ACTION RESEARCH DRIVEN KNOWLEDGE MANAGEMENT IN LOGISTICS TRANSFORMATION

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Introduction

Logistics is defined by the Council of Logistics Management, cited in Vogt et al. (2002, p. 6), as "the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point-of-origin to point-of-consumption for the purpose of conforming to customer requirement." This research involves in particular the supply-side logistics to create winning product value to satisfy customer needs through transforming the farm-to-table operations using knowledge-based information and action-research's co-participative knowledge management strategies. Knowledge-centered organizational learning is necessary, according to Kay (1993), to build core competence that could lead to competitive advantage. A core competence becomes competitive advantage when it is successfully applied in a particular market or markets (Evans et al., 2003). Such a co-participative knowledge management reinforces heavily on valuing the "implicit to explicit" and "explicit to implicit" parts of the knowledge management, as these two processes are generally harder for the competitors to imitate (McEvily and Chakravarthy, 2002). The strengthening of this capability would allow the organizational core competency to not easily be imitated by the competitors, which is further supported by not being transparent to outsiders and not easily transferable even by the resignation of key senior managers.

In other words, logistics in terms of production planning to raw material and work-in-progress logistical movement is a key driving force for successfully implementing the designed business model. This continuous learning enabled knowledge-driven process would also secure durability for competitive advantage. This research discovers that when logistical decision is learning-cum-research enabled and knowledge-driven, the functionality of logistics can help to transform the entire operations of the business and thus to meet desirable operations' key performance indicators in the dimensions of quality, speed, dependability, flexibility and cost (cf. Slack et al., 2010). In note passing, business model can be known simply as a description of how a firm does business which, according to Tan and Sangchan (2014), is an integrative strategic management framework that incorporates the concept of blue ocean strategy (Kim and Mauborgne, 2005), externally oriented industry-attractiveness driven strategy (Porter, 1979) and internally oriented resource-capability driven strategy (Prahalad and Hamel, 1990).

To test how knowledge management serves as a fundamental enabler for inbound and production logistics transformation, both action research cycle and business model cycle will be employed. Knowledge management will be a critical bridge between these two cycles. While the former cycle is driving knowledge creation, the latter cycle is about knowledge utilization. The strikingly explicit benefits of this action research oriented problems solving and change management are multi-faceted. This implies that an intense focus of the problematic issue, driven by the set teams and the team-based active participation and result orientation, can help to pull along other relevant issues to be tackled in parallel. Factors of barriers and supporting mechanisms relating to the use of knowledge creation, knowledge management and knowledge utilization will also be discussed. Most importantly the outcome of knowledge management-enabled logistics transformation in a seafood production facility will be discussed and although it is a single case, but by its rich nature and in-depth action-driven involvement, this research certainly has provided the utility aspect of research quality generally demanded by an applied research.

The research paper is organized in five sections. While the abstract outlines the overall research process and provides a concise summary of the research expectation and outcomes, this introductory section justifies the research background that puts the topic of interest into perspective. In the literature review section a framework will be proposed by intercepting the three disciplines of knowledge, namely action learning and action research, knowledge management and business model, and in addition, research objectives will be raised. Following the literature review is a section focusing on outlining research design which aims to reflect the problematic context and the nature of the firm and its industry, and to identify the procedural structure to address the research objectives, which is followed by discussion and conclusion.

The chart in Figure 8 describes the MFCA calculations prior to making the improvements, showing total negative costs of 38.54% of input costs, and with materials negative product representing 27.38%. The total negative costs, having introduced the improvements, were only 27.20% of the input costs. Meanwhile, the materials negative costs were 17.53% of the total input costs for the night table, a lower percentage than before the improvements were introduced. Prior to the improvements, the input cost value was 3,138.01 Thai Baht per unit, but after the improvements this became 2,524.55 Thai Baht per unit, a decrease of 613.45 Thai Baht or 19.55% per unit. The before-improvements negative costs figure was 1,209.25 Thai Baht per unit, while after the improvements this became 686.58 Thai Baht, a fall of 522.67 Thai Baht, or 43.22%. The negative materials costs before improvements were introduced was 859.19 Thai Baht per unit, but after the improvements was 442.48 Thai Baht, a fall of 416.71 Thai Baht or 48.50%

Conclusion and Discussion

This research study analysed and identified the monetary losses incurred during the study company's production process. Suggested solutions were then developed and put into practice, with the amount of wood and chemicals used during the process reduced as a result. Moreover, the standard working procedures used during each process step were redesigned.

As part of the study, the study company's production process was improved in order to reduce costs and decrease the negative cost that had previously occurred within the production process. After the improvements had been introduced, an assessment was carried out comparing total input costs and negative costs separated into four types, as shown in Figure 8. MFCA techniques were used to improve the night table production process and also bring in a new design (Nakajima, 2010); the aim being to reduce materials losses, and in future, MFCA may be used to further review and improve both product design and process design aspects at the case study company. Such a review will probably have to incorporate all design techniques and strategies, such as Quality Function Deployment (QFD), to create a night table design able to meet the needs of a new generation of customers, and also take into account the raw materials costs incurred by the production process – the best solution for both customers and business owners in a competitive market.

The value of this paper comes from its description of the application of the MFCA approach, and the resulting conclusions as to their effectiveness within an industrial setting.

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