Activity Report
2018/2019

Kühne Foundation Endowed Chair of Logistics Management
Kühne Institute of Logistics Management
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>1</td>
</tr>
<tr>
<td>1 TEAM</td>
<td>2-18</td>
</tr>
<tr>
<td>2 KÜHNE INSTITUTE OF LOGISTICS MANAGEMENT</td>
<td>19</td>
</tr>
<tr>
<td>3 TEACHING</td>
<td>20-22</td>
</tr>
<tr>
<td>3.1 BACHELOR OF SCIENCE PROGRAM</td>
<td>20</td>
</tr>
<tr>
<td>3.2 MASTER OF SCIENCE PROGRAM</td>
<td>20-21</td>
</tr>
<tr>
<td>3.3 FULL-TIME MBA PROGRAM</td>
<td>21</td>
</tr>
<tr>
<td>3.4 PART-TIME MBA PROGRAM</td>
<td>21</td>
</tr>
<tr>
<td>3.5 EXECUTIVE MBA PROGRAM</td>
<td>21</td>
</tr>
<tr>
<td>3.6 DOCTORAL PROGRAM</td>
<td>22</td>
</tr>
<tr>
<td>4 THESSES</td>
<td>23-26</td>
</tr>
<tr>
<td>4.1 BSC PROGRAM</td>
<td>23</td>
</tr>
<tr>
<td>4.2 MSC PROGRAM</td>
<td>24</td>
</tr>
<tr>
<td>4.3 DOCTORAL PROGRAM</td>
<td>25</td>
</tr>
<tr>
<td>4.4 FULL-TIME MBA PROGRAM</td>
<td>25-26</td>
</tr>
<tr>
<td>4.5 PART-TIME MBA PROGRAM</td>
<td>26</td>
</tr>
<tr>
<td>4.6 EXECUTIVE MBA PROGRAM</td>
<td>26</td>
</tr>
<tr>
<td>5 TEACHING INNOVATION</td>
<td>27-28</td>
</tr>
<tr>
<td>5.1 GUEST LECTURES</td>
<td>27-28</td>
</tr>
<tr>
<td>5.2 NETLOP-SEMINAR OF THE KÜHNE-FOUNDATION</td>
<td>28</td>
</tr>
<tr>
<td>5.3 DIGITAL @ SCALE WITH MCKINSEY</td>
<td>28</td>
</tr>
<tr>
<td>6 RESEARCH</td>
<td>29-37</td>
</tr>
<tr>
<td>6.1 DISSERTATION PROJECTS</td>
<td>29-37</td>
</tr>
<tr>
<td>7 PUBLICATIONS</td>
<td>38-39</td>
</tr>
<tr>
<td>7.1 JOURNAL ARTICLES</td>
<td>38</td>
</tr>
<tr>
<td>7.2 WORKING PAPERS</td>
<td>38</td>
</tr>
<tr>
<td>7.3 PAPER PRESENTATION AT CONFERENCES</td>
<td>38-39</td>
</tr>
<tr>
<td>8 EXECUTIVE EDUCATION &amp; CORPORATE CONNECTIONS</td>
<td>40</td>
</tr>
<tr>
<td>8.1 TEACHING</td>
<td>40</td>
</tr>
<tr>
<td>8.2 CORPORATE CONNECTION ACTIVITIES</td>
<td>40</td>
</tr>
<tr>
<td>9 SERVICES PROVIDED TO THE SCHOOL</td>
<td>41</td>
</tr>
<tr>
<td>9.1 MEMBER OF THE BOARD OF DIRECTORS</td>
<td>41</td>
</tr>
<tr>
<td>9.2 CAMPUS FOR SUPPLY CHAIN MANAGEMENT</td>
<td>41</td>
</tr>
<tr>
<td>10 COMMUNITY OUTREACH</td>
<td>42</td>
</tr>
<tr>
<td>10.1 RESPONSIBILITY AND SUSTAINABILITY</td>
<td>42</td>
</tr>
<tr>
<td>10.2 MEMBERSHIPS</td>
<td>42</td>
</tr>
<tr>
<td>10.3 REFEREE ACTIVITIES</td>
<td>42</td>
</tr>
</tbody>
</table>
FOREWORD

This report covers the period from September 2018 to August 2019. In this period, the chair’s team continued to produce exciting research results that were published in a broad range of high-quality journals, to offer attractive lectures related to logistics and supply chain management and demonstrate impact in practice.

In early 2019, the business journal Wirtschaftswoche published its ranking of more than 2300 business professors in German speaking countries in terms of research performance. It is a pleasure to note that I was ranked 51 which was also the highest ranking within WHU where two other colleagues made it into the top 100. This success is a result of excellent work of doctoral students, dedication to research and the sustainable and generous funding by the Kühne Foundation. An ongoing stream of publications in top-ranked journals is another indicator of research performance.

In the domain of teaching, groups from prestigious Chinese universities, among them CEIBS, Tsinghua University and Sun Yat Sen Business School were provided with insights related to industry 4.0 and advanced manufacturing, for instance related to electric vehicles. A Masters course in Data Science at the KLU was met with enthusiasm.

I would like to thank the entire team at the chair for their dedication and energy they bring to their work and for the delightful atmosphere they help to create. This is the basis for the great work that is carried out here. Linda Stein does an outstanding job to assure smooth operations at the chair.

The multitude of research and teaching activities would not have been possible without the ongoing and generous support of the Kühne Foundation. My wholehearted thanks go to Prof. Dr. h.c. Klaus-Michael Kühne and to the managing director of the foundation, Dr. Christian Berthold. The Kühne Foundation’s credo to make logistics research relevant to practice is continuously supported in an excellent manner.

This report provides an overview of the chair’s activities. We all look forward to new exciting logistics research and teaching.

Prof. Dr. Stefan Spinler, Vallendar, May 2020
1 TEAM

Professor Dr. Stefan Spinler
Chairholder

stefan.spinler@whu.edu

Professor Stefan Spinler holds the Kühne Foundation Endowed Chair of Logistics Management at WHU - Otto Beisheim School of Management. He received a master’s degree in electrical engineering from Friedrich-Alexander University in Erlangen, with research stays at University College London and Bell Labs (USA). In 1997, he was awarded the diploma in electrical engineering. Subsequently, he joined Infineon Technologies with responsibilities in process integration, quality, and supply chain management. From October 1999 to August 2002, Prof. Spinler was a doctoral student in the department of Production Management and taught at WHU and Leipzig Graduate School of Management (HHL).

His research on options on capacity has been presented at international conferences and leading US business schools. Moreover, his research was awarded a number of prizes, most notably the Management Science Strategic Innovation Award (from EURO) as well as the GOR dissertation award. Upon the completion of his doctoral studies, Prof. Spinler spent a year as a lecturer at the Wharton School, where he taught classes in the MBA and PhD programs and developed a real options class for executives. He has been invited to teach the real options class at MIT as a guest professor in their Leaders for Manufacturing Program. He was awarded the best guest lecturer award twice at HHL. His postdoctoral degree (Habilitation) covered aspects of market-based supply chain coordination and was completed in September 2008. In January 2009, Prof. Spinler was appointed to the Chair of Logistics Management at WHU, which is sponsored by the Kühne Foundation.

Linda Stein
Personal Assistant

linda.stein@whu.edu

Since the appointment of the Chair of Logistics Management by Professor Spinler in 2009, Linda Stein has been the chair’s secretary.
Sven Falkenberg, M.Sc.
Research Assistant
sven.falkenberg@whu.edu

Sven Falkenberg (born 1989) joined the chair of Logistics Management at WHU as an doctoral student and research assistant in January 2019.

He holds a B.Sc. and M.Sc. in Supply Chain Management from the University of Cologne. His studies focused on supply chain strategies, location planning, logistics and inventory management. The focus of his thesis was on safety stock considerations in cyclic production environments.

After graduation, Sven Falkenberg worked as a consultant with McKinsey & Company, specializing in operations with focus on supply chain management serving pharma clients and various other industries on topics such as supply chain strategies, S&OP transformations and transport optimizations.

Research interests: Digitization of supply chain management, autonomous supply chain processes, machine learning

----------------------------------------------------------------------------------------------------------------------------------------

Alexander Hess, M.Sc.
Research Assistant
alexander.hess@whu.edu

Alexander Hess (born 1987) is a Ph.D. student and research assistant at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since July 2016.

His research is focused on applications of machine learning, demand forecasting, vehicle routing, and capacity planning in the field of last-mile urban delivery platforms.

Alexander studied Management at the WHU – Otto Beisheim School of Management (Vallendar, Germany), in the MBA program at the New York University – Leonard N. Stern School of Business (United States), at the EBS Universität für Wirtschaft und Recht (Oestrich-Winkel, Germany), and the Copenhagen Business School (Denmark). During his studies, he focused on Finance, Supply Chain Management, and Business Intelligence. In his Master’s and Bachelor's theses he built optimization models for the German timber logistics market that were adopted in the industry. Furthermore, he spent a research semester in the PhD program at the Center for Transportation & Logistics (CTL) at the Massachusetts Institute of Technology with which he cooperates in his research on urban logistics.

