OVERVIEW OF THE PILOT PROJECT
October 2014 to June 2016
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1) BACKGROUND

2) GAP ANALYSIS (2014)

3) TRAINING WORKSHOP CENTRAL AMERICA (June 2015)

4) TECHNICAL ASSISTANCE ON BUSINESS INTELLIGENCE AND ELECTRONIC INVOICE (2015/16)

5) PILOT IMPLEMENTATION (2016)
Official name: Republic of Costa Rica
Area: 51,100 Km²
Population: 4,800,000
GDP (PPP) per capita: $15,482 USD (IMF, 2015).
Frontiers: 516 Km
Coastline: 1412 Km
Official language: Spanish
No army
COSTA RICA’S TRADE HAS GROWN QUICKLY

Costa Rica: Trade flows
1980 - 2014

Exports
Imports
Trade balance

Million$ IN US$


Fuente: COMEX, con base en cifras de PROCOMER y BCCR. Datos preliminares sujetos a revisión para 2014.
CUSTOMS IT SYSTEM (TICA)

- Standardized Electronic Customs Declaration Form (“Declaración única aduanera - DUA”).
- Automated customs processes.
- Declaration decided by the user.
- Electronic payments.
- Centralized database with registered operations.
- Integrated risk analysis module.
- Electronic connectivity with public and private institutions.
- Paperless custom.
CUSTOMS DECLARATIONS MESSAGING

Auxiliaries

DUAs Generation system

Sistema generador del DUA

Datos

Messages

Red de Valor Agregado

Costa Rica Customs

Tic@

Datos

Declaración Única Aduanera Electrónica

Custom unique Electronic declaration (DUA)
Customs-System & Institutions Relationship

Aduanas – Diagrama de Relación entre Sistemas e Instituciones

Source: TICA Presentation. C.R. Custom
TECHNOLOGICAL INFRASTRUCTURE

Source: TICA Presentation. C.R. Custom
INTERNATIONAL TRANSIT OF MERCHANDISE (TIM)

Common IT system of all Central American countries to monitor international road transits

Source: Presentation. C.R. Custom
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Determine legal and IT gaps for electronic data exchange between Costa Rica customs and peers from the rest of Central America

Sources used:

- General Customs Law (1996 + amendments)
- General Customs Law Regulation (updated in 2009)
- CAUCA III (Central American Uniform Customs Code, 2002)
- RECAUCA (CAUCA Legal framework) (2002)
- Digital signature Law (2005)
- International regulation on land transport
- Work plan (Jul-Dec 2014) Central American Economic integration Secretariat (SIECA)
- Presentation on trade facilitation (SIECA)
GAP ANALYSIS, 2014: (cont.)

* Interviews conducted with:
  * Deputy Minister of Tax Revenues
  * General Director of Customs
  * Customs processes in Technical Management Department
  * Custom planning and control department
  * Risk administration and customs intelligence department
  * Control department
  * External affairs and International relations
  * Director of IT Strategic Projects
  * IT support and custom systems development department manager
LEGAL SHORTCOMINGS

* Except for ad-hoc exchanges, Costa Rica has no formal agreements with other Central American countries for sharing risk data.

* After version III, Costa Rica did not sign version IV of the Central American Uniform Customs Code (CAUCA IV), which requires recognition of electronic documents.

* Only one authority (Central Bank of Costa Rica) can certify electronic customs documents.

* The token used as a digital signature by Agents using the Customs system (TICA) does not serve to authenticate.
IT SHORTCOMINGS

* The Central American International Transit of Merchandise System (TIM), where each country registers land transits, is not supported on a 24x7 basis in the case of technical difficulties.

* Central American countries have not yet agreed on the improvements to be made to TIM.

* Data bases of Costa Rica Customs (TICA) have not been benchmarked against the WCO data model.

* Currently TICA does not accept electronic invoices, although it plans to do so in the future.
Infrastructure and operations risks have been identified. The IT area plans to mitigate these but requires support from authorities.

The data center was being migrated from unsafe to a tier 3 data center.

Costa Rica’s Customs System (TICA) complies with 80% of requirements included in laws and regulations. IT is developing new functions to close the gap. TICA needs to be upgraded to a web enabled platform.

The receipt of scanned images of import and export invoices does not prevent possible fraudulent alteration of original invoice values.

Personnel in charge of risk analysis and audit has not been trained in applying techniques to analyze big amounts of data (data marts, data mining, business intelligence).
There are strong trade ties between countries in Central America.

The current IT customs platform (TIM) of all Central American countries provides a sound base to increase information exchanges.

Customs officials and operators have been using a centralized database accessed on line from all stations and offices for the last several years.

Customs needs to improve its IT infrastructure to provide a service compatible with demands from increasing trade with acceptable risk levels.

Observed legal gaps are not too difficult to solve. There is room to increase electronic data exchange between customs.

The experienced small team of specialists on Customs Information systems needs to be expanded and trained in best practices of processes and technology to increase information exchange between customs.

Coordinate actions with other agencies to avoid duplicating efforts.
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On June 16th and 17th 2015 a ‘Regional workshop on Business Intelligence applied to risk analysis and custom valuation and introduction to WCO data Model’ was held in San Jose, Costa Rica.

30 representatives from all customs in Central America participated in the training sessions.

