such as banks and insurance companies.

In 1999, the government enacted the “Digital Signature Act” and the “Framework Act on Electronic Transactions”. The latter Act established the basic framework for digital signatures and their promotions. The law was completely revised in 2002 to clarify legal relations, improve customer protection and privacy, and promote e-transactions.

From the early 2000s, the government started promoting the National Single Window (NSW), following global trends. The development and operation of the NSW or the Paperless Trade Platform (PTP) required the establishment of a more robust legal framework.

In 2003, the government created the "National Electronic Trade Committee" to accelerate the digitalization of the national trade system and to facilitate electronic trade. The Prime Minister chaired this Public-Private Committee, which included ministers from export-related ministries and CEOs of export-related public organizations and private federations. The Committee operated a Working Group chaired by the Vice-Minister of the Ministry of Economy. The Committee and Working Group ended in 2015.

2. Integration and regionalization

In the 1990s, the electronic trade system was developed within a closed network relying on EDI and a Value Added Network (VAN). In 1994, the EDI entered operation to process export/import licenses and L/C, and handle export and import processes. In 1997, EDI started processing Certificated of Origin (C/O).

The organizations involved in export processes (such as banks, customs, freight forwarders, inspection agencies, and other government agencies) continued to develop their ICT platforms and simplify administrative procedures. However, exporters still had to visit each platform separately in the export process as these platforms were not interconnected. Hence, the government realized the need to integrate these platforms into a single digitalized platform.

In 2004, the government presented a masterplan to accelerate the establishment of the nationwide electronic/digital platform for trade. This "Innovation Plan for Electronic Trade: e-Trade Korea 2007" was submitted to the 2nd "National Electronic Trade Committee".¹³ In December 2005, the "Electronic Trade Facilitation Act" was enacted based on the complete revision of the "Act on the Promotion of Trade Automation". Its purpose was to establish an NSW and facilitate paperless trade.

The "Electronic Trade Facilitation Act" established and regulated the operation of the "National Electronic Trade Platform". Its main elements were: the facilitation of paperless or e-Trade, the definition of e-trade infrastructure business operators, the scope of NSW business, standardization of e-trade documents, the security of e-trade documents and trade information, and development of e-trade technology and workers' training on e-trade.

Since the enactment of the "Electronic Trade Facilitation Act", the government accelerated the implementation of the internet-based electronic trade system. In 2006, the MOTIE designated KNET as the responsible organization to implement this mission. In 2008, KNET launched the internet-based "UtradeHub".

In 2014, the government announced its "Export Promotion Plan" based on Electronic Trade.¹⁴ Its main objectives were to:

- i) reduce the number of documents required in online trading, including those to process export declarations, duties, and taxes;
- ii) simplify the process of customs clearance and logistics for online trading;
- iii) reduce the shipping cost of online trading by negotiating contracts with global logistics companies (e.g., DHL, FedEx); and
- iv) organize the "Public-Private Conference on the Promotion of Exports based on Electronic Trade" for the promotion of online exports.

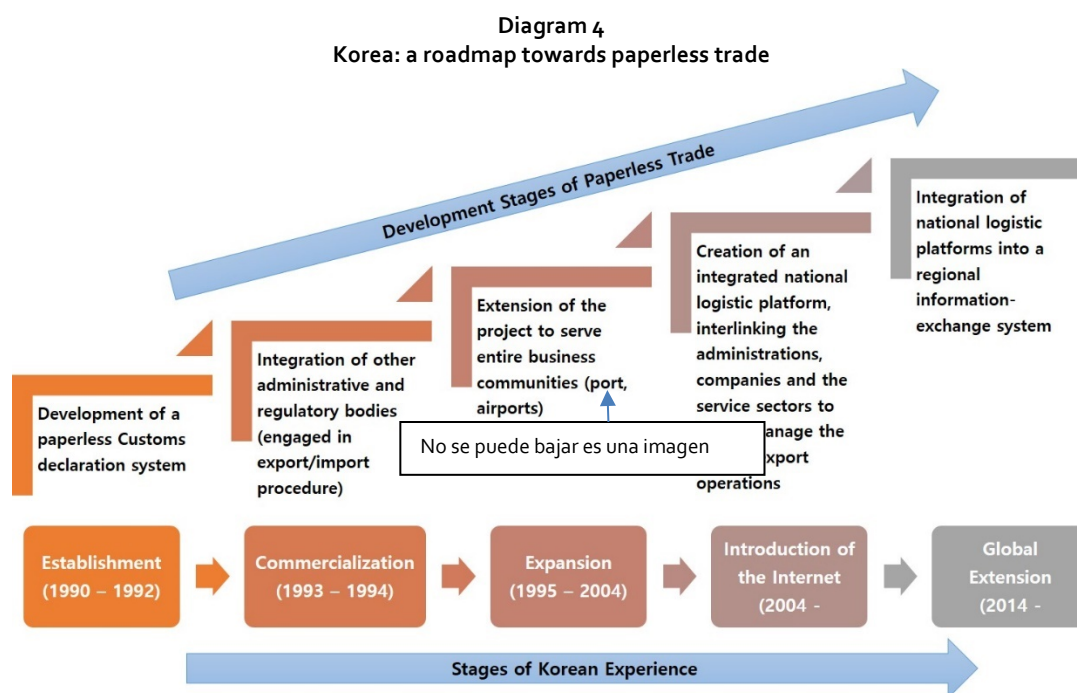
¹³ For more information on this plan, prepared by the multiple ministries, see annex I.

¹⁴ The plan was reported to the 6th 'National Council for Promotion of Trade and Investment'. The chair of the Council is President of Korea.

In 2019, the government announced its Plan for Establishment of Digital Trade Infrastructure. This plan completes the digitalization process of the entire trade-related infrastructure by 2021. Its primary goals are:

- i) the establishment of an "Integrated Information Center" by integrating all information provided by all ministries;
- ii) the implementation of a 3-year plan to establish the Digital Trade-Supporting Platform by upgrading the UtradeHub to 'UtradeHub 2.0';
- iii) the simplification of administrative processes regarding trade financing;
- iv) the differentiation and specialization of digital trade support systems (e.g., buykorea.com, tradekorea.com, gobizkorea.com) according to characteristics and needs of each organization, and provision of services by concluding MOUs between the central bodies of the platform operators;
- v) policy measures to support the online export of SMEs in the B2C market; and
- vi) the collaboration with trading partner countries for the diffusion of the Korean digital trade platform.

Diagram 4 shows the Korean roadmap towards paperless trade (UNECE, 2006). The boxes and arrows at the bottom depict different stages in the process of trade digitalization compared to the concepts of UNECE (2006).



Source: Elaboration by the authors based on UNECE (2006), A Roadmap towards Paperless Trade, ECE/TRADE/371, Geneva.

B. Legal background and global standard

1. Government agenda and legal background

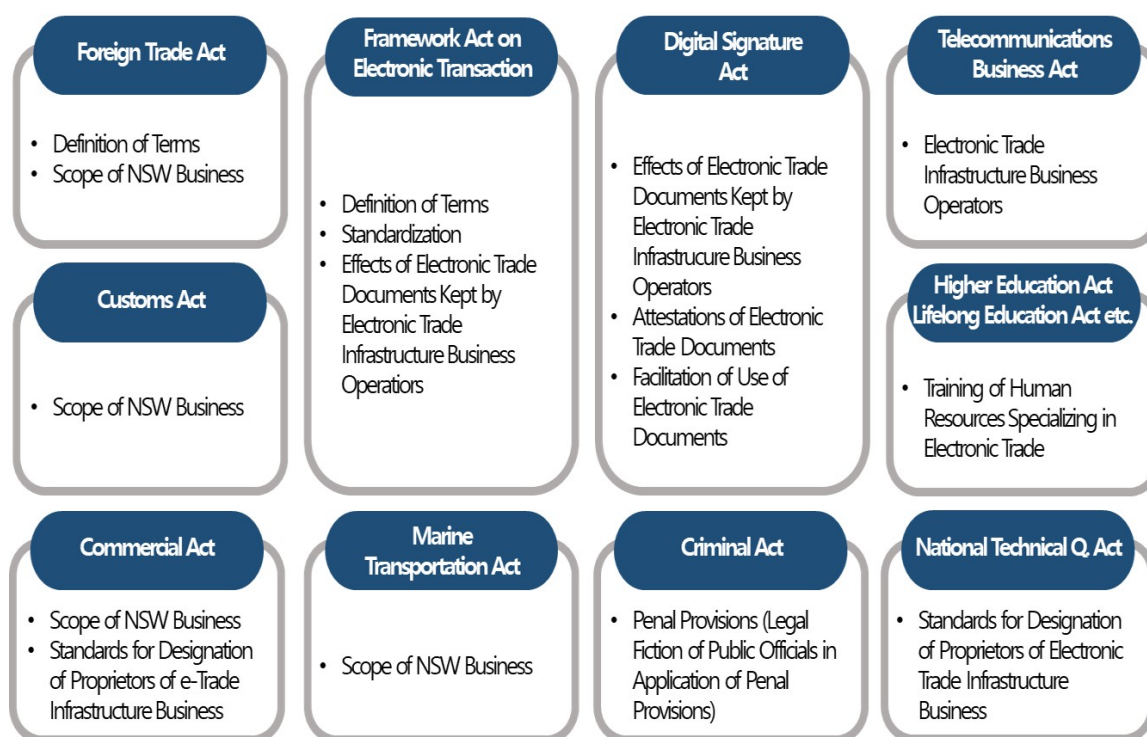
The Electronic Trade Facilitation Act, enacted in 2005, was a significant step in the development of a paperless e-trade system. However, this single law was insufficient to guarantee the success of a

comprehensive reform plan requiring substantial changes and adjustments in the entire trading system. The introduction of the concept of digitalization needed the transformation of the whole legal infrastructure and processes of trade procedures.

This Act relied on other laws to strengthen its basis and avoid conflicts with other laws. These included the “Electronic Trade Facilitation Act” and related “Framework Act on Electronic Transactions”, “Foreign Trade Act”, “Customs Act”, “Commercial Act”, “Digital Signature Act”, “Marine Transportation Act”, and “Criminal Act”.

To increase the number of specialized workers in e-trade, the government introduced additional initiatives, including the “Higher Education Act”, “Lifelong Education Act”, and “Act on the Establishment, Operation and Fostering of Government-Funded Science and Technology Research Institutions and Schools”. The “Electronic Trade Facilitation Act” refers to several laws on the digital signature, e-transactions, and customs (see diagram 5).

Diagram 5
Associated Laws in the Electronic Trade Facilitation Act, 2005



Source: APEC (2017), Promoting Cross-border E-Trade Under the Framework of Regional Trade Agreements (RTAs) / Free Trade Agreements (FTAs): Best Practices in the APEC Region. Singapore: APEC Electronic Commerce Steering Group.

The “Digital Signature Act” was enacted in 1999. It defines the term ‘digital signature’. It lays out issues such as security measures, mutual recognition of digital signatures, mutual recognition of signatures with foreign governments, training of human resources for digital signature, and the development of techniques related to the digital signature. The “Framework Act on e-Transaction” was also approved in 1999 and ratified in 2002. This act defines terms such as e-documents and e-transaction. It covers the following areas: security measures in e-transactions, consumer protection, personal data protection, rules, authentication for business operators of e-transaction, standardization, internalization of e-transaction, the designation of authorized electronic documents depository and its

business, regulations on the business of e-documents depository, security, and the establishment of e-transaction conflict resolution committee.

The “Customs Act” defines administrative procedures for customs and ICT measures for customs clearance. Article 327 explains the construction and operation of the comprehensive “Customs Duties Information Network”. In 1974, the Korea Customs Service (KCS) launched a software system for customs clearance procedures. However, for an extended period, this system was used for statistical purposes only. Until the mid-1990s, customs procedures were paper-based. However, the system began using EDI in 1994. In 2006, KCS launched a platform named “UNI-PASS”.

2. Digital trade and international standards

In 1991, the government enacted the “Act on the Promotion of Trade Automation” to promote the openness and interoperability for the standard e-commerce infrastructure in parallel with the development of the digital trade system. Also, it developed standard XM (extensible markup language) documents based on standardized document creation rules.

In 1991, the government created the “Korea EDIFACT Committee (KEC)” to oversee all projects related to global standards of digitalization. The KEC established the “Korea EDIFACT Board (KEB)” as the secretariat of KEC. In 1999, the KEB changed its name to Korea Institute for Electronic Commerce (KIEC) and has remained in operation until today as a quasi-government organization.

In 2000, the “Integrated Forum on Electronic Commerce” (ECIF) was created to discuss, prepare, and to promote international e-commerce related standards. The forum has prepared several national guidelines for digital standardization. Currently, KIEC develops and facilitates the use of standards for digital documents and represents Korea at the UN/EDIFACT. KIEC has been working with UN/CEFACT and other international organizations to develop standards for digital documents.

UtradeHub is currently in the process of adopting UN/CEFACT TMG (2003) for Core Component Technical Specification, UN/CEFACT ATG (2004) for XML Naming & Design Rules, and UN/CEFACT TMG (2002) for UN/CEFACT Modeling Methodology to comply with global standards.¹⁵ The Institute for Electronic Commerce (KIEC) provided guidelines for Korean standards.

3. Trade digitalization and online exports

In parallel with the development of the digital trade infrastructure, the government promoted the digitalization of SMEs. In 2010, MSS announced the “SMEs Online Export Activation Plan” to encourage SMEs' online exports. The plan aimed to raise awareness among SMEs about the opportunities for online exports and to increase the digitalization of SMEs.

This plan provided several incentives for online business malls and the development of the SMEs' online export infrastructure:

- i) hold seminars and conferences for SMEs to raise awareness regarding the benefits of digitalization and online exports, and showcase success stories and best practices of successful online exporting SMEs;
- ii) provide financial support for SMEs to register on global B2B sites, such as Alibaba.com and globalsources.com, and create malls on international B2B sites for Korean SMEs;
- iii) help SMEs to prepare websites and blogs in English, and support SMEs to register and upload English websites and blogs on global websites, such as Facebook, Google, LinkedIn, and Youtube;

¹⁵ Techniques and Methodology Group (TMG), Applied Technology Group (ATG).

- iv) support the globalization of Korean B2B sites and links between international B2B sites and SME export promotion websites operated by the two leading trade promoting organizations: buyKOREA by KOTRA and gobizKorea by KOSME;
- v) enhance the role of the Support Center for SME exports as the online support center;
- vi) provide training and education programs on online trade, promote employment of online trade experts in collaboration with the Ministry of Labor and business federations; and
- vii) provide financial supports and consulting for online-business startups by young entrepreneurs, including university students.

In the years following the introduction of this Plan, the number of online malls increased considerably (see table 1). There were already several online malls for the domestic market, operated mostly by large firms. With the government incentives, however, these firms transformed the domestic sites into global sites to promote the SMEs' online exports.

Table 1
E-commerce websites in Korea

Classification	Name	Year of creation	Operator
Global site of domestic online shopping mall	Gmarket.com	2011	Private
	11st (www.11st.co.kr)	2012	Private
	Interpark.com	2014	Private
	Lotte.com	2014	Private
Online shopping mall dedicated to international transactions	GobizKOREA.com	1996	KOSME
	buyKOREA (www.buykorea.org)	2004	KOTRA
	Tradekorea.com	2008	KITA
	Kmall24.com (www.kmall24.co.kr)	2014	KITA
Online Agency	Pandakorea.com	2014	Private
	Acommate.com	2012	Private
	Ezwebpia.com	2013	Private

Source: Elaboration by the author.

Several large domestic platforms were transformed into global platforms or connected to existing ones. KOSME created the online platform "gobizKorea.com" in 1996, while KOTRA established "buykorea.com" and KITA began operating "tradekorea.com" in the mid-2000s. According to the 2010 Plan, the government encouraged these platforms to collaborate with global platforms, such as "Amazon.com" and "Alibaba.com" to promote SMEs' online exports.¹⁶

The digital platforms process online transactions on behalf of SMEs, while several government agencies promote SME products in global markets (e.g., amazon.com, eBay.com, taobao.com, etc.). These agencies provide advisory services for sales and marketing strategies, registration of products on websites, sales, shipping, and after-sales services for SMEs.