Between 2014 and 2016, Alexander worked as co-founder and Chief Technology Officer (CTO) for a New York based and venture capital backed start-up company in the art industry where he was the first software engineer and lead backend developer and created an image recognition app for artworks that received a lot of attention in the industry (investment from Leonardo DiCaprio, articles in Financial Times, New York Times, Bloomberg, and others).
Simone Vogel, M.Sc.
Research Assistant

simone.vogel@whu.edu

Simone Vogel (born 1992) started her PhD in June 2018, first as an external doctoral student and since October as a research assistant at the Chair of Logistics Management at WHU - Otto Beisheim School of Management. Her research interests include the challenges of urban freight transport, mass customization and modular vehicle construction systems.

Ms. Vogel obtained a Bachelor's degree (B.Sc.) in Business Administration at WHU - Otto Beisheim School of Management in 2015. She then completed her Master of Science (M.Sc.) in Management & Technology at the Technical University of Munich with a major in Operations & Supply Chain Management and a minor in Mechanical Engineering.

During her studies Simone Vogel gained first work experience in Germany and abroad, among others at Daimler AG in Stuttgart, KPMG AG in Munich or Benteler International AG in Auburn Hills, MI, USA.

-------------------------------------------------------------------------------

Professor Dr. Jürgen Ringbeck
Honorary Professor

Professor Jürgen Ringbeck, former Senior Partner with Booz Allen Hamilton / Booz&Company, is working as an independent strategic investor and consultant since spring 2014. After lecturing at WHU since 2012, he was appointed honorary professor by WHU - Otto-Beisheim-School of Management in 2014. Professor Ringbeck held lectures on various topics of corporate management and currently holds a lecture on Transportation Management in the Master of Science Program.
Anna Achenbach, M.Sc.
Doctoral Student
anna.achenbach@whu.edu

Anna Achenbach (born 1990) is a doctoral student and research assistant at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since August 2015. Her research is focused on: Advanced analytics in operations, Predictive modelling and Large-scale data mining. Anna Achenbach holds a Master of Science in Global Logistics. She studied at Technische Hochschule Ingolstadt (Germany) and Kühne Logistics University (Hamburg, Germany). During her studies she focused on Operations Research and Supply Chain Management and worked as a research assistant. In her master thesis she analyzed the application of Big Data Analytics in airline operations.

Between 2012 and 2013 Anna Achenbach gained practical experience as a business analyst specialized on supply chain management and business process outsourcing while working for Nokia. Besides that she has worked as an intern for the demand planning department of Colgate-Palmolive and in various humanitarian logistics organizations. As part of her educational and professional career Anna Achenbach had the chance to study and work abroad including India, Jordan and Namibia.

After the completion of her doctoral studies in 2018, Mrs. Achenbach joined Deutsche Post DHL Corporate Analytics team as a Senior Data Scientist.

Gianfranco Aguirre, MBA
Doctoral Student
gianfranco.aguirre@whu.edu

Gianfranco Aguirre (born 1987) has been a Ph.D. student at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since February 2019. Gianfranco holds an MBA from WHU – Otto Beisheim School of Management and a Bachelor in Engineering from the Universidad Catolica Santa Maria (Peru).

Gianfranco has been working at Deloitte Consulting since 2018 as Manager in the Strategy department. Before that, he worked for more than nine years in the Investment Management Industry. He was engaged in several startup activities in the field of Robo-advice and Algorithmic Trading. As Portfolio Manager, he was a member of the Investment Committee and specialized in Volatility and Automated Strategies, including ETFs, Equities, Futures, and Options.
Vefa Alparslan, M.A.
Doctoral Student
vefa.alparslan@whu.edu

Vefa Alparslan (born 1987) joined the chair of Logistics Management at WHU as an external Ph.D. student in November 2014. In his research, he analyzes the key drivers for successful and unsuccessful mergers and acquisitions in the logistics and transportation with a geographical focus on Europe and China based on selected and representative case examples.

Vefa Alparslan studied in the Master of Arts program in Corporate Management at the Business and Information Technology School from 2010 until 2012. In his Master thesis, he studied the organization of strategic procurement as well as the importance and creation of procurement controlling as sustainable key success factors for international operating companies. Prior to this, Vefa Alparslan graduated as Bachelor of Arts in Aviation Management from Frankfurt University of Applied Sciences with specializations in aviation, logistics and controlling. In his Bachelor thesis, he focused on the interpretation and operationalization of benchmark results using the example of Fraport Infrastructural Facility Management. In the course of his studies Vefa Alparslan spent one semester at École Supérieure du Commerce Exterieur in Paris.

After his studies Vefa Alparslan worked as an Analyst for McKinsey & Company from 2013 to 2016 and as a Consultant for Lufthansa Consulting from 2016 to 2019. Today, he is working as Expert Strategy for Eurowings, the low-cost carrier of Lufthansa Group. He is primarily involved in the development of the mid- and long-term strategy of Eurowings as well as the identification and analysis of strategic opportunities of Eurowings including evaluation of new markets, investment opportunities and potential acquisitions.

---------------------------------------------------------------------------------------------

Benedikt Anderhofstadt, M.Sc.
Doctoral Student
benedikt.anderhofstadt@whu.edu

Benedikt Anderhofstadt (born in 1991) joined the chair of Logistics Management at WHU – Otto Beisheim School of Management as an external PhD student in April 2018. He’s conducting research on autonomous and alternative fuel-powered heavy-duty trucks.

Mr Anderhofstadt holds a MSc in Management as well as the CEMS MSc in International Management from Nova School of Business & Economics in Portugal and Copenhagen Business School in Denmark. He completed his BA in International Management specialized in Finance and Logistics at the International School of Management in 2015. During his bachelor studies, Mr Anderhofstadt spent one semester abroad in Dublin, Ireland.

He gained first work experience throughout his studies in Germany and abroad, i.a. at BMW Group in Munich or Henkel AG & Co. KGaA in Dubai, UAE.

Since 2017, he’s been participating in BMW’s PhD program “ProMotion” and supports the “Innovation and Industry 4.0 in Logistics” department in Munich.
Reinhard Baller, MBA  
Doctoral Student  
reinhard.baller@whu.edu

Reinhard Baller (born 1983) joined the chair of Logistics Management at WHU as an external doctoral student in September 2017. As part of his doctoral thesis, he deals with the topic of development and evaluation of a Total Landed Costs approach. Reinhard Baller graduated as Master of Business Administration in Logistics Management at the Technical University of Dresden. In his Master thesis, he surveyed logistics benchmarking activities in the automotive industry. He earned a diploma at the University of Applied Science in Ingolstadt. During his studies in Ingolstadt he spent two semesters abroad: one at the Nelson Mandela University in Port Elizabeth, South Africa. The other semester abroad included an internship at Bosch in Belgium. As part of his diploma thesis, Mr. Baller dealt with an application of the Digital Factory in the body shop planning of Audi AG. After his studies, Mr. Baller started to work for Audi AG, from 2006 to 2012 in different functions in logistics. From 2012 to 2018, Mr. Baller worked for Porsche Consulting. As a Senior Manager he managed supply chain projects for companies in both automotive and mechanical engineering industries. In January 2019 he joined Audi Consulting.

Jasmin Bigdon, MBA  
Doctoral Student  
jasmin.bigdon@whu.edu

Since 2015 Jasmin Bigdon (born 1983) is member of the board at the leading Swiss freight railway SBB Cargo AG. Since March 2018 she is CTO and responsible for the business area Rolling Stock (locomotives and freight wagons technology, service and maintenance). From 2012 to Feb 2018 Jasmin Bigdon was responsible for the business development at SBB Cargo AG.

Before joining SBB Cargo she worked several years as strategy consultant and manager for the top management consultancy Arthur D. Little with focus on product strategy, M&A and future mobility and logistics concepts in the automotive and logistics industries.

In September 2017, Jasmin Bigdon joined the chair of Logistics Management at the WHU in Vallendar as external doctoral student. Her research area is urban logistics.
Novi Dewan, MBA  
Doctoral Student  
novi.dewan@whu.edu

Novi Dewan (born 1982) has been a PhD Student and Research Assistant at the Chair of Logistics Management at WHU - Otto Beisheim School of Management starting February 2017, and a Visiting Researcher at INSEAD’s Humanitarian Research Group from October 2018 to February 2019, scheduled to go back to INSEAD in November 2019.

Novi did her Bachelor’s of Engineering (IT) at the University of Pune, India. Her final year Engineering project - Training Automation System - automated the training needs of thousands of employees of Tata Consultancy Services (TCS), getting her the Best Engineering Project Award at the InterUniversity level. After graduating in 2004, Novi worked with Kanbay (now Capgemini) performing Business Intelligence and Data Mining for the Prime Brokerage practice of Morgan Stanley. In 2006, Novi received a partial merit-based scholarship from British Petroleum to pursue her MBA at WHU - Otto Beisheim School of Management in Germany. During the MBA, she participated in International Modules at Kellogg (US), CEIBS (China) and IIM-Bangalore (India). Her MBA thesis, about the Indian Life and Health Insurance at Simon-Kucher and Partners (SKP), was published into a book by SKP.

After graduating in 2007, Novi worked primarily in Supply Chain, Logistics and Transportation and Change Management primarily at Inhouse consulting and/or program management roles for LSG Sky Chefs, DHL Inhouse Consulting, Amazon, Arcelor Mittal and Adidas in Germany and Luxembourg.

