Customs Cross-Border Data Exchange

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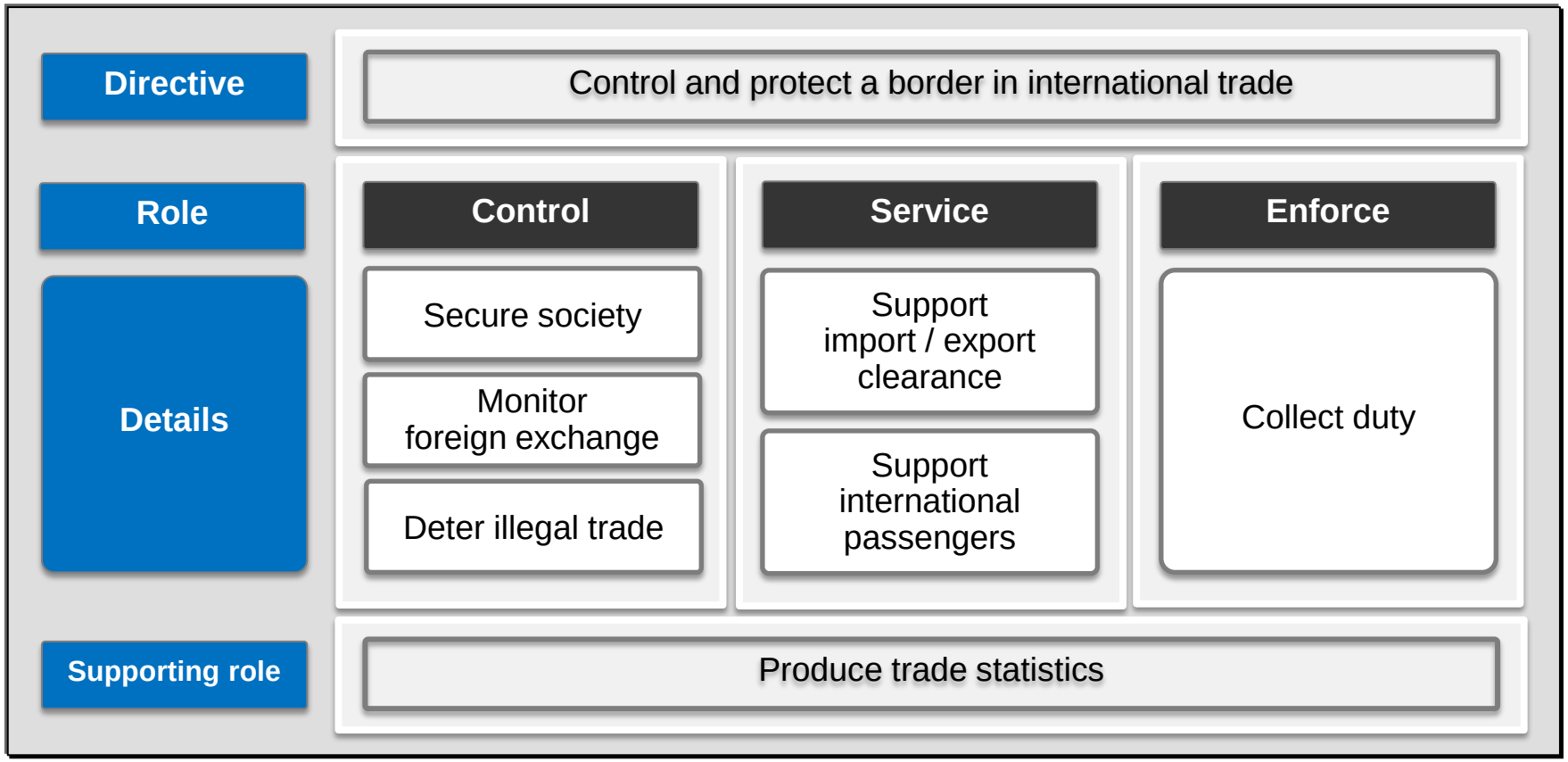
I. Introduction

Roles of a Customs



Role of a customs (World Customs Organization, 2004)

- A customs is a gateway for international cargoes and passengers in/out of a country.

☞ **EFFICIENCY OF A CUSTOMS** greatly affects **INTERNATIONAL TRADE**.

