

**The 4th International Conference on Logistics and Transport
(ICLT 2012)**

**The 1st International Symposium on Value Chain Management
and Logistics (iSVCML2012)**



ICLT
INTERNATIONAL CONFERENCE
ON LOGISTICS & TRANSPORT



Thammasat University - Chiang Mai University

*The conference is co-hosted by International Researchers Consortium of
Value Chain Management and Logistics*

22nd -23rd November, 2012
at Centara Duangtawan Hotel
Chiang Mai, Thailand





DaXiangPai



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PREFACE

This proceeding is issued to support the collaboration between by Faculty of Commerce and Accountancy, Thammasat University, and Faculty of Engineering, Chiang Mai University, on the 4th International Conference on Logistics and Transport (ICLT 2012) and the 1st International Symposium on Value Chain Management and Logistics (iSVCML2012) conferences. The conferences were held during November 22nd - 23rd which was initiated through the international symposium hosted by the department of industrial engineering of Chiang Mai University at Centara Duangtawan Hotel, Chiang Mai, Thailand.

This symposium is aimed to disseminate the knowledge among students and researchers in the field of value chain management, logistics and related topics such as R3A international logistics route in Lao PDR, Myanmar and China and the rising of the Greater Mekong Subregion as well as the ASEAN Economic Community. The conference was launched under the theme of “Supply Chain Risk Management”. The conference is co-hosted by Thai Researchers Consortium of Value Chain Management and Logistics. The conference will be an open space for sharing knowledge among students and researchers in the field of value chain management, logistics and related topics. The symposium also includes the (optional) after conference trip to visit R3A international logistics route in Lao PDR, Myanmar and China. You will be able to experience the rising of the Greater Mekong Subregion as well as the ASEAN Economic Community.

MESSAGE FROM SYMPOSIUM CHAIR

Under the theme of “Supply Chain Risk Management” by Faculty of Commerce and Accountancy, Thammasat University and, Faculty of Engineering, Chiang Mai University, we sincerely welcome you to the 4th International Conference on Logistics and Transport (ICLT 2012) and 1st International Symposium on Value Chain Management and Logistics (iSVCML2012). The conference will be held during November 22-23, 2012 at Centara Duangtawan Hotel, Chiang Mai - Thailand. The conference is co-hosted by Thai Researchers Consortium of Value Chain Management and Logistics. The conference will be an open space for sharing knowledge among students and researchers in the field of value chain management, logistics and related topics. The symposium also includes the (optional) after conference trip to visit R3A international logistics route in Lao PDR, Myanmar and China. You will be able to experience the rising of the Greater Mekong Subregion as well as the ASEAN Economic Community.

Representing the symposium organizing committees, I again would like to welcome you to join the symposium by submitting the paper. Finally, I am looking forward to welcome you in Chiang Mai.

With great pleasure,

Associated Professor Dr. Ruth Banomyong
ICLT Symposium Chair

Associated Professor Dr. Apichat Sopadang
iSVCML Symposium Chair

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and

International Symposium on Value Chain Management and Logistics 2012

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KEYNOTE SPEAKER

Mr. Poonsak Thiapairat

EDUCATION Master of Finance and International Business
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Chulalongkorn University, Bangkok
Master of Science Program in Logistics Management
Chulalongkorn University, Bangkok
Bachelor of Business Administration Assumption University,
Bangkok

WORK EXPERIENCES Chairman of Eternity Group of Companies
Managing Director, Eternity Grand Logistics Plc.
Company Director & Audit Committee of Aira Factoring Plc.
In year 2011, Mr.Poonsak has been a consultant for the Deputy
Prime Minister Kittiratt Na Ranong which concerning to logistics
issues and product distribution during the flood situation.
Lecturer and speaker in subjects and topics of Logistics and
Transport Management for Thammasart University, Chiang Mai
University, ABAC University, SME Bank, Kasikorn Bank, MAI,
Central Group, Department of Land Transport and others.
Chairman of Eternity Group of Companies
Managing Director, Eternity Grand Logistics Plc.
Company Director & Audit Committee of Aira Factoring Plc.

BACKGROUND Mr.Poonsak Thiapairat is the founder of Eternity Group of
Companies and Managing Director of Eternity Grand Logistics
Public Company Limited, which serves various types of logistics
services to top companies in Thailand. His depth and breadth of
experience in logistics, systems analysis and management have
served to create competitive advantages for leading corporations.
Prior to the founding of Eternity, he began his career by joining
CP Agri-Industry in 1984 as Purchasing Officer. This was
followed in 1985 as Warehouse Staff with McDonald. He joined
Siam Cement Trading in 1988 as Trading Officer before joined
Premier Marketing as Product Group Manager in 1990.

KEYNOTE SPEAKER**Professor Dr. Takayuki Mori**

EDUCATION Osaka City University, 1971 – 1975

WORK EXPERIENCES

Mitsui O.S.K.Lines,Ltd employed, July 1997 – July 2001
Managing Director, AMT freight GmbH(Spedition) Germany ,
August 2001 – 2003
Chief General Manager, Maruwa Unyu Kikan Co.,Ltd., January
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Senior Research Officer, Mitsui O.S.K.Lines
Professor, University of Marketing and Distribution Sciences
Faculty of Commerce, Logistics and Transportation, April 2006
Lecturer & Co-Researcher, Tokyo University of Marine Science
& Technology, 2005-2006
Lecturer of Nagasaki Prefecture University, 2001 – 2005
Lecturer-Aoyamagakuin Univ., 2005 and Tokai Univ.,
2004,2005
Lecturer, Kansai University MBA (2011/2012), Faculty of
Commerce, 2012

PUBLICATION

“Liner Shipping and Containerization” 2003 issued by Choeisha
Co.,Ltd.
“Contemporary International Shipping” 2004 issued by
Seizando Shoten Co.Ltd
“Enjoy Cruise ship” 2005, issued by PHP
“History of Japanese passenger ship, after world war II” 2006,
Kaiji Press
“Contemporary basic logistics” 2007, Dobunkan Shuppan
Co.,Ltd
“Visual Airplane” 2008,Dobunkan Shuppan Co.,Ltd.
“Visual Vessel and Port” 2008 Dobunkan Shuppan Co.Ltd.

KEYNOTE SPEAKER**Professor Dr. Yacine Ouzrout**

EDUCATION Engineer in Computer Science. Departement of Computer Science, National School of Engineers of Algeria, 1991
Master in Computer Science. National Institute of Applied Sciences - Lyon.
Option : Artificial intelligence and Data Base , 1992
PhD in Computer Science PhD , INSA National Institute of Technology of Lyon, France, 1997

WORK EXPERIENCES Research Assistant : SIMADE Department, School of Mines, Saint-Etienne France, 1995-1996
Research Engineer : SIMADE Department, School of Mines, Saint-Etienne France, 1996-1998
Associate Professor in Computer Science & Industrial Engineering, Institute of Technology, University of Lyon, Lumiere, 1998 – Present
Head of the the Quality and Industrial Engineering of the Institute of Technology, University of Lyon Lumiere, 2008 – 2010
Deputy Dean of the Institute of Technology, University of Lyon Lumiere, 2010

PUBLICATION Ouzrout, Y., Chaze, L., Lavastre, O., Dominguez, C., & Akhter, S.H., “Simulation of trust in Supply chain”, in “Supply chain performance: collaboration, alignment, and coordination”, ISBN: 978-1-84821-219-0 Wiley - ISTE Ltd. pp. 267-316. 2010
Ouzrout, Y., Bouras, A., Nfaoui, E.H., El Beqqali, O. Chap. XX “A collaborative decision-making approach for supply chain based on a multi-agent system” Springer Series in Advanced Manufacturing , 2010, XXVI, 510 p. 228, ISBN: 978-1-84996-118-9 Springer Ed. 2010

KEYNOTE SPEAKER

Professor Dr.-Ing. Hartmut Zadek

- EDUCATION** Diplom-Wirtschaftsingenieur (Diploma IE), Technical University Berlin, 1993
Promotion (Dr.-Ing.), Award of the Konrad Mellerowicz-Prize Technical University Berlin, 1999
-
- WORK EXPERIENCES** Head of the Department of Logistics , Otto-von-Guericke University Magdeburg, Germany, Institute of Logistics and Material Handling Systems since 2008
Partner and Co-Founder, Visality Consulting GmbH, Berlin, Germany , 2003 - 2007
General Manager , ZLU GmbH, Berlin, Germany 1999 - 2002
Research Assistant , Technical University Berlin, Germany, 1993 - 1999
-
- PUBLICATION** Member of Transportation Committee IHK Magdeburg since 2009
Head of BVL-Arbeitskreis Sustainable Production Logistics since 2009
Member of Logistics Council Saxony-Anhalt, appointed by the minister of rural development and transportation since 2010

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CONFERENCE PROGRAMME

November 22-23, 2012 at Centara Duangtawan Hotel, Chiang Mai

Thursday, November 22, 2012		
08.30 – 09.00	Registration	
09.00 – 09.30	Opening Ceremony ThaiVCM2012 & iSVCML2012 at Chiang Saen Room, 3rd floor, Centara Duangtawan Hotel, Chiang Mai	
09.30 – 10.00	Keynote Speaker(Session 1) at Chiang Saen Room, 3rd floor, Centara Duangtawan Hotel, Chiang Mai By Poonsak Thiapairat Eternity Grand Logistics PCL, Topic: Risk Management During Flood Disaster	
10.00 - 10.30	Keynote Speaker (Session 2) at Chiang Saen Room, 3rd floor, Centara Duangtawan Hotel, Chiang Mai by Professor Dr.Takayuki Mori, University of Marketing & Distribution Science, Japan	
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11.20 - 11.40	IC1202 Evaluating the Performance of Logistics Service Providers Tan, Y.W. and Wai, H.R.	i0002 Combined Continuous Inventory Control and Multi-Depot Vehicle Routing Problem Accounting for Route Duration Constraints, Stochastic Inventory Capacity Constraints and Order Quantity Capacity Karoonsoontawong, A.