From October 2018 to February 2019, Novi was at INSEAD’s Humanitarian Research Group (HRG) as Visiting Researcher and Doctoral Fellow working on the humanitarian topics of her dissertation under the guidance of Prof. Luk Van Wassnhove and Dr. Harwin De Vries. She is scheduled to go back to INSEAD in November 2019.

Novi hopes that the valuable guidance from Prof. Spinler, Prof. Van Wassenhove, Dr. De Vries, the fellow Research Assistants and her background in Engineering and Supply Chain will help her advance her Thesis Topics in her External PhD Candidate role since March 2019.

----------------------------------------------------------------------------------------------------------------------------------------

Andreas Faber, M.A.  
Doctoral Student  
andreas.faber@whu.edu

Andreas Faber (born 1988) joined the chair of Logistics Management at WHU as an external doctoral student in August 2016. His research focuses on data-driven supply chain planning. Specifically, he is working on intermittent demand forecasting, churn prediction and price discrimination.

Andreas Faber obtained a master’s degree in Industrial Engineering from Karlsruhe Institute of Technology (KIT) in 2013. In his master thesis, he analyzed the product life cycle identification and demand forecasts of spare parts in the automotive aftermarket in cooperation with the Robert Bosch GmbH. During his studies, Andreas Faber spent two semesters abroad at Marmara University in Istanbul (Turkey).

After his graduation, Andreas Faber joined McKinsey & Company as a management consultant. He supported strategy and digitalization projects in the logistics, insurance and energy industry.
Mariam Alvin James Furrer, MBA
Doctoral Student

mariam.furrer@whu.edu

Mariam Alvin James Furrer (born 1987) joined the chair of Logistics Management at WHU – Otto Beisheim School of Management as an external Ph.D. student in July 2017. Her research focuses on Supply Chain Risk Management and Climate Change: “The Impact of Climate Change Related Events on Supply Chain Management: Assessing the Vulnerability of Supply Chains and Developing Mitigation & Adaptation Strategies for Firms”

Mariam graduated with a Master of Business Administration (Academic MBA) degree from the Arab Academy for Science and Technology and Maritime Transport in 2013 as the best student of the year with an outstanding GPA of 3.98. In her thesis, she was measuring Supply Chain Management Performance in Service Industry by using Global Supply Chain Forum (GSCF) Framework and the Services Supply Chain Model. In 2009, she earned her Bachelor Degree in Trade Logistics and International Transport Management from the Arab Academy for Science and Technology and Maritime Transport. Her studies entailed the analysis of Liner Shipping, Container Shipping, Ocean Freight Markets, Logistics and Supply Chain Management. Furthermore, she interned from 09.2008 to 09.2009 in G.A. Paper International, where she was able to channel her academic studies into practical skills. Mariam Furrer is currently holding a position as an Assistant Lecturer in the Transport Operations Management Department at the Arab Academy for Science and Technology and Maritime Transport in Cairo, Egypt.

Research interests: Supply Chain Management, Risk Management, Risks Induced by Climate Change, Developing Countries, Supply Chain Vulnerability and Resilience.

Ulrike Kluge, M.Sc.
Doctoral Student

ulrike.kluge@whu.edu

Ulrike Kluge (born 1989) is a doctoral student at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since July 2018. Her research is focused on future trends of mobility along the travel chain, travel behavior, new travel patterns, and novel mobility concepts for urban and long-distance mobility. She holds a Bachelor of Arts degree in Corporate Management and Economics from the Zeppelin University and a Master of Science in Organizational and Social Psychology from the London School of Economics and Political Science. During her studies, she focused on Economic and Social Sciences as well as Business Psychology. In parallel to her PhD, Ulrike works as a research associate at Bauhaus Luftfahrt, an interdisciplinary aviation and mobility research institute in Taufkirchen (near Munich). Here, she conducts EU- and industry projects focusing on future trends within the overall mobility sector and current and future passenger requirements towards the transport system. Prior to her engagement at Bauhaus Luftfahrt, she gained experience working as a consultant for several years.
Daniel Makowski, Dipl.-Ing. oec.
Doctoral Student
daniel.makowski@whu.edu

Daniel Makowski (born 1985) joined the chair of Logistics Management at WHU as an external doctoral student in July 2015. His research is on the logistics of fast moving consumer goods in the B2C area. In particular, he examines ways in which e-grocers can bridge the last mile. Daniel graduated with a degree in industrial engineering (Dipl.-Ing. oec.) from University Hamburg and TU Hamburg- Harburg in 2012, majoring in logistics, production management, statistics and marketing. His student research project – written in cooperation with BUSS Logistics GmbH (Hamburg) – dealt with work place health management and his thesis – written in collaboration with Leeb GmbH (Memmingen) -- dealt with optimization and adjustment of internal logistics processes.

During his studies, Daniel was a member of the German rowing national team and won several medals at World and European Championships. In April of 2013, after 3-month stay in the US, he joined at Mars GmbH for a management development program working as a production team leader and project manager. Since January 2016 Daniel is working for Porsche Consulting as management consultant.

Silke Malina, MBA
Doctoral Student
silke.malina@whu.edu

Silke Malina (born 1972) studied economics at the European-Business-College in Wuerzburg and finished with a Bachelor of Commerce at the Hogeschool van Utrecht (NL).

In 2007 she obtained her Master of Business Administration (MBA) from the University of Surrey (UK). Her master thesis treated about “Lean Management and its Effectiveness in Organizations”.

During her studies she made several traineeships in the consumer and investment goods industry, e.g. at the subsidiary of Michael Weinig AG in Singapore.

Silke Malina works for Bosch Rexroth AG. After several years of controlling, she worked as project manager on the implementation of logistics standards worldwide. Afterwards, she took over responsibility as project director for increasing supply chain flexibility. Currently, she works as director for IT security and risk management. In January 2011, Mrs Malina joined the chair of Logistics Management at the WHU in Vallendar as external doctoral student. Her research is about supply chain complexity, supply chain agility and discrete event simulation.
Stefan Schulze-Schwering, M.Sc.
Doctoral Student

stefan.schulze-schwering@whu.edu

Stefan Schwering (born 1988) is a Ph.D. student and research assistant at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since October 2016.

His research is focused on Structure and performance measurement of supply networks, Strategy in supply networks and Profit-optimized planning in complex production systems.

Stefan Schwering has the following academic background: M.Sc. in Mechanical Engineering (Energy Technologies) at RWTH Aachen (2012); M.Sc. in Business Administration at RWTH Aachen (2014) Semesters abroad at Imperial College London (2009-2010) and Tsinghua University, Beijing (2013). During his previous studies he worked on topics including optimization of nonlinear energy systems and improvement of electricity tariffs for better integration of Renewables.

In parallel to his PhD, Stefan Schwering has been working as a management consultant since 2014 at McKinsey & Company Inc. His focus is on supply chain projects for companies in the process industry.

----------------------------------------------------------------------------------------------------------------------------------------

Christian Soyk, M.Sc.
Doctoral Student

christian.soyk@whu.edu

Christian Soyk (born 1988) is a Ph.D. student at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since July 2016.

He graduated as M.Sc. in Aerospace Engineering from the TU Munich and as well holds an Honors Degree in Technology Management from the Center for Digital Technology and Management, Ludwig-Maximilians-University of Munich. Over the course of his studies he also spent one semester at the UC Berkeley School of Information. During his previous studies Christian Soyk focused on airline network planning and implications on profitability, feasibility and readiness of various alternative aircraft fuels, as well as commercial and environmental viability of alternative aircraft fuel made from microalgae. In parallel, he has been working as a management consultant for Bain & Company since 2014. He has mainly worked on strategic and operational topics with clients from the high tech and industrial goods and services sectors. Prior to his engagement at Bain & Company, he gained experience during various internships at Lufthansa AG, Airbus Group, and BMW AG.
Adrian Viellechner, M.Sc.
Doctoral Student
adrian.viellechner@whu.edu

Adrian Viellechner (born in 1989) joined the chair of Logistics Management at WHU as an external doctoral student in August 2018.

He holds a B.Sc. and M.Sc. in Management & Technology from the Technische Universität München (TUM). His studies focused on operations, supply chain management, and logistics. He concluded his M.Sc. with a thesis on modeling intermodal freight transportation between Europe and Asia.

After graduation, Adrian Viellechner worked as an operations management consultant in the supply chain management service line at McKinsey & Company where he mainly supported transportation, distribution, and warehousing projects in the retail and transportation industry.

Research interests: Shipping 4.0, predictive analytics in shipping, new shipping routes, distribution network optimization

Lothar Weichert, M.Sc.
Doctoral Student
lothar.weichert@whu.edu

Lothar Weichert (born 1989) has been a Ph.D. student at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since October 2018.

His research is focused on:

- Humanitarian Logistics & Supply Chains
- Simulation & Robust Optimization
- Transportation & Supply Chain Management

Lothar Weichert holds a Master of Science in Information Engineering and Management from the Karlsruhe Institute of Technology (KIT), Germany, and a Master of Science in Supply Chain Engineering from the Georgia Institute of Technology (Georgia Tech), USA. During his studies, he focused on Operations Research, Algorithms, and Robust Optimization. In his master’s thesis at KIT he analysed the gap between Operations Research theory and practice in Disruption Management in the airline industry. He wrote his master’s thesis at Georgia Tech in cooperation with Habitat for Humanity, suggesting improvements to their international disaster response supply chain.