¹⁶ KOSME and KOTRA are affiliated organizations of the MSS and MOTIE respectively. KITA can be regarded as the "implicitly" affiliated organization of MOTIE.

In 2016, MSS announced a new action plan with two goals: (i) evaluate the performance of the 2010 program, and (ii) adapt the support measures for SMEs' online exports to the changing business environment. The 2016 plan was as mainly an extension of the 2010 project, but included some new initiatives:

- i) Selection and support of online platforms as Global Online Market Developers (GoMDs) to select SME products with a high potential to be sold in the global market. These platforms receive assistance to export these products online in collaboration with the SMEs that produce them;
- ii) Agreements and Memorandum of Understandings (MOUs) with global logistics companies such as DHL, FedEx, and Express Mail Service (EMS) to reduce the international shipping cost for SMEs' online exports;
- iii) Agreement with large companies to share some of their a) Customer Service (C/S) and After Sales Service (A/S) systems in foreign markets with SMEs, and b) warehouses (and sharehouses of KOTRA) in other countries for the quick delivery of SMEs' products abroad.¹⁷

In 2018, the government announced another plan to encourage online exports of SMEs through the establishment of an "Express Customs Clearance System" to simplify the customs clearance process further. This plan should reduce the number of required documents to submit to the administrative authorities in the process. Another objective was to establish a "Common Logistics System" that amasses small volumes of SME export products for their delivery in bulk to reduce shipping cost.

¹⁷ This kind of collaboration between the government and large enterprises is possible because of the country's historical background. There is a widespread belief that the current success of large enterprises resulted from preferential government support for large export firms during the early stages of economic development. Large enterprises are generally supportive of governmental plans, especially in the context of economic matters.

III. Export support schemes for SMEs

A. Policy support policies for SMEs

Policy support schemes for SMEs have two dimensions. The first dimension is by policy area: 1) Finance, 2) Technology, 3) Human Resources, 4) Exports, 5) Marketing and sales, and 6) 4th industrial revolution. The second dimension is by type of SME: 1) general ones, 2) startups, 3) micro firms, 4) venture company,¹⁸ and 5) self-employed businesses.

Although MSS oversees SME support policies, strategies, and laws, other ministries also promote SME development within their constituency.¹⁹ MSS and other ministries differ in that the policies of the former are restricted to SMEs, whereas initiatives of the latter target firms of all sizes.

Under MSS, there are eight policy implementing organizations and one research institute²⁰: Among these eight organizations providing sector-specific support for SMEs, the Korea SMEs and Startups Agency (KOSME) is the most important. Founded in 1979, it was the only SME-related policy implementing organization throughout the 1980s and the mid-1990s. From the 1990s onwards, seven organizations and research institutes emerged:

- The Korea Technology and Information Promotion Agency for SMEs (TIPA) promotes research and development (R&D) of SMEs;
- Small Enterprise and Market Service (SEMAS) focuses on supporting micro and small enterprises;

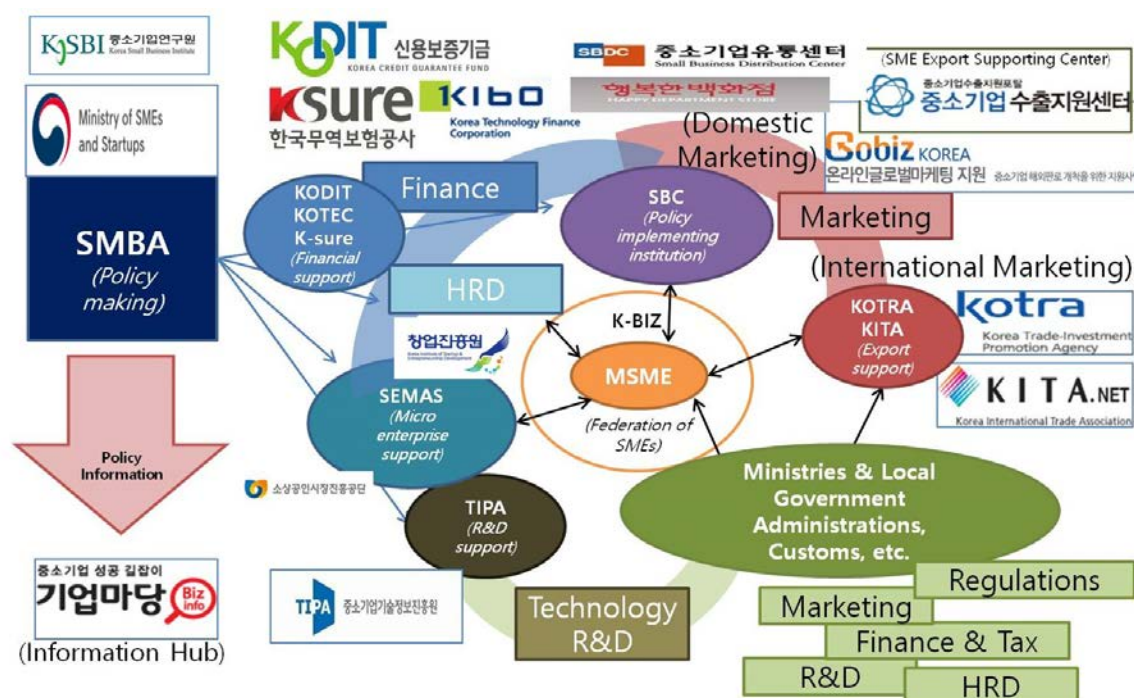
¹⁸ Complying with certain conditions and evaluations, a 'Venture Company' has preferential access to policy programs.

¹⁹ The Ministry of Agriculture, Food, and Rural Affairs (MIFRA) operates programs to support companies in the agriculture and food sectors. The Ministry of Science and ICT (MSIT) provides technology support programs for companies.

²⁰ Korea had 339 public institutions in 2019 (NABO, 2019). For example, MOTIE has 41 affiliated organizations under its umbrella. Most organizations are for policy implementation, except for a few independent ones established for special purposes.

- Small Business Distribution Center (SBDC) is an organization supporting SMEs' domestic marketing and sales channels. SBDC operates the "Happy Department Store", which only displays SME products, and provides various marketing programs in collaboration with the public home shopping channel "IM Shopping";²¹
- Korea Federation of Credit Guarantee Foundations (KOREG) provides credit guarantees for SMEs;
- Korea Technology Finance Corporation (KIBO) provides guarantees for SMEs based on the technology assessment;²²
- Korea Venture Investment Corporation (KVIC) is an organization that supports venture companies;
- Korea Institute of Start-up and Entrepreneurship Development (KISED) promotes start-ups; and
- Korea Small Business Research Institute (KOSBI) is the policy research institute dedicated to research on SMEs.

Diagram 6
The organizational structure of SME support



Source: Elaborated by the author.

²¹ SBDC is the major stakeholder of "IM Shopping".

²² Korea Credit Guarantee Fund (KODIT) provides guarantees for general SMEs. KODIT is under the umbrella of the Financial Services Commission (FSC).

B. Policy supporting scheme and organizations for SME exports

1. Policy support for SME exports

Policy support programs for SME exports consist of three categories. First, several programs seek to improve the export infrastructure, which are common facilities shared by all SMEs. These include distribution centers and offline and online SME export support platforms, such as export promotion agencies, websites, digital trade systems, online shopping platforms, systems providing information, and training/education programs on international trade.

The second support category includes programs for export capacity-building to enhance SMEs' exports. These include financial and technical assistance for SMEs and support the purchase of certificates and patent registration. The third support category focuses on export marketing and has programs that promote the participation of SMEs in exhibitions and trade fairs.

In 2016, 14 ministries (including MSS) operated 60 different policy support programs and 225 instruments for SME exports (Ministry of Economy and Finance, MOEF, 2016). Programs run by the MSS and those offered by other ministries are largely disconnected. The analysis of their content, umbrella organizations, and ministries is beyond the scope of this report, which focuses on policy schemes and related organizations of the MSS.

The MOTIE and MSS provide most support programs for SME exports. The former seeks to improve the export infrastructure. The latter enhances SMEs' export capacity building and export marketing through nine programs (see table 2). Many do not cater to one single policy category, but rather a mix of various supports within one single program. These synergies are possible as these policy implementing organizations fall under the umbrella of the MSS.

Table 2
MSS: policy programs for the support of SME exports, 2020

Program's name	Goals	Website (institution)
Selection of SMEs with export potential	Selects SMEs with high export potential, to which it provides financial and marketing services in collaboration with 20 other export-related organizations.	www.exportcenter.go.kr (Support Center for SME exports)
Export Incubator	Supports SMEs' overseas exports; selects SMEs already established in foreign markets as export incubators and local trading hubs.	www.kosme.or.kr (KOSME)
E-commerce utilization	Helps SMEs to use online marketing programs and common distribution centers for online exporters; provides training for online exports, and matches online agencies with SMEs, among other services.	www.gobizkorea.com
Designating SMEs with potential for innovation and growth	Selects SMEs as the "Global Strong SMEs"; promotes international marketing; gives preferential financial support; and offers subsidized technology development programs.	www.exportcenter.go.kr
Export Consortium	Supports the association and collaboration among SMEs; provides incentives for the whole process (from the launch until the post-contract process).	www.sme-expo.go.kr (SMEs Overseas Exhibition)
Export Voucher	Offers vouchers to SMEs to select support programs for their need. These programs cover most stages of exports, including brand/design development, overseas certifications, training on international trade, overseas market surveys, visits to expositions, and establishment of overseas subsidiaries.	www.exportvoucher.com (Export Voucher)
Collaboration with large enterprise	Provides use of multinationals' distribution channels and facilities in the overseas markets; promotes international online marketing; supports exhibitions and promotional events linked to global K-WAVE events organized by large companies.	www.win-win.or.kr (Federation for Cooperation of Large&Small Business, Rural Affairs)
Acquisition of Certificates	Offers financial support for test certification, consulting, and acquisition of acquiring foreign certificates and licenses.	www.exportcenter.go.kr
Female entrepreneurs	Promotes exports and foreign direct investment of female entrepreneurs.	www.wbiz.or.kr (Women Enterprise Supporting Center)

Source: Elaboration by the author based on the MSS website (www.mss.go.kr).

These programs are open to all SMEs, although application conditions and degrees of support depend on the firms' export experience. For this purpose, the MSS classifies SMEs into five groups; 1) SMEs with no export record, 2) SMEs with export potential, 3) SMEs with a first export experience, 4) SME exporters with innovation potential, and 5) SME exporters with international business success. Different assessment categories and scores assess the applications of SMEs to these programs.²³

2. The leading support organizations for SME exports

The MSS, other ministries, and organizations provide support for all activities involved in the export value chains. The MSS establishes the legal framework and defines policy measures to promote SME exports, while different organizations implement specific programs. The MSS website provides information on all organizations and programs.

SME Export Support Center

The "SME Export Support Center", part of the MSS, provides all export-related programs and services of MSS and 13 offline centers are in operation at the same location as the Regional SME Administrations of MSS. This Center's website is an important digital platform for SMEs to access various types of information and policy measures.

Korea SMEs and Startups Agency (KOSME)

Among the nine organizations under the umbrella of MSS, KOSME provides most funding for SMEs. Moreover, KOSME is the only organization that focuses exclusively on SME exporters. The other MSS affiliated organizations and their programs are implicitly related to SME exporters through the programs offered by KOSME.

Korea Trade-Investment Promotion Agency (KOTRA)

The Korea Trade-Investment Promotion Agency (KOTRA, created in 1964) and the Korea International Trade Association (KITA) are the two principal export promotion agencies. KOTRA is a quasi-government organization under the umbrella of the MOTIE. It promotes the internationalization of Korean firms through various export support programs and services. These are not exclusively for SMEs because the organization caters to firms of all sizes.²⁴

Korea International Trade Association (KITA)

The KITA (created in 1954) is the most important private export promotion agency that provides comprehensive export-related services. Other private sector bodies providing similar services include the Korea Chamber of Commerce and Industry (KCCI) and the Korea Federation of SMEs (K-biz). KITA is operating on a membership basis, and its programs and services are not exclusive to SMEs.

Korea Trade Insurance Corporation (K-Sure)

Affiliated to the MOTIE, the "Korea Export Insurance Corporation" (K-Sure) offers trade insurance. It applies preferential insurance rates and fees to SMEs that meet certain conditions. Before 1992, EXIM Bank provided this service.

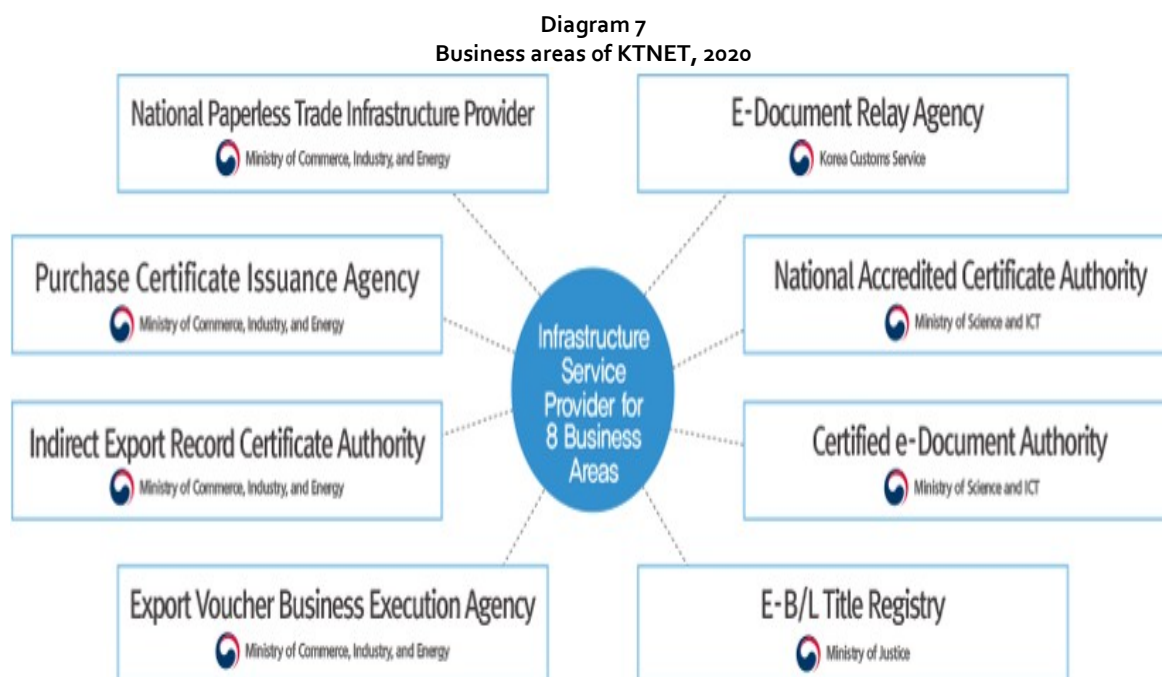
Korea Trade Network (KTNET)

The KTNET was created in 1991 by KITA. In 1992, the government designated KTNET as the "Trade Automation Business Operator". Since then, KTNET has digitalized 614 types of export and import documents in the G2B and B2B sectors and processes an average of 370 million paperless documents per year.

²³ For more details on SME support policies in Korea, see Lee et al. (2017).

²⁴ As most large firms have developed their own departments, services and intelligence for exports and other overseas activities, KOTRA caters mostly SMEs.

KTNET was designated as the “National Paperless Trade Infrastructure Operator” by MOTIE in 2006. Since then, KTNET has been selected by the government as the “Purchase Certificate Issuance Agency” and “e Bill of Lading (B/L) Title Registry” in 2008, and “Certified e-Document Relay Agency” in 2012. KTNET provides “Infrastructure Services” in 8 business areas (see diagram 7). The company launched “UtradeHub”, an internet-based digital trade platform, in 2008.