Needs for information

Activities of a customs

Control	Service	Enforce
Risk management	Cargo management	Tracking transaction
Investigation	Collecting statistics	Keeping payment history
Surveillance	Receiving passenger manifest	Cooperation with other players
⋮	⋮	⋮

Most of the activities in a customs administration requires **INFORMATION**

Needs for information

Internal demand

Limited resources

Demand for quality information in timely manner

Providing better services to the public

Increase revenue collection

External demand

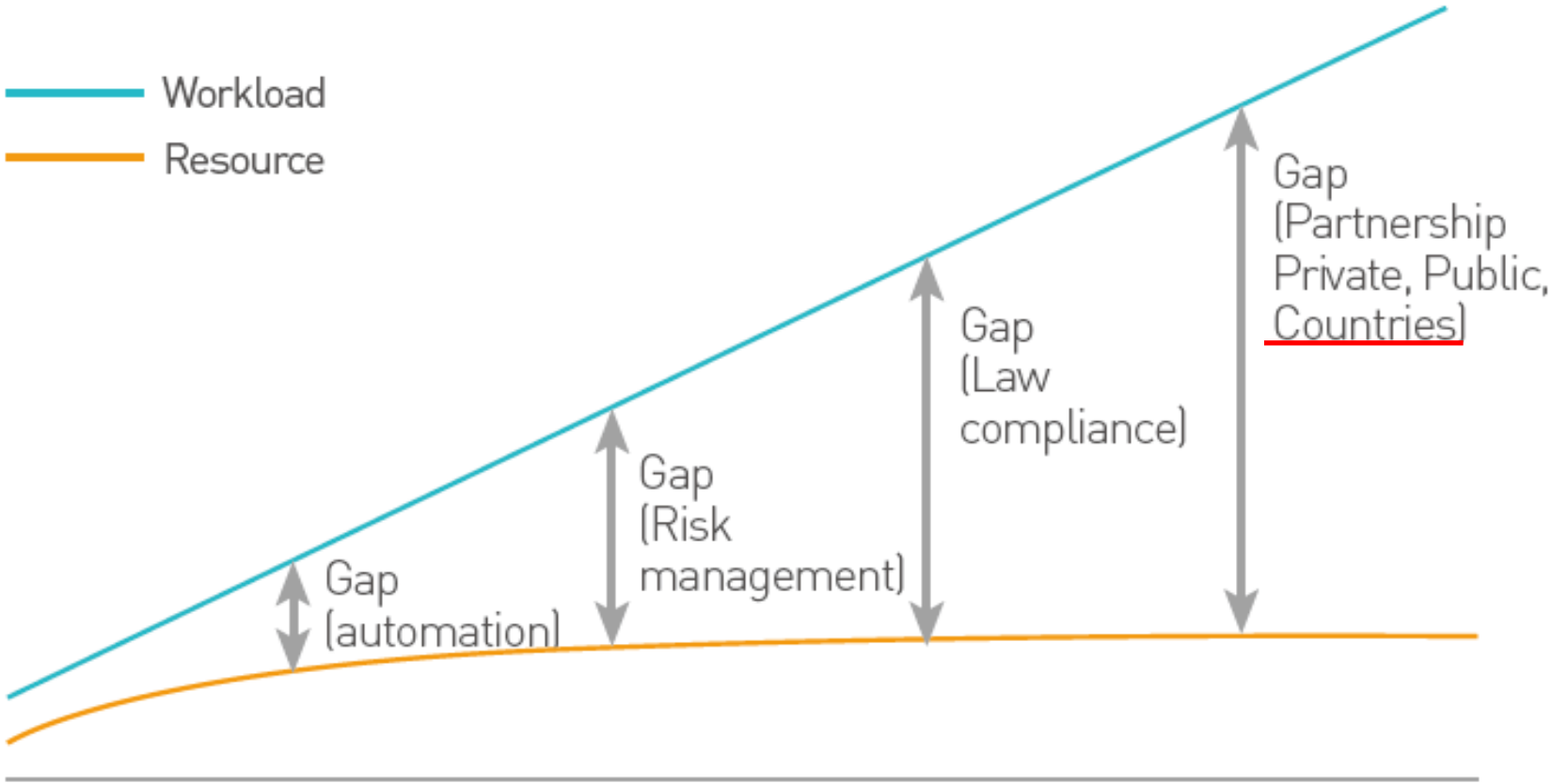
Public demand for secure society

Smooth and swift logistic/passenger service

Increase in international competitiveness

Following international trend

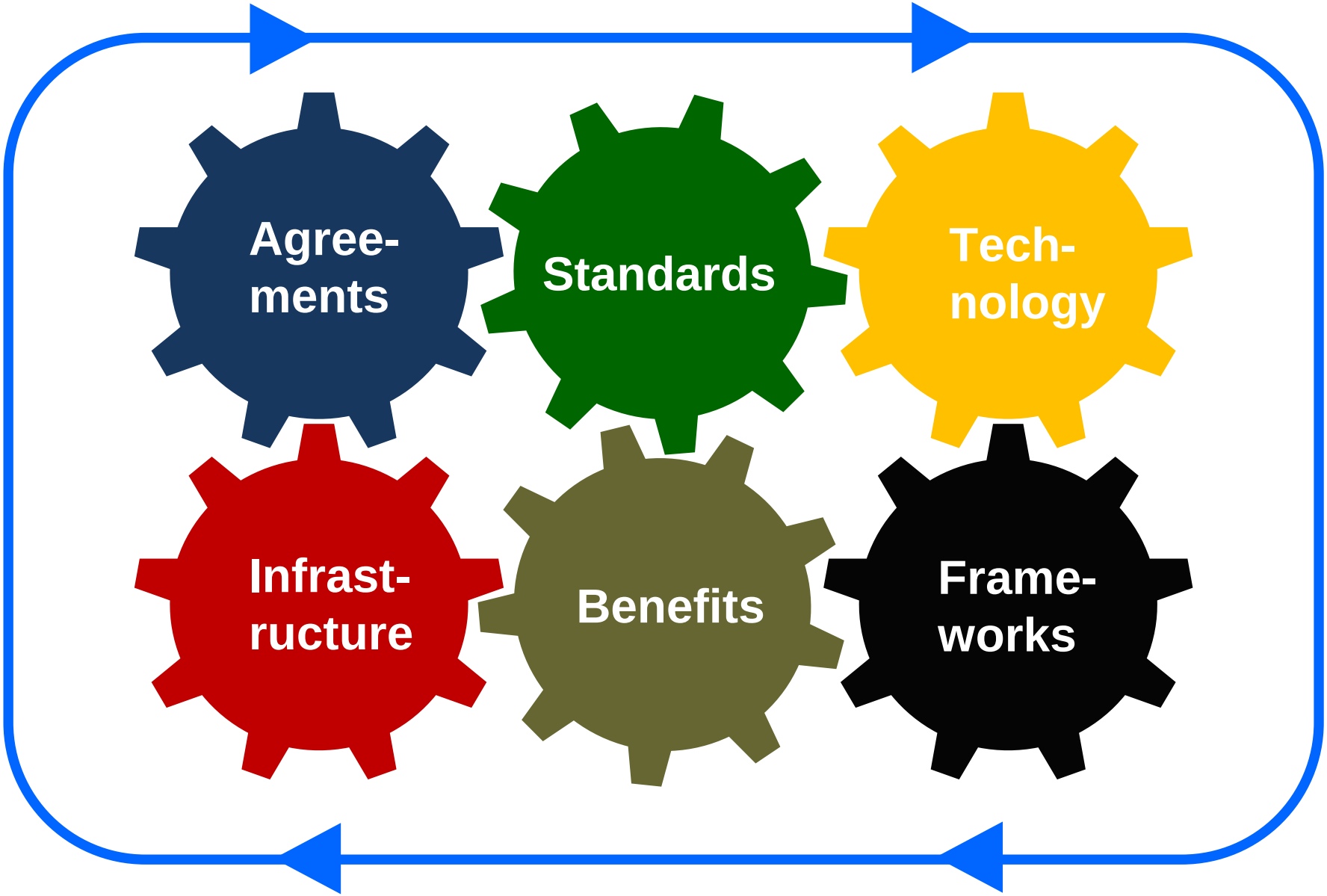
Needs for information



Computerization and securing information enables to cope with increasing **WORKLOAD** with limited **RESOURCES**

II. Procedures

Preparations



Interests

Bilateral

Two countries with common economic and security interests

Regional

Certain number of countries with common interests, often benefits from proximity and political reasons (ASEAN, NAFTA, GTI …)

Global

Based on long-term Follow global trend and to avoid isolation in international trade
(WTO, WCO, UN …)

Procedures

Initial bi(multi)lateral agreements

Formation of governing bodies

Making regulatory frameworks

Implementing computerized medium

Monitoring, promotion and training

As cross-border data exchange involves multilateral decision making processes, **STEP BY STEP** approach reduces failure or partial success of data exchange

Governing body

Committee

Consisted of high level government officers
who can provide development directions and national support

Task force

Consisted of working level government officers who design the whole task according to the committees direction, monitor, operate and provide directions to the member countries

Country A work force

Specialized customs staffs who governs the whole data exchange operation

Country B work force

Receives directions from the task force then plans and operates the national level data exchange

Country C work force

Controls associate performers for the actual operation of data exchange and utilizes them

