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 Wolf Tabakwaren e.K. on the topic: **Clustering and frequency planning of vending machines**

**About the company:**
Wolf is a medium-sized company group which has been family-owned for almost 125 years now. Working in various fields of business, the company currently generates about 170 million € in annual turnover with around 150 employees. The Group is primarily engaged in trade, one of its mainstays being tobacco wholesale and retail. For this, Wolf Tabakwaren e. K. provides cigarettes, cigars and other tobacco products to retailers like kiosks, gas stations etc. (wholesale-business) and sells cigarettes to customers via cigarette vending machines (retail-business). The company supplies about 17,500 cigarette vending machines with around 75 fleet vehicles and three establishments in Bavaria, Saxony and Thuringia. The company sells about 0.5 billion cigarettes every year generating 140 million € in annual turnover. This makes it one of the five biggest tobacco suppliers in Germany. The headquarters are located in Gerolzhofen near Würzburg (Franconia).

**Problem situation:**
The company has several thousand cigarette machines in different regions in Germany which have to be refilled. Several drivers are assigned to a set of vending machines and plan their tours individually. However, the assignment of vending machines to drivers is done manually and over the years resulted in unbalanced tours. The goal of this thesis is to develop a mathematical model to evaluate and restructure the clusters.

**Selected research tasks:**
- understand the problem setting
- formulate and implement the mathematical model
- analyze the results and give recommendations to the company

**Requirements:**
The master thesis is for master students with major in Supply Chain Management. The ability to work independently as well as analytical skills are required. The thesis should be written in English.

**Begin:** as soon as possible

**Advisor:** Dr. Pirmin Fontaine

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