Source: KTNET Homepage.

Export-Import Bank of Korea (Exim Bank)

The EXIM Bank, established in 1976, provided export insurance services until the creation of K-Sure in 1992. Currently, it provides export credits to promote the export of capital goods, such as ships and industrial plants. The bank also offers credits to support overseas foreign direct investment, overseas projects, and natural resource development projects, amongst others. Most of its operations do not relate to SMEs, but the bank operates the “Hidden Champion Program” that provides comprehensive financial support for some selected SMEs.

Integrated FTA Support Center

The Integrated FTA Support Center (created in 2012) promotes the use of free trade agreements (FTAs) by SMEs.²⁵ KITA and MOTIE operate this Center. Its members are 6 FTA-related ministries (MOTIE, MOEF, Ministry of the Interior and Safety (MOIS), MAFRA, KCS, and MSS) and nine organizations (KITA, KCCI, KOSME, KTNET, KOTRA and four other organizations related to issues of FTAs).

This center aims to identify obstacles regarding the use of FTAs by SMEs and find solutions. For this purpose, it provides counseling and consulting services for SMEs, as well as training programs for SMEs. Customs agents, certification (of origin) experts, lawyers are also involved in this Center’s services for SMEs.

²⁵ By mid-2020, Korea has concluded 20 FTAs with 60 countries, see [online] okfta.kita.net.

Public Home Shopping (IM Shopping)

The Public Home Shopping is a quasi-government organization established in 2013 under the umbrella of the MSS. The organization supports SMEs' online exports by utilizing its online systems. It secures sales channels for SMEs in general, and particularly SMEs in the agriculture and marine sectors. The organization operates a TV home-shopping channel, internet shopping mall, and mobile shopping mall called "IM Shopping".

3. Online support websites for SME exports

Homepage/Website

The websites of export promotion agencies include the digital service support platforms for the exports and internationalization of SMEs. KITA, KOSME, and KOTRA, together with other SME export supporting agencies and organizations, have websites for SMEs to access their programs and services.

The KTNET has an FTA information website known as "UFTAKOREA" (fta.utradehub.or.kr) to encourage SMEs to exploit the benefits offered by FTAs. The KCS and MOTIE also operate "YesFTA" (www.customs.go.kr/ftawebsitekor) and "FTA-Korea" (www.fta.go.kr) respectively. These websites provide information on the status of various FTAs, custom tariffs by countries and certificates of origin, among others. The information website "TradeNAVI", operated by KITA and MOTIE, provides trade-related information, including on FTAs.

Over time, these websites improved from providing information only to the inclusion of multiple digital services, such as Electronic Data Interchange (EDI), and the digitalization of documents. Today, these platforms not only grant access to strategic information, but also allow users to conduct administrative processes, apply for public support programs, and submit administrative documents.

Various Websites

Different public and private organizations operate various websites, which serve as digital platforms promoting exports. Ministries control some of these organizations, while others are affiliated to policy implementing organizations or private sector bodies. Two key websites are "UtradeHub" of KTNET and "UNI-PASS" of the Korean Customs Service. Both websites represent the core of Korea's paperless trade system. Other essential websites are:

- "Exportvoucher.com" is the online website that operates the government's "export voucher program", which is managed by MSS and MOTIE. SMEs can redeem their voucher to enroll in any listed support program for exports. Through this website, SMEs can access information, apply for programs, and comply with administrative procedures;
- "www.sme-expo.go.kr" supports SMEs to participate in international exhibitions. This website is operated jointly by the K-biz and MSS;
- "Gobizkorea.com" is the B2B online shopping mall, operated by KOSME, selling products from Korean SMEs. It also includes the "Business Matching program" between Korean suppliers and international buyers, and the "Visitor Assistant Program";
- "buyKOREA" is one of the most prominent B2B online marketplaces operated by KOTRA. The website connects international buyers and Korean suppliers;
- "TradeKorea.com" and "Kmall24.com" are online shopping malls operated by KITA. "TradeKorea.com" is a cross-border B2B online-shopping mall, which is similar to "buyKOREA". "Kmall24.com" is a cross-border B2C online shopping mall inter-connected with foreign online shopping malls, such as Amazon and eBay. Korean companies can use this website for free.

4. Support schemes for SME exports and associated value chains

Various organizations provide support for the core segments and support activities in the export value chains of SMEs.²⁶ Diagram 8 shows the prominent public and private support programs that match different segments of a firm's export value chain. Under the umbrella of the MSS, KOSME and its related websites, including the "Support Center for SME exports", cater almost all activities of SME exports. They support all primary activities—including technology, finance, and human resources, and associated services except outbound logistics. The Korean Customs Service provided the latter service.

The other organizations, agencies, and their related websites promoting SME exports seek to improve marketing and facilitate trade operations. In collaboration with other public organizations, they also encourage activities involved in the services chain. Online shopping malls have a similar role. "K-Sure" and "EXIM Bank" provide financial support.

"UtradeHub" and "UNI-PASS" facilitate trade transactions such as administrative procedures including export declarations, customs clearances, shipments, settlements, and the acquisition of foreign certificates. However, these systems serve all companies, not exclusively SMEs.

The MOTIE and KCS are responsible for the digitalization of the trade system, while MSS supports all other activities in the value chain except for outbound logistics. However, MSS and MOTIE jointly support SMEs when the task or the program requires coordination at the national level.



Source: Elaboration by the Authors.

²⁶ Due to the many organizations that support SME exports and their associated value chains, it is beyond the scope of this report to identify which organizations and programs match exactly which segments of these chain. Here, only the main ones are reported.

C. Obstacles of exports

To maximize the effectiveness of policy measures, the government must prioritize policy interventions according to the most pressing needs of exporting SMEs. For this purpose, the government conducts regular surveys regarding obstacles for SME exports. A 2012 study showed that the main obstacle was securing sales channels in foreign markets (see table 3).

The second-largest obstacle was the compliance with formal export procedures, including international logistics, letter of credit, export insurance, and customs clearance. The third, fourth, and fifth major obstacles were the lack of information on the foreign markets, lack of technology to meet global standards, and unorganized government's export support system, respectively. Language barriers are also among the major obstacles.

Table 3
Korean SMEs: major obstacles to exports, 2012
(Percentages)

(1) Limited capacity to find foreign buyers and/or foreign distributors	36.6
(2) Little knowledge and lack of experience to deal with international trade, such as customs clearance, opening L/C, global logistics, and trade insurance.	21.2
(3) Limited information on foreign markets, including market trends, customer preferences, market capacity, local business practice, etc.	16.2
(4) Limited capacity to produce on time due to little technology or limited access to finance for production.	15.2
(5) Unorganized export support system and lack of mutual and harmonious collaboration between/among export supporting organizations	6.5
(6) Language barriers	3.1
Other	1.0

Source: Bank of Korea (2014), *BOK Issue Note*, No 2014-15. Seoul: Bank of Korea.

Results of a similar survey conducted in 2018 reconfirm that finding foreign buyers and access to information is part of the main barriers for SME exports. However, the obstacle "Limited knowledge and experience to deal with international trade" dropped from the 2nd place in the former survey to the 7th place in the latter study.

Table 4
Korean SMEs: challenges to exports, 2018
(Percentages)

Finding foreign buyers and business partners (34.6)	(1) Limited capacity to find foreign buyers or foreign distributors	23.6
	(3) Inability to find foreign partners for the strategic alliance, joint investment, etc.	11.0
Lack of information on foreign markets (33.4)	(2) Lack of information on foreign markets, such as consumer trends, size of the market, consumer preference, etc.	16.3
	(4) Lack of information on local laws, regulations, business customs, business practices, etc.	10.1
Lack of capacity to conduct international business (19.6)	(8) Lack of information on competitors and their products in the market, local logistics, customs clearance, etc.,	7.0
	(5) Lack of production capacity (access to production financing, securing production facilities, compliance with the delivery date, etc.)	8.3
	(7) Lack of human resource (incapable of hiring experienced personnel in international businesses – international contract, customs clearance, opening L/C, etc.)	8.1
	(10) Lack of resources for acquiring international standards, foreign certificates	3.2
Miscellaneous (12.4)	(6) Limited access to trade financing	8.2
	(9) Insufficient (integrated) consulting system for international business	4.2

Source: Center for Large and Small Business Cooperation (2018), "2018 Survey on SMEs overseas advancement plan and request for government supports", FKI.

Note: The survey covers 1,020 SMEs, which participated in training and advisory programs from 2015 to 2018.

An annual survey conducted by the MSS among SMEs from 2010 to 2017 show that limited information on foreign markets was generally considered the main obstacle for exports (see table 5). From 2013 to 2015, the main challenge was the financing of trade operations and working capital for the production of goods to export. But this obstacle dropped to the 4th position in 2017 and disappeared from the list of top-eight challenges in 2018.

The “lack of internationally experienced human resources” was listed as the 3rd most crucial obstacle for SME exports from 2010 to 2015 and the second most important in 2017. Technology was not among the top-5 obstacles in the early 2010s, but after 2015 it became more critical reaching the 2nd place in 2017. Challenges related to “low brand image” or “firm’s reputation”, “acquiring product standards and certifications”, and “Export process” were ranked in the middle of the lists without much variation during the period.²⁷

Table 5
Korean SMEs: trends in impediments to exports, 2010-18

Year Ranks	2010	2013	2015	2017	2018
1	Information	Finance	Finance	Information	Finding foreign buyers & Information
2	Finance	Information	Information	Human Resources	
3	Human Resources	Human Resources	Human Resources	Technology	Technology (Production capacity)
4	Firm 's Reputation	Export procedures	Technology	Finance	
5	Standards/ certificates	Standards/ certification	Export procedures	Export procedures	Finance & Human Resources & Export procedures
6	Technology	Technology	Standards/ certification	Standards/ certification	
7	Language barriers	Firm's Reputation	Firm's Reputation	Firm's Reputation	
8	Export procedures	Language barriers	Language barriers	Language barriers	Acquiring Standards/ certificates

Source: Cho (2019), “A study on the support system for overseas markets expansion of SMEs”, *Policy Studies*, 19-30, Seoul: KOSBI. (in Korean).

Note: The column for 2018 refers to the author's arbitrary application of the contents of Table 4.

The main obstacles listed in the surveys (tables 3, 4, and 5) coincide partly with the types of requests made by SMEs for support from the government to promote exports (table 6). The main types of support requested from the government were financial support and information provision.

Table 6
Korean SMEs: types of requests for government support, 2018
(Percentages)

Increase financial support for international business and overseas investment	20.8
Increase support for SMEs participating in the international exhibition fairs, international buyer invitation fairs, etc.	18.5
Provide foreign-market information (consumption trends, competitive composition, distribution/logistics structure, etc.)	19.2
Increase support for trade financing and insurance (including easing conditions for applications and evaluations, financing of working capital for the production of exports, etc.)	11.9
Organize a mentoring program between SMEs and companies with experience in specific export markets	9.0
Provide information on national infrastructure such as roads, ports, railways, electricity, telecommunications, etc.	9.0
Provide legal information necessary to establish a local production facility or subsidiary, etc.	6.2
Increase support for SMEs' foreign market entry in collaboration with large Korean enterprises	5.4

Source: Center for Large and Small Business Cooperation (2018), “2018 Survey on SMEs overseas advancement plan and request for government supports”, FK1.

²⁷ It is unclear why “language barriers” were not among the top-8 obstacles in 2018. A possible explanation is the low response rate to the Survey.

D. Barriers to SME exports and support platforms

The whole trade-related system, including the “core trade operations” and “trade support services” is well digitalized in Korea. On the one hand, most core trade operations and processes are digitalized and paperless. On the other hand, the “trade support services”, such as inbound logistics, operation/manufacturing, marketing and sales, and associated services are also increasingly based on digital technologies.

Programs to support SME exports belong to seven categories, following the classification of SMEs’ Integrated Management System (SIMS).²⁸ This classification, which is not official but often used Korean research papers focusing on SME issues, includes the following categories:

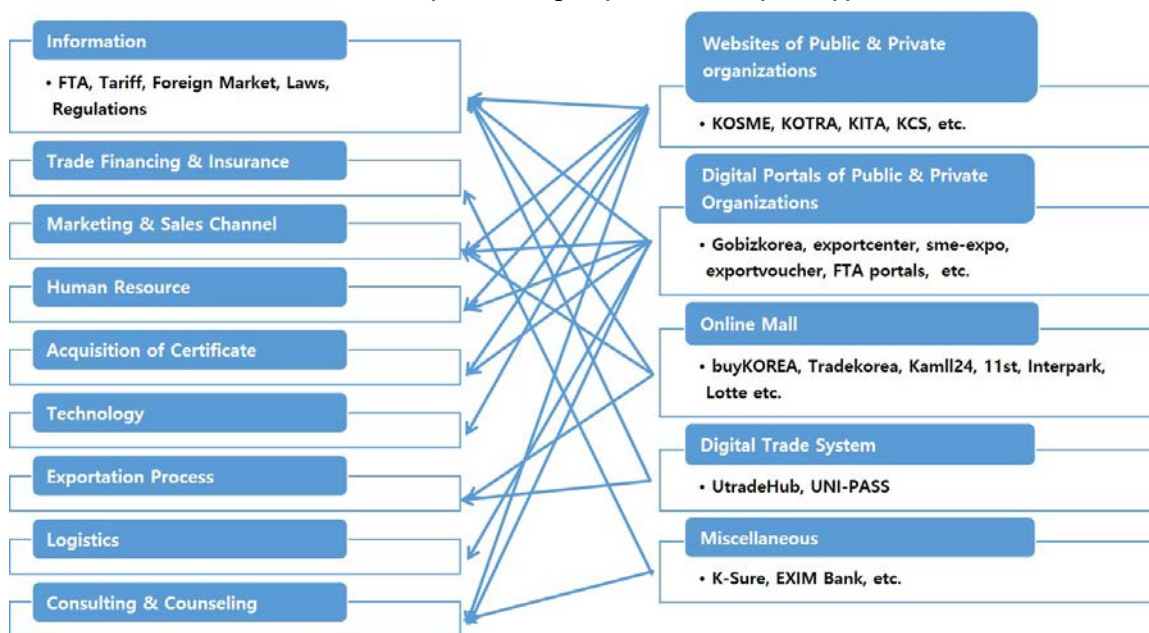
- i) Training programs for international trade, advisory services, and mentoring;
- ii) Implementation of export procedures, such as administrative procedures that include export declarations, customs clearance, shipments, and settlements;
- iii) Purchases of foreign certificates;
- iv) Trade financing that includes working capital for production and operation, and insurance;
- v) International Marketing;
- vi) Securing sales channels in foreign markets;
- vii) Information provision;
- viii) Establishment of overseas offices and subsidiaries.

Diagram 7 matches the main identified obstacles for SME exports (left-hand column) with the support programs and services of different organizations (right-hand column).²⁹ These digital platforms, websites, and services cater to all categories of identified obstacles and related support services.

²⁸ SIMS is the integrated SMEs information management system developed and operated by KOSBI in collaboration with the MSS since 2013. SIMS tracks and records the history of policy programs, such as name of the program, date of application and amount of the grant or loan provided by almost all ministries, SMEs, and information of the beneficiary firms. Currently, the system records and manages information on approximately 2 million companies that have participated in different policy programs since 2010.

²⁹ See Lee and others (2017) for details on the roles and functions of SME support organizations in Korea.

Diagram 9
Obstacles to SME exports and digital platform for export support, 2020



Source: Elaborated by the author.

IV. Digital support platforms for SME exports

A. MSS and SME Export Support Center

The “SME Export Support Centers” provides most support measures for SME exports. These Centers’ operations, established in 2014, follow the “Regulations on the installation and operation of the Support Center for SME Exports”, embedded in the “Trade Infrastructure Development Act” of 2013. Currently, there are 13 offline centers nationwide under the umbrella of Regional SME Administrations of MSS. All centers provide the same programs, which can be accessed through the internet, see “www.exportcenter.go.kr”.

