ICT application in trade facilitation

The role of ICT applications in trade facilitation

ICT applications in trade facilitation refers to activities, processes and procedures that have adopted some degree of information and communication technology (ICT) in order to facilitate trade transactions, particularly in the fields of Customs formalities, trade documentation flow and trade security. In other words, it is an ICT-enabled simplification, harmonization, and automation of administrative and trade procedures towards efficient and effective trade facilitation.

ICT is the engine which facilitates exchange of information in such a manner as to ensure that trade flows in a timely manner, with the absolute minimum of administrative impediments, while reducing a number of physical impediments. This is the fundamental rationale behind the WTO and GATT articles.

Why does it matter?

Trade currently represents 30 per cent of world GDP and it is estimated that it will grow to 50 per cent by 2020 and beyond (SWEPRO, 2002). Against this background, ICT-enabled international trade facilitation becomes absolutely essential due to increased volumes of international trade transactions and the inefficiency of traditional paper-based trade facilitation systems to cope with the rising amount of trade transactions.

The time wasted by inefficient trade procedure is one of the non-physical barriers on trade transactions and each day saved is equivalent to half a per cent of trade tariff and seven per cent of value of international trade is the cost of administration of trade logistics (UNCTAD, 2006). Generally, seven to ten per cent of value of today's international trade is spent on Customs formalities and a typical trade transaction involves 30 parties, 40 documents, 200 data elements – 60 per cent of which need to be retyped at least once (ESCAP, 2002).

The lack of transparency and duplicated trade procedures in paper-based traditional trade facilitation (TF) significantly increases Government expenditures and places additional financial burdens on many developing countries. According to UNCTAD (2006), US$ 100 million could be saved each year through the application of ICT in international trade transactions and operations and in some cases, even more. For example, it is estimated that the savings achieved after the introduction of the TradeNet system in Singapore amounted to US$ 1 billion per year (EJISDC, 2006).

ICT application not only enhances TF, but also changes the concept of trade-related government services through the introduction of various ICT-enabled techniques and services, such as paperless trade documentation and real-time information sharing among stakeholders within and across national boundaries.

In addition, there are three factors that have been forcing decision- and policymakers, as well as the stakeholders, to seriously consider ICT integration in trade facilitation, and more specifically, the establishment of a simplified and automated paperless Single Window TF system as the way forward. These factors are: (1) Technological advances; (2) Development of e-commerce; and (3) WTO accession and integration into the networked global economy.

The advancement of technologies, in particular information technology, together with the expansion and adoption of e-commerce, have dramatically reduced costs and increased productivity. The WTO accession process also requires member States to comply with relevant GATT articles, such as the publication and administration of trade regulations, which all require the application of ICT.

Stakeholders and players

Many stakeholders or players are involved in international trade, they range from: exporters and importers to permit issuing authorities (PIAs); and from suppliers to intermediaries, including the transport or freight forwarders and shipping agents. In the absence of ICT

application interconnection among those stakeholders adds an additional layer of complexity in trade transactions.

The existence of various stakeholders means that traders are faced with a huge number of different regulations and documental requirements, including several signatures needed from various PIAs. Participants at the WTO Symposium on Trade Facilitation held in March 1998 identified the following important issues concerning the inefficient trade facilitation, as summarized below:

- Excessive data and documentation requirements;

- Lack of transparency and use of pre-ruling systems, as well as unclear and unspecified import and export requirements;

- Inadequate procedures and a lack of audit-based controls and risk-assessment techniques;

- High degree of unpredictability and lack of automation and significant use of information technology; and

- Lack of modernization, and cooperation among, Customs and other Government agencies, which thwarts efforts to deal effectively with increased trade flow (SWEPRO, 2002).

Some – mostly developed – countries have taken measures to address these issues, but measures still need to be taken in many developing countries to overcome these barriers through ICT-enabled TF systems.
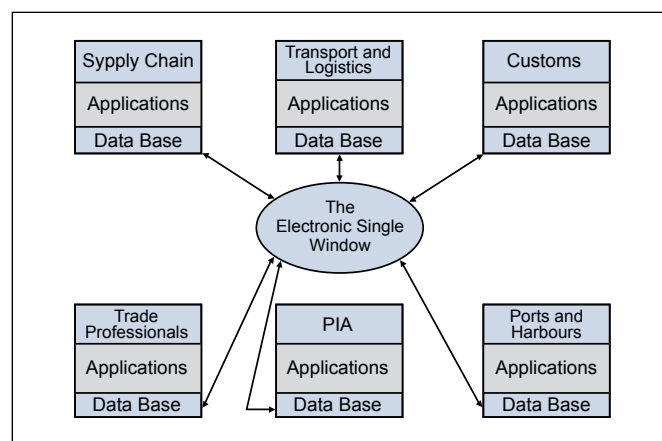
Single Window

