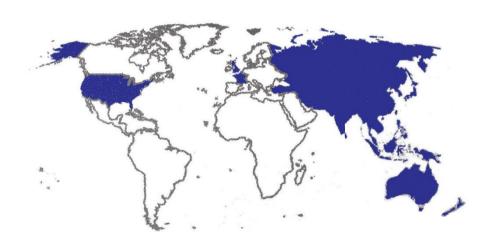
Information and Communication
Technologies (ICT) for Trade and
Transport facilitation:

ICT related requirements and gaps
in implementing
Trade and Transport facilitation systems





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 $^{^1\,}http://www.unescap.org/events/meeting-review-ict-related-gaps-trade-and-transport-facilitation-asia-pacific-region.$

Abbreviations

ACTS ASEAN Customs Transit System
AEO Authorized Economic Operator

ASEAN Association of Southeast Asian Nations

ASEAN NTR ASEAN National trade repository

ASYCER Electronic Phytosanitary Certification System

ASYCUDA Automated System for Customs Data

BCP Border Crossing Point
BI Business Intelligence

BPM Business Process Management

CCL Core Component Library

CDPS Customs Declaration Processing System

CDS Custom Developed Software

CoO Certificates of Origin
COTS Commercial-off-the-shelf

CPU Central Processing Unit – processor

CUSCAR UN/EDIFACT Message Type

DMZ Demilitarized Zone (perimeter Network)

DR Disaster Recovery
DTI Direct Trader Input

ECM Enterprise Content Management
e-CSD e-Cargo Security Document
EDI Electronic Data Interchange
EPZ Export Processing Zones
ESB Enterprise Service Bus
ETL Extract, Transform and Load

FAL Convention Convention of Facilitation of International Maritime Traffic

G2G Government to government

HDD Hard Disk Drive
HR Human Resources

HSPA High Speed Packet Access

IATA International Air Transport Association

ICT Information and Communications Technologies

New Computerized Transit System

IDC International Data Corporation
iOS originally iPhone Operating System

IPsec Internet Protocol Security IRM Integrated Risk Management ISO **International Standards** ISP Internet Service Provider KPI **Key Performance Indicators** KRC WCO Revised Kyoto Convention **LEITS** Law Enforcement IT System MoU Memorandum of Understanding **MPLS** Multiprotocol Label Switching

NTM Non-Tariff Measures

NCTS

OGA Other Government Agency OSS Open Source Software PC **Personal Computer** PKI Public Key Infrastructure QR Code Quick Response Code **RCP** Rich Client Platform RMRisk management ROI Return on Investment **RTAs** Regional trade agreements SaaS Software as a Service SAN

SAN Storage Area Network
SLA Service-level Agreement
SMS Short Message Service

SOA Service Oriented Architecture

SSD Solid State Drive
SSL Secure Sockets Layer
SW Single Window

TCO Total Cost of Ownership

TF Trade Facilitation

TIR International Road Transport
TTF Trade and Transport Facilitation

TTFS Trade and Transport Facilitation System

UN United Nations

UN/CEFACT United Nations Centre for Trade Facilitation and Electronic Business
UN/EDIFACT Electronic Data Interchange For Administration, Commerce and Transport

UNECE United Nations Economic Commission for Europe

UNESCAP United Nations Economic and Social Commission for Asia and the Pacific

VAT Value Added Tax

VOIP Voice over Internet Protocol
VPN Virtual Private Network
WAN Wide Area Network

WCO World Customs Organization
WEB World Wide Web (WWW)

WSDL Web Services Description Language

WSS Web Services Security
WTO World Trade Organization
XML eXtensible Markup Language

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1 Introduction

Trade and transport facilitation require governments, administrations and businesses to improve efficiency and effectiveness, to simplify, standardize and harmonize processes, documents and formalities, to foster partnership and cooperation, and to increase transparency. Information and Communications Technology (ICT) can support many trade and transport facilitation concepts and objectives. The value of ICT for trade and transport facilitation goes beyond concepts such as Single Windows. Automated business processes, digitalization of procedures, simpler interaction and transmission of data, and faster decision-making abilities deliver advantages in many trade and transport facilitation areas.

Taking an abstract generic perspective, this paper studies the linkage between trade and transport facilitation and ICT. It looks into the business needs of trade and transport facilitation (TTF) and how ICT can respond to these needs. Neither trade and transport facilitation, nor IT systems in public administration are new phenomena. But, so the paper argues, new policy and regulatory directions for trade and transport facilitation and new operational requirements have emerged in recent years. Thus the design of ICT architecture and its organizational underpinnings has to change to respond to these new requirements.

In recent years, many new ICT developments for trade and transport facilitation have been piloted. But in the overall, the approach to IT support in the area of trade and transport facilitation remains a piecemeal and silo approach that not only fails to deliver on efficiency and organizational re-design but also increases development and maintenance costs. This paper presents a broad perspective on TTF ICT business needs and describes the requirements of an architectural model to support TTF. Integration and modernization of ICT systems and architecture are the two essential directions for improvement so that ICT can deliver better service to its clients, the users in governments and private businesses, for trade and transport facilitation.

Based on an understanding that IT developments necessarily follows business, meaning operational, needs, this paper will talk about trade and transport facilitation business needs as well as ICT architecture and organizational requirements. IT architecture concepts are often difficult to understand for policy makers. This paper therefore is a description on a functional high level, which, we hope, will contribute to a better understanding from a business and technological point of view.

The paper will first present current trade and transport facilitation trends and the impact they have regarding ICT support. It will then present an architectural model for the integration and modernization of trade and transport facilitation systems and describe some of its features. A discussion of organizational and legal requirements supplements this discussion and completes the framework for Trade and Transport Facilitation ICT systems described in this paper. Some information on the state of preparedness of selected least and landlocked developing countries (Nepal, Kyrgyzstan, Mongolia and Myanmar) towards the implementation of a National Single

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