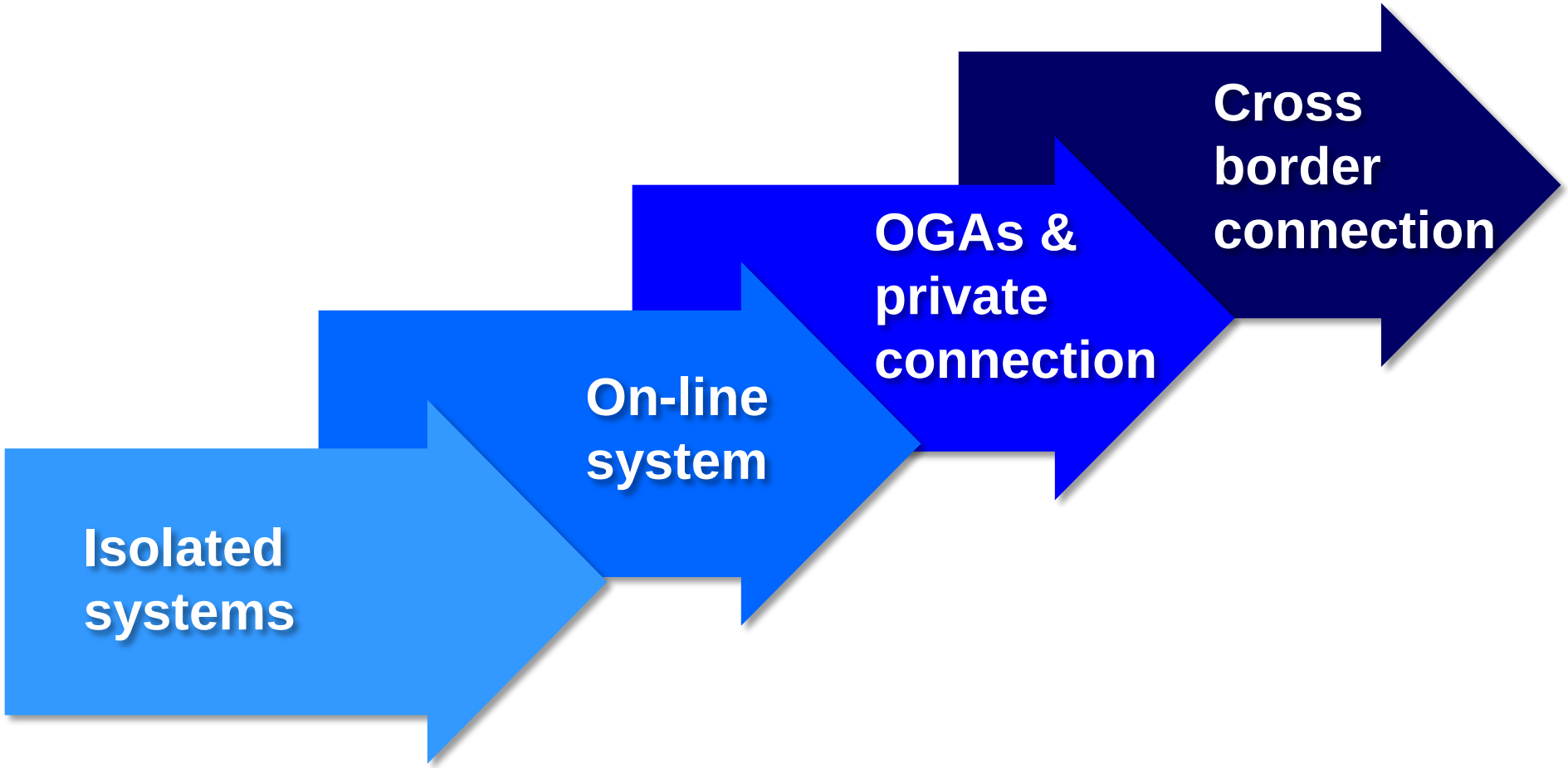
Associate performer

Designs the data exchange system according to the specification given by the country's work force and operates the system

Regulatory framework

National level preparations	Making and amending legislations for cross-border data exchange according to the national interests which does not violate interests of the others
Business process and nature of data	Each customs have different business processes, range of data and their exact definitions. It is important to understand them and make comparison studies to utilize them properly
Data exchange standards	If possible, utilize international standards for data exchange such as the WCO DM for future expansion of data exchange range
Technical strategy	Range of data, exchanging partners and system specifications are continuously changing along with customs regulations and technical strategy should be able to meet those changes

Computerized medium



Expanding connectivity provides **WIDER RANGE** of information in more **EFFICIENT WAY**

Motoring and promotion

Training

Organize regular and irregular trainings for customs staffs and private sector to enable them to utilize newly available data and systems and follow the framework

Promotion

Promote the benefits of using cross-border data and provides incentives to best practices

Monitoring

Continuously monitor proper followings of the framework by customs and private parties

III. Benefits

Benefits - Public

Better risk management	Wider scope of information available in timely manner enables the customs to perform better in audit, investigation and surveillance processes
Simpler work procedures	Data for export can be re-utilized in the importing procedures and vice versa, that can reduce time and effort needed to re-enter or re-apply
Access to more information	New set of data from the other customs counter-parts enable better decision making for the customs staffs and increases productivity
Increase national competitiveness	Increase in customs productivity immediately affects importing and exporting that provides higher competitiveness in international trading

