

CITY UNIVERSITY OF HONG KONG

香港城市大學

Procurement Strategy for Fast Food Business
快餐業的食品採購策略

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Abstract

Fast food business operates under a thin profit margin and bases its profitability on high business volume and efficient use of labour and raw materials through standardisation. The raw material costs such as the cost of meat account for a high portion of the overall cost. Therefore, a procurement strategy is very important for the fast food business. This is contradicted by the fact beef price fluctuates significantly, which creates a challenge for the procurement strategy, especially considering that for fast food; the retail price cannot be adjusted flexibly due to the ‘Value Pricing’ strategy.

This thesis has been motivated by and is being focused on the beef procurement strategy of a fast food chain in Hong Kong. Beef prices have been fluctuating significantly, especially for the past ten years due to globalisation and geopolitical uncertainties, which imposes a serious threat to the bottom line of the fast food chain. Therefore, for a quick response to the changes in price and reduction in the beef procurement cost, there is an urgent need to migrate the currently manual and experience-based procurement process to a fact-based, data-driven procurement system. In this thesis, based on a thorough analysis of the potential factors that are affecting the beef price, we have designed and implemented a machine learning based price forecasting model. Additionally, we have developed a refined procurement decision support tool, which runs on a weekly basis for suggestions on ordering plans for the present and succeeding weeks. Experimental tests based on the data we have collected for the past ten years show that the proposed system and framework works very effectively, reducing the procurement cost by 6.35%, which implies a sharp increase to the bottom line of the company. Such a

procurement framework and system shed light on the procurement of other food raw materials of fast food businesses as well.

Keywords: fast food chain, neural network forecasting model, linear program, procurement strategy