Thailand Industrial Competitiveness; Enhancing the Logistics and Supply Chain Management Scheme for Thai’s Manufacturing

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Abstract—The purpose of this paper was to describe the state of logistics measurement in Thai industry. The study explores relations between manufacturing and their competitive performance based on the methodology of performance measuring systems, applying to the measurement of both tangible and intangible assets, and also measuring supply chain performance internally and externally. The framework developed enhance the use of metrics strategy across all organization, this metrics are a fundamental part of strategy, goals, key performance areas, process elements and activities, enabling evaluating defined goals, leading to decision making and the implementation of improvement actions. In addition, theory regarding the logistics scorecard model measurement was tested. The design of this paper included Top 5 Manufacturing’s that holding high value in inventory cost. Case studies and the assessment completed by professional logistics and supply chain consultants from Private sector, Government sector and Academic sector. Considerable analysis was performed to enhance the understanding of industrial competitiveness in Thai manufacturing supply chain.

Keywords—Performance measures, Industrial Competitiveness, Benchmarking, Supply chain management, Thailand

I. INTRODUCTION

Supply chain management is the process of managing the supply chain, which includes coordination and collaboration with supply chain partners as well as the forward and reverse flow of products, services, finances, and information [1]. Likewise, logistics has evolved from a backroom function to become a major in establishing competitiveness advantage. The costs and service capabilities of logistics are important to the industry and need to be well understood and managed. Knowing the directions and what to improve are critical competencies in understanding how the firm is performed.

Thailand Industrial Competitiveness Model in this paper attempts to enhance the business performance directions. The Model provides the improving scheme for manufacturing. The Information analysis obtains the solution on how organizations raise the key efficiencies to improve businesses, how to embed the performance measurement to their process and how to apply logistics and supply chain management scheme into the business process. The solutions have been gathered by analyzed the logistics scorecard of the 25 sampling firms. Evaluated form generated the business performance into industrial competitiveness which emphasizing on a significant strategies. The Logistics scorecard model have been implemented and applied to be the performance measurement tools in research methodology. The key index of competitiveness will be classified along the performance measurement contents that following 5 areas: Business Strategy Orientation, Capacity and Working Plan, Logistics Efficiency and its Productivity, Information Technology manipulation, and Supply Chain Collaboration. The result proposes the manufacturing with the guidelines to increase Industrial Competitiveness Performance ratio. The relationship between logistics and supply chain management and the measurement tools were addressed to the competitiveness model. 2551 the growth of Thailand Logistics Improvement Strategies revealed that Logistics cost in Thai holding about 1.7 million baht (18.6 per GDP). It consists of transportation, inventory holding cost, and logistics administration. The report shows that inventory holding cost is easy to decrease.

II. LITERATURE REVIEW

There have been a number of empirical research papers which have examined logistics performance measurement. In 1978 and 1984, A.T. Kearney, Inc. [2, 3] established four stages of organizational sophistication in performance measurement of physical distribution activities which was a basis for subsequent work in the performance of supply chain functions. Novack et al. [4] recommended a classification framework in which the optimization of the logistics systems takes precedence over the optimization of individual logistics activities. Caplice and Sheffi [5] pointed out that the performance measurement system should be known which factors influence the performance to improve the economic performance.

In Academic research, both conceptual and empirical has been very broad and includes attempts to model the supply chain in its entirety to very specific studies. Chow et al. [7] were probably the first to attempt to define supply chain (logistics) performance and they presented some...
measures for measuring logistics performance. Since then, most of the literatures on logistics performance appear to focus on models and frameworks and on managing different aspects of logistics [8]. Cohen (2004), have argued that the definition of a correct set of measures allows measuring the performance of supply chain activities, plan, source, make, deliver and return. Enhancing space to improvements and making possible earlier diagnostics and helping on decision making. For instance, Tracey et al. [9] examined specific supply chain activities and investigated the impact of capabilities on business performance. Pohlen and Coleman [10] presented the using of both economic value added and activity-based costing to evaluate supply chain performance. Chan et al.[11] proposed an innovative performance measurement system for supply chain which includes a conceptual performance model, a performance measurement and aggregation method, and example performance measures. Park et al [12] developed and designed a framework for supply chain performance measurement with balanced scorecard notions. These measures allow organizations to have a closer look to actual state of business and gave ideas for setting its prospect plan.

The majority of previous research provides insight into measuring supply chain systems. Research in supply chain process quality, however, has been very limited. The objective of this research is to bridge the gap between supply chain systems analysis and quality control by deploy a logistics scorecard (LSC) for the assessment.

