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 Transmetrics on the topic:

**Transportation Service Network Design under Uncertainty**

**About the company:**
Transmetrics is a predictive optimization company that helps cargo transport and logistics service providers to increase their operational efficiency by applying modern technology such as artificial intelligence, data mining, predictive analytics and computer optimization. Transmetrics SaaS is offered in four steps: data cleansing, demand forecasting, network optimization, and execution controlling. Transmetrics unlocks the power of Big Data and predictive analytics for cargo transport industry. Our products consist of data cleansing, advanced forecasting, predictive optimization and execution controlling modules to help companies optimize their operations. Transmetrics works with some of the leading logistics companies in the world, including three global Fortune 500 companies.

Our products have brought significant benefits to our clients who have experienced an up-to-25% reduction in linehaul costs. The company’s solutions have achieved international recognition in the form of various awards such as the Forbes Business Award.

**Problem situation:**
The design of a transportation network requires the selection and establishment of services between certain origins and destinations. For a given service network, flows need to be routed through the network. The determination of services and capacities needs to anticipate uncertain and dynamic demands.

**Selected research tasks:**
- Model the optimization problem as a two-stage stochastic programming problem based on scenarios
- Develop and adjust solution methods based on decomposition techniques
- Present solution based on real-world customer data

**Requirements:**
This thesis is particularly suitable for candidates who have a strong interest in operations research and ideally have a major in supply chain management and/or attended courses in Modelling, Optimization and Simulation (MOS) and either Transportation Logistics or Stochastic Modelling and Optimization.

**Begin:** as soon as possible

**Advisor:** Dr. Pirmin Fontaine

**Application:** Email with curriculum vitae and transcripts of records to logtheses.wi@tum.de