Between 2015 and 2018, Lothar Weichert worked as a strategy consultant for Strategy&. During these three years he supported a wide range of assignments, especially in the pharmaceutical and automotive industries, with a focus on supply chain and operations strategy.
Philipp Nicolas Weil, M.Sc.
Doctoral Student

Philipp Weil (born 1991) joined the Chair of Logistics Management of WHU as an external doctoral student in 2018. Since then, he is focusing on the research topic of airport slot allocation. Slot allocation is an important parameter of daily air traffic operations, determining the sequence of takeoff and landing at regulated passenger airports. The purpose of his study is to achieve a more efficient allocation model that enables a smoother and more sustainable air traffic in future.

Philipp holds a Masters degree in Global Logistics and Supply Chain Management from Kuehne Logistics University (KLU) in Hamburg and a Bachelor degree in Economics and Management from Johannes Gutenberg University in Mainz. During his studies, Philipp spent a semester abroad at Chalmers University of Technology in Gothenburg and at Libera Università di Bolzano.

Since finishing his Master studies, Philipp works as Senior Associate at PricewaterhouseCoopers GmbH WPG in the area of Operations & Supply Chain Management.

Jennifer Weingarten, M.Sc.
Doctoral Student

Jennifer Weingarten (born in 1990) joined the chair of Logistics Management at WHU as an external doctoral student in June 2018.

She holds a BSc in International Business Administration from the University of Twente (Netherlands) and an MSc in Operations Management & Logistics from the Eindhoven University of Technology (Netherlands). Her master studies focused on supply chain management and transportation. She concluded her MSc with a thesis on developing a same-day delivery concept for an international B2B player in the construction industry.

After graduation, Jennifer Weingarten worked as management consultant in the operations practice at McKinsey & Company where she mainly supported supply chain management projects in the telecommunications and consumer goods industry.

Research interests: Predictive analytics in supply chain management, omni-channel supply chain, same-day delivery, last mile
Jan Philipp Werning, M.Litt.
Doctoral Student
jan-philipp.werning@whu.edu

Jan Philipp (born 1990) joined the chair of Logistics management at WHU as an external PhD candidate in April 2017. In his research he analyses the implementation of Circular Economy and the resulting impacts onto the whole value-chain.

Jan Philipp has been awarded a Master of Letters (MLitt) at the end of his studies of International Management at the University of St Andrews (Scotland) from 2013 to 2014. In his master thesis he studied the potential of Bitcoin to be a disruptive innovation. Prior to this, Jan Philipp has graduated as a Bachelor of Arts (BA) in International Management from the International School of Management (ISM) in Frankfurt (Germany). In his bachelor thesis he developed a KPI framework to minimize systematic delays at IATA Level 3 airports. The KPI framework was validated with movement data from one of the biggest airports in the world. During his undergrad Jan Philipp has studied one semester abroad at the Universitat Ramon Llull in Barcelona (Spain).

In 2015 Jan Philipp joined OakTree Partners where he is working as a Senior Associate. During his time at the consultancy specialised towards the Travel, Transport and Logistics industry Jan Philipp was able to work closely with clients from the Rail and Parcel industry on strategic and implementation-oriented projects.

Research interests: Circular Economy, Value Chain-Management, Business Model-Design
Dr. Judith Berndroth
Alumna

Amazon Transportation Services, Sort Centers
Head of EU LIT - Launches, Innovation & Tech Integration
LU, Luxembourg

---

Dr. Maximilian Burkhardt
Alumnus

Head of Supply Chain Development
Lekkerland Deutschland GmbH & Co. KG
Germany, Frechen/Cologne

---

Dr. Doreen Diehl
Alumna

Head of Global Cost & Corporate Functions Controlling
Covestro Deutschland AG
Germany, Leverkusen

---

Dr. Daniel Girardet
Alumnus

VP Business Intelligence Customer Service
Sky Deutschland Fernsehen GmbH & Co. KG
Germany, Munich

---

Dr. Benjamin Gürtler
Alumnus

Executive Assistant to the Chairman of the Board of Management
Daimer AG
Germany, Stuttgart
Dr. Daniel Hach
Alumnus
Head of User Experience and Scrum
BI X – Digital Lab - Boehringer Ingelheim
Germany, Ingelheim

Dr. Christian Haehl
Alumnus
Engagement Manager (Projektleiter)
McKinsey & Company, Inc.
Germany, Hamburg

Dr. Robert Hein
Alumnus
Founder and Head of Operations
Xioneer Systems GmbH
Austria, Vienna

Dr. Sebastian Huber
Alumnus
Senior Director Pricing and Margin Management
Berner Trading Holding GmbH
Germany, Cologne

Dr. Alexander König
Alumnus
Head of Business Development REWE To Go
REWE Markt GmbH – REWE To Go
Germany, Cologne

Dr. Andreas Kretschmer
Alumnus
VP European Operations
Casper Sleep GmbH
Germany, Berlin
Dr. Andrei Neboian  
Alumnus  
Managing Director and CEO  
Xioneer Systems GmbH  
Austria, Vienna

Dr. Eike Nohdurft  
Alumnus  
Solution Leader  
McKinsey & Company, Inc.  
Germany, Hamburg

Dr. Philipp Rau  
Alumnus  
Engagement Manager  
McKinsey & Company, Inc.  
Germany, Berlin

Dr. Ingmar Ritzenhofen  
Alumnus  
Associate Partner  
McKinsey & Company, Inc.  
Germany, Cologne

Dr. Christian Rudolf  
Alumnus  
Head of IT-Procurement & Providermanagement  
HDI Systeme AG  
Germany, Hannover
Dr. Max Schöne
Alumnus
Head of Corporate Development
heroal – Johann Henkenjohann GmbH & Co. KG
Germany, Verl

Dr. Sebastian Theißen
Alumnus
Operations Manager
Saint Gobain
Germany, Willich

Dr. Katharina von Boch-Galhau
Alumna
Projektleiterin Prozess und Systemmanagement
BurSped Speditions-GmbH & Co.
Germany, Hamburg

Dr. Martin Vu
Alumnus
Projektleiter
Porsche AG
Germany, Stuttgart

Dr. Matthias Winkenbach
Alumnus
Director, MIT Megacity Logistics Lab
Director, MIT Computational and Visual Education (CAVE) Lab
Massachusetts Institute of Technology (MIT)
USA, MA, Cambridge
Logistics has become a key enabler in today’s global trade. And while today’s value creation networks exploit to the extent possible local business advantages, the challenges that come with these dispersed structures have grown substantially over the last ten years. Recognizing this trend, the WHU – Otto Beisheim School of Management founded the Kuehne Institute for Logistics Management, which comprises two endowed Chairs (Prof. Dr. Stefan Spinler and Prof. Dr. Carl Marcus Wallenburg) and currently about 20 PhD students. The institute was inaugurated in March 2012.

Our objectives are to generate new insights for the management of logistics and to disseminate this state-of-the-art knowledge into the research and business community.

To this end, we conduct high quality and internationally visible research, which is analytical, conceptual, or empirical in nature. Further, we provide specialized courses and lectures at various educational levels (BSc, MSc, MBA, Executive Education) and organize conferences for the business community and students in the area of logistics and supply chain management.

Current research projects are dedicated to the following areas:

- Management of logistics services
- Management of vertical and horizontal cooperation
- Logistics and supply chain controlling
- Sustainability in supply chains
- Risk management in supply chains
- Big data and machine learning in logistics and supply chain management
3 TEACHING

3.1 BACHELOR OF SCIENCE PROGRAM

Introduction to the Raspberry Pi (Part II): Build your own Amazon Echo digital assistant
- held by Stefan Spinler and Alexander Hess

The main purpose of this course is to make the student familiar with basic concepts of programming and Python (one of the most important languages used at the moment). This prepares the student for further courses, for example, in Data Science, Machine Learning, or Web Development. Students taking this course in the past reported that they could use what they learned in summer internships as well, in particular when they worked in start-ups.

The topics introduced are:

- basic components of a programming language
- modularization via functions
- boolean if-else logic
- flow control via for or while statements
- data types (lists, dictionaries, tuples)
- object-orientation
- replacing Excel with Python
- data mining via web APIs or web scraping
- prototyping with the Raspberry Pi

Seminar Smart Cities

This seminar deals with various aspects of smart cities: deployment of sensor technology, policy design, city logistics concepts. Students analyze benchmark studies such as Singapore and examine to what extent the smart city concept can contribute to the benefits of the ongoing urbanization.

3.2 MASTER OF SCIENCE PROGRAM

Transportation Management – held by Honorary Professor Jürgen Ringbeck

Transportation is one of the fastest growing global industries. Travel and logistics are the major backbone of our global business and a core element of private life. The objective of this course is to give a comprehensive introduction into the challenges and best-practices of management and principles of global industry players like passenger airlines or logistics companies. Such management best-practice includes a deeper understanding of the underlying industry dynamics, and the outline of superior strategies as well as commercial and operational management methods of selected industry segments. The course will also highlight some specific management approaches which illustrate a way to a long-term sustainable industry.
Designing and managing the global supply chain

Logistics has grown from a purely functional orientation to become a key enabler of global supply chains. To achieve this, logistics needs to be integrated within the firm as well as across boundaries from suppliers to manufacturers to customers. As companies tend to focus on their core competencies, deverticalization of the value chain entails which necessitates coordination of logistics activities. Logistics is not only concerned with flows of goods and cash, but also – to an ever increasing degree – with the flow of information. Hence it is natural that IT systems play a crucial role to achieve what has been called the 4Rs – that is, the right product at the right place and the right time at the right price.