To achieve efficient TF, it is important for a country to learn about the role of ICT in the modern trading world as it begins to tackle the trade regime reform agenda. Therefore, any ICT application for TF should be set against the broader context of a country's ICT policy and strategy.

The benefits of establishing a Single Windows model to facilitate trade in modern trading world are now widely recognized. Single Windows forge a single connection between all stakeholders in the trading community, which allows them, from a single point of entry, to transmit, and receive a specific data set, whenever and in whatever quantity or extent they wanted, as well as in any data standard and format they need to fulfill requirements for import, export and transit regulations and clearance. In other words, Single Windows expedite and simplify information flows between trading community and the Government.

A truly integrated Single Window TF system should include various stakeholders participating in the transition or migration process (figure 1). If the system is not reflected in the national ICT policy and plans and regarded as a stand-alone initiative, integration and collaboration with other government agencies and private sector might prove difficult. ICT infrastructure and human resource requirements of TF should also be reflected in the national ICT strategy, because they require a much broader intervention from authorities responsible for ICT capacity building and infrastructure (ESCAP, 2006).

Figure 1
The electronic Single Window: connecting all stakeholders

Source: *Guidelines on ICT application for trade and transport facilitation in landlocked countries in the Asian and Pacific region,* ESCAP, 2006

It may be easier to establish a Single Window in developing countries as it may be easier to set up an integrated mechanism from scratch rather than attempt to overhaul an existing system into an integrated mechanism. For many developing countries, access to such innovative technologies and their associated benefits is not a straightforward exercise as they face capacity and financial constraints. In terms of financial constraints, the set-up costs for implementing a Single Window are higher than operating costs. However, it is important to note that the long-term savings are much higher than the cost of setting up and operating Single Window.

Implementation of paperless trade facilitation system

One of the objectives for adopting ICT in trade facilitation may be to reduce paper-based information and documentation through the increased use of electronic versions of this information.

In this respect, the fundamental question should be "where to start?" The degree of ICT application for TF would depend on each country's ICT capacities, including ICT infrastructure. In addition, the success of any implementation would depend on whether the paper-based system itself had been properly streamlined and simplified sufficiently to ensure conversion into an electronic format.

One of the important basic principles is "never to automate present processes: that merely makes an unsatisfactory system faster" (ESCAP, 2006).

There are many parallel steps involved in the implementation of a paperless system as part of the success factors. They include, among others:

- Institutional arrangements, such as assigning the lead agency;
- Mapping stakeholders, influencers and potential partners;
- Assessment on the ICT awareness-level of key stakeholders;
- Simplification and standardization of documents and procedures;
- A review of existing ICT-related legal and regulatory frameworks;
- Mapping existing transaction processes and documents;
- Risk assessment and management;
- Examining the system designs and specifications;
- Extensive capacity-building initiatives;
- Greater cooperation and partnerships with all interested parties; and
- Setting up monitoring mechanisms.

Figure 2

Evolution of trade portals: towards a Single Window global trade portal
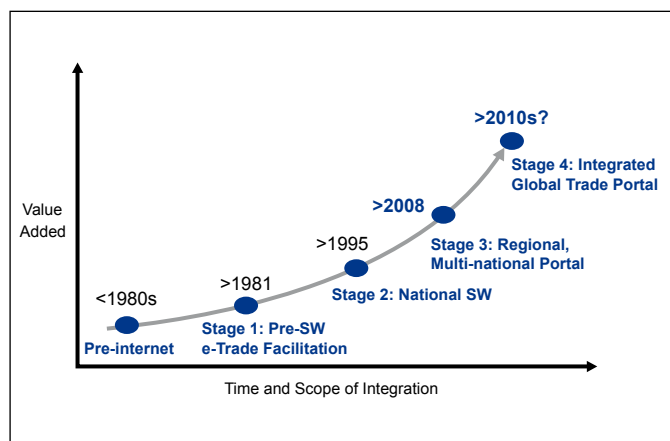
Source: *The Electronic Journal on Information Systems in eveloping Countries, 2006,* vol. 26, issue 3, pages 1-27.