11.40 - 12.00	IC1203 Evaluation of the Distribution System of Indonesia Fertilizer State-Owned Company Yusuf, N., Sutanto, S. and Susanti, T.	i0003 Stochastic Demand Robust Machine Layout Design with Fixed Planning Horizon Vitayasak, S. and Pongcharoen, P.
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14.40-15.00	IC1216 Service Preference in the Short Sea Shipping Market Chen, Y.J. and Lirn, T-C.	i0001 Factors Affecting Green Supply Chain Operational Performance of Thai Autopart Firms Niyomyat, N., Tippayawong, K.Y. and Sopadang, A.
15.00 – 15.30	<i>Coffee Break</i>	

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15.30-15.50	<p>IC1217 Green and Sustainable Supply Chain Management on Operational Perspective: A Literature Review Muangpan, T. and Chanintrakul, P.</p> <p>IC1218 Developing Logistics Service Quality Framework: Malaysian Perspective Rahmat, A.K. and Jaafar, H.S.</p> <p>IC1219 Current Challenges Faced by Local Thai Coffee Producer Ren, C.H., Nimsai, S., Mingmalairaks, P. and Kantabutra, S.</p> <p>IC1220 Factors Affecting the Real-Time Traffic Information Demand in Bangkok Potipun, M., Rathanachonkun, P. and Indra-Payoong, N.</p> <p>IC1221 Eliminating Non-Value-Added Activity Through Value Stream Mapping: A Case Study of the Thai Sugar Industry Wichaisri, S. and Sopadang, A.</p>
15.50-16.10	<p>i0007 Smallholder Farmers Reaction: Collaboration Toward Sustainability in Palm Oil Supply Chain Weerasoontorn, P., Suksa-ard, C. and Raweeewan, M.</p> <p>i0012 A Propose Research Framework of Decision Factors in Relocation of Thai Electronics Industry in Preparation to ASEAN Economics Community Janmontree, J. and Tippayawong, K.Y.</p>
16.10 - 16.30	<p>i0006 A Study Framework of Cassava Supply Chain Redesign for AEC Preparation Praneetpholkrang, P., Buddhakulsomsiri, J., Raweeewan, M., Parthanadee, P. and Chaveesuk, R.</p>
16.30 - 16.50	<p>i0008 The Case Study of Factors Influencing Innovation in Operating Hotel Business in Thailand Jeenanunta, C., Visavanont, N. and Suksod, K.</p>
16.50 - 17.10	<p>i0009 A Survey of Supply Chain Resilience Teerasoponpong, S. and Sopadang, A.</p>

Note: ThaiVCML committees meeting from 14.00 to 17.00 at Chiang Kham Room (Floor 3).

Depart from hotel at 18:00 to Gala Dinner at Khum Khan Tok Restaurant.

CONFERENCE PROGRAMME (Day 2)

November 22-23, 2012 at Centara Duangtawan Hotel, Chiang Mai

Friday, November 23, 2012		
Presentation		
	Chiang Saen 1 Room (ICLT2012)	Chiang Saen 2 Room (ISVCM2012)
09.00-09.20	<p>IC1223 Organic Food Supply Chain Restructuring and Marketing Development: The Role of Smallholders and Modern Supply Chains in Thailand Nimsai, S., Boonchoo, P., Mingmalairaks, P., Kantabutra, S. and Ren, C.H.</p> <p>IC1225 Analysis of the Dynamic Relation Between Logistics Development and Economic Growth in Indonesia Reza, M.</p> <p>IC1226 A Comparative Study on SCM Practices: Thai Small Medium and Large Enterprises Yardpaga, T., Song, D.P. and Megicks, P.</p> <p>IC1227 A Cost-Based Model for Container Freight Index Estimation Tor.Chaisuwan, A., Indra-Payoong, N. and Raathanachonkun, P.</p>	<p>i0013 Efficiency Improvement of canned fruit Production Line: A Case Study Makprang, K., Kasemset, C. and Sopadang, A.</p> <p>i0015 Thailand Electric & Electronics Industry Review – The Preliminary Competitiveness Study Ramingwong, S., Monopinives, W. and Sampattakul, S.</p> <p>i0014 The Impact of Guanxi on the Provision of Logistics Service Value Chao, P. and Anantana, T.</p>
09.20-09.40		
09.40-10.00		
10.00-10.20		
10.20 – 10.45	<i>Coffee Break</i>	
10.45 – 11.15	Special Session (Session 3) at Chiang Saen Room, 3rd floor, Centara Duangtawan Hotel, Chiang Mai by Professor Dr.Yacine Outrouz, University of Lyon II, France, Topic: Risk Issues and Research Advancements in Supply Chain Management.	
11.15 – 11.45	Special Session (Session 4) at Chiang Saen Room, 3rd floor, Centara Duangtawan Hotel, Chiang Mai by Professor Dr. Ing. Hartmut Zadek, Otto-von-Guericke University Magdeburg, Germany	
11.45 – 12.00	ThaiVCM2013 Conference Chairperson and Organizer Ceremony	
12.00 – 13.00	<i>Lunch</i>	

Presentation	
Chiang Saen 1 Room (ICLT2012)	
13.00-13.20	<p>IC1228 Growth of Asian International Physical Distribution and Improvement of Transport Infrastructure Ishida, N.</p>
13.20 - 13.40	<p>IC1229 Integration of the Internal Supply Chain Management (SCM) Components Towards Long Run Competitiveness Aishah, T.N., Farizan, N., Samsudin, N.Z., Pyeman, J. and Tajuddin, R.M.</p>
13.40 - 14.00	<p>IC1231 Does LCC Improve Airport Performance? : The Case of Regional Airports in the UK Yokomi, M.</p>
14.00 - 14.20	<p>IC1232 A Comparative Review of Supply Chain Optimisation Jamaludin, A., Yahya, S., Hassan, R. and Jaafar, H.S.</p>
14.20 - 14.40.	<p>IC1233 Overview of Halal Supply Chain Process: Case of Poultry Industry Omar, E.M., Jaafar, H.S. and Osman,M.R.</p>
14.40 - 15.00	<p>IC1234 Structural Equation Modeling in Road Accident Research: A Literature Review Srisawat, S. and Roathanachonkun, P.</p>
15.00 – 15.30	<i>Coffee Break</i>
15.30 – 15.50	<p>IC1235 Optimum Design of Shuttle Bus Routes with Service Level Risks Vachajitpan, P.</p>
15.50 – 16.10	<p>ICLT1236 Just-In-Time Production Planning of A Painting Section to Meet Customer Orders Chomtongsiri, P. and Vachajitpan, P.</p>

*The 4th International Conference on
Logistics and Transport*

THE SERVICE DETERMINANTS OF FREIGHT FORWARDING INDUSTRY

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ABSTRACT

Purpose: This research aims to find service determinants of four popular international freight forwarding business models in the Latin America.

Design/methodology/approach: To analyze the pros and cons of four popular freight forwarding business models and the importance of determinants in this industry, an analytical hierarchy process (AHP) and importance-performance analysis (IPA) techniques are employed to carry out the study. Thirty leading freight forwarders headquartered in Taipei and have done business with Latin America are surveyed by posting them questionnaire to know their perception on the degree of importance of these service factors and the degree of performance of various business models on these service factors. Twenty three of them have responded the survey. A following up telephone interviews with these freight forwarders after the survey are carried out to further interpret the survey findings.

Findings: Three factors of the service quality dimension have much higher degree of importance than the eight factors of the economic dimension.

Research Implications: Freight forwarders should be service-oriented instead of cost-oriented and revenue-oriented, and risks of neglecting service quality in the freight forwarding industry cannot be overemphasized.

Originality/Value: The business models and their service determinants of freight forwarders in the emerging economics are systematically studied for the first time.

EVALUATING THE PERFORMANCE OF LOGISTICS SERVICE PROVIDERS

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ABSTRACT

Purpose: The aims of this research are to gather insights on logistics outsourcing in Singapore from the perspective of the 3PL customer (i.e. service user), determine the importance of decision criteria as perceived by service users and develop a decision-making framework to assist 3PL service users when they select a 3PL provider.

Design/methodology/approach: Selected professionals in the manufacturing and service sectors were surveyed to gather perspectives on the 3PL market as well as to shed light on the criteria they consider to be important when selecting a 3PL provider. Information from 30 respondents was used in the analysis. The structure for the selection of a 3PL provider was conceptualised as a two-level multi-criteria decision-making model. The analytical hierarchy process (AHP) was used to compute the criteria weights based on the judgments of selected supply chain managers from oil and gas, PC manufacturing and commodity trading companies.