Sustainable Operations Management

Sustainability is emerging as a key concern for businesses, not least because of the agreement which was reached in the COP21 meeting in Paris in 2015. Thus, it is imperative that students are familiar with sustainability assessment tools. Case studies on successful sustainable companies highlight key challenges and solution concepts.

3.3 FULL-TIME MBA PROGRAM

Operations Management

Operations management is about designing, managing, and improving the activities involved in creating products and services and delivering them to customers. A great workshop offered by Porsche Consulting introduced the students to the importance of quality management in a very hands-on fashion: the process of assembling a pocket lamp was improved step-by-step along the lines of the Toyota Production System principles. Gregory Bryan, Director Operations at Amazon, illustrated why Amazon is so successful and how that relates to operations and supply chain management.

The Analytics Edge

Through analytics companies can improve their competitive positioning. With big data emerging in many areas, new tools based on statistics and machine learning become a necessity. In this course, we will use R to employ these tools and discuss the respective benefits.

3.4 PART-TIME MBA PROGRAM

Both The Analytics Edge and the Operations Management courses which are popular in the full-time MBA program are offered in the part-time MBA program, too.

3.5 EXECUTIVE MBA PROGRAM

The Analytics Edge

Through analytics companies can improve their competitive positioning. With big data emerging in many areas, new tools based on statistics and machine learning become a necessity. In this course, we will use R to employ these tools and discuss the respective benefits.
3.6 DOCTORAL PROGRAM

Data Analytics

This course provides an overview of modern machine learning methods such as regression, tree-based methods, artificial neural networks and support vector machines. Unsupervised learning such as clustering and principal component analysis are also discussed. Lastly, visualization techniques are introduced as a useful means of communication.
4 THESES

4.1 BSC PROGRAM

- **Altenburg, M.J.**
  New Business Solutions to Reduce the CO2 Footprint in Heavy-Emissions Sectors

- **Beckervordersandforth, L.**
  The FSB Task Force on Climate-Related Financial Disclosures: Overview and Implications for the Automotive Industry

- **Damm, A.M.H.C.**
  The Impact of Artificial Intelligence on the Medical Sector - An evaluation of machine learning models for cancer classification

- **Dopfer, M.R.**
  Capacity Planning Challenges for Food Delivery Businesses - Simulation Derived Insights

- **Huntgeburth, K.G.**
  Artificial Intelligence Applications in Supply Chain Management

- **Imhof, M.D.**
  Integrating Renewable Energy into the Electricity Grid: A Qualitative Analysis on the EU Market Design

- **Knippenberg, T.F.**
  Applicability of Robotic Process Automation within the logistics industry

- **Knospe, M.A.M.**
  Deployment of Internet of Things Solutions in the Fast Food Industry

- **Sibbel, B.**
  The German energy transition - a case of successful green industrial policy?

- **Winterberg, N.**
  EU-ETS: Why did it fail and is the Market Stability Reserve an appropriate measure in order to remedy the defects of the system?

- **Wölfel, P.**
  Implications of Artificial Intelligence on Capacity Planning of Airlines
4.2 MSC PROGRAM

- **Baur, J.F.**  
  Website-Based Screening Automation for Pre-Seed Venture Capital Investment Opportunities

- **Bitter, N.**  
  Applications of Machine Learning - Analyzing CEO Twitter Sentiment in Quantitative Trading

- **Bunte, T.**  
  Making a Business Case out of Carbon Dioxide Removal

- **Hartel, A.N.**  
  Business Applications of Machine Learning: Combining Descriptive, Behavioral and Visual Data for Website CTR Optimization

- **Henzler, S.**  
  Carbon Emissions and Stock Market Prices - Analyzing the Impact of the Paris Agreement

- **Heuer, F.**  
  Predictive Lead Scoring in Logistics - Enhancing Outbound Sales Activities with Machine Learning Techniques

- **Leshel, G.H.M.**  
  Climate Change Loss & Damage and the Impact of the UNFCCC

- **Penchovska, D.P.**  
  Exploring Machine Learning Opportunities in Healthcare based on Pneumonia Detection from Chest X-Rays

- **Schraven, P.**  
  Web Application Security for Entrepreneurs

- **Sennewald, D.R.H.**  
  Machine Learning Empowered Recommender Systems: A Business Application Study

- **Sun, Q.**  
  Exploring German Student Accommodation Rental Pricing Strategy with Machine Learning
4.3 DOCTORAL PROGRAM

- **Achenbach, A.**
  Predictive Analytics in Airline Operations: Application of Machine Learning for Arrival Time and Fuel Consumption Prediction

- **Schulze-Schwering, S.**
  Supply Network Management – Managing Suppliers Beyond Tier 1

- **Soyk, C.M.**
  The economic viability of long-haul point-to-point airline business models and their competition to full-service network carriers

- **Steinbach, T.** (2nd advisor)
  Managing service outsourcing: Contract choice, interplay of formal and relational factors, and incentives for performance improvements

4.4 FULL-TIME MBA PROGRAM

- **Chen, J.**
  Digitalization of operation in Manufacturing Industry – The transformation of the traditional manufacturing and industry 4.0 implementation in enterprises

- **Diaz, E.**
  Future scenarios to extend existing service catalogue and develop additional item strategies in Adhesives Service Strategy

- **Groß, S.**
  empulse Case – Artificial Intelligence in Social Intranet Solutions – A Good Match?

- **Johnson, J.C.**
  The Effects of Tariffs and other Protectionist Measures on Domestic and International Supply Chains

- **Khan, Y.M.**
  Business transformation in composites product industry

- **Kumar, A.**
  Logistics: On the cusp of the next transformation

- **Lee, J.K.**
  A Strategy and Entry for Mid/Lonterm Development for Platform Business of Industrial Robot (Focused on East Asian and West European Markets)

- **Mata, M.**
  Business Plan for Artificially Intelligent Advertising Billboards

- **Okorie, K.I.**
  Tracking Post Merger Synergies in a Business Integration Project
• **Solanki, A.S.**  
Artificial Intelligence in Green Logistics: Exploration of a sustainable business aspect through proved solutions

• **Vasilev, V.**  
Business Steering via Service Differentiation

• **Xue, N.**  
Business Model Transformation of Automotive Industry in China

### 4.5 PART-TIME MBA PROGRAM

• **Hanitsch, N. (2nd Supervisor)**  
Datenschutz hoch 4 GmbH Business Plan for 2019 and onwards

• **Mogoase, B.**  
The impact of digital transformation on business and corporate governance: Understanding the organizational effects and benefits of digital transformation

### 4.6 EXECUTIVE MBA PROGRAM

• **Hasan, K.**  
A Study on the Contribution of Video Surveillance Data to Forensic Analysis & Crime Prevention

• **Karrenberg, U. (2nd Supervisor)**  
Starting Up – From Start-Up to the Next Level Organization  
Moving from a Start-Up to a Logistics Consultancy Company

• **Srikantha, D.**  
Gaining Competitive Advantage for AGCS in North American market by improving the operational efficiency of Client Service Team
5 TEACHING INNOVATION

5.1 GUEST LECTURES

- **Baris Göncü**, AlixPartners
  AlixPartners Autostudie 2018
  September 24, 2018 as part of the MSc lecture “Sustainable Operations Management”

- **Professor Dr. Anders Levermann**, Potsdam Institut für Klimaforschung (PIK)
  Supply chains in a warming world: What do we have to plan for?
  October 17, 2018 as part of the MSc lecture “Sustainable Operations Management”

- **Udo Kiesslich**, kollex
  New last mile ideas for e-commerce / digitalization & beverage industry (kollex.de)
  January 29, 2019 as part of the MiM lecture “Designing and Managing the Global Supply Chain”

- **Frauke Heistermann**, Non Executive Board Member, BEFESA S.A. / Board Member BVL / Chairman Technology Council Federal State Rhineland-Palatinate
  Digitalization of Logistics
  February 5, 2019 as part of the MiM lecture “Designing and Managing the Global Supply Chain”

- **Dr. Edward Tse**, Gao Feng Advisory Company
  China’s Audacity in Innovation and Entrepreneurship
  March 29, 2019 as part of the Digital Speaker Series of the Center of Digitalization

- **Dr. Monika Hauck**, WHU
  Sustainable Fashion
  September 9, 2019 as part of the MSc lecture “Sustainable Operations Management”

- **Dr. Ani Melkonyan**, University Duisburg-Essen
  Sustainable Cities
  October 9, 2019 as part of the MSc lecture “Sustainable Operations Management”
• Dr. Lisa Koep, Head of Sustainability Management at Lidl
  How sustainable can a discounter be?
  October 16, 2019 as part of the MSc lecture “Sustainable Operations Management”

• Dr. Judy Berndroth, Amazon
  Amazon’s drive for sustainability
  October 18, 2019 as part of the MSc lecture “Sustainable Operations Management”

5.2 NETLOP-SEMINAR OF THE KÜHNE-FOUNDATION

For the NetloP-Seminar, which is now successfully run by Holly Hillen of the KLU who took over from Martin Willhaus, the former managing director of the Kühne Foundation, we provide content for one of the concentration seminars in Vallendar. This year, we visited the Globus warehouse in Bingen and had a very interesting guest talk by Dr. Matthias Kreimeyer who is head of product strategy at MAN.