Trainers from ECLAC, Inter-American Development Bank, International Road Transport Union and Peru Customs
TRAINING WORKSHOP

* SESSION I: Business Intelligence and Data Mining
  * Basic concepts of Business Intelligence.
  * Introduction to Control Charts and Indicators
  * Data Mining Tools
  * Application of Data Mining Tools (examples from Peru).
  * Trade facilitation: modernization of border stations in Central America
TRAINING WORKSHOP

* SESSION II: World Custom Organization Data Model
  * Introduction to WCO Data Model
  * Implementation concepts of the WCO Data Model
  * Electronic Invoices
  * Best practices on Information exchange (TIR)
  * SIECA support to trade facilitation and its relationship with WCO Data model
  * Regional project to promote economic integration in Central-America and implementation of the Association Agreement with the EU (PRAIAA)
Good feedback from participants. Request to continue this initiative to treat in more depth in these subjects.

From May 2016 onwards, a joint effort between ECLAC, WCO and PRAIAA was started with 8 one week training sessions including all countries in Central America.
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Based on the 2014 Gap Analysis, Costa Rica Customs asked for support to mitigate two detected gaps:

1. Electronic Import Invoices
2. Application of Business intelligence to risk and valuation to reduce under invoicing
(1) Electronic Import Invoices
USE OF ELECTRONIC IMPORT INVOICE: ACTIVITIES

- Analysis of existing process to enter Import Invoices to IT System (TICA).
- Interviews with professionals in different areas to identify priorities.
- Interviews with representatives to develop an Electronic Invoice that can be used in the domestic market.
- Meetings with vendors interested in using electronic import invoicing mechanism.
- Review of best practices around the world.
ELECTRONIC IMPORT INVOICE: CURRENT PROCESS

Present process

Source: TICA Presentation. C.R. Custom
Agents enter Customs Declaration data through a system that produces a digitally signed XML message using a token (guaranteeing encryption and no rejections).

They send a scanned image of both sides of the invoice with handwritten signatures.

There is no validation and guarantee that data sent through the XML message match those on the scanned image.

There are no records of handwritten signatures to validate scanned images.
Define a standard for Import Invoices that can be implemented gradually

Adopt standards defined by the «United Nations Centre for Trade Facilitation and Electronic Business” (UN/CEFACT)
ELECTRONIC IMPORT INVOICE: PROPOSED IMPLEMENTATION

New Process

Electronic invoice
PDF invoice
Digital signature
Link

Agents
Present process

Electronic invoice
XML

Digital signature
Firma digital
Asociación

Link

PDF invoice
Representación
Factura

Solución actual
TIFF
Imágenes

Firma al Dorso

Present process

Electronic invoice
Factura Electrónica

Agents
Auxiliares de la Función Pública
A detailed XML message to receive import electronic invoice was developed using the CII (Cross Industry Invoice) Standard developed by UN/CEFACT (Centre for Trade Facilitation and Electronic Business).

The message has three sections:

1) Background information referred to the process corresponding to the transaction.

2) Basic header information such as invoice number and date.

3) Detailed invoice information.
PRODUCTS PROVIDED

* Detailed import invoice messages to be read with XML-Reader software.

* Cross reference table containing each message field and the corresponding TICA data when applicable

* Global design of new process
(2) Business Intelligence Risk Analysis
Customs use Risk analysis to determine when to inspect import and export cargos to distinguish legitimate and illegitimate transactions and optimize available human resources.

This facilitates international trade without compromising security levels and government revenue.

BI techniques (information analysis, data mining and other disciplines) are increasingly used for risk analysis and valuation. This approach is enabled by sophisticated IT tools to analyze historic customs data.
Costa Rica Customs has more than 10 years of data. A data mart has been created with data from 2009 on and receives information on a daily basis from the operational TICA System. This data is not yet used for the generation of risk rules.

There is an opportunity to generate rules based on statistics analysis of historic data available.

There is an urgent need to include the value of goods in the analysis because under invoicing of imports there can be great economic losses to government.
Processes can be implemented to automatically generate risk rules oriented to detect value anomalies and incorrect declarations by importers.

As the risk module is integrated with the Customs System, it is easier to implement this type of method including more sophisticated statistical analysis as «outliers» determination related to weight and/or value of goods.
On Data Marts

On indicators and Control Charts regarding the indicators generating process automation and use of IT tools for Control Charts production.

Recommendations on automated generation of risk rules based on statistical analysis of data
Three types of rules

- a) Rules to detect risk of value anomalies based on calculation of Statistical Mean over Data Mart
- b) Rules to detect outliers
- c) Other rules based in data obtained directly from the operational system.
BUSINESS INTELLIGENCE FOR RISK ANALYSIS
GENERATING RULES USING A STATISTICAL MEAN

(Data mart) → Rule Generator → Rules Engine (TICA)
OBJECTIVE: Generate rules to detect imports of a product (at the 10 digit level) from a country and unit which differ substantially from the mean value.

PROCEDURE: For each product, rules are generated on the basis of frequently calculated means with statistics from Data Marts.

Rules are generated for those tariff positions when one country of origin and unit have sufficient declarations and when tax income is relatively high.
Outliers are those values from a data set that are considered atypical because they are distinct from most data.
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PILOT IMPLEMENTATION

- Assistance to the Divisions in charge of Risk and Value Assessment in the implementation of these techniques.
- Building a plan to implement statistical analysis and generation of Risk Rules based on average values.
- Procedures and documentation generation for the methodology usage in Costa Rica customs.
- A one week work session was held between June 4-10.
- A detailed implementation plan to be formulated before the end of June.
THANK YOU
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