Findings: 90% of the respondents reported that their company outsourced their logistics activities. The most outsourced activities tended to be transactional, operational and routine in nature. The least outsourced activities tended to be more strategic and IT-intensive in nature. The four criteria (delivery, cost, quality and flexibility) and 12 associated sub-criteria were found to have a high level of importance. The weights derived from the AHP method reflected the differences in priorities for the selected industries and the products that flow through their supply chain.

Research Implications: Different businesses have different considerations when selecting the most appropriate 3PL provider. Quality and delivery seem to be important considerations for the oil and gas industry, while flexibility and quality are important for PC manufacturers. Commodity trading companies tend to be cost-oriented. 3PL providers need to be agile to align with different customers' expectations.

Originality/Value: The decisions involved in selecting a 3PL service provider are examined from the perspective of the 3PL service user across different industries.

EVALUATION OF THE DISTRIBUTION SYSTEM OF INDONESIA FERTILIZER STATE-OWNED COMPANY

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ABSTRACT

Purpose: This paper is aimed to evaluate the distribution system of one of Indonesia Fertilizer State-owned company which is obliged to apply specific distribution regulations dedicated for public service obligation of the company.

Methodology: The distribution cost of the existing system is compared with the proposed ones through some scenarios of distribution to improve the system and a mixed integer programming is developed to represent the optimization problem of the proposed system.

Findings: It is found that the proposed system could reduce the distribution cost by simplifying the distribution channelization and rearranging the clustering system of distribution warehouses while it keeps guarantee the security of supply.

Practical Implications: The proposed system may help to diminish the delay problem on product delivery due to shorter distance and more simple channelization. Moreover, the reduction of the distribution cost may come to the reduction of the subsidy that should be provided by the government. Finally, this current research must be followed by detail analysis of the feasibility of the implementation of the proposed system, particularly of the social impact of the closure of the warehouses.

Originality: The idea of public service obligation in distribution system becomes the originality of this paper and its value is to show that the government may increase the efficiency while the supply is kept secure at the same time.

Keywords: Distribution System, Public Service Obligation State-Owned Company

Paper type: Case Study

EQUIPMENT TRADE AND TRANSPORTATION TRENDS FOR ASIA-EUROPE-AFRICA

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ABSTRACT

Purpose: To provide clues for enhancing multimodal transportation and trade policies, the transportation and machinery equipment trade and transportation trends for the 3 continents of Asia, Europe and Africa, AEA, were analyzed.

Methodology: For the study area a multimodal network was defined. The relevant time-series information was extracted from centralized databases consisting of 4 categories: transportation and machinery equipment trade, transportation, geographical and socio-economic characteristics. The deployed techniques included: preliminary statistical analysis, regression and elasticity analyses, shortest path algorithm, gravity modeling and liner programming.

Findings: The study identified possible relations between trade and transportation. Gravity modeling introduced GDP and transportation variables as the determinant factors for trade. The coefficients of gravity models often showed increasing time trends. The comparison between optimal trade distributions, based on linear programming, and their observed distributions, showed significant differences. Further study of the AEA trades can enhance trade routing and policy development.

Limitations: The study database was limited to information accessible from centralized and international databanks. The trade information was aggregate at national and total transportation and machinery equipment level. The study AEA network was a simplified version of the actual multimodal network. Information about network actual link flows was not accessible. The origin and destination of trades were assumed to be the country's capital.

Originality/value: For the first time, trade and transportation trends for the 3 land connected continents of the AEA were analyzed based on a newly defined multimodal network.

Keywords: Regional Transportation, Multimodal Transportation, Trade Modeling, Gravity Modeling, Linear Programming, Asia, Europe and Africa, Freight Multimodal Routing.

Paper Type: Research paper.

CAPACITY PLANNING IN CONTAINER HANDLING FACILITY

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ABSTRACT

Purpose: Uncover unmet plans (underutilized resources) and the met/realized plans (undervalued capacity) fuelled by work methods mediation and establish basis for Ideal Capacity.

Design/Methodology/Approach: To test the Equipment Efficiency and Work Methods, Productivity Standards, Existing Capacity; and Ideal Capacity by Sampling of historical data, current operations reports, performance reports before and after mediation of methods; and Observational Research (naturalistic and participant modes). T-test, ANOVA, and F-Test were used where deemed applicable.

Findings: Improving Equipment Efficiency and Work Methods does improve Productivity Standards at a certain efficiency level not exceeding the equipment's allowable capability; Productivity Standards does not directly affect Existing Capacity; while Productivity Standards, if updated and dependable, is a better basis of Ideal Capacity. But Existing Capacity is a sure yardstick of Productivity Standards' relevance and operational performance.

Research Limitations/implications: Sensitivity of internal information and confidentiality clause delimit the presentation of the detailed computation and efficiency of variable equipment attributes is no longer itemized. Between operator's speed and equipment's speed, the latter prevails and test is no longer necessary.

Practical implications: Negative variance of Ideal Capacity against projected Demand necessitates resource balancing and provision options. Positive variance provokes added marketing efforts or productivity programs. No variance means status quo.

Social implications: Reliable Productivity Standards are beneficial when considering reaction to changes in Gross Domestic Product (trade influx) and in the overall growth of this logistics network.

Originality/Value: In container handling where ideal capacity is based on traditional experience (existing capacity), this study objectively views the ideal capacity through buoyant and dependable Productivity Standards setting.

Keywords: Equipment Efficiency, Existing Capacity, Container Handling, Ideal Capacity, Productivity Standards, Work Methods

Paper type: Case Study

JAPANESE FOOD DESERT ISSUES AND SUPPLY CHAIN

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ABSTRACT

Purpose: The purpose of this paper is to clarify the relation between factors generating Food Deserts, and these issues; the retail industry's shift in strategy and consumption and supply chain factors.

Design/methodology/approach: This research focuses on the point of "collapse of the supply chain of food" in Japan.

Findings: The following conclusions have been obtained through this research;

- (1) A new market is created by the retail industry's measures for Food Desert issues.
- (2) Measures for Food Desert issues contribute to a performance improvement in the retail industry.
- (3) The struggle against Food Desert issues means shifting the strategy of retail industry. Therefore, a new strategy is needed simultaneously with a reconstructed supply chain.

Research Impact: The result from this research, which not only can be contributed to the dissolution of future Food Desert issues but also to offer the strategy shift to the retail industry.

Originality/Value: The composition of Food Desert issues in Japan differs greatly from Britain, which is where these problems originated. Here, taking Food Desert in Japan as Shopping Refugee and connect it to the strategy shift of retail industry which straggle in the changing society with Low birthrate and longevity. That is, this study is regarded as research not of a social problem, but an economic problem, or a problem of corporate management.

Keywords: Food Desert, Shopping Refugee (Senior residents in shopping deserts), Low Birthrate and Longevity, Retail Industry, Door-to-Door Food Delivery Service, Shuttered Shopping Street, Supply Chain

Paper Type: Research paper

STREET TURN STRATEGY: THE EFFECTIVENESS AS A GREEN LOGISTIC TOOL FOR THE MANAGEMENT OF EMPTY CONTAINERS FOR ROAD HAULAGE IN MALAYSIA

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ABSTRACT

Purpose: This author seeks to determine whether there is a cost saving and environmental benefits if there is implementation of a new strategy like 'Street Turn' in Malaysia for container haulage operations.

Design/Methodology: The sample for this study consists of companies that are involved with the haulage of containers in Shah Alam and Klang, Selangor and questionnaires were distributed to 162 road haulage company.

Findings: The effectiveness of 'Street Turn' strategy will be measured systematically looking at the cost of operation gathering after implementation and simple estimation of percentage carbon emission reduction. In addition, Statistical Package for the Social Science (SPSS 19.0) software also had used to analyse the haulage perception.

Research Limitation: The study is still new, therefore is being a lack of information supported in Malaysia and people still lack of awareness and knowledge about green logistic.

Practical Implications: The results provide insights on how Malaysia government can reduce the carbon emission and support green logistics from the road haulage industry.

Keywords: Street Turn, Depot Direct, Green Logistic, Carbon Dioxide (CO₂), Prime Mover, Containers

Paper type : Research Paper

ASSESSING AVAILABILITY RISKS IN HEALTH CARE SERVICE SUPPLY CHAINS

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ABSTRACT

Purpose: In many countries the demand structure for health care services is changing due to ageing population. This has led to the need to re-assess the current designs of the current service models. This paper studies health care services as service supply chains which face an availability risk largely due to the re-organisation of the service supply.

Design/methodology/approach: This paper uses a survey methodology approach in the context of the Finnish health care system. The study is based on regional health care system statistics and vast questionnaire results.

Findings: Taking customer perspective into account in planning health care services increases customer perceived availability and social acceptance of services. Geographical distance might have a great influence on availability risk, but it is context dependent and rooted in routines and habits of customer groups.

Originality/value: The availability risk of health care services is still a focal subject under research and there are clear gaps in the current scientific discussion from several perspectives. This study addresses some new research perspectives to the availability of health care services. Our contribution to earlier scientific discussion is formed through the combination of geographical availability and customer perspective.

Keywords: Availability, Risk, Health Care, Service Supply Chain, Assessment, Geographical Distance, Finland.

Paper type: Research paper

SERVICE PREFERENCE IN THE SHORT SEA SHIPPING MARKET

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ABSTRACT

Purpose: This study proposed a causality model in the context of Short Sea Shipping (SSS) services to investigate the influence of purchase intention through the buyers' service preference and perceived value.