Preparations needs to be made ahead of each phase of the transition or migration procedure, from a paper-based to a simplified, automated, paperless trading system. Clearly, this does not happen overnight, even in the best case scenarios. It can take years to migrate from one system to another (figure 2). Some countries are far more advanced in adopting of ICT for TF than others. As described in figure 2, TF systems (portals) have evolved in stages over the years and countries are at various stages through both national and regional initiatives (figure 3).

Figure 3

Stages of the evolution of trade facilitation portals and corresponding selected cases in the Asia-Pacific Region

Stage	Geographic Scope	Cases
Pre-single Window portals	National	Eighty-five plus countries (world wide) have adopted UNCTAD's ASYCUDA platform
Single Window portals	National	Australia (Tradegate), Hong Kong, China (DTTN), Japan (NACCS), Republic of Korea (KTNet), Malaysia (Dagong Net), Singapore (TradeNet), Thailand (TradeSiam)
Regional, multinational portals	Multinational, regional	ASEAN Single Window initiative
Global portal	Global	Bolero.net (a precursor)

Source: *The Electronic Journal on Information Systems in Developing Countries, 2006,* vol. 26, issue 3, pages 1-27.

Some of the factors contributing to the successful implementation of ICT-enabled TF systems include:

- Commitment and political will from the highest levels of Government;
- Gradual phased implementation through various concurrent processes, involving all stakeholders, including Government agencies, private sector and other players in trade transactions and operations;
- Simplification and harmonization of trade procedures and re-engineering of inefficient processes and documentation;
- Introduction of international conventions, standards, codes and other instruments (e.g., UN/CEFACT, WCO data models, etc.);
- Transparent collaboration among various stakeholders, both within the country and across borders, at all phases of the implementation;
- Adoption of legal and regulatory frameworks for electronic processing and signature; and
- The existence of basic ICT infrastructure.

However, the true success of the strategy depends on subsequent efforts. Some of the prerequisites to automation includes: process re-engineering through technology; introducing inter-operable systems with all parties involved; and enabling them to switch from paper-based to paperless Single Window TF system.

Policy recommendations

Countries may have different levels of automation and priorities and issues in terms of ICT application for TF. As described earlier, ICT has transformed international trade operations and affected global trade. Developing countries, particularly least developed countries (LDCs) and landlocked developing countries (LLDCs), must be proactive and ensure appropriate planning and implementation of ICT application for TF in order to reap the benefits of technological advances, reduce transaction time and costs, increase transparency, enhance supply capacities, create business opportunities, and achieve the ultimate goal of integrating into global knowledge economy and global trade portal.

ESCAP recommends three areas of policy intervention:

1. Integration of ICT application for TF into national ICT policy

The introduction of so many aspects of policy is very difficult within the often fragmented fiefdoms of Government agencies or between the various legislative bodies; coordination among concerned stakeholders is also important to facilitate efficient, economic and harmonized trade systems. It is often stressed that it is important to establish a national TF committee as a platform for coordination and mainstreaming ICT into national development strategies, as well as for integrating ICT application for TF into national ICT policy.

2. Foster enabling environment

Trade facilitation through ICT application requires an enabling environment, including the development of infrastructure and legal framework. Governments must demonstrate strong political leadership and commitment to create a positive enabling environment; this requires upgrading existing and/or development of new infrastructure, modifying existing regulatory practices and/or adopting of new legislations.

Building the capacity of national institutions and the trade community in ICT application for TF is needed to enhance the technical capacities of countries. Public-private partnerships can contribute to building the capacity and optimizing the performance of relevant authorities through the use of emerging new technologies and conforming to new international standards.

3. Regional cooperation and partnerships

In the context of regional cooperation, some developing countries with ICT achievements should come forward. A country with sufficient advancements in the automation of Customs and other border agencies has already achieved many of the TF features through their own efforts. Technical cooperation among countries is important to share best practices among border countries in order to harmonize documents and procedures to facilitate trade.

Regulation measures pertaining to the acceptance of electronic documents and signatures must be integrated on a regional basis, as in the case of the European Union's "e-Europe programme", as well as in the framework of interregional partnerships such as Asia-Europe Meeting (ASEM) and e-ASEAN. The interoperability between countries can be strengthened further through cooperation activities at the global level.

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