Benefits - Private

Savings in operations	Simpler and easier customs procedures reduce resources that were previously needed resulting cost savings
Increased opportunities	Simpler customs procedures such as customs clearance and bonded area management reduces entry barrier for international trading
Cooperation with the government	Companies with high compliance level as well as its partners will benefit not only with its own customs but also with its counter-parts
Smoother and swift logistics	Less time is needed for customs clearance and audit process which result in less delays

IV. Challenges

Challenges

Different interests and priorities	Different customs, governments and private parties have different interests and priorities and it is often difficult to find a common ground
Difference in data management	Different countries have difference data management procedures and regulations along with scope of data and their descriptions
Sensitivity of data	Some data carry information that can violate counter's interest. Also private sectors usually are reluctant to share more information than previously provided
Technology gap	Difference in development of technology and infrastructure can pose physical and tangible difficulties
Lack of strong regulatory body	Multiple number of different interests and issues often require strong decision making body to regulate the differences

V. Case study

Introduction

Title	**Pilot exchange of customs data between the Korea and the Philippines customs authorities**
Purposes	• Pursuing trade facilitation and sharing knowledge and information • Applying international standards for cross-border data exchange
Scope	Exchanging WCO UCR based export declaration and related information
Intl. Standard	• WCO SAFE Framework of standards • WCO Customs Data Model 2.0 • WCO UCR Guide line • WCO Johannesburg Convention • UN/CEFACT Recommendation 33 (Establishing a single window)
Entities	

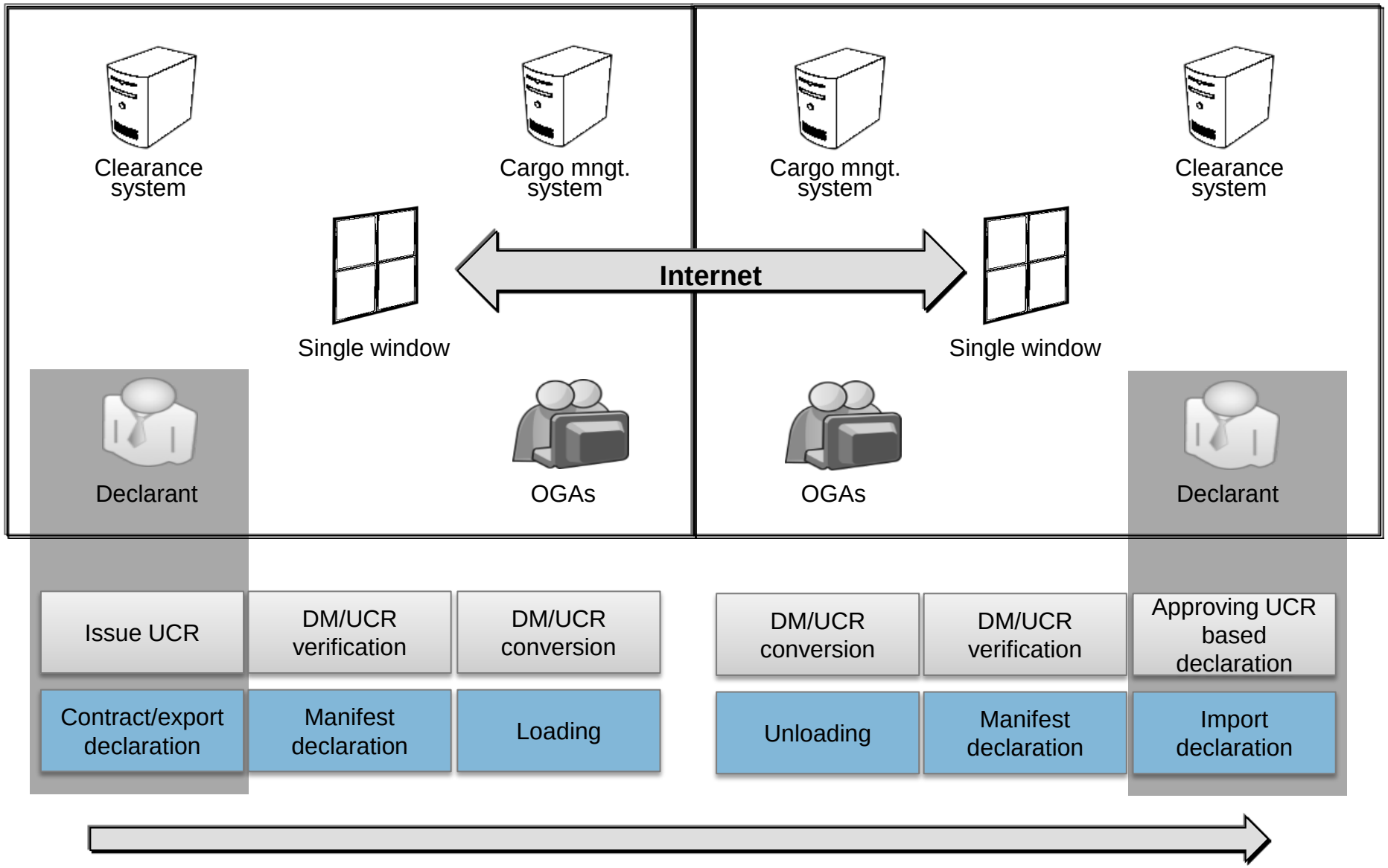
	Korea	Philippines
Customs	Korea Customs Service	Bureau of Customs Philippines
Enterprise	Dong In Entech	N/A
Logistics	Korab Global	N/A
Shipper	Hanjin	Hanjin
Consultant	CUPIA	UNYSIS