III. METHODOLOGY

The study adopts qualitative and quantitative approach to data collection in the form of assessment in 25 firms by professional private consultant, Government officials and academics. The assessment was conducted over and intensive 16 weeks periods in June - Sep 2010. The units of analysis for the study were the Thai manufacturing in 5 industries with 5 hours assessment and site-tour.

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The Logistics evaluation is applying to the measurement of both tangible and intangible assets and also measuring logistics performance internally and externally. These 2 subjects focusing areas consider the business performance by qualitative measurement what’s the position that manufacturing setting their own business and how their plan to achieve the business goal. The performance evaluation attempts to point out the problem in business with 23 indicators. The assessment was designed with the logistic scorecard model. It quantified the extent of deployment of supply chain strategies, the structure of supply chain in various firms, the problems encountered in organizing supply chain systems and the path being taken by organizations in strengthening supply chain management for competitiveness.

The Five-section assessment with 23 KPIs was designed to capture facts, figures as well as qualitative responses about the supply chain practices in organizations. Section I of the assessment profiled the Business Strategy Orientation, section II covered Capacity and Working Plan, section III focused on the Logistics Efficiency and its Productivity, and section IV captured Information Technology manipulation and section V looked into Supply Chain Collaboration. The respondents were requested to respond from the perspective that best captured the supply chain and logistics issues faced by their organization. Quantitative responses were measured using scale level from 1 to 5. The scale level 1 can be implied that the business are doing very poor on the logistics performance and capability. It means that business does not pay much effort to improve their capability and also does not invest on expert or technology to serve its customer requirement. Especially, it is shown that the business has not much realize and get involve at those activities. And, the scale level 5 was implied to show that business is doing best in those index measurements.

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TABLE 1 LSC: THE FIVE-SECTION ASSESSMENT WITH 23 KPIs
The target population for data collection consisted of the 25 firms those are holding high inventory level, drawn from the list of Ministry of Industry, in 5 industry segments in Thailand including Food, Electronics, Automobile-Part, Petro-Plastic, and Rubber.

IV. RESULT

The results have been presented from five perspectives according to the paper objectives as following: Business Strategy Orientation, Capacity and Working Plan, Logistics Efficiency and its Productivity, Information Technology manipulation, and Supply Chain Collaboration.

VI. DISCUSSION

1. Food Industry had set management system on training and evaluation employee and they are doing well on technology implementing. On the other hand, it is quite difficult to control the logistics cost and the accuracy on forecasting demands. It is the result from seasonal cropping and profit expectation of its parties.

2. Petro-chemical Industry realizes in the need of setting logistics scheme in the organization but it has no system to plan and manage their own logistics cost.

3. Electronic Industry is doing well in setting the logistics strategy and collaborative. On the other hand, it failed on the area of training and improving labor skill and also poor performance in developing Logistics department.

4. Automotive and Automotive part Industry has the best performance in the area of forecasting demand and they also realize on the importance of contract, information sharing and supply management. It is because they had educated by headquarter about how to do the best in the process but in the other way they has lost performance level in total logistics cost.

5. Textile Industry is the best in adapting SCM planning but they also do worse in controlling logistics cost.

As shown by the radar chart below, it describes; Thai manufacturing had a different potential level. The chart gives an idea about how efficiency that Thai Automotive industry and Food industry has. It is because automotive industry using their technology and planning system to set the format for business process that help them being more potential than others. The reasons are; most of food industry is the primary industries and they run business as the traditional done. The business characteristic itself forced them to do business in the opposite way like automotive industry do; food industry has to hold their stock, main raw material has been supplied seasonal and the labor had low educated. While automotive industry has already set the process systematic; technology and facilitate that support its business to gain more efficiency.

These concepts of systemic competitiveness improvement help the business understand how to achieve their firm target and business strategies. Embedded industrial competitiveness as an essential issue is the short term strategies to drive supply chain management efficiency. It is importance to set the Logistics Performance measurement as a priority road map strategy for Thai Industry. To meet this growing need, customer-focused distributors are implementing logistics scorecard applications to evaluate firm’s processes and enhance overall logistics management performance. Customized supply chain management solutions enable organizations to effectively execute their distribution initiatives while accessing critical quantitative and qualitative performance information, enabling them to realize long-term goals. These strategies are then translated into specific tactical performance driving activities. These metrics are established for each activity and become the logistics performance measures in order to develop each perspective for supply chain and logistics competence.
REFERENCES


