

United Nations Conference on Trade and Development (UNCTAD)
Expert Meeting – ICT Solutions to Facilitate Trade at Border Crossings and
Ports

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I wish to thank UNCTAD for extending to me the offer to speak before you today. I hope I can provide some useful thoughts on information and communication technologies (ICTs) to facilitate trade at border crossings and ports.

The world is becoming more integrated through telecommunications and transportation, a topic expressed through many UNCTAD documents over the past few years. In one sense, the problem is that trade is becoming increasingly complex, both from the private sector side and the government side. From a private sector perspective, shippers are trying to move cargo quickly to respond to changing markets and to reduce inventory costs. From a public sector side, governments must provide safe and secure borders while not unduly burdening shipments moving through those same facilities. This is reflected by the concern of not only how one should improve the actual facilities but also the exchanges of the information of those movements. I will discuss ICT in context of the four broad areas: infrastructure, information, institutional and intangibles. These four areas reflect the complexity of trade, but also the challenges of deploying ICT solutions.

Infrastructure

For the purpose of these remarks, infrastructure can be defined as the facilities and terminals that handle cargo and is often the first port of entry for international trade. Without the facilities to receive, handle, and transfer cargos, trade will be impossible to conduct. We can recognize trade facilitation as moving through the three mile section of a border crossing or port as a part of a three thousand mile movement. Carriers and shippers benefit when the goods are moving – there are no “road blocks”. It is at the transactional points, borders and ports, where significant delays can occur. When considering trade, most people consider facilities as outside of the ICT formulation, but are critical to understanding the nature of improvements required to move cargo through a facility.

Most people simply believe if you build something, people will use it, and that trade will flow easily through the facility. This is somewhat misleading. We can point to many facilities throughout the world that are underutilized for a number of reasons. There are problems with planning for infrastructure – generally it is either a “lumpy” large scale investment or incremental improvements to an existing structure. This approach of

“either/or” investment underlines the fact that infrastructure improvements require the spending of funds – funds normally secured by either the public sector planning process or by private sector investment. (In some cases, funding is hard to secure from the public sector, so the private sector has been seen as one way to fund infrastructure, especially at ports.) The need exists to service growing traffic but physical constraints may limit the ability to expand existing terminals quickly to handle unexpected cargo growth. This raises concerns that existing border crossings or ports terminals will become practically obsolete before becoming physically obsolete.

Regarding incremental improvements, trade volumes can result in additional challenges to a facility that are smaller in scale – such as the size and location of offices. There are questions raised about the ability to maintain the facility once it is developed, as well as the roads and other networks that support the facility. This is becoming a problem in the United States, where according to a survey done by the Federal Highway Administration seven years ago, the worst roads on the national highway system were the small connector roads linking ports. Also the Federal Highway Administration conducted several studies to develop simulation models of border crossings and performance measurements for operational improvement. Other studies sought to examine the travel time associated with specific border facilities. Finally, I worked with Transport Canada and the American Trucking Research Institution on using satellite technology to develop travel time measures for trucks. By understanding the total nature of traffic around a port or border crossing, one can develop a systems approach that would allow for greater driver notification beyond movement to the first checkpoint and the entire system.

Again, the link to infrastructure and ICT remains underappreciated. Throughput can be improved by simply examining activities related to infrastructure itself. These can involve the putting the correct signage in place to separate truck activity, guard station, or other facilities in the transportation system to facilitate traffic. Sometimes it is the ability to change a lane configuration at a truck inspection area, or to provide for the movement of people and equipment, that can greatly enhance system usage, generally by the expenditures of smaller funding than building new facilities or terminals. The physical movement of cargo must go through facilities, but these facilities can be redesigned to allow for traffic to move through the system, and to provide transparency, but only if properly located in the current or planned facility action plan.

Information

This area has seen some exciting changes in the past few years. Telecommunications and computer technologies have resulted in expectations that data and information to be tracked and accessed in a “real time basis”. Initially, private sector shippers and carriers developed this information, not to share this with local ports and border crossings, but to capture benefits from controlling costs and inventories. Furthermore, the development of 3rd party logistics firms and the resulting integration of shipper and carrier in shipment decisions have resulted in additional operational gains, while adding more complexity to the system.

At the same time, the construction of automated customs manifests and shipper notifications have been developing. In the U.S., the movement to a single Automated Manifest System has been a laborious process, given the coordination that involves over 70 agencies on data regarding international shipments. The U.S is looking at data exchanges with Canada and Mexico to improve customs statistics. The move to standardize forms to reduce the burden on not only for shippers but for government agencies will make the system more transparent for all involved.

Operational information may also being shared between the public and private sector. The use of Intelligent Transportation Systems and driver notification can improve operational patterns in a facility or on local roads. In Southern California, the Pier Pass system has successfully reduced truck delays at container ports. Along the U.S. - Canadian border, expedited shipments are now available to shippers and carriers approved by U.S. Customs. Several electronic tracking options are being considered to improve the productivity of the navigation system. For inland ports, the Smartlock system, being evaluated by the Port of Pittsburgh, utilizes Geographical Positioning Systems to locate representative points on the towboats and barges. By utilizing GPS technology, a pilot could move a barge through a lock or channel, even during times of limited visibility. In many cases, the private sector views reliability is more important than costs, and by making “real time” tracking and facility use information may provide additional benefits.