Time	September 2007 ~ December 2008

Introduction

Interval	Real-time exchange
Exchanged data	32 clauses mentioned in the Johannesburg convention for e-data exchange
Application	To be used in risk management and post clearance audit
Tracking key	UCR is given based on House B/L
Data standard	WCO CDM ver. 2.0
Connection protocol	ebXML Messaging service specification (ISO 15000-2)
Transmission	Push receive method
Transmission protocol	HTTPS ver. 1.1
Security	Commercial PKI solution
e-Signature	ebXML XML digital signature
Number of exchanges	Korea → Philippines : 869, Philippines → Korea : 194

Overview


Clearance system
Cargo mngt. system
Cargo mngt. system
Clearance system
Internet
Single window
Single window
Declarant
OGAs
OGAs
Declarant
Issue UCR
DM/UCR verification
DM/UCR conversion
DM/UCR conversion
DM/UCR verification
Approving UCR based declaration
Contract/export declaration
Manifest declaration
Loading
Unloading
Manifest declaration
Import declaration

Sample

Sample of the exchanged data Johannesburg convention (29th April 2008)

#1	WCO ID	Detail	Korea	Philippines
1	001	Declaration name coded	423	423
2	002	Declaration reference number	011100700252315	0054240
3	017	Message function coded	9	9
4	047	Customs office of exit coded	KRPUS030	PHMNL
5	085	First port of arrival coded	N/A	PH
6	160	ID of means of transport crossing border	MOL ACCLAIM	HANJIN LAEM
7	156	Departure date and time	2007-12-03	2007-12-27
8	175	Nationality of means of transport crossing border coded	PA	N/A
9	167	ID of means of transport crossing border coded	3EEU8	N/A·
10	149	Conveyance reference number	0031S	V-004E
11	049	Carrier name	MITSUI O.S.K.LINES	MOL
12	050	Carrier ID	MOUL	N/A
13	016	UCR	MOUL375448937	·
14	058	Notify party coded	N/A	N/A
15	057	Notify party	SAME AS CONSIGNEE	SMORGON HARTWELL

Sample

#1	WCO ID	Detail	Korea	Philippines
16	070	Place of loading coded	KRPUS	PHMNL
17	080	Place of discharge coded	PHMNL	KRBUS
18	146	Total number of packages	1	164
19	141	Type of packages ID	CT	24
20	131	Total gross weight	390	3444
21	159	Equipment ID number	MOFU0412986	·
22	152	Equipment size and type ID	42GP	CARGO
23	165	Seal number	434049	N/A
24	042	Exporter coded	2108122065	000129554
25	041	Exporter name	ACADEMY PLASTIC	LEVI STRAUSS (PHIL)
26	040	Importer coded	PHACA0001X	N/A
27	039	Importer name	ACADEMY PLASTIC	LEVI STRAUSS KOREA
28	034	Delivery destination	PH	KR
29	145	Tariff code number(customs)	848071	6203.4290
30	137	Description of goods	USED MOLDS	LEVI'S MENS JEANS
31	144	Number of packages	1	0
32	128	Net weight	385	0

Agreements

Agreements were made to tackle some differences in the exchanged data

Nature	Korea	Philippines	Details
First port of arrival coded	Data not available	Use ‘PH’	Korea did not have the ID, temporary code of ‘ KRPUS’ was used with mutual agreement
Place of discharge coded	No issue	Use ‘KRPUS’	Use KRPUS code for the Philippines
Notify party coded	Data not available	Data not available	Optional for both parties
Exporter name	No English name available	No issue	Issuing English names provided by the Korea National Information Knowledge Solution
ID of means of transport CB coded	No issue	Data not available	The Philippines customs had planned to provide a solution but no result
Nationality of means of transport CB coded	No issue	Questioned its necessity	Decided not to include
Carrier ID	No issue	Majority of data were not present	The Philippines customs extracted data from manifest
Importer coded	No issue	Majority of data were not present	Optional for both parties

