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FOREWORD

This report covers the period from September 2017 to August 2018. 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.

With respect to teaching, a very successful capstone course has been offered in the Master in Management program. The course took place in Boston with visits to MIT, Amazon Robotics, Bain, Merck, Siemens Healthineers. Thus, the students had the opportunity to study the success factors of a world-class academic and entrepreneurial environment. The big data analytics and machine learning class continues to attract students as many jobs these days require such data science skills. 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.

Publications in top-ranked journals and a range of working papers indicate the quality of the research carried out at the chair. Among the topics that were addressed are characteristics of low-cost long-haul airline business models, machine learning for airline operations, investment decisions under regulatory uncertainty and the management of supplier networks.

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, Mr. Martin Willhaus who retired in 2018. His successor is Dr. Christian Berthold who gave an overview of new activities and strategic directions during his visit in Vallendar. I very much appreciate his willingness to share his thoughts on the future roadmap of the foundation. Not only is the financial support greatly appreciated, but also the tireless efforts which Mr. Willhaus makes to provide contacts with practitioners within the logistics industry. The Kühne Foundation’s credo to make logistics research relevant to practice is thus 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.

Vallendar, December 2018
1 TEAM

Professor Dr. Stefan Spinler  
Chairholder  
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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  
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Since the appointment of the Chair of Logistics Management by Professor Spinler in 2009, Linda Stein has been the chair’s secretary.
Novi Dewan, MBA
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Novi Dewan (born 1982) is a PhD Student and Research Assistant at the Chair of Logistics Management at WHU - Otto Beisheim School of Management starting February 2017.

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.

Since October 2018 (expected for half a year), Novi has been at INSEAD’s Humanitarian Research Group (HRG) working on the humanitarian topics of her dissertation under the guidance of Prof. Luk Van Wassenhove and Dr. Harwin De Vries.

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 continue to learn from and contribute to the Chairs.

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Alexander Hess, M.Sc.
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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).

His research results were presented at the INFORMS conference in 2017 and 2018.

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.

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, born 1990, is a doctoral student and research assistant at 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.

Vefa Alparslan, born 1987, joined the chair of Logistics Management at WHU as an externa l 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. Today, he is working as a Consultant for Lufthansa Consulting and he is primarily involved in projects in the aviation and logistics industry in Europe, Middle East and Asia Pacific with a primarily focus on topics of airline and airport strategy, restructuring, network optimization, operations and ancillary products. Research interests: mergers and acquisitions, geographic footprint strategies of companies, market growth forecast calculations and drivers as well as product portfolio diversification in the aviation and logistics sector.
Benedikt Anderhofstadt, M.Sc.
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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
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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. Since 2012 Mr. Baller has been working for Porsche Consulting. As a Senior Manager he manages supply chain projects for companies in both automotive and mechanical engineering industries.
Jasmin Bigdon, MBA
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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.

Maximilian Burkhardt, Dipl.-Kfm.
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Maximilian Burkhardt (born 1987) is a doctoral student and research assistant at the Chair of Logistics Management at the WHU – Otto Beisheim School of Management since October 2014. His research is focused on the effect of stress on operational decisions in a humanitarian logistics environment.

Maximilian Burkhardt graduated as a Master of Science equivalent in Business Administration from the University of Cologne in 2012. During his studies, he focused on Supply Chain Management, Corporate Strategy and Business Psychology. In his diploma thesis at the Chair of Supply Chain Management & Management Science, he analyzed the impact of historical and real time traffic information on last mile express delivery operations. Furthermore, he joined the MBA program of the McGill University in Montreal, focusing on Supply Chain Management and Negotiation Tactics.

Between 2012 and 2014 Maximilian Burkhardt worked as a consultant for McKinsey & Company in the Cologne office as a part of the operations practice. He worked on operational topics with clients from the automotive, high tech, logistics transport and consumer goods sector. Former to his consultant work, he gained practical expertise in various internships including IBM Business Consulting, Deutsche Post DHL and Deutsche Telekom.
Andreas Faber, M.A.
Doctoral Student

Andreas Faber (born in 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 in e-commerce. In particular, he is seeking to improve demand forecasts based on big data.

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 at Marmara University in Istanbul (Turkey).

After his graduation, Andreas Faber joined the McKinsey & Company Business Technology Office (BTO) as management consultant. He supported strategy and digitalization projects in the logistics, insurance and energy industry.