Approach: This study applies the structure equation modeling (SEM) approach to assess the empirical strength of the relationships in the proposed model. The model has been validated through empirical test that the extent of preference matching between services delivered and customer needs in each attribute influence the perceived value of customers and therefore affects the final purchase intentions.

Findings: The attributes of a service can commonly be categorized into service quality and service preference where the former represents an attitude that the more the better but the latter pertains to each one's preferred selection. The findings show that timing related services, pricing related services, warehousing services, sales services, door-to-door services, information services and advertising services have positively impact on customer preference.

Practical implications: In addition to the conventional satisfaction indicator in which the quality is perceived after using the service, we show that the perceived value can be an effective criterion for evaluating the procurement decision before the consumption of transportation service

Originality/value: Although existing studies have addressed the importance of service quality and perceived value, the service preference of customers and its relationship to perceived value and Purchase Intentions remain unexplored.

Key Words: Service Preference, Perceived Value, Purchase Intention, Short Sea Shipping (SSS)

GREEN AND SUSTAINABLE SUPPLY CHAIN MANAGEMENT ON OPERATIONAL PERSPECTIVE: A LITERATURE REVIEW

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ABSTRACT

Purpose: The purpose of this paper is to present a comprehensive review of the literature available that addresses Green supply chain management (GSCM) and Sustainable supply chain management (SSCM) from an operational perspective between 2007-2012, identify any research gaps and future research opportunities.

Design/methodology/approach: Content analysis was employed in this paper to analyse and classify 150 articles of GSCM and SSCM research recorded in the databases of Emerald, SpringerLink, ProQuest and Science Direct between 2007–2012.

Findings: The findings of the research work include the classification of GSCM and SSCM research. This research area can be divided into 4 categories i.e. environmental effects, strategic, operational and regulation perspective. The operational perspective has been emphasized and future studies and research opportunities have been proposed.

Research limitations/implication: The research outputs reviewed were only based on published peer-reviewed international journals; any other forms of publications (i.e. research working papers, conference papers and dissertations) have been excluded.

Practical implications: The operational perspective and new research issues are proposed as knowledge for the development of organizations more efficiently.

Originality/value: This paper summarizes available knowledge related to GSCM and SSCM, especially from the operational perspective and highlights guidelines for any future research.

Keywords: Literature Review, Sustainable Supply Chain Management (SSCM), Green Supply Chain Management (GSCM), Operational Perspective and Content Analysis.

DEVELOPING LOGISTICS SERVICE QUALITY FRAMEWORK: MALAYSIAN PERSPECTIVE

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ABSTRACT

Purpose: The main objective of the study is to explore the logistics service quality elements that affect the Malaysian manufacturers' satisfaction level. Focus was given in assessing manufacturers view on outbound logistics service as it is the highest 3PL service used in Malaysia.

Design/methodology/approach: The research adopted qualitative approach in gathering and analysing the information from eight selected Malaysia manufacturers. In depth interview with the relevant personnel were being conducted and transcribed verbatim. Constant comparative analysis technique of data analysis was employed in analysing the data.

Findings: The study reveals that that all eight companies used 3PL services and there are four factors which are aligned with preceding LSQ empirical studies namely product condition, product delivery accuracy, quality of key contact personnel and timeliness. Subsequently, 3PL responsiveness and flexibility is an additional factor discovered in the analysis which is originally not previous LSQ studies.

Originality/value: This study provides insights on the different elements of logistics service quality from the view of 3PL users in Malaysia. This information is vital for researcher to understand the applicability of original LSQ elements and the possible element not considered in preceding studies.

Keywords: Logistics, Third Party Logistics, Malaysia, Logistics Service Quality, Manufacturers

Paper type: Conceptual paper

CURRENT CHALLENGES FACED BY LOCAL THAI COFFEE PRODUCER

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ABSTRACT

Purpose: This study explores challenges that are facing by the local producers in the coffee industry in Thailand. Moreover, there is a need to understand the supply chain systems of local producer such as the local chain and factors that are affect their businesses created by the fierce competition around. Also, there has been a paradigm shift in the coffee industry in Thailand because the consumption of the soluble coffee is transforming into the fresh brewing coffee.

Design/methodology/approach: Qualitative approached is used and semi-structured interview is conducted on the established local producer to understand their supply chain and how they sustain their businesses with an increasing competition faced by them.

Findings: This paper shows the importance of the local coffee production in Thailand that affects the local producers to meet its demand for local consumption. There are also increasing interests from the foreign investors to purchase the coffee beans at a higher price that lead to a threat to local producers.

Research limitations/implications: The limitations in data collection as the interviewers were reserved on the information and the coffee industry in Thailand is based on local producers' initiative to expand their business due to there are minimal assistance from the government. This study can provide a better understanding of important factors in the coffee supply chain risk management by the local producers that can be categorised the risks into organisational, technological, and environmental contexts.

Originality/value: This study highlights the potential benefits of this type of research to develop an understanding of the coffee supply chain and the evolution of relationships in a supply chain system as well as how the local producers can sustain their business in these increasing challenges and a fierce competition.

Keywords: Coffee Industry, Supply Chain Risk Management, Coffee Supply Chain

Paper type: Viewpoint

FACTORS AFFECTING THE REAL-TIME TRAFFIC INFORMATION DEMAND IN BANGKOK

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ABSTRACT

Purpose: To study the factors affecting the demand of real time traffic information service and classify travelers based on the travel behavior.

Design/methodology/approach: Data from respondent are analyzed and form the basis of the generated Binary logistic model. Binary logistic regression is used for analysis used for predicting the traveler's decision that purchases the real-traffic information service or not and the equation derived from the analysis shows that the factors influencing the decision of the traveler. In addition to, the Hierarchical Cluster Analysis and the K-Mean Cluster Analysis are used for grouping of travelers.

Findings: The results will show that 5 factors affecting the traffic information demand such as traveler' needs, traffic jam experience, distance, willingness to pay for information service, and cost, respectively. The factors that influence the decision are different according to the groups(commuter and recreation). The commuter group, the traffic jam experience influences the traveler's decision. Meanwhile, the traveler in recreation group emphasized the factors of distance. In addition, the travelers are classified into three groups according to the travel behavior. Each of the group is divided into the difference of time, costs, distance and willingness to pay for service.

Research limitations/implications: This survey is specification among travelers who travel in Bangkok regularly so limits its usefulness elsewhere.

Originality/value: The results of this paper will be beneficial to the government and business in order to develop the traffic information systems for the travelers' needs.

Key words: Traveler Behavior, Real Time Traffic Information, Binary Logistic Regression

Paper type: Research paper

ELIMINATING NON-VALUE-ADDED ACTIVITY THROUGH VALUE STREAM MAPPING: A CASE STUDY OF THE THAI SUGAR INDUSTRY

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ABSTRACT

Purpose – This paper aims to analyze the Thai sugar industry supply chain and investigate the use of Value Stream Mapping (VSM) to identify waste.

Design/methodology/approach – VSM is the main tool used to identify opportunities for improvement and elimination of waste in processes. Then, this paper proposes an approach to improve the sugar supply chain.

Findings – The results of current state map found that non-value-added and necessary non-value-added activities, which are waiting times, took 735 minutes, representing 56.84% of production time. An approach sequencing and *scheduling* arrival of sugar cane trucks proposes to improve the sugar supply chain in the future state map. Simulation results that eliminate waiting time associated with non-value-added activity save 185 minutes, reducing non-value-added activity to 49.19% of production time.

Research limitations/implications – The findings are limited due to the focused nature of the case study.

Originality/value – This paper is a real case study showing VSM applications and simulation approach sequencing and *scheduling* arrival of sugar cane trucks to eliminate waste in the process. In future research, this approach will be applied to reduce non-value-added activity in the Thai sugar industry.

Keyword: Sugar Industry, Value Stream Mapping, Waste Reduction

ORGANIC FOOD SUPPLY CHAIN RESTRUCTURING AND MARKETING DEVELOPMENT: THE ROLE OF SMALLHOLDERS AND MODERN SUPPLY CHAINS IN THAILAND

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ABSTRACT

Purpose: There have been many changes in agri-food systems in the last two decades, both in developed and developing countries. These changes were driven by forces, such as agricultural industrialization, globalization, trade liberalization, consumer's demands, safety and environmental concerns, and increasing role of information and logistics management. The food sector in Thailand undergoes two major transformations: "supermarketization" and the demand for organic and low-chemical products both from local and international markets. This presents threats as well as opportunities for smallholders. The standard set by buyers requires farmers to adjust their production and marketing systems. Assistance for farmers are derived from social enterprise and government and collaborations amongst these two parties.

Design/methodology/approach: A supply chain restructuring framework is used to analyze the participation of small-scale producers in schemes run by the social enterprises to assist smallholders with production and marketing.

Findings: This study, consequently, intends to explore empirically the pattern of agri-food (organic) supply chain restructuring and the role of social enterprises. The patterns of supply chain found in this study are substantiated and linked with the existing social enterprise and modern trade schemes to see whether there are inconsistencies in the policies and actual implementations.

Research limitations/implications: Focuses on the modern trade as the fastest growing segment in Thailand.

