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Somnuk Keretho
Saisamorn Naklada

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Somnuk Keretho*
Saisamorn Naklada**

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*Director and **Project Manager at the Institute for Information Technology Innovation (INOVA), Kasetsart University, Thailand, specializing in ICT-enabled innovation, trade facilitation and e-logistics initiatives including Single Window strategic planning and implementation. Comments from anonymous referees and participants to the ARTNeT Research Team Meeting on Improving Regional Trade Procedures, 4 October 2010 in Kuala Lumpur are gratefully acknowledged. This work was carried out with the aid of a grant from the International Development Research Centre (IDRC), Canada, and is part of an ARTNeT Trade Facilitation Study on Improving Regional Trade Procedures and Process. The support of the United Nations Economic and Social Commission for Asia and the Pacific is gratefully acknowledged. The opinion figures and estimates are the responsibility of the authors and should not be considered as reflecting the views or carrying the approval of the United Nations, IDRC, ARTNeT or INOVA. Any errors are the responsibility of the authors, who can be contacted at sk@ku-inova.org, and saisamorn@ku-inova.org

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1. Introduction

Thailand's exports include agricultural and industrial goods such as rice, processed and frozen food, electronics, fashion garments and textiles, automobiles and auto parts and accessories. The export of jasmine rice, sugar, frozen shrimp, automobiles and auto parts has been a key contributor to economic growth.

Thailand has negotiated free trade agreements with Australia, China, India, Japan, New Zealand and the Association of Southeast Asian Nations (ASEAN) that have helped to increase the total value of its exports. But other barriers to trade (administrative and procedural) may unnecessarily impede further growth.

Business Process Analysis (BPA) is a powerful tool that can help to identify these barriers and suggest ways to streamline trade processes. As part of the Asia-Pacific Research and Training Network on Trade (ARTNeT) Regional Study on Improving Regional Trade Procedures and Processes, a BPA was conducted on Thai exports of sugar to Bangladesh and auto-parts to India, as well as imports into Thailand from China of raw materials used to produce electronic devices. This paper presents the key findings of these analyses and offers some recommendations for streamlining export and import processes.

The study focused on the export of sugar and auto parts because, along with frozen shrimp and jasmine rice, these products are two of Thailand's highest-performing exports and the quantity of the exports of these products grew rapidly between 2005 and 2009, as shown in Table 1. The decision to analyze exports to Bangladesh (sugar) and India (auto parts) was also based on considerations of existing trade practices and market potential. A BPA of Thailand's two other high-performing exports – frozen shrimp and jasmine rice – has already been performed.

Table 1: Quantity and value of sugar and auto parts exported from Thailand (2005-2009)

Products Year		Sugar ¹	Auto parts		
			O.E.M. Part		Spare parts
			Body Part	Component Part	
2005	Quantity (ton)	1,419,417	---Total units not specified---		
	Value (mil.bath)	14,437.50	6,462.11	70,328.58	4,100.74
2006	Quantity (ton)	981,463	---Total units not specified---		
	Value (mil.bath)	13,151.60	6,677.28	80,489.32	5,026.38
2007	Quantity (ton)	2,321,484	---Total units not specified---		
	Value (mil.bath)	25,383	39,910.06	72,432.02	8,115.21
2008	Quantity (ton)	2,015,012	---Total units not specified---		
	Value (mil.bath)	21,733.50	71,493.36	61,320.34	11,007.91
2009	Quantity (ton)	2,694,467	---Total units not specified---		
	Value (mil.bath)	35,503.40	14,665.70	86,225.42	12,531.84

Source: Thailand Automotive Institute²

The study examined the processes involved in the import of raw materials (for electronic devices) in order to give due attention to both sides of trade transaction, and to illustrate the complex procedural requirements and interactions between the agencies that sustain global supply chains.

¹ Office of Agricultural Economics <http://www.oae.go.th/>

² Thailand Automotive Institute http://www.thaiauto.or.th/statistic/vehicle_and_part_export.asp

Section 2 of this paper elaborates upon the benefits of BPA as a basis for the development of a national Single Window by reviewing a prior BPA of Thai imports and exports. Section 3 describes the BPA and time/cost-distance methods used for this study. Sections 4 and 5 examine the processes involved in the export of sugar and auto parts, and Section 6 examines the processes involved in the import of the raw materials used in the production of electronic goods. The paper concludes by listing some recommendations for streamlining processes and procedures.

2. Business process analysis in Thailand

Simplification of documentary requirements and trade procedures (including commercial, transport, regulatory and financial procedures); and their alignment with international standards has a significant impact on the performance of businesses and can consequently enhance competitiveness both at the organizational and national levels. Thus, such simplification of processes and procedures can serve as a means of trade facilitation.³

Prior to the selection of trade facilitation measures, it is crucial to have a good understanding of the existing or “as-is” conditions of business processes and information flows throughout the international supply chain. All attributes of the import and export processes and information flows, including activities required to complete the processes, relevant stakeholders, related laws, rules, regulations and documents, as well as their relationships, need to be duly recognized and understood.

