Single Window Reference Model

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1. Trade Facilitation Models - A Recap
2. Establishing the Single Window - What are the Costs?
3. Operating the Single Window - What’s involved?
4. PPP Approach - Managing & Transferring Risk
5. Structuring the PPP - Establishing a “Special Purpose Vehicle
6. Mongolia Single Window - A Suggestion for the Way Forward
Introduction to Reference Model
Introduction to Reference Model

- Reference model ….

- Just as it is not possible to build a decent and secure house without a proper plan, which has been drawn up by a qualified architect, it is not possible to computerize a system without **first designing the necessary models**, outlining **all the elements and procedures** of which it consists.

- And just as the construction of a small garden shed does not require the same planning as the construction of a hundred storey high commercial building, different systems will require different modeling techniques, in function of their aim and complexity.
‘Anchor’ Concepts of Reference Model

The main purpose of reference model is to generalize the processes for a specific sector.

Provides a framework:
- Make it easier for them to identify own processes
- Find weaknesses in their own running processes easily

Main ‘anchor’ concepts: Authority and Re-use

- **Authority**: establishing a model as an authoritative reference
- **Re-use**: Streamlining the design and development of particular models
‘Anchor’ Concepts of Reference Model

Figure 1.0 ‘Anchor’ Concepts of Authority and Re-Use
Taken from: ‘On reference models for collaborative networked organizations’
Business Process Reference Model

- Business Process Reference Models (BPRM) are frameworks that depict the relationship of the business processes in an organization.

- Business Process
  - Visualized with a flowchart (sequence of activities)
  - Designed to add value and should not include unnecessary activities
  - Well designed increased effectiveness
• Business reference models (BRM) concentrate on the functional business processes and organizational aspects of the core business of an enterprise.

• Describe the business operations of an organization, independent of the organizational structure that performs them.

• The business process modeling methodology for trade applied to draw up this document is based on the UN/CEFACT Modeling Methodology (UMM).

• UMM concentrates on workflows needed to understand the business needs to produce business scenarios, business objects and areas of business collaboration. They are:
  • Business Domain Modelling
  • e-Business requirements
  • Analysis
  • Design
UMM Workflow

Business Modeling
Requirements
Analysis
Design

Deliverables

BOM
Business Area
Process Area
Business Process (Use Case)

BRV
Use Case Description
Business Collaboration

BTV
Business Transactions
Business Documents

BSV
Service Collaborations
Examples of Trade-related Reference Models

- **Reference Model of the TIR Procedure** - UNECE TIR
  - Models the business processes for the whole TIR Carnet life cycle
Reference Model for Single Window Implementation
What is a reference model?
Why develop a reference model for Single Window / Customs?

A reference model is a conceptual framework that essentially serves as a blueprint for business engineering.

- There is currently no industry reference model in the SW / Customs domain.
- Easy identification of gaps and overlaps between the current practices and the industry best practices.
- Process inefficiencies and bottlenecks prevalent in the on-going processes can be continually monitored and allows benchmarking against international standards.
- Enables continual examination and rationalisation of the business processes, its documentation and information requirements of other government agencies involved in the clearance of imported and exported goods.
From Business to IT

- Business Architecture
  - Business Processes, Workflows, Transactions and Collaboration

- Application Architecture
  - Systems, Services, Functional Use Cases

- Information Architecture
  - Data, Business Objects, Exchange Formats, Security and Privacy

- Infrastructure Architecture
  - Hardware, Server, OS, Network

Business Strategy & Requirements

Program & Project Management

Portfolio Analysis
CrimsonLogic SW Reference Framework

Overview

- Strategy
- Organization
- Business Function
- Business Process
- Information
- Technology
Business processes define system requirements.

Applications deliver IT Functions and services.

Target: Migrate the existing IT landscape step by step towards the IT standards.

Conclusion: No system standardization without process standardization.
Business Modeling Tool - ARIS

- Unified user experience
- Role based UI
- Easy to use
- 90% top ratings from end user tests in structural clearness and visual design
CrimsonLogic SW Reference Framework Overview

- Strategy
- Organization
- Business Function
- Business Process
- Information
- Technology
Organization Framework - SW Stakeholders

Level 1

- Customs
- Government Agencies (O.G.A.)
- Port
- Trading Partners
- Other Agencies

Level 2

- Government
- Diplomat
- Service Bureau
- Individual
- Importer
- Exporter
- Land Carrier
- Air Carrier
- Air Cargo Handler
SW Reference Framework

Overview

- Strategy
- Organization
- Business Function
- Business Process
- Information
- Technology
SW Reference Model Framework Overview