Research interests: E-Commerce, Demand prediction, Advanced analytics, Predictive modelling

Mariam Alvin James Furrer, MBA
Doctoral Student

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 Related Events on Supply Chain Management: Assessing the Vulnerability of Supply Chains and Developing Mitigation 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 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, Climate Change, Supply Chain Vulnerability and Resilience.
Christian Haehl (born 1985) joined the chair of Logistics Management at WHU as an external doctoral student from October 2014 until October 2017. In his research he worked on the valuation of container ship investments under uncertainty using the real options approach. Specifically, he analyzed risk management opportunities in shipping companies to optimize risk exposure to high volatilities in shipbuilding prices and charter rates. After completing a vocational training in banking (Bankkaufmann), Christian Haehl has studied in the Bachelor of Arts programs in Business Administration and in Economics at the University of St. Gallen from 2007 until 2010. From 2011 until 2012 he completed the Master of Science in International Finance program at HEC Paris business school. In his master thesis, Christian Haehl focused on analyzing the contemporary market for repurchase agreements, their mechanisms of collateralization and their impact on the world financial crisis in order to deduce implications for future regulation. In between his studies, Christian Haehl has worked 3 years as a consultant for McKinsey & Company. During this time he mainly worked for clients in the banking, telecommunications and consumer goods sectors in Germany, Switzerland, the UK, USA and Japan. In these projects he focused primarily on topics of risk management, investment decisions, overall group strategy and logistics. Upon completion of his doctoral studies, he rejoined McKinsey & Company in their Hamburg office, focusing on work in the transport and logistics sector.

Ulrike Kluge (born 1989) is a Ph.D. student at the WHU – Otto Beisheim School of Management (Chair of Logistics Management) since July 2018.

Her research is focused on:
- Customer segments
- Travel behaviour research and new travel patterns
- Novel mobility concepts for urban and long-distance mobility

Ulrike has the following academic background:
- M.Sc. in Organisational & Social Psychology (LSE, London)
- BA Corporate Management & Economics (Zeppelin University, Germany)
- Semester abroad (Butler University, USA)

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. Here, she conducts various EU- and industry projects focusing on future trends within the overall mobility sector, current and future passenger requirements towards the transport system and travel patterns. Prior to her engagement at Bauhaus Luftfahrt, she gained experience working as a consultant from 2014 and 2016 and through various internships at Bertelsmann, Groupion, and other companies.
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 workplace 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 a 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.

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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.
Christian Rudolf (born 1982) joined the chair of Logistics Management at WHU as external doctoral student in March 2014. His research is focused on Supply Chain Risk Management in large scale projects.

Christian graduated as Master of Business Administration from the Graduate School Rhein-Neckar, University of Applied Science Mannheim 2012. In his master thesis, he analyzed methods of Supply Chain Performance Management and provided a holistic Performance Measurement Framework for the Strategic Management of Procurement and Supply Chain Management Organizations. He earned a diploma of Business Administration (DH) from the Baden-Wuerttemberg Cooperative State University with majors in Finance and Supply Chain Management 2007. In his diploma thesis, Christian worked on an approach for Key Supplier Management within a European Supply Chain Management Organization and evaluated the potentials of a harmonized European Sourcing and Logistics Group. During his studies, he spent 2006 an internship in Helsinki, Finland and 2007 in Swansea, Wales. 2011 he attended a summer school at the University of Warwick, UK to study Intercultural Management. During his studies, Christian worked for the Westinghouse Electric Company, a group company of the Toshiba Corporation. He held several positions within the Global Supply Chain Organization, mostly in the areas of Strategic Sourcing, Category Management, Outsourcing and Business Transformation Projects. Currently he is Head of IT-Procurement and License management at Talanx Systeme AG, a group company of HDI.

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 (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

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.
Martin Vu, M.Sc.
Doctoral Student
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Martin Vu (born 1985) joined the chair of Logistics Management at WHU as an external doctoral student in July 2014. In his research, he is working on effective risk management within product creation and focus on the automotive industry perspective. Martin Vu graduated as Master of Science in International Business and Management from Manchester Business School at The University of Manchester (UK) with specialization in Finance in 2011. In his Master thesis, he assessed value creation from mergers and acquisitions in the European automotive industry under the application of an event study. During his Master studies, Mr. Vu spent one semester abroad at Copenhagen Business School in Denmark. He earned a Bachelor of Arts degree from HFU Business School at Hochschule Furtwangen University in Germany with specialization in Finance in 2010. In his Bachelor thesis in cooperation with the Strategy and Organizational Development department at Volkswagen AG, Mr. Vu worked on the measurement of the internationalization degree and the derivation of an internationalization strategy under the consideration of the strategic goals from the ‘Strategy 2018’. During his Bachelor studies, Mr. Vu spent one semester at the University of California at Santa Barbara in the USA. After his studies, Mr. Vu started working as a consultant at Porsche Consulting in 2011. He works on projects in the automotive industry with focus on product creation and innovation management in the national and international context. During his studies, he gained first work experience through internships in the automotive industry: BMW Group Inhouse Consulting in 2009, International Business Consulting in 2008 and Marquardt Group in 2006.