Agreements

Nature	Korea	Philippines	Details
Total number of packages	No issue	Data with value “0” were present	In the Philippines, bulk cargoes were represented with “0”
Type of packages ID	No issue	Some values were not identifiable	Details of the codes that were unique to the Philippines were transferred to Korea
Conveyance reference number	No issue	Some values were not identifiable	The data were in the ‘ID of means of transport crossing border coded’ field
Carrier name	No issue	Majority of data were not present	The Philippines customs extracted data from manifest
Place of loading coded	No issue	Some values were not identifiable	The Philippines customs rectified its code structure
Net weight	No issue	Data with value “0” were present	The Philippines customs rectified its code structure

Issues

The following issue was raised for data exchange interval

Details in the TOR	Real-time data exchange	
Status before the pilot operation	**Korea**	**Philippines**
	Necessary preparations for real-time data exchange were ready	Plausibility of real-time data exchange was not studied
Agreement details	• It is agreed to integrate clearance and cargo data using the WCO EX1 • Due to the difference the time for collection of cargo and clearance data (up to 30 days) in Korea, it was realized that real-time data exchange not possible using a single administrative document during the operation • In order to improve the above situation, the Korea customs made two separate forms(WCO DM EX1, WCO DM CRE) with XML schema and sample XMLs • The ‘information department’ in the Philippines customs which is responsible for the operation, had to request ‘export department’ for clearance and cargo information in advance • Those procedures caused delays in data exchanges	

Issues

The following issue was raised for nature of data exchange

<table>
<tr><td>Details in the TOR</td><td colspan="2">The 32 data in the Johannesburg convention</td></tr>
<tr><td rowspan="2">Status before the pilot operation</td><td>Korea</td><td>Philippines</td></tr>
<tr><td>Suggested an integrated XML schema(EX1) suitable for cross-border data exchange with the WCO DM 2.0 XML MIG</td><td>Suggested the ASEAN SAD based on the UN/eDoc used during the Philippines – Thailand data exchange</td></tr>
<tr><td>Agreement details</td><td colspan="2">• The ASEAN SAD did not satisfy the Johannesburg convention and was not following the global trend for standard
• Both parties agreed to follow the WCO DM which supports the 32 data in the Johannesburg convention
• Used the WCO DM 2.0 XML MIG for data exchange</td></tr>
</table>

Issues

The following issue was raised for nature of data exchange

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Agreement details	• The ASEAN SAD did not satisfy the Johannesburg convention and was not following the global trend for standard • Both parties agreed to follow the WCO DM which supports the 32 data in the Johannesburg convention • Used the WCO DM 2.0 XML MIG for data exchange • During the operation, possible enhancement on the XML schema was discovered and suggested in the WCO DMPT	

Issues

The following issue was raised for data transmission

Details in the TOR	ebXML based messaging service (ebMS)	
Status before the pilot operation	**Korea**	**Philippines**
	Had been using its own in-house developed ebMS tool	Had used Hermes 2.0, an ebMS tool that had been used during the Philippines – Thailand data exchange
Agreement details	• The Korea customs analyzed Hermes 2.0 for its compatibility and found out that it was compatible with its own ebMS • Both parties used their own ebMS tools	

Issues

The following issue was raised for security

Details in the TOR	Mutual recognition of their counter-parts' 3rd party PKI	
Status before the pilot operation	**Korea**	**Philippines**
	Had used a domestically developed 3rd party PKI(Public Key Infrastructure) for the security of the ebMS in the internet portal	Had used PKI and SSL(Secure Socket Layer) that had been used during the Philippines – Thailand data exchange
Agreement details	• Both PKI and SSL were used for protection of clearance data • As the issuing agencies for both parties differed, an international issuing agency, VeriSign, was used • The Philippines maintained(VeriSign) its security policy and the Korea counterpart used evaluation version of VeriSign during the operation	

Issues

The following issue was raised for data utilization

Details in the TOR	Utilization of the exchanged data	
Result	**Korea**	**Philippines**
	Verified most of the information such as goods name, weight, quantity, HS code(6 digits) and others were correct using the B/L number received from the Philippines counterpart	Data from the Korea counterpart were not been analyzed and no report was given to its Korean counterpart
Agreement details	• A new system was planned to be developed for data exchange but not been realized	

