

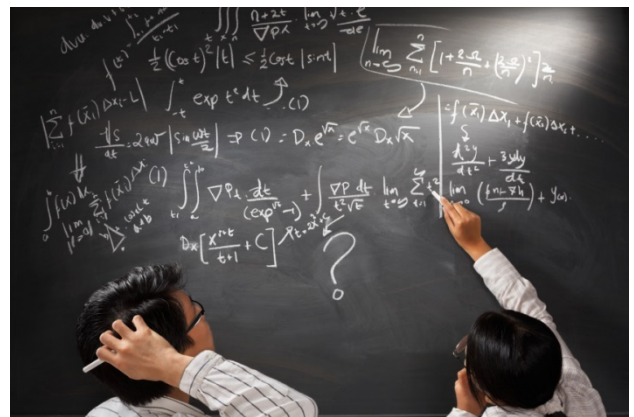
RESEARCH DIRECTIONS

Fast, efficient goods shipment

Dr Henry Lau and Dr Dilupa Nakandala of the School of Business with Professor Sven Axäter of Lund University Sweden are developing a mathematical decision-making model to assist best-practice in supply chain operations for businesses. This project is funded by the Australian Research Council through its Discovery Projects grant scheme.

'Australia, like other countries, has moved a number of manufacturing operations offshore and shifted to a focus on supply chain management in order to remain competitive', Dr Lau says. 'Effective competition, however, is only possible with optimum business practices, processes and solutions in supply chain operations. The absence of an integrated model that enables managers to make the right decision given the myriad of variables involved hinders the potential prosperity of firms. We aim to implement a decision-making model based on a new mathematical theory dealing with supply and demand problems. The purpose is to minimize the expected logistics costs for goods shipment operations along the supply chain, thereby maximizing profits and enhancing the competitiveness of Australian companies.'

A mathematical model that treats some of the business variables in a more dynamic way will be tested using previous goods demand and arrival data of multiple suppliers and wholesalers. By taking into account variable factors such as lead time of suppliers and arrival time of goods, a better picture of the whole order and delivery process can be determined. This is vital for forecasting purposes for business operations.



In the current economic climate of volatility and uncertainty, helping business managers in making important decisions related to efficient, low-cost goods trans-shipment among parties of a supply chain network is very important. Having a pragmatic and convenient new model of decision-making will contribute to maximizing profits of business logistics operations and boost the competitiveness of Australian firms in the global marketplace.

Project Title: A complete Stochastic Trans-shipment Decision Model (STDM) to assist logistics practitioners to make cost optimised decisions.

Funding has been set at: \$160,000

Contact Details: h.lau@uws.edu.au

<http://www.uws.edu.au/sob>

February 2014