Philipp Nicolas Weil, M.Sc.
Doctoral Student
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Philipp Weil (born 1991) has joined the Chair of Logistics Management of the WHU as an external doctoral student in 2018.

Since then, he is focusing on the topic of Seasonal Slot Scheduling at Airports. Slot allocation is an important parameter of daily air traffic operations, determining the sequence of take off and landing at regulated passenger airports. The purpose of his study is to achieve a more efficient allocation model that enables a smoother and sustainable air traffic in future.

Philipp Weil studied economics and management at Johannes Gutenberg University Mainz from 2010 to 2014. From 2014 to 2016 he continued his studies at KLU Hamburg obtaining a Master of Science degree with specialization in Logistics and Supply Chain Management.

During his studies, Philipp Weil spent a semester abroad at Chalmers University of Technology in Gothenburg and at Libera Università di Bolzano.

After finishing his studies, Philipp Weil started to work as a Management Consultant at PricewaterhouseCoopers in the area of Procurement, Supply Chain & Operations.

His major focus areas in projects are process optimization and digitalization within the Supply Chain context.
Jennifer Weingarten, M.Sc.
Doctoral Student
jennifer.weingarten@whu.edu

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: Omni-channel supply chain, Urban logistics, 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  
Head of EU Outbound Transportation Performance  
Amazon Luxembourg  
LU, Luxembourg

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  
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Dr. Benjamin Gürtler  
Alumnus  
Executive Assistant to the Chairman of the Board of Management  
Daimer AG  
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Dr. Daniel Hach  
Alumnus  
Head of User Experience and Scrum  
BI X – Digital Lab - Boehringer Ingelheim  
Germany, Ingelheim
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 Group  
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Dr. Alexander König  
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Head of Business Development REWE To Go  
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Dr. Andreas Kretschmer  
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Managing Director and CEO  
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Germany, Cologne

Dr. Max Schöne
Alumnus
Head of Corporate Development
heroa! - Johann Henkenjohann GmbH & Co. KG
Germany, Verl

Dr. Sebastian Theißen
Alumnus
Operations Manager & Leader Project Management Office
Saint Gobain
Germany, Willich
Dr. Katharina von Boch-Galhau
Alumna
Projektleiterin Prozess und Systemmanagement
BurSped Speditions-GmbH & Co.
Germany, Hamburg

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

Due to a sabbatical in fall term 2017 and the spring term 2018 there were no courses held in the Bachelor of Science Program.

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.

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.

Capstone Module Abroad

This course took place in Boston and introduced students to world-class academic institutions such as MIT and top-notch companies such as Amazon robotics where all of the warehouse automation activities within Amazon are concentrated. Bain’s global head of M&A activities gave us valuable insights into developments in this market.

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

- **Hoppe, D.**
  Intelligent Shift scheduling – How Absenteeism can be Predicted

- **Reichardt, A.**
  Blockchain Technology as the Backbone of Digitized Supply Chains

4.2 MSC PROGRAM

- **Buchner, M.**
  Machine-Learning Applications in Time Series Forecasting - Evaluating the forecast performance of machine learning algorithms on highly seasonal bike-sharing demand

- **Engels, E.**
  Introducing Digitalization Opportunities within Supply Chain Controlling of a global operating life science company based on a Supply Chain Control Tower Approach and using the Example of an Automated Customer OTIF Root Cause Analysis

- **Fritschy, C.**
  The Impact of Autonomous Trucks on Business Models in the Automotive and Logistics Industry - A Delphi-Based Scenario Study

- **Laopaiboon, W.**
  Discrete Choice Models of Last-Mile Transportation Pricing and the Effects on Social Costs

- **Müller, S.**
  One Belt, One Road" Initiatives, Opportunities and Threats for the Involved Countries with a Special Focus on the New Eurasian Land Bridge

- **Nonn, V.**
  The Impact of Digitalization on Currency-Based Loyalty Programs - Results from a Delphy Study

- **Schönheit, P.**
  How did natural catastrophes in the past lead to production chain loss cascades?