Level 1
Business Areas

Level 2
Business Activities - Value Chain

Level 3
Business Processes
## Domain: Process Level Definition

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Description</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Process Map</strong></td>
<td>It represents service oriented view of SWB’s core business processes, those services could be provided to external customers or internal staff. It contains a few business process areas. For example, Asset Enhancement, Collection, etc.</td>
<td>0</td>
</tr>
<tr>
<td><strong>Business Process Area</strong></td>
<td>It focuses on a business process area within the business process map, represent one major service provided to internal employee or external customers. A business process area contains a few main business processes.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Business Main Process Flow</strong></td>
<td>Each main process flow describe an end to end thread of processes which start from and end at customer, deliver the service to internal or external customers.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>A business main process flow contains a few business process flow which work together to deliver the service.</td>
<td></td>
</tr>
<tr>
<td><strong>Vertical Swim lane</strong></td>
<td>Business process flow describe how different process activities work together (Sequence and roles) to perform a defined task required by the process.</td>
<td>3</td>
</tr>
</tbody>
</table>
Model Name: Business Process Map
Domain: Business Process
Level: 0
Model Name: Business process Map

Specification:
It describes the overall services provided to internal/external customers, such as:
- Import
- Export
- Transit
- Transshipment
Domain : Business Process
Level : 1
Model Name : Business Process Area

Specification:
Each ‘business process area’ contains a collection of end to end process flow, which provide similar services to the one or a few ‘customer cluster’. All these ‘end to end’ process flow are list out in a ‘Business Process Area’ diagram, each of ‘end to end’ process flow is referred as ‘business main process’
**Business Process Models**

**Domain**: Business Process  
**Level**: 2  
**Model Name**: Business Main Process Flow

**Specification:**  
Each 'business Main Process' could be described by some business process', which work together to deliver the service to the customer in different scenario (Variant). This diagram provides an overview picture for the owner and user of this 'business main process' and it serves as basis for business model change or process improvement.

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**Import**

Type: Business Main Process Flow  
Last change: 3/18/09 5:42:36 PM
Specification:

To describe business process flow in a swim lane style, so that the responsibility of process activities and the place of the handle over are clearly defined.
SW Organization & Process Relationship

Level 0

Business Process Map

Level 1

Business Process Area

Level 2

Business Main Process Flow

Level 3

Vertical Swimlane
SW Reference Framework

Overview

- Strategy
- Organization
- Business Function
- Business Process
- Information
- Technology
Information / Data Models

Domain : Information Architecture (IA)
Sub Domain : Data
Level : 2
Model Name : Entity Relationship Diagram

Specification:

Entity Relationship Diagram (ERD) is traditional method to describe the relationship for the entities used by a specific business domain or sub domain. Here, attributes to describe an entity is hidden with a lower level model ("Entity Description Diagram (Logical)"
SW Information Framework

Overview

Level 1

Import

Transit

Passenger Cargo

Export

Transhipment

Level 2

Entity Relationship Diagram
Domain : Information Architecture (IA)
Sub Domain : LDM

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<th>Description</th>
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<tr>
<td>DW Structure</td>
<td>DW Structure provide entry point to list a group of Logical Data Model by business area.</td>
<td>1</td>
</tr>
<tr>
<td>Entity Relationship diagram</td>
<td>An entity-relationship model (ERM) is an abstract conceptual representation of structured data</td>
<td>2</td>
</tr>
<tr>
<td>Entity Description Diagram</td>
<td>To describe the attributes belong to an entity, and how them help to identify an entity and help to link one entity to another</td>
<td>3</td>
</tr>
</tbody>
</table>
SW Reference Framework Overview

- Strategy
- Organization
- Business Function
- Business Process
- Information
- Technology
The reference model is going to have IT support, and this diagram provides an IT landscape to list all the required applications system function for both SW and external parties.
Desired Output

Reference Model for Single Window Implementation
CrimsonLogic SW Reference Framework - Putting It Together

- Strategy
- Organization
- Business Process
- Information
- Business Function
- System Function
- Technology
SW Reference Model Framework

**Business Process Strategy**
- Determine process objectives
- Create process transparency

**Business Process Design**
- Identify weak points
- Improve processes
- Determine system requirements

**Enterprise Architecture Information Repository**
- Measure processes

**Business Process Controlling**
- Manage resources by objectives - Motivate employees
- Identify and manage operational risks
- Control execution of processes

**Business Process Implementation**
- Implement application systems
- Train employees in the new processes
- Continuously manage and improve processes
Single Window Repository Framework for Service Oriented Architecture

ARIS Process Performance Manager

Service-oriented Business Process Modeling

Service-oriented Business Process Modeling

BPMN

BPEL processes

WS repository

Process engine

Workflow

Application server

Deployed Web services

WS

Business application

WS

Business application

WS

Self-developed services

XMI

WSDL

BPEL

XPDL

Software engineering

- Eclipse
- Rational
- Borland
- CASE tools
A Trusted Partner to Governments Worldwide