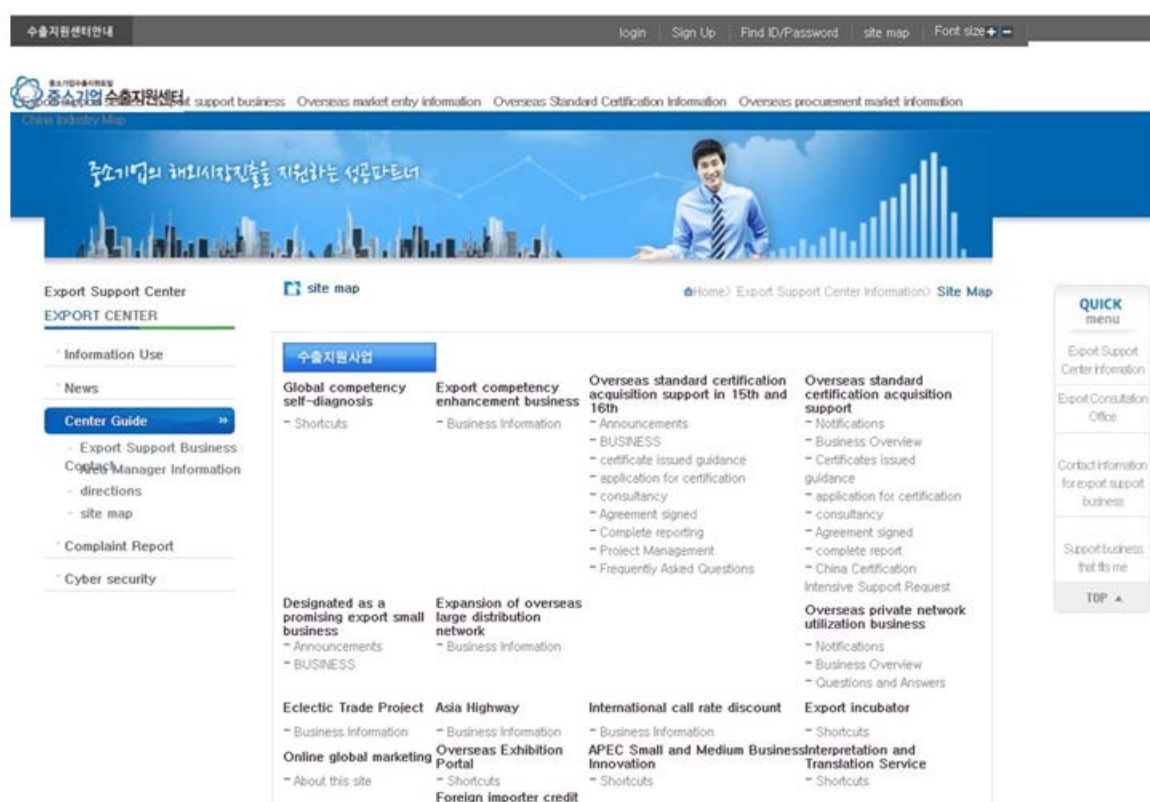
The “Support Centers for SME exports”:

- provide information, advice, and training on international business opportunities for SMEs;
- support SMEs to negotiate international business contracts, conduct export procedures, and access trade financing and insurance;
- facilitate the development of production technologies, improvement of design and quality of export products;
- conduct diagnosis on the capacity of SMEs to trade, including the ability to understand foreign markets, doing international business, and provide tailor-made support to SMEs; and
- identify obstacles for SMEs in doing international business and provide SMEs with support to overcome those obstacles.

Image 1 shows the website of the “SME Export Support Center”. The programs and services offered are located on the upper right corner of the webpage. There are five categories listed on the webpage as the functions operated by the “Support Center for SME exports”:³⁰

- i) services to support SME exports,
- ii) support programs for SME exports;
- iii) information on foreign markets;
- iv) information on foreign standards and certification, and support measures for the purchase of certificates, and
- v) support measures for SMEs to participate in public procurement contests in foreign markets.

Image 1
Website of SME Export Support Center, 2020



Source: www.exportcenter.go.kr.

Various public (including the MSS) and private organizations offer services supporting SME exports. Through the website of the “Support Center for SME exports”, users can access the websites of different organizations and agencies that provide the services. Table 7 presents the predominant services and service-providing organizations.

³⁰ Most websites of trade promoting agencies are both in Korean and English, but that of the Support Center for SME Exports is only in Korean as it targets firms within the country.

Table 7
Services facilitated by the SME Export Support Center, 2020

Provided services	Collaborating organizations
Discount on international call rates	Korea Telecom
Discount on logistics fees (FedEx)	FedEx
Support for SMEs' participation in international exhibitions	K-BIZ (www.sme-expo.go.kr)
Provide office space, facilities, information, and legal consulting in overseas markets	KOSME
Translation and interpretation services	KITA
Information on international economy and foreign direct investment	EXIM Bank
Consulting on money exchange	EXIM Bank
Legal consulting on international contracts and deals	EXIM Bank
Credit evaluation of foreign buyers	K-sure
Export consulting service for local SMEs	KOTRA

Source: Elaboration by the authors based on <http://www.exportcenter.go.kr/main.jsp>.

Note: Korean terms are freely translated to English to convey each program's content better.

Table 8 presents the policy support programs for exports³¹ shown on the website of the Support Center. Most programs are operated by KOSME, which, together with the Support Center for SME exports, falls under the same umbrella of MSS. Each program is designed by the department responsible for promoting exports. Their content focuses on areas such as export marketing, export financing, and the provision of information on foreign markets. Some export promotion programs cover several policy areas, including finance, human resource development and training, marketing, and technology, in collaboration with other departments in the MSS. The government offers this broad package as it became aware that the internationalization of SMEs requires support in multiple areas.

Table 8
Programs of the SME Export Support Center, 2020

Name of the program	Contents
Diagnosis of global business capacity	Conduct diagnosis on the internationalization capacity of the firm to match appropriate support measures
Global Market Developer (GMD)	Designate successful exporter as global market developer (GMD) → match GMD with SMEs → GMD supports SMEs to export (from preparation → international marketing → export)
Designating SMEs with export potential	Find high-tech SMEs that do not export → provide support to become exporters
Foreign Private Networking	Designate successful Korean companies located abroad as Networks and match with other SMEs to export to countries with Korean Networks.
International Distribution Network	Designate successful Korean distributors abroad and match them with Korean exporting SMEs
Export Capacity Building	Focus on startups and SMEs with no export record and provide them with comprehensive support to become exporting firms
Export Voucher (Export Success Package) (Export Capacity Building for high-growth SME)	SMEs with a voucher can apply for various export support programs, such as technology development, consulting and counseling, human resource development, and information provision.
Asia Highway	Provide support measures to the SMEs intending to export to China, India, and ASEAN markets

³¹ In Korea, it is difficult to distinguish between programs and services. Programs are developed by government authorities based on the legal background and implemented by government-affiliated organizations. Services are various practical measures of operating a certain program. Services include part of 225 policy programs that belong to the detailed category, as well as the service programs provided by public and private organizations. This report followed the distinction made on the MSS's homepage.

Name of the program	Contents
Commercialization of Technology	Provide support on areas such as technology, finance, human resource, and marketing to SMEs that plan to develop new products or technologies for export
Online Global Marketing	Provide foreign buyer match-making, foreign visitor assistance service, etc., through "GobizKOREA.com"

Source: Elaboration by the author based on <http://www.exportcenter.go.kr/main.jsp>.

Table 9 shows a list of information resources on foreign markets, foreign standards and certifications, and procurement in the foreign market. All information is accessible on the website of the SME Export Support Center.

Table 9
Information provided by the SME Export Support Center, 2020

Classification	Name	Contents
Information on foreign markets and overseas entry	Guide for overseas market entry	Domestic and international procedures for overseas market entry Export and import processes Guidelines to establish a foreign subsidiary Guide for overseas market entry by countries
	Trade guide	Dictionary for trade terminology Trade laws Export processes Customs refund
	Cyber education	Guide for market research Finding foreign buyers A practical guide for international procurement Video clips on trade procedures Video clips introducing support programs
	Information on tariffs	Direct link to KCS's FTA website (https://www.customs.go.kr/ftawebsitekor/main.do)
	Trade statistics	Direct connection to KCS and KITA (stat.kita.net)
	International exhibitions	Direct connection to SME Overseas Expo Website (www.sme-expo.go.kr)
	Credit evaluation	Direct connection to KSUREcyber Office (cyber.ksure.or.kr)
	Online consulting	-
International standards and certifications	Introduction to international certificates	North and South America, Asia Oceania and Africa Europe Russia & Eastern Europe Common standard & certification
	Online search system	Search by : Country HS Code Name of certificate Name of product
Foreign procurement	North American Market	Bid, tender, trends, etc. Regulation in the United States
	International organizations	Bid, tender, trends, regulations, etc.
	EU market	Bid, tender, trends, regulations, etc.
	Asia and other regions	Bid, tender, trends, regulations, etc.
	Information on procurement	Process manuals, information on bid, etc.

Source: Elaboration by the author based on <http://www.exportcenter.go.kr/main.jsp>.

B. KOSME, GobizKOREA, and gobizkorea.com

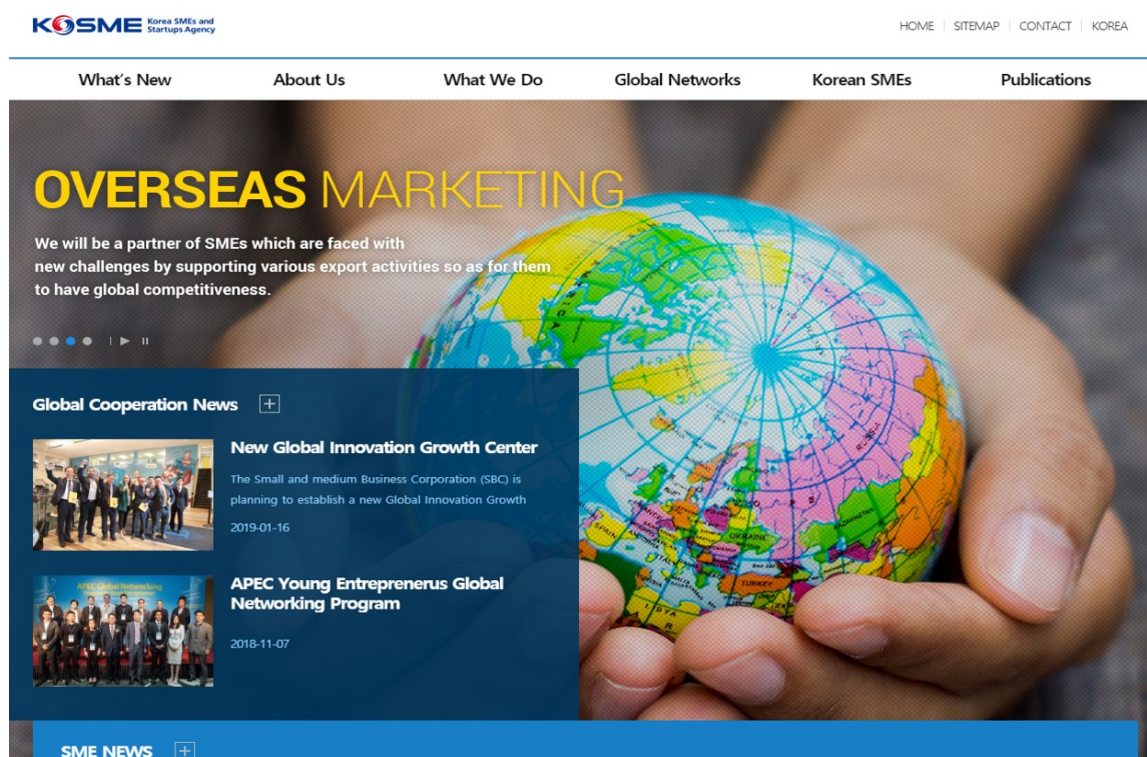
1. KOSME

KOSME is a government agency for the implementation of government policies and programs for SMEs. KOSME provides support in 3 domains: finance, human resources, and export. KOSME's website presents its support programs and allows SMEs to apply to each (see image 2).

On behalf of the MSS, KOSME provides subsidies to SMEs to support human resource development through various education and training programs in collaboration with educational institutions. These include the "Meister High School"³² and vocational schools. KOSME also operates the "Business Diagnosis Program", with experts performing a diagnosis on the current status of SMEs and giving recommendations on which government programs match best their business' needs. These experts are from various areas, including business administration, strategy, and technology.

KOSME has two categories of export support programs. The first focuses on non-exporting SMEs that want to become exporters. All programs offered by MSS are accessible on the web, including the Export Voucher Program, Export Incubator Program, and International Marketing for Regional SMEs program.³³ The second category focuses on supporting online exports of SMEs. For this purpose, KOSME operates a different website "GobizKOREA", which functions as an online export support center as well as an online B2B shopping mall.

Image 2
Homepage of KOSME, 2020



Source: <http://www.kosmes.or.kr/sbc/SH/EHP/SHEHP001Mo.do>.

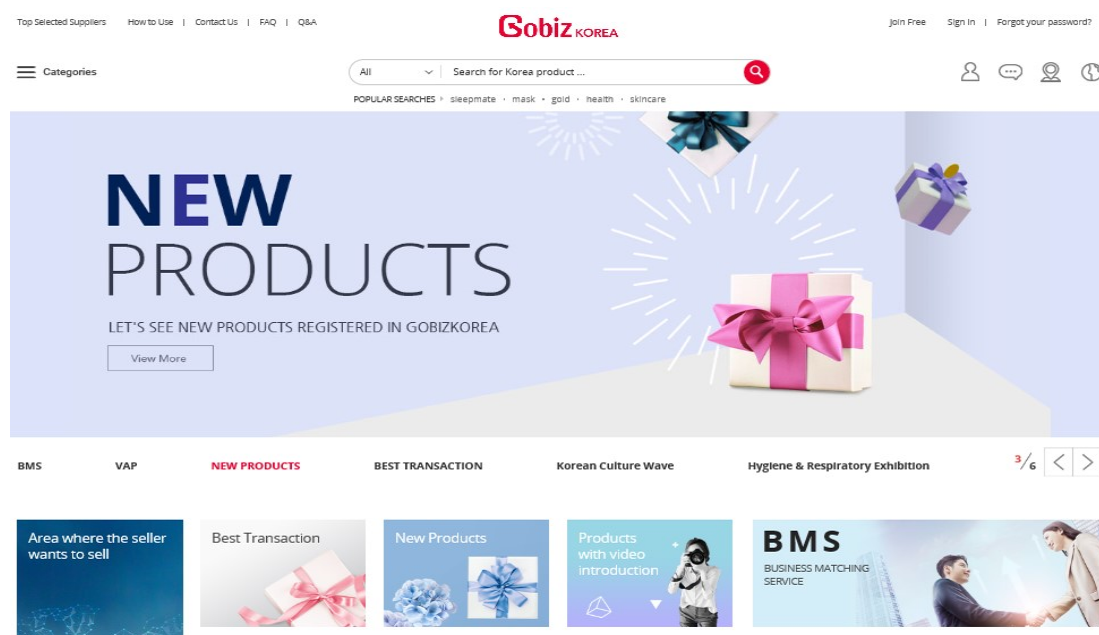
³² The "Meister High Schools" is the name given to 48 vocational high schools in Korea as of 2018. Meister is the German word for craftsman.

³³ See also table 2 on SME export support programs of the MSS.

2. GobizKOREA and gobizkorea.com

The website GobizKOREA (kr.gobizkorea.com) has three main parts: 1) gobizkorea.com (see image 3), 2) support programs for digital exports, and 3) support programs for the marketing of digital exports.

Image 3
Homepage of gobizkorea.com, 2020



Source: <https://www.gobizkorea.com/user/main.do>.

Online-export support programs (GobizKOREA)

This website lists various services to promote online-exports of SMEs, including logistics, exhibitions, business matching services (BMSs), and visitor assistance programs (VAPs). Table 10 summarizes the main export support programs on the website.