Originality/value: An enhancement of smallholders towards an integration of modern supply chain

Keywords: Organic food, Supply Chain, Social Enterprise, Smallholder

Paper type: Research Paper

ANALYSIS OF THE DYNAMIC RELATION BETWEEN LOGISTICS DEVELOPMENT AND ECONOMIC GROWTH IN INDONESIA

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ABSTRACT

Purpose: This paper investigates the relationship between logistics development and economic growth in Indonesia from the data of traffic volume and GDP growth rate from 1988 to 2010.

Design/methodology/approach: The analysis of the dynamic relation will be performed by linear and logistic regression. Literature reviews have been conducted to find the most applicable statistical model. Survey data was collected, whereby data of cargo volume that travels through sea, air and rail is used as the logistics index, while GDP is used for the economic growth index.

Findings: The outcome of the study shows that development of logistics plays an important role in supporting and sustaining economic growth. The linear equation model presents a good trend, while the logistic econometric model, using the upperbound value of Indonesian GDP in 2015, shows an even a better relationship.

Research Impact: The logistic regression model is quite useful in analyzing Indonesia's logistics contribution. Even though the model is developed in the context of Indonesia, the overall statistical analysis is generic and can be generalized to other developing economies.

Originality/Value: Analyzing relationship of logistics infrastructure and economic growth that has been done in previous research in specific geographical region using various regression analysis or other statistical method scan perhaps be built for understanding Indonesia's economic situation. This paper will hopefully present a strong and interesting angle of the necessity to keep the stability of Indonesian economic growth rate and be in pursuit of continuously improving the logistics infrastructure.

Keywords: Logistics, GDP, Economic Growth, Regression Analysis

A COMPARATIVE STUDY ON SCM PRACTICES: THAI SMALL, MEDIUM AND LARGE ENTERPRISES

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ABSTRACT

Purpose: The purpose of this paper is to present the result of a study that investigates current supply chain management (SCM) practices and performances benchmarking among Thai Small, Medium and Large Enterprises.

Design/methodology/approach: Survey data was collected from 166 companies with 50 or fewer employees, 145 companies with 51 – 200 employees, and 98 companies with more than 200 employees.

Findings: Research on SCM practices in Thai SMEs was rare indeed. The outcome of study shows that overall perception of SCM between Thai SMEs and LEs has little different. Both of them concentrated in relationship management as the first priority. Whilst LEs focused on manufacturing flow as the next, SMEs preferred product development and commercialisation.

Research Impact: In order to investigate the effectiveness of SCM implementation between SMEs and LEs; literature reviews and semi-structure interviews have been conducted with antecedents and consequences to SCM. Then SCM practices model is conceptualised including five-dimensional constructs. Although the model is developed in the context of Thai SMEs, the overall framework is generic and can be generalized to other developing countries.

Originality/Value: The result from research offers a number of managerial implications to Thai SMEs, e.g. (1) better comprehension of perception in SCM practices and its antecedents and consequence between SMEs and LEs, (2) an appropriate framework to implement SCM practices in Thai SMEs, which may improve their competitive performance that would directly result in sustainable growth of Thai economy.

Keywords: Supply Chain Management, SMEs, Thailand

Paper Type: Research paper

A COST-BASED MODEL FOR CONTAINER FREIGHT INDEX ESTIMATION

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ABSTRACT

Purpose: The road freight index is an indicator for referencing and forecasting the price of freight transportation. This paper develops a cost-based model used for estimating container road freight index in Thailand

Design/methodology/approach: We focus on a macro-level freight index estimation using non-survey method to update the freight index quarterly. To define the freight price structure, forty-three carriers in the eastern region of Thailand are chosen ranging from small to large-sized companies. The developed freight index includes five transport routes between Industrial Estates and Laem Chabang port. The cost-based model is developed considering primarily carriers' fixed costs, running costs, and profit mark-up. The freight index is derived from the freight price using a modified Laspeyers's formulation.

Findings: The results have indicated that the transport distance and the average price per kilometer are negatively non-linear trend. This is similar to the profit mark up in which up to sixty percent of the freight price is quoted. The results have also shown that the proposed freight index follows similar patterns to the Thailand road freight index. The validation on updating freight index compared with the average freight price is 70 percent correctly estimated.

Originality/value: This paper fulfills the information of road freight index for container transport between Industrial Estates and Laem Chabang port.

Keywords: Road Freight Index, Container Freight Price, Cost-Base Index

Paper type: Technical paper

GROWTH OF ASIAN INTERNATIONAL PHYSICAL DISTRIBUTION AND IMPROVEMENT OF TRANSPORT INFRASTRUCTURE

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ABSTRACT

Purpose: We analyze the international freight transport systems in Asia. Also we consider the improvement of transport infrastructure which enhances the efficiency of the international physical distribution.

Design/methodology/approach: We use the statistical methods to analyze the major international freight transport in Asia. Also we use theoretical analysis to consider the improvement of transport infrastructure which enhances the efficiency of the international physical distribution.

Findings: In Asia, the intermodal transport will become more used as an efficient international physical distribution system. To use the intermodal transport systems more widely, it needs to reduce its total cost. For that purpose, terminals must be improved and transshipment cost must be reduced. We had to improve transport infrastructures continuously to make our international physical distribution systems more efficient.

Originality/value: We statistically confirm that the major modes of international freight transport in Asia are the sea container, the air freight transport and the intermodal transport. Also we theoretically analyze the improvement of transport infrastructure which enhances the efficiency of the intermodal transport or the international physical distribution.

Keywords: Asian Economic Growth, International Freight Transport System, Intermodal Transport, Improvement of Transport Infrastructure

Paper type: Viewpoint

INTEGRATION OF THE INTERNAL SUPPLY CHAIN MANAGEMENT (SCM) COMPONENTS TOWARDS LONG RUN COMPETITIVENESS

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ABSTRACT

Propose - Economic growth of a country can be sustainable when it is able to be competitive in the long run. Hence, Malaysian government has implemented Economic Transformation Program (ETP) to ensure the achievement of long-term and sustainable economic growth for the country. It is well accepted that there are many factors that influence the achievement of long-term and sustainable economic growth. These factors consist of internal and external supply chain management (SCM) components.

Design/methodology/approach – 192 electric and electronics (E&E) manufacturers were interviewed to determine their views on the importance of the integration of the internal SCM components towards the achievement of long term and sustainable economic growth.

Findings - Many studies had been conducted to evaluate the effects of external SCM components on the efficiency and performance for long-term and sustainable economic growth. However, very limited studies had been focused on the effects of internal SCM components in order to achieve long-term and sustainable economic growth of a country. Therefore this paper presents the findings from a research conducted to determine the factors and their integration towards the performance of internal SCM components on the long term competitiveness and sustainable economic growth.

Research limitations/implications – The study focuses only on manufacturer perspective and concentrates on their views but not the whole channel members in the supply chain.

Practical implications - The results provide insights on how integration of internal SCM components were applied in Malaysia E&E industry and how it could be improve in achieving towards long run competitiveness.

Originality/value – This study can be one of the first to address the integration of internal SCM to identify their influence towards long run competitiveness.

Keyword: Supply Chain Management (SCM), Competitiveness Internal

DOES LCC IMPROVE AIRPORT PERFORMANCE? : THE CASE OF REGIONAL AIRPORTS IN THE UK

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ABSTRACT

Purpose: The purpose of this study is to make clear the effects of LCC (Low Cost Carrier) on the UK's regional airports.

Methodology: This study conducts two stage procedure to evaluate the LCC effects to airport management. At the first stage, we calculate the technical efficiencies of regional airports in the UK by DEA (Data Envelopment Analysis). Then at the second stage, we estimate some variables that influences on DEA scores calculated in the first stage by Tobit regression model.

Findings: Our findings are that LCC as well as charter flights are the most important contributor to airport performance of aeronautical activities. On the other hand, as for the total activities, charter flights make higher contribution to airport performance than LCC flights.

Research Implications: This research could demonstrate many factors influenced on management performance of airport.

Practical Implications: This research could give airport manager useful information about strategies of airside and landside operation.

Originality: Empirical analysis about LCC impacts to airports is research field with fewer previous studies.

Keywords: LCC, Airport Performance, DEA (Data Envelopment Analysis).

Paper type: Research paper

A COMPARATIVE REVIEW OF SUPPLY CHAIN OPTIMISATION

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ABSTRACT

Purpose: The paper aims to detail out the element of the supply chain optimisation and compare the elements of supply chain optimisation modelling which is the Mixed Integer Linear Programming (MILP), Knowledge Based Genetic Algorithm (KBGA), Supply Chain Operations References (SCOR) and Agent-Based Model (ABM).

Design/methodology/approach: The methodology of this study was carried out by reviewing literature on supply chain optimisation modelling (MILP, KBGA, SCOR and ABM).

Findings: Cost, capacity, inventory and time are the elements of supply chain optimisation from the literature review. Meanwhile time and capacity are the most vital elements from four type of optimisation modelling that had been studied.

Research limitations: This study only limits to four type of supply chain optimization modeling (MILP, KBGA, SCOR and ABM) and did not present the overall elements of optimisation modeling.

Originality/value: This paper differentiated four type of supply chain optimization modeling (MILP, KBGA, SCOR and ABM) in term of parameters and the purposed of the modeling to help researchers decide which of the modeling will be useful and more suitable.

