At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for an interested and qualified student to conduct his/her Master thesis in cooperation with Voith GmbH & Co. KGaA on the topic:

Guaranteed Service Models in EtO, AtO and MtO supply chains

As a division of company J. M. Voith SE & Co. KG, Voith Turbo is producing engineered parts for the mobility and industry sector, mainly drives and couplers for various applications. The production environment ranges from engineered-to-order project-based products to assembly-to-order series-like products. The markets demand decreasing, guaranteed delivery times to the customer, while delivery times of suppliers for purchasing of components are increasing and stochastic. In this challenging environment the question is how to set up inventories and replenishment strategies in an optimal way, considering that demands for components are uncertain by nature. The goal of the thesis is to formulate and implement a guaranteed service model which decides on optimal inventories for purchased parts and raw materials while guaranteeing the target lead time of the end product and considering its associated (sometimes stochastic) bill-of-material. Implementing the model and validating it in a numerical study on real company data should finally generate managerial insights on how optimal inventories should be set per production environment.

Selected research tasks:

- Review the relevant literature
- Implement a Guaranteed Service Model
- Conduct a comprehensive study, discuss results numerically and conceptually

Details and further suggestions will be discussed during a kick-off meeting.

Requirements:

The thesis is particularly suitable for TUM-BWL Master students with a major in Operations and Supply Chain Management who have strong analytical skills and the ability to work independently. Course attendance of Inventory Management is desirable and MOS is required.

Begin: March 2019 or later
Advisor: Josef Svoboda (josef.svoboda@tum.de)
Application: Email with curriculum vitae and transcript of records to logtheses.wi@tum.de