Table 10
GobizKOREA's support programs for online-exports of SMEs, 2020

Name of the program	Function
Common logistics	Provide logistics services for small online exports of goods. The system collects all goods at a common distribution center for lump-sum delivery. The program offers discounts on logistics costs.
Online sales agency	Designate online agencies to support SME exports on foreign shopping platforms ^a . Agencies provide assistance for registration, marketing, and overseas delivery.
Export through gobizkorea.com	Offers two types of programs: Package: supports making promotional video content, websites, marketing through linkage with search engines/Multi-Channel Networks (MCN) as a package Individual: a group of experts assists an SME from the identification of foreign demand to all steps after signing an export contract.
Online purchase offer Follow-up management	Experts provide free support on: Verification of the validity of inquiries Negotiation with overseas buyers Preparation for signing export contracts. Implementation of trade procedures, including trade mentoring and promotional marketing.

Name of the program	Function
Online exhibitions	Support producing promotional video content, registration for online exhibitions on gobizkorea.com, online to offline (O2O) related marketing, and follow-up processes.
Developing company-owned online shopping mall	Covers up to 70% of the cost of promotion, marketing, and renewal of e-commerce site. Support for the creation of local e-commerce site.
Commercialization of online export	For both domestic and export start-ups, this program covers up to 70% of the cost of entering the online shopping mall of the selected platform ^b Develop and train a "1-person creator" who can use social network sites (SNS) and social media marketing.
Business Matching Service (BMS)	Mediation services between foreign buyers and Korean SMEs
Visitor Assistance Program (VAP)	Provide translation, trade counseling, and review of export contracts free of charge for domestic SMEs that are meet foreign buyers visiting Korea.

Source: kr.gobizkorea.com.

^a E-commerce sites: Flipkart (India), Mercado Libre (Latin America), n11 (Turkey), Qoo10 (Southeast Asia), Rakuten (Japan), Shopee (Southeast Asia), Souk (UAE), Taobao (China), T mall (China), and Wildberries (Russia).

^b E-commerce sites include Alibaba, Amazon, eBay, Flipkart, G market global, Lazada, Line, n11, Qoo10 Japan, Rakuten, Shopee, Souk, Taobao, WeChat and Wildberries.

Online marketing services (GobizKOREA)

GobizKOREA offers multiple marketing services, including advice on challenges faced by SMEs in crossborder e-commerce and information on buyers' trends, purchase offers, buyer proposals. Also, it provides a discount on domain purchases and logistics by partnering with domain registering and logistics companies.

Gobizkorea.com

Gobizkorea.com is a global B2B marketplace that connects international buyers with domestic suppliers. The website offers an online marketplace where international buyers can purchase products that are registered by local SMEs. Gobizkorea.com is a membership-based website operated by KOSME. Membership is free, and registration is simple.

The website of Gobizkorea.com is available both in Korean (kr.gobizkorea.com) and several other languages. The English version is the leading website for foreign buyers, listing Korean products by major categories, such as electronics, health, and beauty. It also provides a product search function.

The website in Korean is mainly for domestic producers who want to sell their products through e-commerce. The website allows sellers to register their products on the website and manage business transactions. The Korean website offers six types of services; 1) product registration, 2) Industrial Bank of Korea (IBK) telegraph transfer (T/T) service, 3) inquiries/orders, 4) payments, 5) deliveries, and 6) export report. Table 11 shows the details of the functions of services.

Table 11
Services provided by gobizkorea.com

Category	Function
Product registration	Upon approval by GobizKOREA, sellers can register their products on gobizkorea.com by filling out information in three areas; Basic information on the product in a maximum of nine languages, including at least 3 keywords for search engine optimization (SEO). Producer information, including product approval, display status, product category, and target country for sales. Transaction information, including terms of payment, transaction, price, and delivery can be set

Category	Function
IBK T/T service	A foreign exchange service in which exporting companies receive remittance of export through a payment number issued by the Bank. The service uses the "P@yGOS" platform dedicated to e-commerce
Inquiries /orders	Through interactive searches, sellers and buyers can communicate quickly at any time. Transactions negotiated through search can be ordered after confirming the estimated price and terms at the "Trade Inquiry Center".
Payments	To check the payment status, invoice, and cancellation status of an order. Sellers can request payments and buyers can process payments on the web.
Delivery	Seller selects logistics company for delivery from the list of affiliated logistics companies (including CJ Logistics, DHL, EMS, or Pantos) Basic delivery fare and insurance fee can be checked for each sale.
Export reports	Information on export declarations, results, and withdrawals.

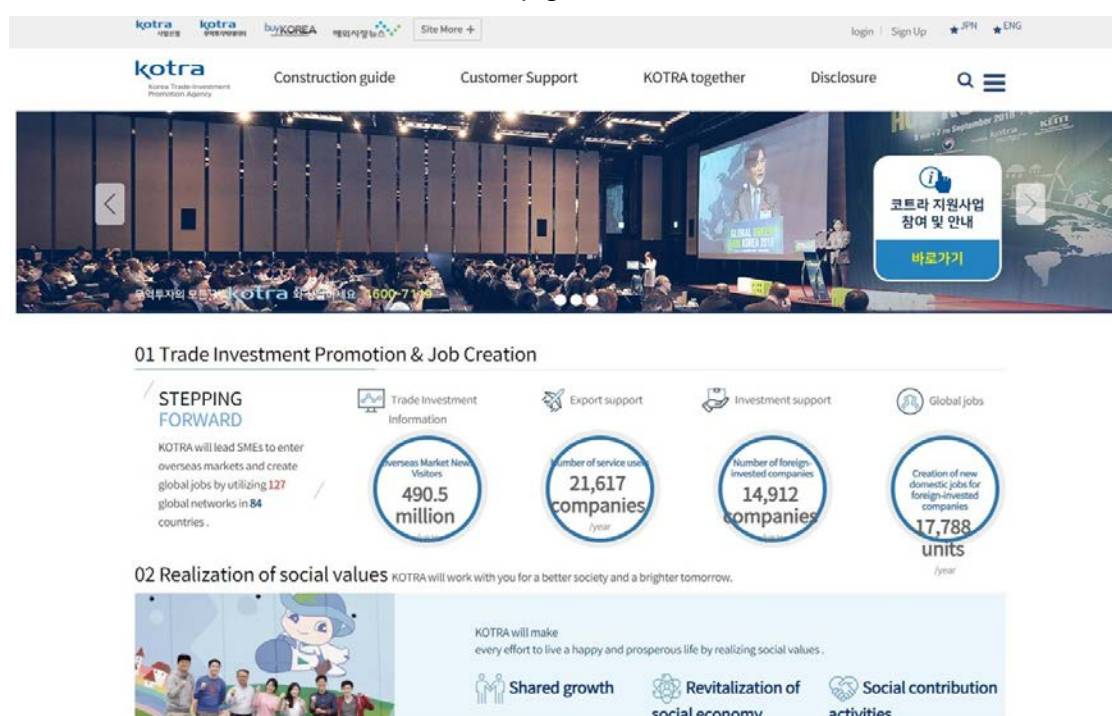
Source: Elaboration by the author based on kr.gobizkorea.com.

C. KOTRA and buyKOREA

1. Korea Trade-Investment Promotion Agency (KOTRA)

Established in 1962, KOTRA is one of the largest trade promotion organizations (TPOs) in the world, with 127 offices globally. KOTRA provides both online (see image 4) and offline counseling services on many company internationalization issues, such as exports, foreign direct investment, and overseas market entry. For this purpose, KOTRA connects regional and sectoral experts to companies with different needs.

Image 4
Homepage of KOTRA



Source: www.kotra.or.kr.

KOTRA also advises Korean companies that want to invest abroad. Simultaneously, its website provides information for foreign companies that want to invest in Korea with material on the business environment and a list of experts for assistance. The website also gives information on hiring procedures for foreign workers in Korea. Moreover, the KOTRA website lists nine export promotion programs, see table 12.

Table 12
KOTRA's export promotion programs, 2020

Name of the program	Contents	Function
Promoting early exporters	Commercialization Global Competency Level Test (GCL). Export guidance	Provide consulting services for expanding businesses, support dealing with overseas buyer inquiries, and arrange meetings with buyers visiting Korea. Conduct the GCL test, and provide customized counseling and support based on the test result. Conduct market analysis and evaluate marketability of the company's product.
Finding overseas partners/buyers	Overseas market research Business trips	Discover potential partners and conduct market research. Basic information collected by KOTRA's database is free. Match foreign buyers and arrange business meetings, provide translation services, amongst other services.
Facilitating business meetings	Local Overseas Online	Promote business meetings with foreign buyers who participate in trade exhibitions in Korea. Assist Korean delegations to meet overseas buyers or participate in exhibitions abroad. Support online marketing. Connect companies with buyKOREA.com
One-on-one customized services	Branch office Export Incubator Overseas logistics network Support for middle-standing enterprises Promote to become the world's first-class product Open trade facilitation	Share overseas public institutions as a branch office of SMEs. Provide office facilities, counseling, information and other services to SMEs that have no offices abroad Share warehouses of KOTRA's local partner logistics companies. Deal with logistics and online inquiries. Select companies with high growth potential and provide 1:1 services on overseas marketing. Promote an item to be within the top 5 in the world market share, in collaboration with other export promotion organizations. KOTRA's overseas trade center provides free office space, market information, and counseling.
Industry-specific services	Provide industry-specific projects, consulting, partnership, etc. Industries covered by the program: construction, machinery parts, auto parts, consumer goods, ICT, service industries, and medical/bio	
Cooperation with foreign governments	Trade of military products Intergovernmental trade for general goods Support center for overseas public procurement	Support the export of military products by cooperating with relevant government departments and professional institutions. Support (non-military product) intergovernmental trade Operate KOTRA's Foreign Trade Center as a local base for SMEs that want to participate in the local government's procurement offer.
KOTRA Academy	Operate various training courses to deliver/share KOTRA's know-hows.	
Export voucher ^a		

Source: Elaboration by the authors based on www.kotra.or.kr.

^a Table 7 shows the same program, which is managed in part by KOTRA.

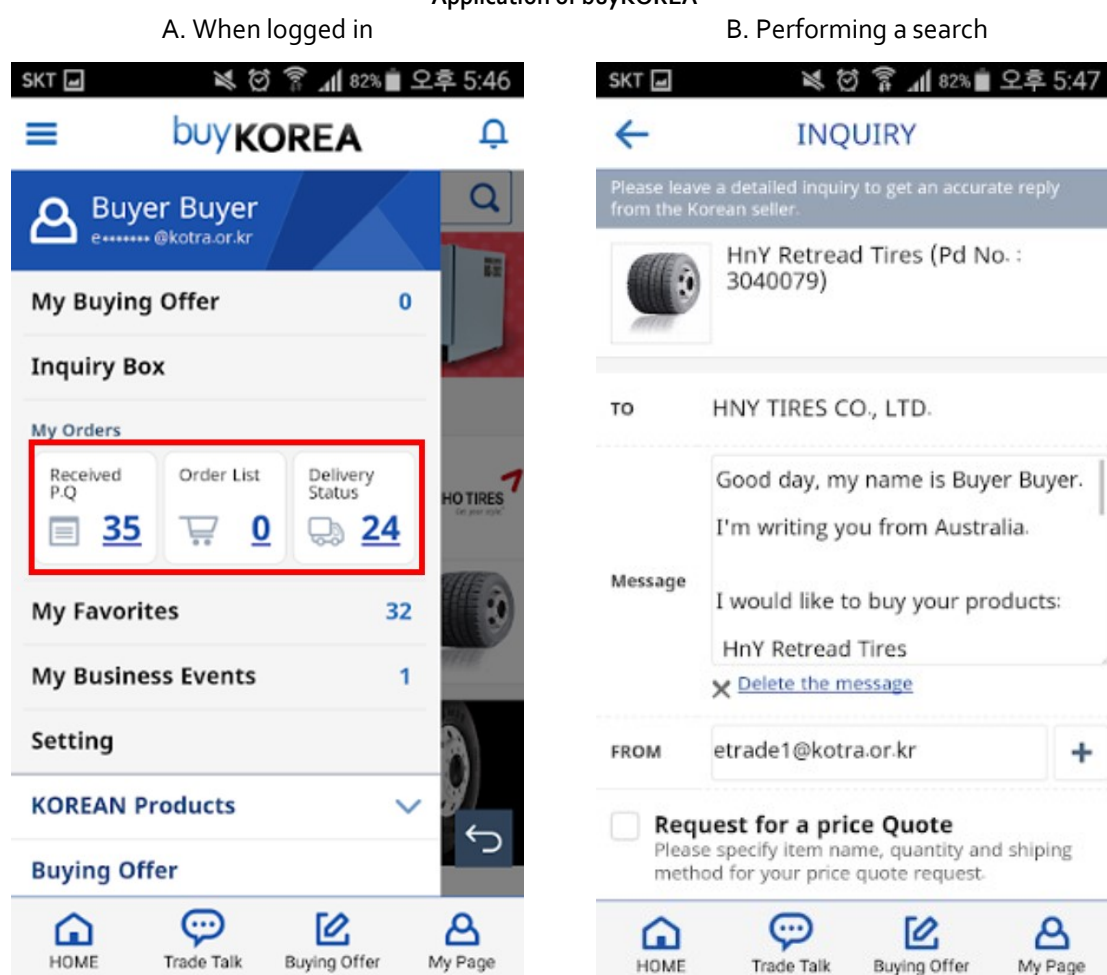
2. BuyKOREA

KOTRA also operates an e-commerce site "buyKOREA". This export promotion platform enables Korean companies to promote products and connect with overseas buyers through an online B2B marketplace. Its basic role and functions are similar to those of gobizkorea.com.

The “buyKOREA” allows companies to register their products online and later receive inquiries from overseas buyers. Registered products get promoted on trade exhibitions online, Google ads, etc. Sellers can view buying offers and also view overseas buyers’ inquiries from other online shopping malls. To guarantee safe transactions, all inquiries for purchases go through a verification process by KOTRA to identify the credibility of buyers. This platform also provides online payment services, such as KOPS Pay³⁴ and PayPal. Additionally, SMEs’ receive discounts on international shipping by companies such as DHL and EMS. BuyKOREA is available both in English (for foreign buyers) and the Korean (for Korean sellers).

The “buyKOREA” application includes the Play Store and the App Store in Korean and English versions. When a user logs in, product inquiries from buyers and the Express Mail Service (EMS) history can be checked, see image 5. The app has three functions: a) search products using specific keywords; b) establish communication between buyers and sellers using the option Trade Talk; and c) receive inquiries from buyers, send a reply or a quote, and process transactions. In 2020, 9.9 million products were registered on buyKOREA, while 180,000 overseas buyers used buyKOREA in 2017.

Image 5
Application of buyKOREA



Source: <https://play.google.com/store/apps>.

³⁴ As known as KOTRA Online Payment Service. It is an online credit card payment service operated by KOTRA for Korean companies to safely receive payments from online export transactions.