Keywords: Supply Chain, Optimisation, Supply Chain Optimisation

Paper Type: Conceptual Paper

OVERVIEW OF HALAL SUPPLY CHAIN PROCESS: CASE OF POULTRY INDUSTRY

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ABSTRACT

Purpose: The paper aims to identify and outline the halal supply chain process in the food industry particularly the poultry industry.

Design/methodology/approach: This study was conducted through literature review and face to face interviews. The interviewees comprise those who dealt directly or indirectly in the poultry processing industry and also Muslim scholars in Peninsular Malaysia.

Findings: Findings from the interviews show that the majority of the small abattoirs did not bother to follow the *halalan toyyiban practice* as underlined by Syariah Islamic perspectives. This means that even though the product is *halal* it is not consumable due to the lack of hygiene being practiced. The literature review provides evidence that studies that viewed food supply chain from Islamic perspectives are lacking. This has limited in-depth discussions on the issue. Similarly, the concepts of supply chain and logistics are also new to the Muslim scholars.

Research implications: This research could create awareness among the consumers, manufacturers, logistics service providers, suppliers as well as the government on the importance of implementing halal supply chain.

Practical implications: This research also provides guidelines to the practitioners on various halal control points that need to be given attention.

Originality/value: Fewer attempts have been made by researchers in applying Islamic concepts and principles into specific disciplines such as supply chain. Even though many studies have focused on halal issues and supply chain issues, but the two have been conducted in isolation. Thus, this study contributes to knowledge by integrating the two disciplines and come out with the *halal* supply chain.

Keywords: Halal, Halal Supply Chain, Poultry, Abattoir

Paper type: Research paper

STRUCTURAL EQUATION MODELING IN ROAD ACCIDENT RESEARCH: A LITERATURE REVIEW

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ABSTRACT

Purpose: This study is presented the applications of Structural Equation Modeling (SEM) in Road accident research and identified some significant research gaps for future research.

Design/methodology/approach: This paper is focused on the applications of Structural Equation Modeling (SEM) in Road accident research. A systematic literature review methodology was employed to analyze published applications of the Structural Equation Modeling (SEM) and identify methodological issues gleaned from reviewing those literatures.

Findings: The findings of this paper focus on empirical applications of SEM which include: (1) CFA models; (2) PA models; and (3) SEM models that combine both measurement and structural components. Research studies in the past focused on the association between model and empirical data. However, they lacked of advance statistical analysis of the variables relationship in the model such as Mediator analysis and Moderator analysis etc.

Research limitations/implication: This study was resulted from reviewing literatures related to applications of SEM from the previous publications in the international journals in the past decade. However, this study was excluded other forms of published applications of SEM.

Practical implications: The findings lead to development of SEM model to apply in road accident researches which the developed model is able to describe causes of road accident with more understanding.

Originality/value: The results of this study are presented understanding situation of application of Structural Equation Modeling (SEM) and indicating guideline for road accident research in the future with advance level.

Keywords: Structural Equation Modeling(SEM), Confirmatory Factor Analysis(CFA), Path Analysis(PA), Road Accident Model, Review Literature.

OPTIMUM DESIGN OF SHUTTLE BUS ROUTES WITH SERVICE LEVEL RISKS

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ABSTRACT

Purpose: The purpose of this paper is to model the Shuttle Bus Problem as a variant of the Capacitated Vehicle Routing Problem (CVRP) in which demands by customers appear probabilistically and the minimum service levels are specified. Probability-based constraints are added to the discrete optimization problem with uncertainty in passenger numbers in delivery and pickup at specified stopping points on the bus route.

Design/methodology/approach: Using an evolutionary algorithm in Excel Solver, optimum routes with required service level can be obtained by minimizing the total time spent and travel distance traveled by the vehicles.

Findings: For the numerical problem instances, results show different options generated for separate delivery and pickup, delivery and backtracking pickup and simultaneous delivery and pickup routes. Results are also obtained for single-bus and multiple-bus services for comparison in order to show the effect of different variables.

Practical implications: Three different models are studied and compared. These will help the route planner to understand the behavior of the problem and to select the optimum service to customers. Considering service level and maximum passenger travel time will also have impact on the customer satisfaction.

Originality/value: Different possible options in designing shuttle bus routes are proposed. This paper also proposes to add the service level concept in the optimization of the CVRP.

Keywords: Bus Shuttle Service, Capacitated Vehicle Routing Problem, Route Optimization, Service Level, Simultaneous Delivery and Pickup

Paper type: Research paper.

JUST-IN-TIME PRODUCTION PLANNING OF A PAINTING SECTION TO MEET CUSTOMER ORDERS

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ABSTRACT

Purpose: The purpose of this paper is to study the production planning under the just-in-time delivery demand. JIT is a very common arrangement in manufacturing especially in the automotive industry in Thailand. Suppliers are required to strictly follow the daily even hourly schedule of product delivery to a customer. Any delay can cause significant penalty and other expediting costs. This has necessitated most suppliers to avoid the costs by careful production planning and to rely on inventory.

Design/methodology/approach: This paper describes a situation in a car bumper manufacturing plant using a simulation approach to improve its production planning of the painting section. There are 50 combinations of designs and colors of bumpers which have to be produced according to advance orders and meeting delivery requests in just-in-time order cycle of 45 minutes. Although inventory is used to absorb the real-time delivery request, the manufacturer still encounters difficulties in matching its product availability with the real time orders from its customer. Since the product requires large storage spaces and a necessary number of storage dollies in circulation, this also imposes a limit to the inventory level. Frequent changes in production plan and expediting are thus necessary and incur very high cost. A simple spreadsheet simulation model is used to determine a better planning policy.

Findings: The results show that a better policy can be adopted and leads to about 75 percent reduction in the undesirable cost.

Originality/value: The method used in this study shows the importance of selecting a good production planning that can be applied to similar just-in-time environment. This will improve the efficiency in production and allows more effectiveness in meeting real time orders of the customer.

Keywords: Just-In-Time Production, Production Planning, Simulation, Spreadsheet Model

Paper type: Research paper.

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FACTORS AFFECTING GREEN SUPPLY CHAIN OPERATIONAL PERFORMANCE OF THAI AUTO PARTS FIRMS

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Abstract

In this research paper, operational performance and potential green supply chain management were investigated for Thai autopart industry. *Green supply chain performance measurement (GSPM) model was developed based on the combination of various concepts including SCM Logistics Scorecard, Supply Chain Operations Reference Model, Balance Scorecard and Green Supply Chain Management.* The *GSPM* has been utilized as a self-evaluation tool for participating companies focusing on five decisive areas or factors which included procurement, transportation, manufacturing, reverse logistics and eco-design. The total of 28 sub-factors was assessed to obtain scores in each assessment area, compared among targeted industry. A factor analysis was conducted using the survey result of the *GSPM* in order to identify significant factors that represent the green supply chain operation performance of Thai autoparts industry. Results show that three decisive factors which included Procurement and Transportation for Green Supply Chain Management, Reverse Logistic and Eco Design for Green Supply Chain Management and Reuse and Recycle of Manufacturing for Green Supply Chain Management were proven to have significant impact on the autoparts industry in Thailand. These findings could be applied as indicators to specify strength, weakness, and position of firm's operation performance in the industry.

Keywords: Operational Performance, Green Supply Chain, GSPM, Thai Autoparts Industry, Factor Analysis

COMBINED CONTINUOUS INVENTORY CONTROL AND MULTI-DEPOT VEHICLE ROUTING PROBLEM ACCOUNTING FOR ROUTE DURATION CONSTRAINTS, STOCHASTIC INVENTORY CAPACITY CONSTRAINTS AND ORDER QUANTITY CAPACITY

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Abstract

This paper studies the inventory management and routing problem in a two-level supply chain where a single plant serves a set of warehouses, which in turn serve a set of customers with stochastic demands. A set partitioning based probabilistic chance constrained nonlinear integer programming formulation is provided for the combined continuous inventory control and multi-depot vehicle routing problem while accounting for probability of inventory capacity violation, order quantity capacity, service levels, vehicle capacity restrictions and route duration limits. Two tabu search heuristics, differing in the way initial solutions are generated, are applied to solve the problem. Computational tests on standard tests networks reveal that integrating the inventory management and routing decisions by solving the combined inventory management and routing problem may yield cost savings of up to 14% over the sequential approach where both problems are solved separately. The best objective function value obtained by the tabu search heuristic was found to increase with increase in customer demand variance but decrease with increase in order quantity capacity and route duration limit. The safety stock levels, the reorder points and total holding costs were found to increase with increase in customer demand variance. The available inventory capacity was found to decrease with increase in customer demand variance. The total ordering costs in the best solution increases with the decrease of the order quantity capacity, whereas the total holding costs decreases with the decrease of the order quantity capacity. The routing costs increases with the decrease of route duration limit.

Keywords: Multi-Depot Vehicle Routing Problem, Inventory Control Problem, Tabu Search

STOCHASTIC DEMAND ROBUST MACHINE LAYOUT DESIGN WITH FIXED PLANNING HORIZON

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Abstract

In lean manufacturing context, variability in customers' demand over time-periods has led to the production flexibility on a shop floor area. Placement of machines in the limited space is one of the essential plant designs to material flow between machines. Shorten material handling distance can be considered as a key performance index of internal logistic activity in manufacturing firm. This paper presents the application of Genetic Algorithm for designing robust machine layout that minimise total material handling distance based on multiple time-periods uncertainty demand on fixed planning horizon. The experimental study on uncertainty demand was computationally based on two scenarios: (i) re-layout after demand changing; and (ii) robust layout (no machine movement even demand changes). Discussion on the trade-off between the shortening handling distance and re-layout cost was demonstrated as a decision making tool for a manufacturing company.