Benefits and challenges

Customs side

Clearance	**Benefits**	• Exchanged data helped to make better judgement for the customs staffs • Reduced clearance time
	Challenges	For more swift clearance, legal framework should be present to legitimize data exchanges but the limited amount of exchange was not enough
Inspection	**Benefits**	• Advanced acquisition of data helped to catch harmful cargoes such as drugs, foreign exchange fraud and other high risk cargoes • Discrepancy in weight and quantity of cargoes could be found
	Challenges	• Difference in the code structures • Due to the difficulty in real-time data exchange, many data had arrived too late
Audit	**Benefits**	• With the exchanged HS code, appropriateness of tariff could be determined • Such data as export details, details on origin could be determined easily
	Challenges	Much of data lacked detailed information to make accurate judgements
AEO	**Benefits**	Can provide benefits to importers by recognizing counterparts' AEO
	Challenges	No agreement had been reached to recognize counterparts' AEO

Benefits and challenges

Others

Im/exporter	**Benefits**	National level(customs) data(CO, requirement verification etc.) exchange with verification of the counterpart authorities will speed up the clearance process
	Challenges	• Difficult to reach agreements(customs) • Abundance of data might give reasons for more inspection
Forwarder	**Benefits**	Easy to calculate the 'lead' time for cargo handling
	Challenges	Only established forwarders were interested in process and utilizing UCR
Shipper	**Benefits**	Data exchange provide more stable operations(entry, exit report etc.)
	Challenges	Worry for the possibility that their vessel could be designated for inspection due to increase in information
OGA	**Benefits**	Advanced acquisition of data for requirement verification
	Challenges	No agreement was reached for requirement verification data and mutual recognition of the issued certificate

Benefits and challenges

CSD, UCR

CSD	**Benefits**	• CSD provided more improved security for containers that provided less chance of inspection and swift clearance • By tracking the movement of cargoes, loss of cargo was minimized
	Challenges	• No administrative framework was made on the details of incentives that would be provided to the cargoes with CSD • Tracking system was not integrated into the customs system so that external system was used along with the customs systems • Except GPS enabled devices, readers must be present throughout the course of the cargoes
UCR	**Benefits**	UCR enabled to call in data that was already submitted to the counterpart customs so that only additional information for import was needed
	Challenges	Establishment was very limited(only 1 company utilized UCR)

Lessons learned

Administrations

Optimizing business process

- The Korea customs, data exchange was governed by one department(Information planning) whereas its counterpart, the responsibility was divided in two departments(information dept. and export dept.) that caused bureaucratic delays
- There was not enough exchange of information on business process of both parties for the operation

Lack of preparations for real-time data exchange

- Although TOR had stated real-time data exchange, technical details were not included which eventually caused delays in data exchange
- Types of documents and their contained data are significantly different and point of time for ‘receiving’, ‘ approving’, ‘notifying’ are different between the parties

Quantity of data exchanged

- Export from the Philippines to Korea was significantly smaller than its counter-part
- It was necessary to search and predict amount of data that would be exchanged

Lessons learned

Standardization

Lack of understanding on business process
• The TOR was made with brief understanding of data that were exchanged and without analyzing and understanding business process of the counter-parts. This resulted frequent changes in schema that caused added work load • The two parties used different codes for different data(eg. Export code) which should had been analyzed and code list should had been exchanged prior to operation
List of data exchanged
• It is necessary to separate the chosen data into mandatory and optional due to the requirement differences in the customs administrations • Although the exchanged data set is based on the Johannesburg convention, one can add more data or exclude data from the set depending on the requirement of data exchange

Technicality

Lack of discussions on technicality
• There was lack of discussions on detailed technical issues such as data exchange server settings which caused delays in initial data exchange transmission • It is necessary to have enough discussions between technical experts such as databased, communication protocol and standardization specialists of the two parties along with the administrative side

Lessons learned

Operation

Necessary to provide motivation

- Continuous support from customs heads of the two parties was very important
- For the external parties such as transporters and exporters, there was lack of immediate benefits from the operation. Thus is was important to survey their requirements and demands and provide incentives which was lacking during the operation

Carrying out the operation

- The Korean customs secured budget and outsourced the operation to a specialist whereas the Philippines did not have separate budget and carried out the operation by 2 customs staffs(1 administration, 1 technical staff) and both of them had other duties
- Both customs had differences in priority and goals for the operation itself

Lessons learned

Monitoring

Progress discussion

- It is important to have regular evaluation with result from the operation and provide solutions for any raised issues
- It is important to include regular conference(inc. tele-conference) in the TOR and organized off-line meetings to motivate both parties
- Measurements for issues raised were often delayed due to lack of discussions

Incentives

- Data exchange did not provide equal incentives for all the parties including external parties
- Important to provide incentives and motivations to all the parties to increase participations

Thank You

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