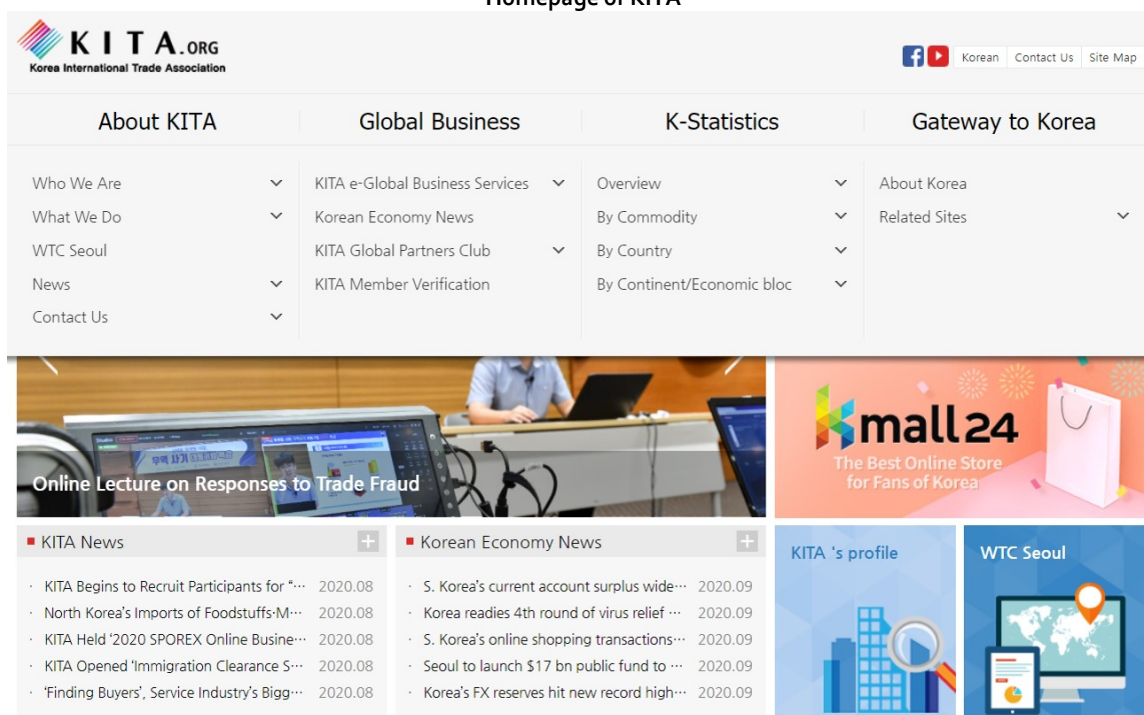
D. KITA, tradeKorea.com, and Kmall24.com

1. The Korea International Trade Association (KITA)

The KITA is a private association, which provides membership-based services. Since its establishment in 1946, KITA has implemented various trade promotion services for its 70,000 member companies, of which 95% are SMEs. In 2020, KITA has 13 offices in Korea and 11 overseas branches in major cities. Nowadays, it is a leading business organization assisting Korean companies in entering foreign markets.

The KITA offers five categories of services: 1) online and offline counseling on trade, 2) information on overseas markets and, 3) research on trade-related issues, 4) trade-oriented education and training programs, and 5) Global Buyer-Seller Matching Service. While the KITA website, shown in image 6, provides multiple digital services, it also operates a B2B e-marketplace “tradeKorea.com”, and a B2C online marketplace, “Kmall24.com” to promote the participation of Korean SMEs in cross-border e-commerce.

Image 6
Homepage of KITA

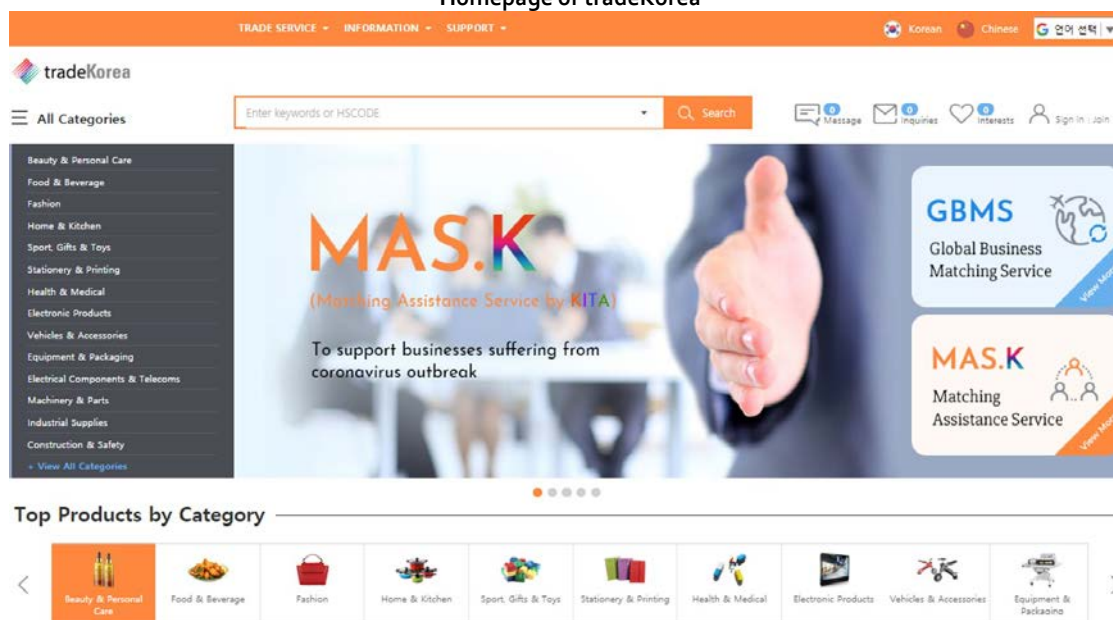


Source: kita.net.

2. TradeKorea.com

The tradeKorea.com website is a B2B e-marketplace, where overseas buyers and suppliers can trade with KITA members and other Korean firms. The tradeKorea website is available in Korean and English. While “kr.tradeKorea.com” mainly targets Korean companies (see image 7), “www.tradeKorea.com” targets both overseas buyers and suppliers.

Image 7
Homepage of tradeKorea



Source: www.tradekorea.com.

Table 13 shows the 5 main services offered on tradeKorea.com; 1) global business matching service, 2) information, 3) transactions and payments, 4) creation of mini website and 5) Inquiries.

Table 13
Services provided by tradeKorea.com's website, 2020

Category	Contents	Function
Global business matching services	Buyer Database (DB) targeted marketing Global business matching service Arranging transaction with big buyers Overseas buyers' purchase offer	Sellers can search for buyers on KITA's database and send proposals Match sellers to buyers from the United States, China, Japan, and other countries. Arrange online meetings between local companies and large international buyers Provide overseas buyers' sourcing information to match with domestic companies.
Information	Online exhibition TradeAlert TradeAlertWe	Hold online exhibitions in different product groups. Updates on areas of interest by e-mail. Provide newsletters on the latest trade trends, events, and news in Korea.
Transactions and payments	Micropayments on samples Discounts on exchange fee	User-friendly payment services for ordering product samples. Hana Bank gives a discount on foreign exchange fees for both importing and exporting contacts.
Minisite	-	Create individual minisite in English, using the tradeKorea domain.
Inquiry	Two-way inquiry	Similar to an e-mail, buyers and sellers can communicate bilaterally.

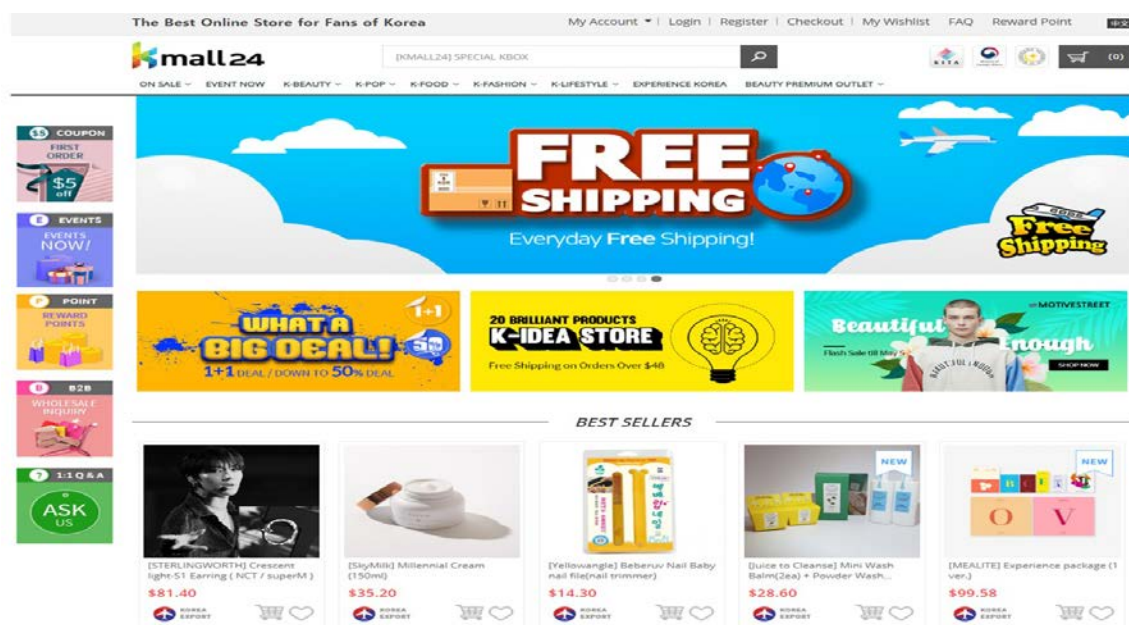
Source: Elaboration by the authors based on www.tradekorea.com.

3. Kmall24.com

Kmall24.com is a B2C online shopping mall for international consumers, which includes more than 30,000 products (see image 8). Kmall24 is similar to other e-commerce platforms such as gobizkorea.com and tradekorea.com. One difference is that Kmall24 focuses on B2C transactions, where goods are sold directly to final consumers.

The Kmall24 website is user friendly, with a simple registry for Korean SMEs and a reliable payment system for foreign customers. The Kmall24 has no entrance fees or operating costs. It is less burdensome for sellers to promote products in overseas markets, such as Amazon, eBay, Shopee, and T mall Global. Some of Kmall24's services include: 1) overseas product marketing through mobile devices, 2) product inspection and repackaging logistics, 3) foreign currency exchange without fees on payments, and 4) customer service for inquiries.

Image 8
Kmall24.com's homepage, 2020



Source: www.kmall24.com.

E. UNI-PASS and UtradeHub

UNI-PASS and UtradeHub are the two most prominent trade-related single windows of trade procedures in Korea. Both systems have simplified complex trade procedures by integrating export-related online services in an Internet-based open network.

1. UNI-PASS

UNI-PASS is a digital customs clearance system that is free of cost for its users. It connects 169 government agencies, including MOLIT and MOTIE, with 260,000 traders, shippers, airlines, banks, and other trade-related institutions. With UNI-PASS, export clearances only take 1.5 minutes and import clearance about 1.5 hours (Cho and Nam, 2016).

This e-customs system was created in 1974. Since 1992, KTNET was designated as the "Trade Automation Business Operator" in charge of the development and operation of this customs automation system. In 1994, KTNET introduced Electronic Data Interchange (EDI) based export/import permits and export customs declaration services. Subsequently, this system introduced several new services: EDI import declarations and a manifest consolidation system in 1996; an export cargo EDI system and customs duty drawback service in 1997; an import cargo EDI system in 1998; and the interconnection with the National Quarantine Agency and other regulatory agencies in 1999. Inspection results were transferred to the customs system in real-time based on those connections. In 2006, the Korea Customs Service (KCS)

launched the internet-based customs clearance system "UNI-PASS" and established "Customs UNI-PASS International Agency (CUPIA)" for the development and operation of the system.

UNI-PASS has 5 main components:

- i) Single Window System provides a one-stop service for all customs clearance and logistics management processes without visiting process-related offices and organizations.
- ii) Clearance Management System is composed of modules for the automation of customs administration, which includes business procedure modules, such as cargo and clearance management, and non-business procedure modules, notably investigation and audit.
- iii) Cargo Management System collects Bills of Lading (B/L) from shipping companies, airlines, and forwarders, and assigns a cargo tracking number to each consignment. The system is connected to delivery companies and warehouses, allowing customs officers and traders to access information on the customs clearance process (such as the status of the cargo at each stage of the inspection process), officer in charge, and location of the shipment.
- iv) Information Management System supports the administration system with modules, such as the Integrated Risk Management (IRM) module and the Advance Passenger Information System (APIS). The IRM analyses customs data and data provided by other entities for risk management, analytical and statistical purposes. This information is available to customs officers during various stages of the audit and inspection procedures. APIS uses data, such as passenger lists, reservation and entry/exit history for risk analysis before the arrival of travelers.
- v) Administration System supports the KCS's management administration in the area of customer relationship management, human resource management, etc.

Diagram 10
Structure of UNI-PASS, 2020



Source: Lee (2018), "Second session: UNI-PASS", in UNCTAD, Korea's new e-government in today's digital economy, Geneva: UNCTAD.

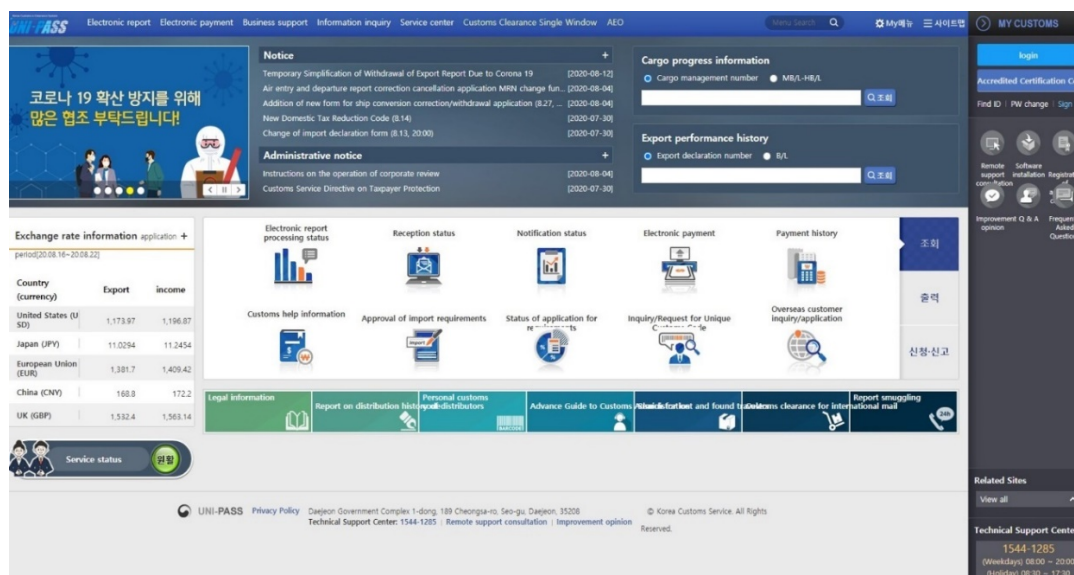
Note: This diagram refers to the Client-Oriented Logistics Information System (CLIS) and Advanced Passenger Information System (APIS).

UNI-PASS is the "Single Window" for customs clearance. Users can access this website and conduct most customs-clearance-related processes without having to visit the customs office. This portal allows users

to perform various types of transactions. They can, for example, submit online applications for customs clearance, check the real-time status of declaration or cargo, and make online/electronic payment.

In 2016, KCS introduced the 4th generation of UNI-PASS, which was more user friendly than the previous generation, notably by providing mobile assistance services available around the clock. The UNI-PASS complies with several international standards and recommendations, including the World Customs Organization (WCO) Data Model (DM 3.0), UN codes, “Revised Kyoto Convention” and the “WCO SAFE Framework”. The system exchanges customs data with other countries based on those foundations (Lee, 2018).

Image 9
Website of UNI-PASS, 2020



Source: <https://unipass.customs.go.kr/csp/index.do>.

2. UtradeHub³⁵

The UtradeHub is an integrated paperless-trade system operated by KTNET. The system is inter-related with multiple trade-related public and private entities of various sectors. Diagram 20 shows four major sectors involved in the hub and its related entities. Agencies and organizations related to the export and import sector include the Korea Chamber of Commerce and Industry (KCCI), National Quarantine Station, and federations and cooperatives that are associated with the approval of export and import. Financial institutions linked to this hub include Bank of Korea, Korea Financial Telecommunications and Clearing Institute (KFTC),³⁶ SWIFT, and domestic and international foreign exchange banks. Entities from the logistics sector include logistics companies, forwarders, warehouses, and Korea Logistics Network Corp. (KL-NET).³⁷ The e-customs system UNI-PASS and customs brokers are connected with the hub in the customs clearance sector. The website is also associated with global Networks, such as Pan Asian e-commerce Alliance (PAA)³⁸ and ASEAN Europe Alliance for Paperless Trading (ASEAL).³⁹

³⁵ Most contents in this part are retrieved from the UtradeHub website.