Keywords: Genetic Algorithm, Machine Layout, Stochastic Demand, Robust Layout.

RISK MANAGEMENT AND PERFORMANCE MEASUREMENT IN THE THAI SHRIMP CHAIN

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Abstract

Currently, the risk management provides the direct impact on the supply chain performance measurement in terms of the efficiency and effectiveness. The focusing on performance criteria factors including financial perspectives and non financial perspectives can be used to evaluate and to manage risks in the supply chain. This research therefore aims to develop the performance that can be used to evaluate the risk in the Thai shrimp chain. The quantitative data was collected by using the questionnaire survey. The factor analysis was applied to analyze the data and to group sub-criteria factors. The proposed model was included with the five main criterions and 27 sub-criterions. The construct of performance model was also examined through confirmatory factor analysis. The result of CFA analysis indicates the good fit to reach an acceptable of the performance model construction in the Thai shrimp chain.

Keywords: Risk Management, Performance Measurement, Supply Chain, Factor Analysis

MULTIOBJECTIVE UNIT COMMITMENT IN LARGE SCALE POWER SYSTEM AND SENSITIVITY ANALYSIS

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Abstract

The unit commitment is the scheduling of start-up/shut-down decisions and operation levels for power generation to reduce operating and fuel costs. This paper considers environmental issue in the unit commitment for Thailand electricity generation. The objective is to reduce CO₂ emission while minimize the total fuel costs. Moreover, we analyze the sensitivity of CO₂ emission cost per kgCO₂ to find the sensitive price range that will effect power generation distribution. Since, minimizing fuel cost and CO₂ emission have conflict objective functions this paper proposes presents a formulation of a mixed integer linear programming and a multi-objective approach (MO) to solve the problem between unit commitment and CO₂ emission for daily generator operations. CO₂ emission limitation is an important constraint that will affect the fuel cost and the power generation plan. The large scale model is coded with IBM ILOG CPLEX and tested with various scenarios to observe the behavior of the model. The model generates the best optimal quantity of power generation daily which minimizes CO₂ emission costs and fuel costs. The sensitivity of CO₂ emission cost helps decision maker to schedule long term power distribution under both minimization objectives

Keywords: Power plants, Unit Commitment, Multiobjective approach, CO₂ Emission Constraints

A STUDY FRAMEWORK OF CASSAVA SUPPLY CHAIN REDESIGN FOR AEC PREPARATION

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Abstract

This research involves a supply chain redesign of cassava product industry for AEC preparation. The study begins with data collection including production, processing, transportation (inbound and outbound), demand, and market situation of cassava products in ASEAN region. Research instrument and sources of information are secondary data from related research studies, direct interviews during field study, phone interviews, and questionnaire by mail. This paper outlines the framework of the study. The expected outputs include a suggestion on supply chain redesign of Thai's cassava product industry in AEC context, the potential, distinctive points and weak point of Thai's cassava product industry when compared with other countries in ASEAN.

Key words: Cassava, Supply Chain, Redesign, AEC

SMALLHOLDER FARMERS REACTION: COLLABORATION TOWARD SUSTAINABILITY IN PALM OIL SUPPLY CHAIN

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Abstract

Palm oil is used in various products. The global palm oil demand is primarily raised by the demand for food manufacturing industry and biofuel in energy industry. Activities in supply chain serving this consumption have destroyed forest and environment around the world. In Thailand, palm oil planting is mostly run by smallholder farmers. They grow the plant and sell fresh fruit bunch to collectors (middleman) or directly to mills. If they can participate further in the downstream supply chain sustainably, not only should they receive higher price from selling palm oil, higher than selling fresh fruit bunch, but they also will be main contributors to eco-friendliness. A new type of mill, that is environmental friendly, requires low investment. This presents an opportunity for smallholder farmers to collaborate and be able to practice sustainably in the downstream supply chain. But should a group of farmers invest more in the downstream? If so, how should they manage? This paper presents a conceptual model in an analysis of smallholder farmers' collaboration in palm oil supply chain.

Keywords: Smallholder Farmer, Sustainable Agriculture Supply Chain, Palm Oil, Collaboration

THE CASE STUDY OF FACTORS INFLUENCING INNOVATION IN OPERATIONG HOTEL BUSINESS IN THAILAND

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Abstract

The purpose of this study was to survey factors influencing innovation and supply chain in operating hotel business in Thailand. The tool employed in this study was an interview undertaken by querying human resources managers of two large four-star hotels, one small luxury four-star hotel, a small one-star hotel, two-star small hotel and three-star economic hotel in every part of Thailand. The interview tool is based on the literature. It was found that customers' needs, good service, management process, technology, marketing, and linkage were the key factors affecting innovation in hotel industry in Thailand.

Keyword: Innovation, Service Industry, Factor, Hotel Business, Impact

A LITERATURE REVIEW OF SUPPLY CHAIN RESILIENCE

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Abstract

Due to the rapid advancement of technology, the supply chain has become more complex than ever before. One undesirable effect of the complex supply chain is its vulnerability. The modern paradigm of performance improvements, e.g. Cost reduction and lean production, contribute to increased risk of potential loss. Resilience is a concept for designing a supply chain that is not only able to withstand the disruption but also able to survive and able to recover from the disruption. However, there is already a huge number of researches regarding the measurement of supply chain's resilience. Each of the research characterizes the resilience using various types of sub-properties. This paper provides a survey of the definitions and components of supply chain's resilience in order to capture the current trend of the resilience evaluations. The objective of this paper is to classify the components of resilience into category and to identify the characteristics of each aspect. A critical evaluation of the state-of-the-art and future challenges also discussed.

Keywords: Supply Chain, Resilience, Survey

RESOURCE ANALYSIS IN EMERGENCY DEPARTMENT

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Abstract

The critical objective of the Emergency Department is to provide the fastest response to all patients need with the proper treatment in order to improve to the stable condition. The patient flow in the emergency department at Thammasat University Hospital in Thailand was analyzed and re-engineered to achieve efficient services. However, the major problem is the increasing number of the patient and as a result, the increasing waiting time for the medical services or treatments. Therefore, we propose a decision support tool and method for analyzing the staff scheduling using the integrated simulation model with the main purpose to increase patient safety or to reduce the patient waiting time. To meet high demand efficiently and effectively is by organize human resource appropriately such as doctors, lab physicians, and nurses are required to reduce the patient waiting time in the ED subject to some constraints such as the budget restrictions.

Keywords: Emergency Department, Simulation, Waiting Time Reduction

SUPPLY CHAIN COLLABORATION AND INNOVATION IN THE AUTOMOTIVE AND ELECTRONICS INDUSTRIES: THE CASE STUDIES IN THAILAND

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Abstract

The purposes of this research are to explore and examine the important factors that play major roles on influencing the innovation and collaboration in automotive and electronics supply chain in Thailand. According to Thailand's Gross Domestic Product (GDP), automotive and electronics industries consider as the most valuable industry in Thailand, which also has an extremely high volume of production and exports since 2008. The main factors considered for use in our case study analysis are the firm's characteristics which include the firm size, the tier of firm, the type of firm (Thai-owned, joint venture, or foreign-owned company), the relationships between the suppliers and the customers, technology and innovation transfer, and lastly, the level of collaboration among partners. This research illustrates the relation and dependency between supply chain collaboration and innovations. The paper focuses on what is needed for innovations—can supply chain collaboration alone create innovations or are other factors involved? Our case studies were conducted with in-depth interviews, which include tier 1, tier 2, and tier 3 suppliers. The selected companies are all Thai-owned companies and range from large scale to small scale like Small and Medium Enterprises (SME) to analyze and compare the different results that occur from the different characteristics of the companies.

Keywords: Supply Chain Collaboration, Innovation, Automotive Industry, Electronics Industry

A PROPOSE RESEARCH FRAME WORK OF DECISION FACTORS IN RELOCATION OF THAI ELECTRONICS INDUSTRY IN PREPARATION ASEAN ECONOMICS COMMUNITY

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Abstract

This research aims to study on 2 objectives, the first is to study on electronics industry supply chain management in Thailand and the second one aims to find out the decision factor on relocation electronics industry. The analysis will be focused on the electronics sector by applying survey method to gather potential factors from electronics industry in Thailand. Questionnaire consists of 2 approaches, quantitative and qualitative. Quantitative questionnaire will collect the numeric answer while opinion would be collected by qualitative questionnaire. The arrangement of each factor will be grouped into clusters by using Factor Analysis technique. AHP method will later be applied to rank the impact factors into a hierarchical model. The model will allow the electronics industry to prepare themselves before and after the reinforcement of the upcoming ASEAN Economic Community.

Keywords: Supply Chain Redesign, Relocation, Electronic Manufacturing, ASEAN Economic Community

EFFICIENCY IMPROVEMENT OF CANNED FRUIT PRODUCTION LINE: A CASE STUDY

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Abstract

This study aims to determine the line balancing of canned fruit and set the optimal configuration of production line. Motion and time study is used to analyze the existing production line. Improvement solutions are proposed and evaluated by using ECRS technique. Finally, the optimal configurations can be set including location of each work station, balanced work flow, practical working step and optimal number of workers for each work station.