5.3 DIGITAL @ SCALE WITH MCKINSEY

In May 2019 another run of the Digital@Scale Executive Training Program took place, this time in Berlin. It was another great experience both for participants and faculty! The faculty directors for this program which elaborates on the WHY, WHAT and HOW of digital transformation are Dr. Jürgen Meffert, Karel Dörner (both McKinsey) and Profs. Ringbeck and Spinler (both WHU). Simone Vogel and Sven Falkenberg excelled in the project management for this event.
6 RESEARCH

6.1 DISSERTATION PROJECTS

Achenbach, Anna (from 08-2015 to 11-2018)

“Predictive Analytics in Airline Operations: Application of Machine Learning for Arrival Time and Fuel Consumption Prediction”

With the historic low margins in the airline industry and the ongoing fierce competition, airlines struggle to increase the productivity of their operations to ensure profitability. The application of machine learning and predictive analytics has shown to hold great potential in many industries. So far there are only few examples of its application in airline operations.

The aim of this dissertation project is to improve an airline’s decision making capabilities through applying machine learning to historic flight and fuel data. Through the improvement in information quality airlines can ensure economical and punctual operations.

In her first Paper, Anna Achenbach develops a predictive algorithm based on aircraft, weather and traffic data to forecast a continental flight’s arrival time. The model is further extended by adding a speed optimization, which determines the optimal cost index for an aircraft considering fuel versus personnel and maintenance costs. The model builds on machine learning and aircraft performance data to generate accurate predictions and a robust optimization. In the second paper a predictive algorithm for intercontinental flights is developed. The work also assesses the accuracy of en-route weather data of the operational flight plan. The inclusion of en-route weather data as meta-features and the arrival time prediction of intercontinental flights is a completely new development in this research area. The prediction accuracy increases by more than 30% compared to the airlines model. The third paper focuses on fuel prediction. Here the aim is to quantify the optimal fuel load for an aircraft on a specific route. Considering that weight and therefore initial fuel load are one of the main factors in fuel consumption, the weight dependency is incorporated in the predictive model. The aim is to predict the optimal fuel amount that will include the necessary safety fuel load at arrival.

Alparslan, Vefa (from 11-2014, ongoing)

“Acquisitions in the logistics sector: A sustainable value creation or aware value destruction? - A case study based analysis”

Mergers and acquisitions are strategic tools for companies to expand their activities in today’s highly competitive business environment. Compared to organic growth and other types of cooperation’s such as bilateral partnerships or joint ventures, mergers and acquisitions require thorough pre-analyses and the success basically depends on different factors. Even transportation and logistics companies defer to vertical and horizontal mergers and acquisitions to extend their market shares or to secure their competitiveness. However, a couple of large cases in recent years such as the acquisition of Exel through DHL in 2005 were not fully successful due to various reasons. While already existing academic explanatory approaches provide potential causes determining the success or failure of mergers and acquisitions, there are today no detailed investigations specifically in terms of transportation and logistics related cases available. In his dissertation, Vefa aims at identifying the main drivers for the success or failure of mergers and acquisitions in the transportation and logistics industry based on selected cases. He applies the case study research method to figure out why mergers and acquisitions in the transportation and logistics industry fail or succeed.
In this context, cases from Europe and China are analyzed to see whether local or geographic circumstances have a significant influence on mergers and acquisitions. Furthermore, he aims at showing significant factors how transportation and logistics relevant mergers and acquisitions can be more promising in the future.

Anderhofstadt, Benedikt (from 04-2018, ongoing)

“The future of autonomous and alternative fuel-powered heavy-duty trucks in Germany”

Germany is one of the largest contributors of greenhouse gas emissions worldwide and by far the largest emitter across the European Union. Thus, the German government adopted the “German Climate Action Plan 2050” to achieve greenhouse gas neutrality by the middle of the century. The transport sector is the third-largest producer of greenhouse gas emissions and around 96% of emissions result from passenger cars and commercial vehicles. Based on the latest vehicle registration numbers, almost 100% of registered heavy-duty trucks (HDTs) in Germany run on diesel whereas the share of alternative fuel-powered passenger cars increases steadily. Other challenges are fatalities due to human error and the massive truck driver shortage. Therefore, we aim to assess the future market potential of alternative drivetrains and try to answer the question of how certain factors affect the successful implementation of low emission HDTs in Germany. Furthermore, we intend to shed light on a possible operation of autonomous HDTs in Germany. Our research provides both a practical and theoretical contribution to spur the penetration rate of innovative HDTs. The results of our research are of great importance to truck manufacturers, logistics service providers, policy makers, energy suppliers but also international academics.

Baller, Reinhard (from 09-2017, ongoing)

“Development and evaluation of Total Landed Costs approach”

Planning and implementing reliable and cost efficient supply chains is essential. The costs have to be comprehensively evaluated to take the right decisions using financial analysis instead of guesswork or gut feeling. Therefore, the total landed cost (TLC) approach provides a promising foundation for the development of a costs-based supply chain design methodology. TLC is mostly seen as the sum of all costs from the point of origin to the point of use. Although TLC is not a new approach, industry doesn’t use it frequently and in a standardized form. Thus the question arises how to implement TLC successfully. In a survey the status quo of the TLC approach in industry; barriers to its implementation; potentials, and relevance of implementation; and success factors when implementing this approach are shown. Based on different use-cases the methodology for implementing TLC and potentials is evaluated with a process focus on inbound as well as inhouse logistics at two companies. A Mixed Integer Linear Programming (MILP) approach is chosen to minimize costs of line feeding policies with multiple line feeding policies and multiple constraints to optimize inhouse logistics processes. MILP is also used to define lot sizes for different transport modes with multiple constraints to optimize inbound logistics. By a Monte-Carlo-Simulation it is shown, that there are easier to adapt calculation approaches, which reduce the number of needed data significantly.
“Customer Value Creation from returns in e-commerce”

Returns in e-commerce are one of the most important drivers for customer satisfaction, customer buying behaviour and customer loyalty in e-commerce. Based on literature reviews and qualitative expert interviews this dissertation project analyses the potential of return policies as well as process quality on creating customer value. The aim of the dissertation is to show a new positioning perspective on the return process as important sales and profitability driver in e-commerce retailing.

“D-Eye for an Eye: Scaling Tele-Ophthalmology for Diabetic Retinopathy in Rural India”

India has only 22,000 ophthalmologists (eye doctors). This results in a skewed ratio of 1 ophthalmologist for every 61,000 citizens. This ratio is further skewed in areas that have limited reach of healthcare (rural areas) or lack of infrastructure. Congestion jeopardizes reach for areas that do have access to health care like cities. At 7.9 million folks, India has 20% of the world’s blind population. And 49% of the global diabetic population live in the country. Diabetes can cause an asymptomatic disease (asymptomatic in early stages – implying not known until too late) of the eye called Diabetic Retinopathy, a growing leading cause of blindness in the developed and developing world. WHO says 80% of all blindness can be avoided if detected on time. Thus instead of waiting for more medical doctors to graduate, we aim to overcome the problem of reach by using a portable ergonomic tele-ophthalmic device with early but developing AI capabilities which enables large scale screening thus early detection of a disease through outreach camps in rural areas. Novi Dewan teamed up with Prof. Dr. Natarajan, the President of the All India Ophthalmic Society and the recipient of Padmashri/highest civil service award by President of India, and conducted eye screening tests through camps in the Mumbai slums with his team. This helped her identify contextual aspects like behavioral hurdles in community screening, actors needed and device specificity and sensitivity.

The first paper is a pedagogical case study about Prof Dr Natarajan and his foundation - the Aditya Jyot Foundation for Twinkling Eyes. The objective of the next paper is to develop a logistics model for determining the most cost-effective strategy to scale screening and diagnosis via tele-Ophthalmology in rural India. The final paper will focus on technology diffusion using the Bass diffusion model for high-tech innovative devices in the healthcare area.

“Data analytics in supply chain planning: Applications in intermittent demand forecasting, churn prediction and price discrimination”

The concepts of predictive analytics and big data are commonly used these days, but there is limited empirical research regarding its application and benefits. In addition, many companies still struggle to find relevant and useful applications of data analytics.

Given these challenges, the doctoral thesis provides new insights in quantifying the benefits of new data-driven analytical methods in supply chains. The ambition is to provide insights regarding potential improvements in warehouse operations, customer relationship management and price optimization.

The first paper deals with demand predictions for products with intermittent demand for an online retailer. We develop a method selection forecasting algorithm that leads to significant savings in the warehouse operations through improved storage decisions. The second paper deals with churn prediction in a B2B setting in the logistics industry. The proposed approach allows to combine high
predictive performance with interpretability. Thereby, potential churners can be identified early-on with high accuracy and the underlying reasons for the prediction can be understood. The third paper covers price optimization for B2B customers in the logistics industry. We develop a data driven algorithm without price experiments to predict price sensitivities.

Falkenberg, Sven (from 01-2019, ongoing)

“Predicting breakdowns of material handling equipment - How novel approaches can outrun classical ones”

Sven’s research project focuses on logistic processes and how machine learning and advanced analytics can optimize them in the supply chain context. Therefore, he investigates together with a Logistic Service Provider how e.g. neural networks can help to improve predictive maintenance for their material handling equipment fleets in warehouses. From a different angle he works together with an e-commerce player how transport times can be best synchronized across complex networks to fulfill given customer requirements.