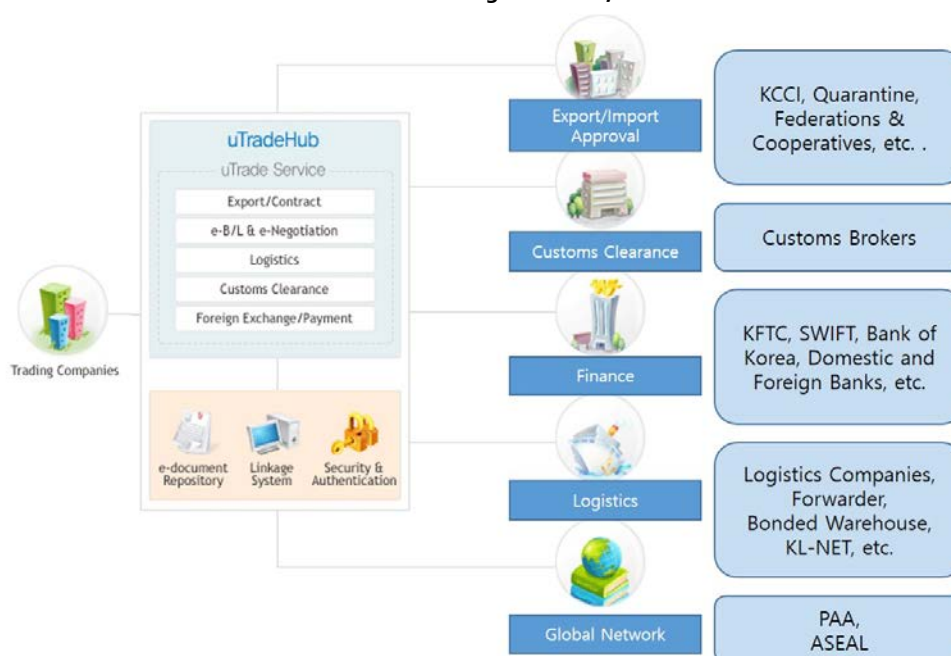
³⁶ The KFTC is a non-profit organization that operates a joint small payment infrastructure between banks, and carries out the issuance and management of public certificates. The Bank of Korea pays about half of its membership fees.

³⁷ KL-NET, founded in 1994, is a collaboration between logistics companies and public government agencies. The company provides EDI based services on export/import logistics information.

³⁸ PAA was established by 9 Asian countries, including China, Hong Kong, Japan, Korea, Macau, Malaysia, Singapore, Taiwan and Thailand. Its goal is to provide global e-Trade services, such as B2B exchange of e-documents and mutual security authentication.

³⁹ ASEAL aims to promote e-commerce through the exchange of electronic trade documents such as electronic certificates of origin and commercial invoices between Asian and European countries. The member states include Korea, France, Germany, Taiwan, and the UK.

Diagram 11
UtradeHub and related organizations, 2020



Source: Modified version by the Authors, based on original image retrieved from the webpage of UtradeHub.

The UtradeHub has five parts: Trade, Logistics, Finance, Marketing, and Customs. All services can be accessed through Utradehub with a single account, based on the Single Sign-On (SSO) system. The hub allows traders to process export and imports, local purchase, transactions related to e-B/L, and e-Nego (digital handling of negotiation documents).

The Hub electronically processes all export-related services from contracts, L/C related business, customs clearance,⁴⁰ shipping, insurance, and remittances after export contracts. Exporters can electronically handle domestic L/C and purchase confirmation to procure raw materials or finished products required for the production of products in Korea. Suppliers can also conduct processes related to the delivery of export goods to exporters and payment collection.

UtradeHub can also handle import-related processes, such as import contract, insurance, import L/C opening, shipping document collection, customs clearance (Import Declaration), and payments. ANNEX II shows details of the L/C related services managed in the hub.

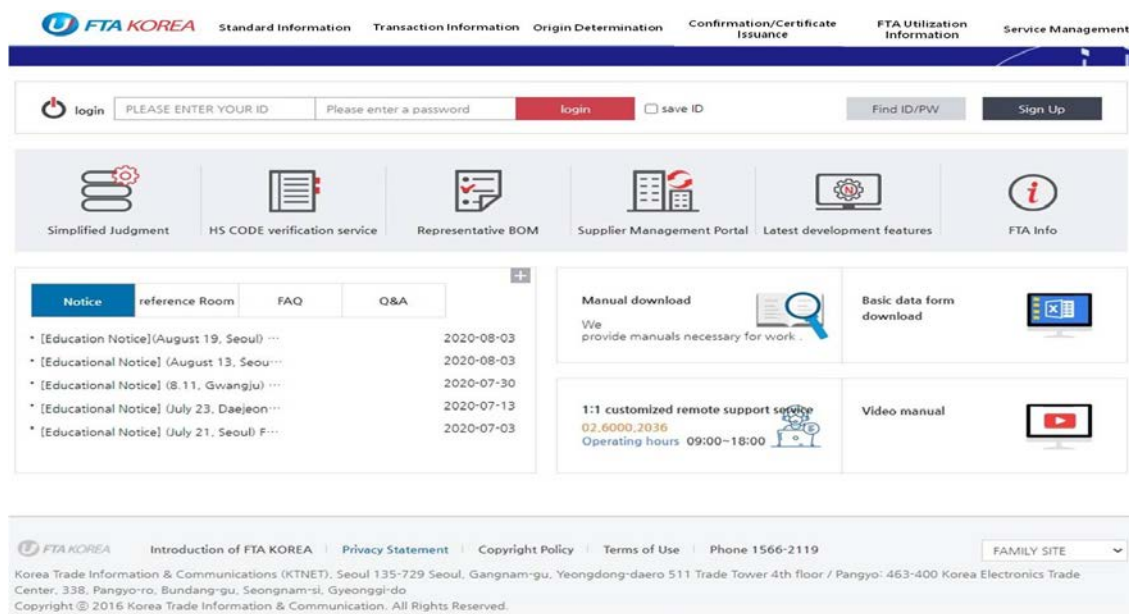
Negotiation-related processes can be conducted electronically without visiting financial institutions. In the case of the e-B/L, the system receives a B/L electronically from a carrier, registers the title into the 'Title Registry', and stores the original copy in the 'Document Repository'. The latter are circulated online. Regarding L/C services, a variety of banking operations can be conducted, including the L/C incoming notice, amendment of the terms, issuance of the original copy, e-Negotiation, and L/C transfer. The system also helps banks to negotiate e-L/Cs, D/As, and D/Ps digitally by enabling banks to process online negotiation requests from customers. The hub also provides various information in collaboration with KITA, KOTRA, EC Plaza, and EC21.⁴¹ The websites of these organizations connect with the hub.

⁴⁰ The system includes all services related to invoice, packing list (P/L), export report request and export declaration.

⁴¹ EC21 is the B2B online shopping mall operating company, spun off from KITA in 2000. 'EC Plaza' is established in 1996 as the 'KTNIC (KTNIC Internet Commerce)', and changed its name into EC Plaza. The company provides international marketing services, and operates B2B online site 'ecplaza.net'.

UtradeHub also operates the websites 'UFTAKorea' and 'ULogisHub'. The website 'UFTAKorea' is the FTA related Certificate of Origin (C/O) management system (see image 10). Users can access FTA rules and FTA related information and simulate market access conditions with the Harmonized System Code (HS Code). The hub also provides services such as storage, distribution, print, and transmission and reception of e-C/O.

Image 10
Homepage of UFTAKorea, 2020



Source: <https://fta.utradehub.or.kr/fta/origin/common/main/index.do#>.

The 'ULogisHub' is a website designed to assist logistics companies (e.g., airlines, freight forwarders, and shipping lines)⁴² by providing consolidated services for the process of export and import cargo and conducting operations related to bonded goods by automatically connecting to the business process of logistics companies. The website provides cargo information through the Manifest Consolidation System (MFCS). This system supports the consolidation and submission of cargo manifests (the consolidated list of cargo loaded in a ship or a plane) from forwarders and charterers on behalf of shipping lines or airlines to control the total volume of inbound and outbound cargos. The system enables logistics companies to monitor the entire process, from the consolidation of freight manifests to customs inspection in real-time, and to share the information with bonded warehouses and carriers.

⁴² The website also provides services for bonded carriers, land carriers, bonded warehouses, inspection, and customs agents.

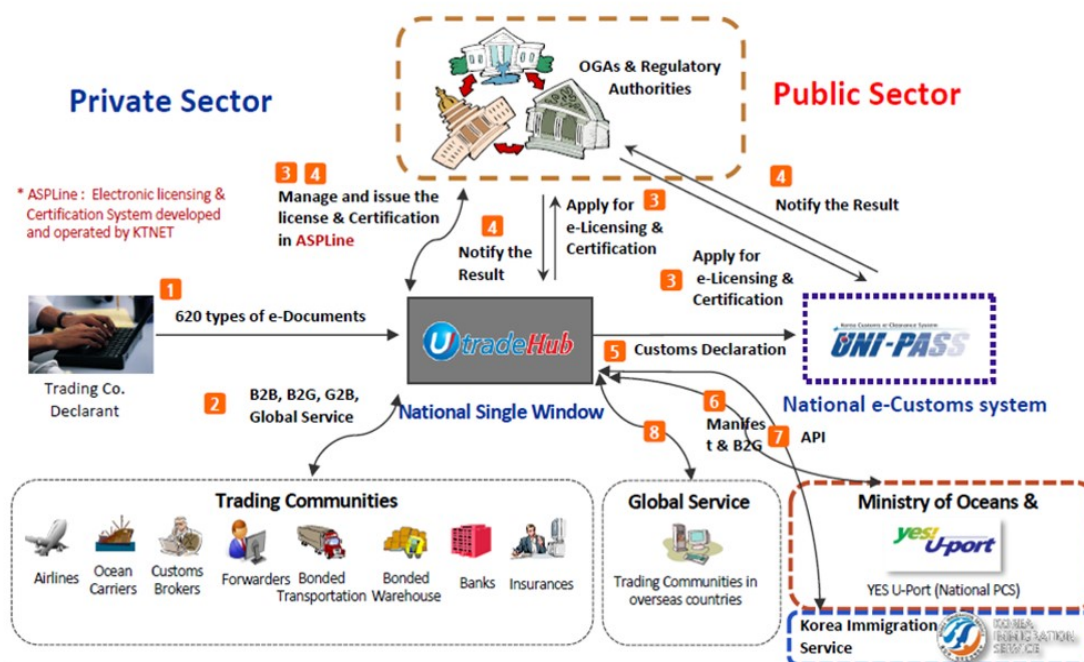
Image 11
Homepage of ULogisHub, 2020

Source: <https://www.ulogishub.com>.

In many countries, e-customs systems are operated by the government (agencies), which budget is financed by the central government. At the same time, most operators of additional services cover their operating costs by user fees. In the case of Korea, however, UNI-PASS is operated by customs authorities funded by the government. At the same time, authorized third-party service providers such as the KTNET handle the network connections and other value-added commercial services.

In 2003, MOTIE funded the development of the internet-based e-trade platform UtradeHub and designated KTNET for its operation. KCS also selected KTNET to handle some commercial customs network services, including some functions of customs clearance, consolidation, and customs duty drawback. UNI-PASS and UtradeHub are connected to conduct processes related to customs clearance, including submission of applications for licensing and application, information inquiries on export and import declaration, and refund request. According to UN/ESCAP and UNNExT (2018), UNI-PASS is one of the most advanced customs systems that integrate all customs-related services. Diagram 23 shows the functional relationship between the two systems.

Diagram 12
Links between UtradeHub and UNI-PASS, 2020



Source: Lee (2019), "The experience of Korea and other Asian Countries", presentation at the CORPYME Training workshop for the internationalization of SMEs in Latin America and the Caribbean: The trade single window for the internationalization of SMEs, Santiago: ECLAC.

F. The Government plan for a digital trade infrastructure

In October 2019, the government announced the "Digital Trade Infrastructure Establishment Plan".⁴³ It aims to improve the national digital-trade infrastructure and facilitate cross-border e-commerce. Despite constant efforts to digitalize the national trade system since the early 1990s, the government has recognized that the current system can be even more efficient and effective. The plan has three objectives: 1) establish a user-oriented trade promotion system, 2) Make the document processing system more user-friendly, and 3) Diversify the online export support measures. To achieve this goal, the government defined three objectives and seven tasks (see table 14).

Table 14
Goals and tasks of the "Digital Trade Infrastructure Plan", 2019

Objectives	Tasks
User-oriented support system	Establish a tailor-made support system for exporting companies Improve online trade-financing system
Easy and convenient system	Adopt innovative technology to reduce trading costs Globalization of the digital trade system
Diversification of e-commerce exports	Tailor-made support for online B2B cross-border e-commerce Tailor-made support for online B2C cross-border e-commerce Establishment of the user-friendly system

Source: Elaboration by the author based on the Ministry of Trade, Industry, and Energy, (14 October 2019), "Digital Trade Infrastructure Establishment Plan" prepared by all related ministries, MOTIE.

⁴³ The plan was prepared by several ministries but announced by MOTIE.

Establishing a tailor-made support system for exporting companies

The government plans to integrate and reorganize the export-related information supplied by public and private organizations into five information websites. Table 15 summarizes the objectives, contents, and websites that serve different purposes. The aim is to integrate all information provided by the Korean ministries into the “Integrated Information Center for International Economy” website. MOTIE and KOTRA are jointly developing the “BigData based Trade and Investment Analysis System”. Also, MOTIE is developing the “Integrated FTA Management System”.

Table 15
Plan for a user-oriented support system

Classification	Objective	Contents	Website
Information provision	Basic information	Provide information on foreign market and basic information on exports	Integrated Information Center for the International Economy
Market recommendations	Specific information	Recommendation for particular products and markets	“My Trade Service” (KITA)
Connection to support programs	Government support	Provide tailor-made government programs	BigData based Trade and Investment Analysis System
Linkages to GVCs	Buyer information	Promote integration into global supply chains	“Global Partnering Platform” (KOTRA)
Solution for obstacles	Support for FTA utilization	Provide information and support to SMEs to overcome obstacles in utilizing FTAs	Integrated FTA Management System

Source: Elaboration by the authors based on the Ministry of Trade, Industry, and Energy, (14 October 2019), “Digital Trade Infrastructure Establishment Plan” prepared by all related ministries, MOTIE.

Improving online trade financing system

Currently, many trade finance related processes can be processed online. However, exporting firms still need to visit banks and other financial institutions on various occasions for the submission of documents and counseling.⁴⁴ The new system aims to use new technologies, such as Blockchain, to improve the current processing system. The new online system should be able to perform self-diagnosis and automated screenings, rendering on-site visits obsolete. This system focuses on micro and small exporting firms.

Adapt innovative technology to reduce the costs involved with trades

From 2019 to 2021, the MOTIE has been implementing the project “Establishment of Digital Trade Infrastructure”. The main objective is to establish the improved “Digital trade Platform”, which will be the “UtradeHub 2.0”. Table 16 presents the main elements of this transformation.

Table 16
Comparison of the old and the new platforms, 2020

Classification	Old	New
Scope	Disconnection between finance, logistics and customs	Liaison and Integration of all trade-related processes
Methods	Conveyance of digital documents.	Sharing and distribution of data Open API ^a
Target	Traditional trade (B2B oriented)	Traditional trade and online commerce (B2C oriented)

Source: Elaboration by the author based on the Ministry of Trade, Industry, and Energy, (14 October 2019), “Digital Trade Infrastructure Establishment Plan” prepared by all related ministries, MOTIE.

^a API (Application Programming Interface).

⁴⁴ According to the result of the government's survey on exporting SMEs (Ministry of Trade, Industry, and Energy, (14 October 2019), “Digital Trade Infrastructure Establishment Plan” prepared by all related ministries, MOTIE.

