



MODELLING AND SOLVING THE INTEGRATED THREE LEVEL LOT SIZING AND REPLENISHMENT PROBLEM

Abstract: Over the last decades, the value of integrating operational decisions has become obvious to manufacturing companies. The main reason behind this integration, whether it is within a company or across a supply chain, can be easily explained by the potential benefits, such as cost reduction, increased flexibility or a higher customer service level. Several studies have built on this observation and successfully proposed mathematical models that take into account the integration of operational decisions, such as the production and distribution decisions. Despite these success stories, the integration of operational decisions at a broader level is still not fully exploited. The objective of the work presented in this seminar is to use operations research techniques to optimize the integration of operational decisions within a supply chain with three levels and a distribution structure. The first, second and third level comprise a unique production plant, several warehouses and several retailers, respectively. The problem under study is therefore an integrated three-level lot sizing and replenishment problem (3LSPD). The main contributions lie in the mathematical models proposed along with the efficient algorithms developed to solve different versions of the problem, all of which integrate the production and replenishment decisions, while minimizing the operational costs across the supply chain.

Bio : Matthieu Gruson is a professor at ESG-UQAM in the analytics, operations and information technology department. His research interests lie in the integration of production decisions along with other operational decisions of manufacturing companies. It involves modelling such problems, and designing efficient methods to solve them, use operations research tools.

* **INSCRIPTION** pour présence / * In-person **REGISTRATION:** ortmann.janosch@uqam.ca

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Salle R-1910

Pavillon des sciences de la gestion
Université du Québec à Montréal
ou/or Lien Zoom

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Ouvert à tous / Open to all

Responsable / Organizer

Martin Trépanier