Furrer, Mariam Alvin James (from 04-2017, ongoing)

“The Impact of Climate Change Related Extreme Events on Supply Chain Management: Assessing the Vulnerability of Supply Chains and Developing Mitigation & Adaptation Strategies for Firms”

Over the last decade, nearly all industries have faced increased competitive pressure in the business environment and globalization of the markets. Vulnerable supply chain networks are becoming an essential topic to tackle. In an era of increased frequency and severity of extreme weather events, Supply Chain Risks induced by climate change extreme weather events is still an emergent field of study especially in Developing countries. Severe and costly disruptions induced by climate change extreme weather events, such as, raw material shortages, production and manufacturing disruptions, longer lead time and others need to be highlighted and analyzed in order to develop suitable adaptation and mitigation strategies.

The research adds to the immature of climate change extreme weather and its impacts on supply chain networks for different industrial sectors. Moreover, it will introduce an empirically validated process aiming for assessing the various impacts of risks induced by climate change risks on supply chain networks. The research will fill the gap between risks induced by climate change and supply chains disruptions. The relation among the previously mentioned variables will be underlined and proposing mitigation and adaptation strategies will be developed.

Using data from different case companies from various industrial sectors located in Egypt will allow an empirical validation of the proposed process for managing climate change induced supply chain risks. Then a causal loop diagram will be developed in order to build a system dynamic model. The model will help to investigate the potential costly disruptions of extreme weather events induced by climate change and resulted supply chain risks affecting the resilience of the supply chain networks, either nationally or globally. The model will help decision makers to be more informative while choosing the appropriate cost-effective adaptation concepts and strategies to reduce the severe impacts of climate change extreme weather events on supply chains. Not only adaptation, but also mitigation strategies will be discussed in the curse of this research. This research is a starting point for further research and investigation in the areas related to supply chain management and risks induced by climate change.
Hess, Alexander (from 07-2016, ongoing)

“Quantitative Models for Prediction, Optimization, and Simulation in Urban Logistics”

Food delivery services and other urban logistics service providers have employed various methods of optimizing the flow of their vehicles in recent years. However, with more and more real-time data (e.g., weather, traffic, ...) available, the overall performance of such optimization systems and thus the customer experience can be improved with more accurate predictions of future demands, traffic jams, and total delivery times. The goal of the research project is to promote the usage of machine learning algorithms in the field of urban logistics. In addition to demand forecasting via machine learning methods, better routing strategies are evaluated, and its potential to optimize capacities is analyzed.

Kluge, Ulrike (from 07-2016, ongoing)

“Tackling Trends of Future Door-to-Door Travel”

Passengers are essential stakeholders in the aviation sector since they generate the demand for transport products and services (demand side). At the same time, their needs are increasingly individualized. Gaining a better understanding about future passengers’ requirements is crucial for mobility companies to stay competitive, for middle- and long-term planning, and for the innovation or development of products and services that will satisfy customer needs on the prospective travel market. However, for gaining a comprehensive and holistic understanding about future trends, the supply side (including mobility providers such as airlines, airports, or railway) also requires examination. Furthermore, research and the overall mobility industry start to broaden their scope beyond looking only at one mode but integrating the entire travel chain from door-to-door (D2D), considering modes from every travel segment. Hence, railway, busses, private vehicles, air transport but also novel concepts such as sharing mobility are examined.

The overall objective of this dissertation is hence to identify and understand future trends of D2D travel in 2035, on both the demand and supply side. As it can be challenging to look ahead into an uncertain future, the application of methods from the area of futurology are suitable. The first part of this doctoral thesis is based on a Delphi study for the identification of future D2D travel trends. Building on these results and using a machine learning approach, it shall be explored if transport companies along the travel chain are currently considering or already acting upon these identified trends. Lastly, a customer analysis in part three shall complement this trend analysis and provide a third perspective on the identified future D2D travel trends.

Makowski, Daniel (from 07-2015, ongoing)

“Decision Criteria for Optimal Home Delivery Strategies in the E-Grocery Sector”

Order groceries from the internet and have them delivered directly to the front door is an emerging trend. Also, major players like Amazon and Rewe entered the market in recent years is still a niche market. High complexity of the last mile, from distribution centres to the final customer, sensitive products and low volume of grocery deliveries makes home deliveries expensive.

The initial analysis of the German grocery market and expert interviews with managers of German e-grocers showed that, compared to other countries, German e-grocery market is still in its infancies. Main potential identified is, besides the actual delivery and the delivery strategy optimization in order fulfillment, the second major pool of costs in last mile delivery. Storage strategies, considering the special requirements for food storage are not yet investigated in depth. From the expert interviews, two main topics have been identified which could contribute to the current discussion on online ordered groceries. On the one hand the development of optimized, e.g. hybrid delivery strategies and on the other hand research on optimal storage strategies.
Given that a grocery storage requires different areas due to the storage requirements of the products, the simulation shows, that the storage concept is the most important lever to improve the warehouse performance, whereas the size of the individual storage areas plays a minor role. To further improve the storage an area only for high runners can be implemented, whereas the percentage of items stored decreases with an increasing number of total items stored in the warehouse.

As the optimal storage strategy strongly depends on the storage concept and the concept is depending on the customers demand, intelligent forecasting. Self-learning algorithms could provide further potential to improve storage strategies.

Malina, Silke (from 01-2011 to 11-2019)

“Supply Chain Complexity in the Drive and Control Industry”

Through increasing product variety, structures and processes, managers struggle with an increase in supply chain complexity (SCC), which leads to a negative influence on a firm’s efficiency in terms of lead times, flexibility and costs. In order to manage complexity, supply chain managers need to know its drivers or define appropriate management measures. In order to cope with this challenging issue and achieve overall benefits, it is necessary that the complete supply chain is involved in optimising supply chain processes. An aligned supply chain should ensure that supply chain partners benefit from cost savings. At the same time, supply chain processes should be agile to respond to market volatility, while also being cost-efficient to survive in the highly competitive world.

In this dissertation, three research cases are conducted with different focus areas, whereby first drivers for internal and external SCC are explored in a single case study. In order to gain a representative overview of relevant drivers, not only interviews with top managers from a manufacturer are held but also with key managers from suppliers and customers. In a second step, another qualitative study addresses the requirements of a supply chain. The basis for this part is the triple-A supply chain of Hau Lee (2004), where he states from a theoretical perspective the prerequisites of a supply chain, namely agility, adaptability and alignment. It is analysed which key performance indicators of a firm are affected by the three aforementioned qualities. Finally, it is presented how agility, adaptability and alignment are linked together. In a third step, a quantitative simulation creating a discrete-event simulation model is provided to evaluate inventory and logistics costs’ effects in a company that faces significant SCC.

The contribution to academic literature is the limited research of supply chain complexity to date. Based on the results practical recommendations for managerial decisions are developed.

Schulze-Schwering, Stefan (from 10-2016 to 06-2019)

“Supply Network Management – Managing Suppliers Beyond Tier 1”

Driven by increasing outsourcing and globalization, supply networks have become more complex in recent years. However, only limited research has been conducted on how to manage supply networks and especially indirect suppliers. In this dissertation, we aim to answer the following questions: Which suppliers are critical for a supply network from a structural perspective? What do the demand dynamics in a supply network look like and how can they be managed? How do quality disruptions propagate in supply networks and how can they be mitigated? Our research will combine different methodologies: First, we will use social network analysis (SNA) to identify critical nodes in real supply networks from the semiconductor industry. Second, we will analytically assess the bullwhip effect in supply networks. Third, we will assess the spread of quality issues using an epidemic modeling approach. Overall, the thesis explores an area of supply chain management that has become more important in practice over the past years and has, as we believe, not yet experienced an adequate scientific attention.
Soyk, Christian (from 07-2016 to 11-2018)

“The economic viability of long-haul point-to-point airline business models and their competition to full-service network carriers”

This dissertation focuses on identifying opportunities and challenges of different long-haul airline business models. Over the past decades, short- and medium-haul airline business models have been undergoing fundamental changes, particularly driven by the rise of low cost airlines. Since a few years, new intercontinental (i.e., long-haul) low cost airlines have emerged. Characteristics, economic potential and challenges of these airlines are widely discussed in academia and management, without consensus. This study aims at identifying the defining characteristics and evaluating the economic viability of these long-haul low cost airlines. In case their economic viability proves to be sustainable, it could have fundamental impact to the airline industry overall, including the surrounding infrastructure.

Viellechner, Adrian (from 08-2018, ongoing)

“Novel Data Analytics meets Conventional Container Shipping: Predicting Delays and Spot Rates using Machine Learning Algorithms”

Supply chain disruptions are expected to significantly increase over the next decades. Delays of container vessels are particularly likely to escalate. This can be traced back to higher frequency of extreme weather events and continued growth of shipping resulting in more congestion and thus additional delays. Furthermore, today's highly unbalanced trade lanes connecting Asia with Europe and North America are anticipated to fundamentally change. With rising wealth in Asian countries, more trade will flow towards Asia. This will lead to reduced amounts of empty containers in Europe and North America which influences the shipping costs for carriers and hence provokes shifts in freight rates.