In 2008, Thailand conducted, as part of the Data Harmonization and Data Modeling for Single Window e-Logistics Project,⁴ a BPA of the export and import processes relating to eight strategic products. The four export products selected for analysis were frozen shrimp, frozen chicken, durian and automobiles. The four import products selected for analysis were tuna fish, beef, grapes and auto parts. The analyses concluded that exporting of the selected products from Thailand required between 11 and 16 steps and importing of the selected products required between 9 and 10 steps. The analyses also revealed that certain of these steps, especially those relating to documentation requirements, imposed higher time costs than others. Unified Modeling Language (UML), Use Case Diagrams, and Activity Diagrams were used to illustrate the processes. The Activity Diagrams clearly showed the existence of bottlenecks and redundancies in activities and data requirements. These results guided subsequent improvements in the business processes relating to the selected products. The summaries of the export and import processes for the selected products are shown in Table 2 and Table 3.

³ UNNExT, UNESCAP, UNECE. (2009). *Business Process Analysis Guide to Simplify Trade Procedures*, Bangkok: UNESCAP

⁴ Data Harmonization and Data Modeling for Single Window e-Logistics Project (2008) commissioned by Ministry of Information and Communication Technology, and researched by Institute for Information Technology Innovation, Kasetsart University, Thailand.

Table 2: Summary of the export processes of four strategic products of Thailand (2008)

Export process	Frozen shrimp	Frozen chicken	Durian	Automobiles
1. Buy	√	√	√	√
2. Ship				
2.1 Quality assurance	√	√	√	-
2.2 Arrange Transportation	√	√	√	√
2.3 Obtain export permit	√	√	√	√
2.4 Obtain insurance	√	√	√	√
2.5 Customs declaration	√	√	√	√
2.6 Pack goods and inland transportation	√	√	√	√
2.7 Inspection at the loading station	√	-	-	-
2.8 Export process	√	√	√	√
2.9 Prepare document for importation	√	√	√	√
2.10 Request for cutoff from raw materials list	-	-	-	√
2.11 Report production process	-	-	-	√
2.12 Report exportation	-	-	-	√
2.13 Request for tax/duty return in compliance with the specific laws	-	-	-	√
2.14 Request for excise duty return/waiver	-	-	-	√
3. Pay	√	√	√	√

Remarks: √ that process is required for that product
 - that process is not required for that product

Table 3: Summary of the import processes of four strategic products of Thailand (2008)

Import process	Tuna	Beef	Grapes	Auto parts
1. Buy	√	√	√	√
2. Ship				
2.1 Prepare documents before importation	-	√	-	√
2.2 Obtain approval of raw materials release	-	-	-	√
2.3 Prepare documents required for importation	√	√	√	√
2.4 Obtain insurance	√	√	√	√
2.5 Request for berthing	√	√	√	√
2.6 Request for unloading cargo containers from vessel	√	√	√	√
2.7 Inspect cargo	√	√	√	-
2.8 Release cargo	√	√	√	√
3. Pay	√	√	√	√

Remarks: √ that process is required for that product
 - that process is not required for that product

3. Study method

I. Business process analysis method

This study of export and import processes was conducted based on the *Business Process Analysis Guide to Simplify Trade Procedures* (2009), jointly developed and produced by United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), and United Nations Economic Commission for Europe (UNECE).

A BPA is recommended as the first step towards implementing trade facilitation measures related to simplification, harmonization, and automation of trade procedures and documents.⁵ A BPA is used to visualize the documentation requirements and interactions between agencies that are necessary to facilitate a particular supply chain and to explain how to perform each step in the context of legal regulations, policies, and related trade and electronic commerce orders. BPAs involve examining the documentary and regulatory requirements of trade processes and reveal information flows, bottlenecks and redundancies in the activities and documents necessary to complete trade transactions. The results of a BPA can also enable further data harmonization and data modeling to support the development of e-logistics, as in the case of Thailand. Conducting a BPA also involves collecting the documents and data items used in trade transactions.

According to the UN/CEFACT International Supply Chain Model, business processes are analyzed and categorized into three process areas: **Buy-Ship-Pay**, as follows:

- **Buy** – Activities concerning the conclusion of trade terms and establishment of a sales contract
- **Ship** – Activities concerning the arrangement of inland and cross-border transportation and other actions necessary to meet regulatory requirements in both exporting and importing countries, such as:
 - Obtaining an export permit
 - Arranging transport
 - Arranging for inspection and fumigation
 - Obtaining cargo insurance
 - Providing a customs declaration
 - Collecting empty container(s) from yard
 - Packing container(s)
 - Transferring cargo to the port of departure
 - Clearing goods through customs

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