PhD position on Operational Optimization of After-sales Service Supply Chains of Capital Goods

The department Industrial Engineering and Business Information Systems (IEBIS) is part of the School of Management and Governance within the University of Twente. We closely collaborate with industry, knowledge institutes and government agencies. We focus on projects that have substantial impact on industrial innovation while significantly contributing to the international scientific knowledge base. The focus of our research is on the logistics, healthcare and services sectors. We have a special interest in decision support systems and inter-organizational systems connecting networks of businesses and governments. We apply quantitative models and algorithmic approaches, simulation and gaming, ICT architectures and business modelling and prototyping to create and evaluate innovative concepts. This project is part of the research theme "Design, planning, optimization and control of operational processes in production, transportation, supply chains, service logistics, and health care logistics".

The Challenge
This research position is part of the research project "Pro-active service logistics for capital goods – the next steps", in close collaboration with industrial partners. Four full-time researchers will work on this project. This work package focuses on operational management and optimization of the entire service supply chain, focusing on maximum asset availability during the entire life cycle at limited costs (engineers, tools, parts), in dynamic situations. Your challenge is to model product flows in after sales service supply chains, and to design planning and control rules for the day-to-day planning of spare parts, service engineers and tools to reduce downtime of capital goods. The decisions at strategic and tactical level (network layout, spare part inventory levels, resource capacities and locations) are given. Decisions include assigning spare parts and resources to preventive and corrective maintenance tasks, using data analytics. Also, planning and control of the return and repair of failed parts should be considered, as well as feedback to the tactical decision level. You will design and implement (discrete event simulation) models to test your planning and control rules, and apply your logic to cases of the participating organizations. The lead companies in this work package are ASML, Vanderlande Industries, IBM, Thales Netherlands and Fokker Services.

Our Offer
We offer a very challenging position in an inspiring environment, bridging science and industry. You will be appointed in a full-time position for a period of four years (38 hours a week), with the aim to complete a PhD dissertation next to papers in scientific journals, while interacting with various industries. The gross monthly salary for a PhD increases from € 2125,- in the first year to € 2717,- in the final year in accordance with the Collective Labour Agreement for Dutch Universities. The University of Twente offers additional attractive employment conditions.

Your Profile
You have a master's degree in a relevant field, such as industrial engineering, applied mathematics, or econometrics. You have a thorough knowledge of stochastic operations research techniques and its application in the field of reliability and maintenance. Further, you have a good knowledge of programming languages and tools (e.g. Delphi and discrete event simulation tools) in order to develop prototype decisions support tools. You are able to work both independently as well as in a project team, and you have good communicative skills for collaboration with our (industrial) partners. You are fluent in English.

Information and application
For more **information** you can contact dr. M.C. van der Heijden, email: m.c.vanderheijden@utwente.nl, phone: +31-053-4892852 or prof. dr. W.H.M. Zijm, email: w.h.m.zijm@utwente.nl, phone: +31-053-4893524. To apply for this position, please fill in the application form before December 15st, 2015. You can find this form via https://www.utwente.nl/en/organization/careers/vacancies/