Optimizing operations by predicting delays and spot rates could result in considerable cost savings. Both academia and shipping industry, however, lack analytical solutions for such predictions. Here, we developed prediction models using machine learning-based regression and classification methods. Regarding the prediction of delays, we obtained best results using neural network and support vector machine with a prediction accuracy of 77% compared to only 59% of a naive baseline model.

Based on both delay and spot rate prediction, shipping players such as sender, carrier, terminal operator, and receiver could benefit from our predictions. Knowing the delays of vessels would help carriers to fine-tune schedules, terminal operators to adjust vessel handling sequences, and receivers to adapt hinterland logistics. Anticipating spot rates would support senders such as commodity suppliers to save costs by optimizing their decision making between conventional bulk cargo and bulk in container. Taken together, we showed that our machine learning-based models enable better prediction of shipping delays as well as spot rates and thus considerable overall cost savings.

Vogel, Simone (from 06-2018, ongoing)

“Customer integration in the commercial vehicle industry”

Although the commercial vehicle plays a central role not only for the transport industry but also for society, the industry is confronted with many diverse problems. At the same time, the market is characterized by a very high degree of heterogeneity in terms of customer demands and transport tasks and this requires a particularly strong market-induced individualization of trucks, which in turn leads to increasing customer requirements. For the commercial vehicle manufacturer, this means the negative consequences of a high internal variance portfolio with strong component networking and an unusually long product cycle of 15-20 years by today's standards. In addition, this leads to a high degree of complexity due to the high number of variants with comparatively low production quantities per variant and configuration options that are difficult to predict. The paradigm shift from technology-driven development by manufacturers to customer orientation and integration is essential to enable manufacturers to react quickly and flexibly to today's price competition and the varying degrees of
customer demand. By involving the customer in the product development process, the aim is, on the one hand, to create added value for the customer and, at the same time, to unite internal complexity and cost management.

In order to investigate this problem, the aim of this dissertation project is to answer the overall research question of how to most efficiently integrate the customer of a commercial vehicle manufacturer in order to achieve customized products. Despite their high relevance, the commercial vehicle industry in general and the realization of customer integration receive relatively little scientific attention. Although there is extensive literature on customer integration, there is hardly any knowledge about its implementation and no literature at all on the topic in the commercial vehicle industry.

This research gap will be closed by using different methodologies to answer this question, and this is done in cooperation with a leading commercial vehicle manufacturer. First, data analysis is used to divide the market into homogeneous clusters in order to identify customer types in the form of persona. Secondly, a modular holistic process model is established, which is oriented to the requirements of the customers and also to the processes of the company. Thirdly, this model is to be implemented and validated at the industrial partner in order to ensure suitability for application.

Weichert, Lothar (from 10-2018, ongoing)

"Enabling more Efficient Humanitarian Responses with Humanitarian Logistics Innovations"

Considerable progress was made in the young research field of Humanitarian Logistics and Supply Chain Management over the last years, but the academic community is still shaping itself to ensure lasting impact of research results. Specifically, practitioners still often struggle to employ research findings in humanitarian practice.

Given these challenges, the doctoral thesis works on the interface between theory and practice. The ambition is to provide humanitarian logisticians actionable insights, based on rigorous research. The research is motivated by the push towards more localized and efficient humanitarian responses, as agreed by the humanitarian community at the World Humanitarian Summit 2016 in Istanbul, Turkey.

The first paper reviews knowledge management in humanitarian logistics and priorities for the future. We identify current approaches and knowledge needs via a practitioner survey and develop a concept for a humanitarian logistics knowledge management system addressing those needs. The project and a pilot implementation are done in cooperation with a major humanitarian logistics membership organization. The second paper investigates the positive impact of using shared logistics services in humanitarian supply chains. We will simulate the in-country logistics market during a humanitarian response, analyzing the quantitative effects of providing humanitarian actors with shared logistics services. The research and simulation are done in cooperation with a major humanitarian service provider. The third project will also work on making research more accessible and applicable for humanitarian logisticians.

Weil, Philipp (from 07-2018, ongoing)

„Seasonal slot scheduling at airports“

My dissertation project is dedicated to the phenomenon of Seasonal Slot Scheduling at Airports. Airport slot scheduling refers to the allocation of start- and landing rights at coordinated airports as a scarce resource of infrastructure. By the assignment of a runway slot, an air carrier obtains the permission to use the full range of airport infrastructure necessary to operate an air service at a coordinated airport on a specific date and time, according to the International Air Transport Association.

The dissertation is split in three parts: The first part includes the development of an allocation matrix for an airport. The second part is foreseen to deal with the potential to implement a different allocation pattern based on routes, and the third part will address the question whether a different allocation pattern can increase airport capacity overall.
Weingarten, Jennifer (from 06-2018, ongoing)

„Predictive analytics in supply chain management“

Predictive analytics and big data are frequently used buzzwords while academic research on this topic is still emerging, especially in the area of supply chain management. Moreover, many companies have just begun the discussion on how to leverage big data successfully, especially in terms of predictive analytics.

To add to the overall discussion on this topic, the doctoral thesis investigates different applications of predictive analytics in supply chain management. The main focus is on using big data to improve forecasting to eventually shorten lead times and become more customer-centric. Results will indicate whether machine learning methods can be used to predict customer purchases based on online behavior and to optimize product allocation to warehouses.

Werning, Jan Philipp (from 04-2017, ongoing)

„The Transition from Linear to Circular Economy Business Models: Theoretical and Empirical Study of Boundary Conditions and other Effects on the Value Chain“

This dissertation focuses on identifying boundary conditions on business not system level, hindering companies to pursue the transition from linear to circular business models. In addition the effects of the identified boundary conditions shall be quantified through value chain simulations. This study is highly relevant for academics and practitioners, since in both areas a collectively exhaustive list of boundary conditions is not available and understood completely. In the last years the idea of a circular economy, keeping products, at their highest value, as long alive as possible, and using the at their end-of-life as input for new products, emerged and spread quickly. Marco-economic developments, like population and global middle-class growth, are also supporting the need for circular business models. In order to not leave this field to newly emerging start-ups, this dissertation closes the existing research gap on the transition from linear to circular business models.
7 PUBLICATIONS

7.1 JOURNAL ARTICLES


7.2 WORKING PAPERS


7.3 PAPER PRESENTATION AT CONFERENCES


Baller, R. (2019) “Case study based multi-parameter optimization and simplification of EOQ model to reduce the need for data”, International Symposium on Logistics, ISL


8 EXECUTIVE EDUCATION & CORPORATE CONNECTIONS

8.1 TEACHING

- Sun Yat-Sen, Executive MBA: Industry 4.0 in Germany
- Monash University: Smart manufacturing in Europe
- Campus for Corporate Transformation
- Tsinghua, YES program: Smart manufacturing in Germany
- Digital@Scale with McKinsey
- BASF: Introduction to data science and analytics
- Latham & Watkins: Digitalization and data analytics
- SEMBA Melbourne Program: Smart manufacturing in Europe

8.2 CORPORATE CONNECTION ACTIVITIES

- Host for NetloP-Seminar (for Logistics Managers) at WHU
- Guest Speaker acquisition for the Campus for Supply Chain Management
9 SERVICES PROVIDED TO THE SCHOOL

9.1 MEMBER OF THE BOARD OF DIRECTORS

Prof. Spinler heads the Center of Digitalization (CoD) at WHU. The center’s activities focus on preparing WHU for the digital transformation in teaching, research and administration. Furthermore, it coordinates activities for executive training in the area of digital transformation. The Digital@Scale project with McKinsey is one offering in this domain. As head of the CoD, Prof. Spinler is also member of the Board of Directors at WHU.

9.2 CAMPUS FOR SUPPLY CHAIN MANAGEMENT

The Campus for Supply Chain Management is a student-led initiative that brings together speakers from industry and academia for German and international business students and young professionals. Speaker’s at the 2019 conference, dedicated to the topic **Logistics driven by innovation: How will cities cope with the increasing parcel demand**, included Dr. Matthias Winkenbach (MIT) and Harald Ehren (DVZ). Prof. Spinler acts as an academic advisor for this event. Mr. Martin Willhaus continues to be active in speaker acquisition which is greatly appreciated.
10 COMMUNITY OUTREACH

10.1 RESPONSIBILITY AND SUSTAINABILITY

Since sustainability should (and eventually will) be engrained holistically in business activities, all teaching as well as research endeavours at our chair show a strong relationship to the topic of sustainability. Some of the lectures are explicitly dedicated to sustainability, others touch on it. Research mostly explores the “planet” dimension of sustainability, for instance the reduction of CO2 emissions.

10.2 MEMBERSHIPS

- BVL, Bundesverband für Logistik (German Logistics Association)
- DHV, Deutscher Hochschulverband (Association of German Universities)
- GOR, Gesellschaft für Operations Research (German Operational Research Society)
- INFORMS, Institute for Operations Research and Management Science (USA)
- POMS, Production and Operations Management Society
- VHB, Verband der Hochschullehrer für Betriebswirtschaft (German Association of Business Professors)

10.3 REFEREE ACTIVITIES

Professor Spinler is Senior editor for focused issue of Decision Sciences Journal (Modularity and Supply Chain Management)

He regularly acts as a reviewer for the following journals:

- Decision Sciences
- European Journal of Operational Research (EJOR)
- Management Science
- Operations Research (OR)
- Production and Operations Management Journal