The University of Hong Kong
Department of Industrial and
Manufacturing Systems Engineering

HKU Laboratory for Systems Analytics

Systems Analytics Global Leaders' Seminars

Date : Sep 15 (Wed), 2021 Time: 20:00 (GMT+8)

Zoom link: https://hku.zoom.us/j/93965533071
Zoom meeting ID: 939 6553 3071

Suzanne de Treville

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Building Responsiveness into Supply-Chain Decision Making

This talk begins with the Cost-Differential Frontier (CDF), which is a tool that my lab has created and made generally available to aid decision makers in incorporating lead time into decision making. The Cost-Differential Frontier is available at Cost Differential Frontier Calculator, and has also been made available through the inventory section of the US Department of Commerce's website (referred to as the "cost of lead time calculator"). The CDF illustrates that reducing the decision lead time (the time between when a decision about what to produce or what capacity to have available needs to be made and when demand is known) has value when demand volatility is high and the residual value of leftover goods or capacity at the end of the demand period is low. Products can thus be categorized as being more or less time sensitive.

We will then explore the concept of option-based costing. Consider two products, one highly time sensitive and the other time insensitive. The producer decides to hold capacity reactively to ensure that demand for the time-sensitive product can be met. The fixed costs (labor and overhead) of that capacity are allocated to the time-sensitive product as the cost of having the option to meet demand. Leftover capacity can then be profitability used to produce a time-insensitive product as long as the price received covers variable cost. I will illustrate how reconsidering what costs are allocated to which product can facilitate local production in a high-cost environment.

In the 5 years since the CDF was made generally available, we have observed that decision makers in companies accept the principles, but have difficulties putting them into action. We thus have developed a competitive game that makes it possible for decision makers to interact intuitively with these concepts. The seminar will include a few rounds of the game. Here is a link for warming up: https://forio.com/app/lausanne/cas4/.

Suzanne de Treville is Professor of Operations Management at the University of Lausanne. She currently serves as co-Editor-in-Chief of the Journal of Operations Management. She served as dean of the business school from 2006-2009. She has been a frequent visiting professor at MIT Sloan School (most recently during the spring of 2014).

Her expertise is in quantifying the cost of extending the supply chain, reducing lead time, and using the resulting insights for strategic advantage. The Cost-Differential Frontier app developed by her laboratory is used by the US and Swiss governments to better understand how to manufacture locally.

Her work has been published in journals such as the Journal of Operations Management, Production and Operations Management, the Harvard Business Review, the International Journal of Production Economics, and Interfaces. Professor de Treville received her doctorate from the Harvard Business School, and her masters and undergraduate degrees from Carnegie-Mellon University.

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