



## Supply Chain Management and Service Logistics Research Group

*Supply chain management and Service logistics research group (Servo-Log)* aims to advance in the fields of **supply chain management and service logistics**. Our research group consists of industrial engineers and mathematicians from Kadir Has University and Işık University in Istanbul, Turkey.

**Field of Interest** – we mainly focus on *control policies of spare parts inventory and maintenance policies for capital products*. Our research demonstrates opportunity for significant improvement of the dynamics of *maintenance activities and spare parts management*. Determination of optimal control policies for capital products that are either at different stages of their life cycles is a challenging tasks in the field of service logistics. This challenge intensified by the introduction of online trading platforms, a.k.a. secondary markets. Secondary markets are effective in re-distribution of excess inventory and recovered components from retired products.

Predictive maintenance by utilizing data mining techniques and stochastic modeling is another focus area of our research. We aim to develop empirical models and maintenance policies that can be combined with classical corrective and preventive maintenance control systems.

From a methodological perspective, we utilize stochastic modeling and dynamic optimization for developing applicable solutions for problems. In addition, we employ linear and nonlinear mathematical programming, statistical inference and data mining techniques, to develop rigorous solutions and to create *applications of our theoretical models* in practice.

**Our Experience** - Our research group consists of successful academicians published in respected journals. Despite the fact that it has been recently founded, our research group managed to receive a significant research grant from Turkey (TUBITAK) with a project on *dynamic control of spare parts in existence of secondary market and nonstationary demand driven by changing installed-base*. This research project aims to focus on spare parts of capital products which are in introduction (growth) and end-of-life (decline) phases of their life cycles respectively.

In addition to these significant research experience, researchers in our group had been involved with research and consulting projects that aim to develop optimum solutions for spare parts management problems at Fokker Services in the Netherlands for five years. Moreover, we work as the scientific expert and consultant in a spare parts optimization projects at Turkish Technic, which is a Maintenance Repair Organization providing service for Turkish Airlines in Istanbul.

**Our role as a partner** - We are particularly interested in finding partners in H2020 calls 1) **ERA-MIN Joint Call 2018** targeting innovative logistics solutions for recycling and re-use of raw materials recovered from end-of-life products; and marketing challenges of secondary markets, 2) **FOF-09-2017**: aiming for predictive maintenance systems with capabilities of advance failure detection, assessment of remaining lifetime, while working together with traditional maintenance policies.

We are interested in taking an active role and collaborate in design, development and implementation phases of potential research projects in those directions.

### Contact

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