Institutions

There remain institutional barriers to implementing ICT solutions in ports and border crossings. In the developed world, we are moving from the age of expansive infrastructure construction to the age of maintenance and institutional partnerships. In some regards, developing countries have jumped over the developed world in seeing ways to develop public-private partnerships to improve trade facilitation.

In most situations, there generally are not single entities responsible for freight movements at ports and borders. At what level should the private sector discussion occur: at the port, the drayage operator, the shipper, or the carrier? What is the public sector role: is it defined by the port, customs authorities, local departments of transportation, and other federal or state agencies? In some areas, each of these groups need to have some level of information on activity at the port or border crossing, but at a different time frames and scales. For example, the private sector is examining events within the context of a few days – such as securing the necessary documents, or the trucks, to move the cargo to or from a border crossing. The public sector is either responding to goods already in transition or very long range planning activities. The specific information needed for these different levels are not the same, although common features do exist. It should also be noted that generally data is not collected for planning purposes, but to access rates and fees against the cargo from a customs perspective or to track cargo by the private sector. This may result in the data not necessarily being available or consistent for all users.

Ports and borders are geographic entities. They are unable to respond quickly to changing national or local policies and can not simply move to take advantage of opportunities. For example, in the early 1990's, the State of California decided to remove the tax exemption for bunker fuels. This led to a dramatic loss of bunker business and changed costs associated with charter movements along the west coast. Although the tax was later repealed and volumes increased, the industry already adjusted.

In other cases, the potential challenge of locally active participation by other groups concerning current and future use of specific gateways may change a location's competitive position. While physical or process improvements can improve the flow of cargo through a facility, in some cases local groups have sought to reduce traffic because of concerns over traffic congestion, noise, and air emissions. This potential disruption from other local or national policies always should be considered, as even further highlighted by security responses in the U.S. that are adding more costs to the system, and potentially, more delays. The potential for unfunded mandates from governments are real and can lead to additional costs and variability along a nation's frontier.

Intangibles

Port and border crossing planners and operators must not assume that simply building a facility will guarantee its success – there are other factors outside of the ICT framework that can shape the ultimate success of a gateway facility. In the past, transportation was associated with production decisions and the networks developed around production and consumption regions. In the new global business paradigm, low-cost technology and flexible production and logistics support have basically changed investment in plant and equipment from a more long term framework to simply being viewed as five to seven year assets. Business are locating in new markets, generally supported by governments wanting increased foreign investment, but in some areas, the government may not have developed and transparent ICT processes. With the potential for rapid turnovers in production locations and operations, the importance of linking transportation and economic growth remains even more critical.

In this new global network, transportation is geographically blind. Ports and borders are now interchangeable links in the system, not a separate component of a transportation activity. An example involves the U.S. West Coast where failed labor negotiations led to a coastal shutdown along the U.S. West Coast a few years ago. Since that time, shippers are becoming increasingly concerned about controlling not only transportation costs, but also system reliability. Afterwards, certain shippers diverted some cargos through other U.S. ports. If a shipper feels that one port range is too crowded or that problems exist, that shipper may switch to either another carrier or port, for some or all shipments.

While not necessarily an ICT function, the Corps of Engineers is developing a suite of products to examine the interchange between national and international policy, national planning and specific operational and planning models. The Navigation Economic Technology System (NETS) seeks to provide some information on how the system

related to itself. One of these tools is the development of the Regional Routing Model, which seeks to develop an economic model of multiport relationships either within a national context or within specific trade corridors. Other tools include a global grain model of trade flows that can be used for policy analysis and simulation models for harbors and inland navigation. The NETS program will release these tools into the public domain once they are completed, and hopefully show the interaction to freight facilities and the need for nations to consider these facilities in the context of other policies.

Technologic Transference to Developing Countries

In considering developing countries needs from some distance, the potential exists for technologic transference to the developing countries under certain circumstances. The factors to consider include the recognition that the developing world does not have the same infrastructure and institutions as in developed countries, which means the level of funding or even the nature of coordination is much different. Also, we should not necessarily hold developing countries accountable to the same standard of operational activity within a short time period once a technology transference occurs. Finally, the developed world needs to approach the developing countries as peers and commit to long term training and personnel development.

Conclusion

In closing, trade and logistics are entering in a new era where the industry is looking at improving throughput and reduce delays in ports and border crossings. ICT solutions present a new framework that can provide for greater (and transparent) communications between shippers, carriers, and governments. This is critical, as improving transportation means so much more than it did fifty, twenty or even ten years ago, incorporating concerns over operational flexibility, security concerns, and uncertain traffic forecasts.

Within the framework of increasing ICT deployment, challenges exist but opportunities remain. New approaches that balance infrastructure, information and institutional changes may be necessary to ensure that trade remain an important component to sustain economic growth. These questions are important to answer, namely how to balance a complex system of clearances and notifications, but the biggest gap may remain the institutional: changing how people comprehend the nature of traffic through ports and borders and to support improvements that benefit all parties from ICT deployments.