The government will share data and information of the KCS with other trade promotion organizations, develop and provide a simplified Certificate of Origin (C/O) management system for early exporters, and improve the current digital logistics service system.

Globalization of the digital trade system

The government plans to “export” its “Korean Digital Trade System” to other countries, to facilitate the interconnection of systems through the web. This process is under way in Peru and Uzbekistan.

Tailor-made support for online B2B cross-border e-commerce

The government plans to restructure three public export promotion platforms to provide more differentiated, and tailor-made support adapted to the needs of its users. These platforms are “buyKOREA” (managed by KOTRA), “GobizKOREA” (KOSME), and “Tradekorea” (KITA). The government has requested these three organizations to differentiate their websites to target different audiences. At the same time, they should also conclude an MOU and establish a “Single Window” connecting these websites. Each platform caters another market segment:

- Manufacturing: The “buyKOREA” website of KOTRA will promote industrial goods, with a focus on industrial parts and components;
- SMEs: the “GobizKOREA” website of KOSME will promote SMEs and early exporters;
- Chinese market: this will be the focus of the “Tradekorea” website of KITA.

Tailor-made support for online B2C cross-border e-commerce

To promote B2C online exports, the government plans to select e-commerce platforms by sectors, which have a high growth potential in the global market. It will provide these with marketing and technology support to become international e-commerce platforms. KOTRA’s 127 offices around the world will facilitate this process. Moreover, the government plans to support the registration of SMEs and promote their products on these online platforms, and assist SMEs with an insufficient capacity of doing international business through selected online agencies.

Establishment of the user-friendly system

The government plans to establish an “e-Commerce Cluster” by 2022 for e-traders. To simplify the online export declaration process, it will create a special (online-trade only) declaration form and system to provide a convenient and straightforward online trading environment. The government also plans to establish the “Statistical Analysis System for Online Trade” to keep track of online trading and create the Global Distribution Center (GDC) that specializes in the distribution of goods sold in online market places. The government will provide training and education courses to foster experts in cross-border e-commerce, in collaboration with 20 selected universities.

V. Implications for Latin America and the Caribbean

In Korea, the government budget for SME support in 2019 was about 18 billion dollars. These funds financed approximately 1,600 SME policy support programs and services provided by the central and regional governments (Lee et al., 2019). Notwithstanding this large amount, it is impossible to provide all this support to SMEs without the help of digital technology.

The digitization of the trade-related environment is a necessity for efficient SME export support. Everywhere SMEs lack time to visit government agencies to review and apply for public support programs. Their digitalization enables SMEs to access information on government support at any time and from anywhere. Digitalization is also an attractive option for the policymaker to overcome spatial and temporal obstacles. For the past two decades, the trade-related policy environment in Korea has dramatically improved due to digitalization. The digital trade processing system has simplified and reduced the time and cost of export and import procedures.

Korea's experience provides the following lessons regarding the development of its national digital trade infrastructure since the early 1990s. First, the authorities responsible for SMEs need to identify the needs of SMEs and prioritize the sequence of digitalization along the firms' export value chain. This chain has several segments, each requiring a specific digital export support instrument.

During the early stages of Korea's trade system digitalization, the country mainly focused on the development of the automatic trade processing system, most notably UtradeHub and UNI-PASS. However, later on, the government realized that the trade processing system had no direct impact on facilitating SMEs' exports or imports. From the early 2010s, new digital platforms were established, such as e-commerce websites and online trade support systems. These have had a more direct and positive impact on SME exports and internationalization.

It is unclear whether digital support instruments that directly benefit SMEs, such as e-commerce platforms, should be introduced before or after more generalized digital tools that help all firms independent of their size, such as e-customs. As SME exports represent a small share of total sales abroad, the government could have developed a simple online transaction system for SMEs before

2010s. The relatively late development is because authorities in charge of SME development did not participate in the early stages of digital trade development.

As each country's situation is different, the sequence of the development and introduction of other digital trade support instruments differs from one place to another. A country's position depends on several factors, including the development stage of the national digital infrastructure, size of available budget, the status of SME internationalization, and participation of SMEs in the GVCs. However, institutions in charge of SME exports should assess the degree of SMEs internationalization and their SMEs. Both factors determine the priorities in the development of the digital trade infrastructure.

Second, each country should establish differentiated and specialized trade promotion organizations. In Korea, KITA, KOSME and KOTRA have been competing rather than collaborating in their roles of supporting Korean SME exports over the past two decades. They have been providing similar types of export promotion programs and services, which were often overlapping. This situation raised criticism and produced a certain level of inefficiency, as excessive sources of information and programs were confusing and overwhelming to many SMEs. Firms' managers often do not have time or are not capable of figuring out which organization's programs provide better opportunities for them.

Overlapping inter-agency roles in Korea create inefficiencies, which is a challenge to this day. The current government is trying to address this issue by differentiating the agencies' roles. In 2019, the government plans to separate the functions of the trade promoting organizations according to their characteristics. According to the plan, each organization will be in charge of specific areas, such as manufacturing, SMEs, and specific foreign markets. Each will concentrate the provision of information and SME support measures on their particular domain. Subsequently, a single platform will integrate these websites, with all resources from these organizations.

Third, digital platforms must be as user-friendly as possible. Often IT experts and program developers are unaware that SMEs have difficulty understanding technical terms. This reality applies in particular to platforms for customs clearance, logistics, and trade financing. Even user's manuals, which should be easily understandable, are often full of technical terms that are unfamiliar to SMEs. Therefore many trade promotion organizations' websites, prepared by experts, are often complicated for SMEs.

Another frequent complaint of trade promotion websites is an excessive amount of information in a limited space. Many information websites provide an overly complicated interface as they try to provide as much information as possible, which confuses public users. Many SMEs complain they spend too much time trying to find a simple piece of information.

In Korea, the Ministry of SMEs and Startups (MSS) has not participated in the development of digital trade promotion and facilitation tools such as UniPass and UtradeHub. It is, therefore, unlikely these online portals explicitly consider the views and considerations of SMEs. According to interviews with these firms, most are reluctant to use UtradeHub or UNI-PASS for exports because they are not familiar with the terms and functions offered in the system but instead outsource the trading process to brokers.

Therefore, SMEs' Ministries and business organizations should be encouraged to participate in the development of digital trade promotion and facilitation tools. This participation would significantly enhance user-friendliness. Also, training courses should be provided for SMEs to learn how to use electronic devices related to, for example, customs clearance, trade financing, and logistics.

Fourth, the government should encourage SMEs to adopt and use digital technologies. According to the National Information Society Agency (NIA, 2019), Korea is the world's top country in terms of the penetration rate of optical cables, access speed to the internet, development rate of ICT, and 5G adoption. Korea also ranked second in terms of internet access speed in rural areas. However, the proportion of Korean SMEs participating in e-commerce was only 8%, which was the lowest among

20 countries (Ezell et al., 2018). Moreover, the proportion of SMEs that are using Big Data was only 3.6%, which was the lowest within the group of OECD countries (Jones, 2018).

In Korea, a higher than expected share of SMEs are unfamiliar with new technologies and digitalization. Despite the well-developed national digital infrastructure, less than 10% of SMEs had adopted the smart-factory-system in 2018. According to a 2018 survey conducted on Korean SMEs, only 16% were preparing for the 4th industrial revolution, and only 14% were interested in the digital technology-based businesses.⁴⁵

The national trade-related system will be of little use if SMEs are not familiar with the digital-based systems. Thus, the government should develop and provide training programs for the SME application of digital technology and programs. Also, more training programs are needed to teach SMEs the basic concepts and practical trade processes regarding, for example, customs clearance and trade financing.

Currently, the Korean government is planning to offer more professional training courses to increase the number of experts in e-commerce. Twenty designated universities collaborate with the development of this program. Moreover, the government is planning to create an appropriate job market for those who complete the program.

Many countries are developing various trade-related digital tools, including e-customs and digital information websites. These digital systems may reduce the administrative burdens of government authorities that support SMEs while benefiting SMEs by reducing the time and costs of their business. However, little evidence exists on how digitalized systems impact SME exports.

In most countries, the creation of digital trade promotion and facilitation systems is not the responsibility of the authorities responsible for SMEs. Many countries are interested in establishing a digital strategy in itself, such as e-customs, but do not invest in the development of digital technologies adapted to SMEs. Digital technologies do not necessarily increase the internationalization, exports, and imports of SMEs. Authorities should focus on which digital technologies fit the needs of SME exporters. Technology is only a means to support SME exports effectively and efficiently, but not an end goal.

SME export related organizations should form a consultative body to discuss how digital technologies may improve the export support system. The participation of ministries responsible for SMEs and technology is desirable, as well as the involvement of representatives of SMEs in different business sectors. This body could identify the most critical needs of SMEs in the export value chain and how digital technologies can address those needs. The use of digital technology is vital for the successful promotion of the internationalization of SMEs.

⁴⁵ Presidential Committee on the Fourth Industrial Revolution (2018).

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MSS [online] www.mss.go.kr
OECD [online] www.oecd.org
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WTO [online] <https://www.wto.org>

Annexes

Annex 1

Digital infrastructure for SME internationalization

Several ministries prepared the "Innovation Plan for Electronic Trade: e-Trade Korea 2007". The Plan's three primary objectives were:

- i) Establish a 24-hour operating electronic trade platform (single window) based on the internet,
- ii) Redesign the whole process of doing international business; marketing, F/X, logistics, customs clearance, settlement, and global connectivity of the system, etc.,
- iii) Revise the associated laws and procedures for the nationwide facilitation of electronic trade.

The seven task areas for digital innovation are:

- 1) "E-trade platform" as a single-window:
 - Establish the 'digital document storage center' as a core infrastructure of the single window
 - Establish inter-linkages between trade-related organizations (export supporting agencies, customs, inspection agencies, carriers, banks, etc.) of the platform
- 2) International marketing:
 - Establish an 'integrated information-search system' for foreign market research and information provision etc.
 - Establish an international marketing-support system in collaboration with trade promotion agencies and export supporting organizations
- 3) Trade processes (declaration, inspection, certification, etc.):
 - Establish a one-stop trade process system based on an online system
 - Establish an information-sharing system among customs service, inspection agencies, and certification agencies, etc.
- 4) Logistics and customs clearance:
 - Enhance digitization of trade-related documents
 - Establish an information system based on the internet on logistics and customs clearance
- 5) F/X and settlement:
 - Establish an e-Nego system in the e-trade platform
 - Establish an online local L/C settlement system
 - Establish an "online trade-financing platform" etc.
- 6) International cooperation:
 - Establish an e-trade network between Korea and East Asia & Europe etc.,
 - Establish mutual agreement system on trade documents and standardization of e-trade
- 7) Legal framework:
 - Revise related laws to set up the legal framework to facilitate e-trading, and support education and training of human resources for e-trade

Annex 2

Functions in UtradeHub: export, import, and local purchases and supplies⁴⁶

1. Export

Category	Available functions
Export contract	Export contract sheet L/C & non-L/C information
Export l/c	Arrival of export l/c L/C confirmation L/C cancellation Transfer of l/c Balance inquiry History of export L/C Expiry date inquiry Service charge inquiry Payment of service charge
Customs clearance	Commercial invoice / packing list (for customs use) Request for export permit / export permit
Shipping	Commercial invoice Packing list Shipping booking Shipping request B/I confirmation Request for export B/L reissue/cancellation of the request Request for export B/L transfer / approval Query of export B/L title registry General shipment operations
Insurance	Request for cargo insurance Issuance notice of cargo insurance policy Request for endorsement Notice of cargo insurance endorsement
Certificate of origin	Request for certificate of origin / inquiry Request for certificate of commercial invoice / inquiry Online payment for issuance of certificate of origin Certificate of commercial invoice samples
Purchase-related documents	Bill of exchange Certificate for quality / quantity / weight Beneficiary certificate

⁴⁶ All contents in ANNEX II are from webpage (www.utradehub.or.kr/porgw/english/html/eng_services_o2.html) of UtradeHub.

Category	Available functions
Negotiation of export bill of exchange	Request for purchase (negotiation) of export bill of exchange Result of negotiation / cancellation Notice of open account (o/a) transfer / approval
Logisview (logistics information)	Inquiry into visibility of logistics

Source: Author.

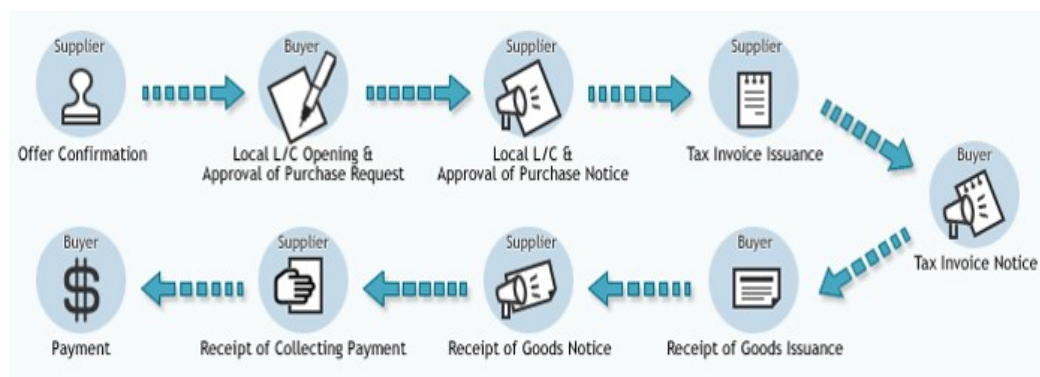
2. Import

Category	Available functions
Import contract	Import contract sheet L/C & non-L/C information
Insurance	Request for cargo insurance Cargo insurance certificate notice Request for cargo insurance endorsement Cargo insurance endorsement notice
Import L/C	Import L/C application / response Conditions amendment application / response
Shipping documents	B/L & AWB management
L/g issuance	History of import bill discounting notice Request for letter of guarantee
Sales on credit	History of import bill discounting notice Shipping document arrival notice Payment confirmation Request for payment order Debit advice message (DEBADV) Payment instruction
Customs clearance	Import permit
D/o issuance	Cargo information

Source: Author.

3. Local purchase & supply

a) Local purchase/supply



Source: Author.

b) Main functions

Category	Available functions
Offer confirmation	Offer confirmation (proposal/verification)
Local L/C	Local L/C opening request and response Conditions amendment request and response
Approval of purchase	Application for purchase approval to obtain foreign currency Purchase certificate to obtain foreign currency
Payment for goods	Receipt of goods issuance Tax invoices Local L/C incoming notice Request for the payment order Debit advice message (DEBADV) Account statement

Source: Author.

c) Confirmation of requirements

Category	Available functions		
Import license-related services	Application form for an import license Import license amendment order Import declaration for animal feed Request for inspection of imported animal feed	Application for import license amendment app Application for certificate of secure authentication Import permit for animal feed Notification of imported animal feed inspection	Import license Certificate of secure authentication Failure notification
Import recommendation	Recommendation of bound tariffs Application for recommendation of bound tariffs Application for extension of bound tariff recommendation	Recommendation of tariff quotas Application for recommendation of tariff quotas Application for extension of tariff quotas recommendation	Recommendation of fta tariffs Application for recommendation of fta tariffs
EDI-transmission from the customs	Results of import clearance Notification of export permit Notification of import permit	Approval of bound tariffs recommendation Approval of tariff quota recommendation Approval of fta tariff recommendation	Approval of tariff exemption recommendation
Other services	Error notification Partner relationship management	Receipt notification Item management	Management of necessary function codes Statistics

Source: Author.



Small and medium-sized enterprises (SMEs) account for a significant share of the exports of the Republic of Korea, in large part thanks to the sophisticated digital support infrastructure available to these firms. This document analyses how the government implemented this infrastructure over the last decades in close coordination with the private sector. It also presents the prominent institutions and their digital SME export support instruments. Lastly, it identifies some future challenges and recommendations for Latin America and the Caribbean.