Keywords: Efficiency Improvement, Line Balancing, Motion and Time Study, ECRS Technique

THE IMPACT OF GUANXI ON THE PROVISION OF LOGISTICS SERVICE VALUE

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ABSTRACT

The purpose of this study is to examine the relationship between logistics service value, relationship quality, guanxi and the financial performance of Thai shippers. Under the context of relationship, the concept of guanxi embeds Chinese philosophy of social structure and interactions. A structural equation modeling (SEM) approach was used to examine the proposed research hypotheses and the result indicated that guanxi had a significant positive effect on logistics service value and financial performance. In addition, the finding indicated that logistics service value was not found to have significantly positive effect on financial performance, as well as, guanxi to relationship quality. Implications of the research findings for Thai shippers are discussed in both theoretical and managerial perspective.

Keyword: Logistics Service Value, Relationship Quality, Guanxi, Financial Performance, Thai Shipper, Structural Equation Modeling

THAILAND ELECTRIC & ELECTRONICS INDUSTRY – THE PRELIMINARY COMPETITIVENESS STUDY

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Abstract

The paper is to review Thailand electric and electronics industry in terms of preliminary competitiveness analysis based on 6 Thailand's main electric and electronics products, i.e., Hard Disk Drive (HDD), Printed Circuit Board (PCB), television, DVD player, air conditioner and washing machine. The review aims at identifying marketing potential of Thai industry in terms of the industry market share, growth of industry and product variety as well as domestic market size, extent of marketing and market itself, i.e., population, purchasing power parity and GDP. The result was demonstrated via the view of the Diamond Model as 1) Input Factor Conditions, 2) Demand Conditions, 3) Strategy and Rivalry Context and 4) Related and Supporting Industries, together with Chance and Government factors.

Keywords: Thai Electric and Electronics Industry, Diamond Model, ASEAN Economic Community

MULTIPLE REGRESSION FORECASTING MODEL FOR OFF-SEASON LONGAN QUANTITY SUPPLY

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Abstract

This research work aims to develop a forecasting model to predict quantity supply of off-season longan using multiple regression technique. There are twenty three factors that influence on quantity supply of off-season longan. Data collection was done in Chiang Mai and Lamphun provinces. Forecasting model based on multiple regression techniques with enter, forward, backward and stepwise selection methods were adopted and yielded mean absolute percentage error (MAPE) as 18.39%, 25.63%, 21.21% and 25.63%, respectively. This results showed that multiple regression with enter selection method is practical to predict off-season longan quantity supply.

Keywords: Quantity Supply Forecasting, Multiple Regression Technique, Off-Season Longan

APPLIED FACILITY LAYOUT PROBLEM FOR MINING LOGISTICS SUPPORT SYSTEM USING BY SPREADSHEET MODELING CONCEPT

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Abstract

The mining logistics support system for mining operation is system that supports to mining machines which are often relocated by mining operations plan at deeper workspace level so this reason impact the efficiency of logistics support system because of farther transportation distance of resources. The main objective of paper is optimizing framework to minimize total transport cost of logistics support system for mining operations with facility layout problem optimization in spreadsheet modeling. Metaheuristic is method to solve this problem for a near optimal solution so this approach is utilized from geometrical open pit mines environment to optimize the location of facility in pit mine. A case study is presented on a prototype facility layout problem using by spreadsheet modeling concept for this case to demonstrate the benefits of the approach with spreadsheet modeling in Microsoft Excel. The result of this approach can plan the optimal logistics support system that it can save costs approximately 55.61% that facility relocates from the old location to new location.

Keyword: Facility layout problem; Mining logistics support system; Spreadsheet modeling concept; Metaheuristic



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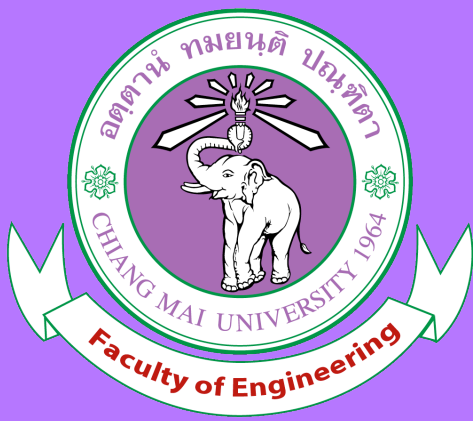
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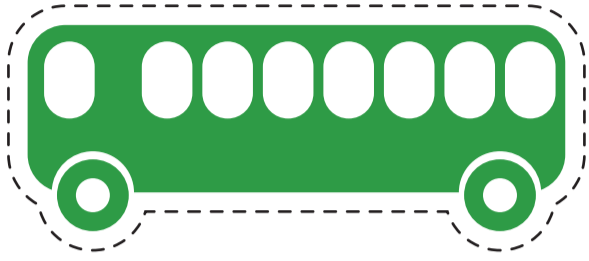
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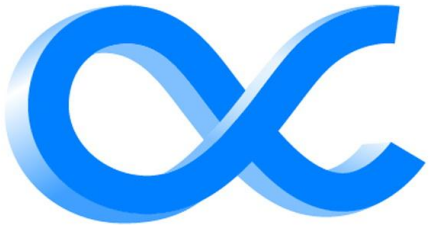
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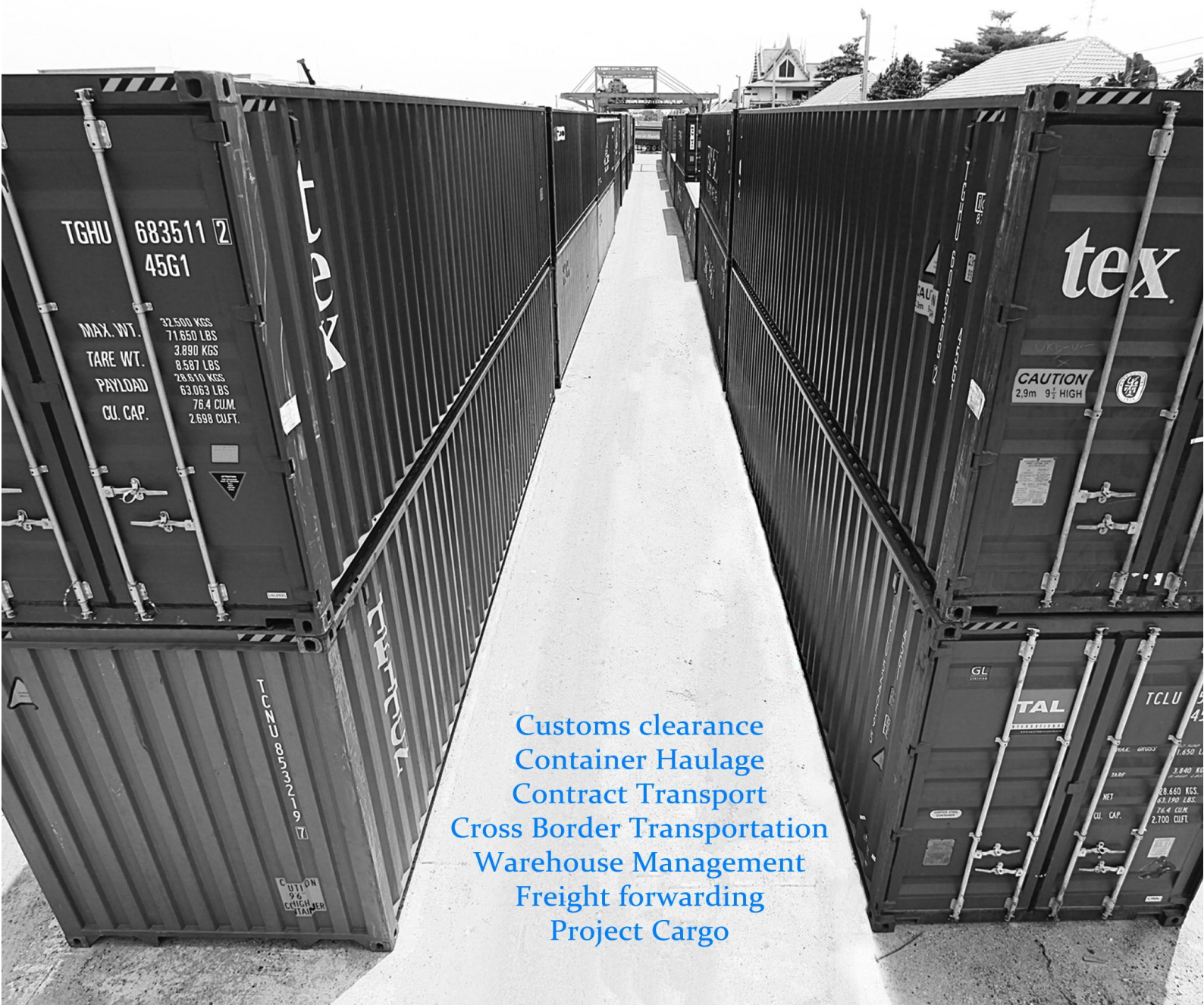
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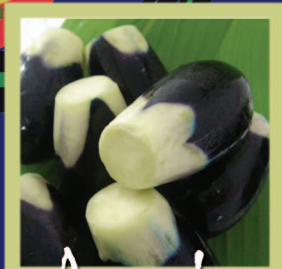
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