- **Singh, G.**
  Exploring the Existing and Anticipated Challenges in the Pharmaceutical Supply Chain

- **Zaßenhaus, J.**
  The Future of Sustainable Urban Mobility - An Outlook and Quantification of Business Potentials
4.3 DOCTORAL PROGRAM

- **Burkhardt, M.**
  Three Essays on Decision Making in Operations Management

- **Haehl, C.**
  Investment and Charter under Market and Regulatory Uncertainty: Real Options-Based Studies in International Container Shipping

- **Rudolf, C.**
  Supply Chain Risk Management in Large Scale Projects

- **Seeberger, D. (2nd advisor)**
  Profiting from Product Returns: Perspectives on Return Policies, Consumer Reviews and Salvaging Portfolios

- **Smirnov, D. (2nd advisor)**
  Prescriptive Analytics in Retailing Applications in Shelf-Space Optimization, Labor Planning and Retention Management

- **Vu, M.**
  Risk Management in Complex New Product Development Project – the Automotive Industry Perspective

- **Winselmann, K.P. (2nd advisor)**
  Essays on the Kelly Criterion and Growth Optimal Strategies

4.4 FULL-TIME MBA PROGRAM

- **Ardabili, P.**
  From Data to Value: A Case Study on Creating a Centralized Sales Forecast Using the CRISP-DM Model

- **Ashwini Kumar, U.N.**
  COOK-ë Ltd. Automation Solutions for the Restaurant Kitchens of Tomorrow

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

- **Groß, S.**
  Strategic Orientation of Products and Services in the Field of Digital Workspace Solutions

- **Huang, X.**
  COOK-ë Ltd. Automation Solutions for the Restaurant Kitchens of Tomorrow

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

- **Lee, N.Y.C.**
  Digital Solution for Housekeeping in Hotels: a match making app
• **Pulido Ortiz, R.A.**
The foundation of a Blockchain consortium to improve the information exchange network in circular economy services

• **Valles Urueta, L.R.**
Digitalization – Industry 4.0 in the Product Creation Process (PCP)

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

### 4.5 PART-TIME MBA PROGRAM

• **Foller, F.**
Flexible process chains in the steel industry - Adapting to an increasing volatility in the markets

• **Pieper, J.-A.**
Strategic decision to improve the logistic supply chain with an online application

• **Schäbitz, M.**
Leveraging data to improve Digital Marketing through analytical CRM at Tigha

• **Wu, P.J.**
Case Study: Implementation of Lean Management Techniques in Project Management
5 TEACHING INNOVATION

5.1 GUEST LECTURES

- **Dr. Klaus Suwelack**, J&J Johnson & Johnson Innovation
  Digitalization in the pharmaceutical industry
  October 2, 2017 as part of the Sun Yat-Sen course on Industry 4.0

- **Denise Fischer**, Lanxess
  Sustainable Operations Management at Lanxess
  December 15, 2017 as part of the MBA lecture “Operations Management”

- **Gregory Bryan**, Amazon
  Supply Chain Management at Amazon
  December 15, 2017 as part of the MBA lecture “Operations Management”

- **Wolfgang Pelousek**, PTV
  Big data applications in traffic modelling
  September 13, 2018 as part of the MBA lecture “The Analytics Edge”

5.2 RESEARCH SEMINAR

- **Univ.-Prof. Dr.-Ing. Wolfgang Maaß**, Chair in Business Informatics, Department of Human and Economic Sciences, Saarland University and Scientific Director, Research Group Smart Service Engineering; Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (DFKI)
  “Advances in Machine Learning”
  October 18, 2017
5.3 DIGITAL SPEAKER SERIES

The series is organized by Prof. Spinler to give students and faculty access to key players in digital transformation.

- **Eva-Maria Bauch**, CEO G + J Digital Products
  “Beyond Articles and Advertising: Transformation of the Digital Media Industry”
  April 18, 2018

- **Stefan Stroh**, CDO Deutsche Bahn
  „DB Goes Digital – DB’s digitalization strategies“
  April 27, 2018

5.4 NETLOP-SEMINAR OF THE KÜHNE-FOUNDATION

For the NetloP-Seminar, which is very successfully run by Mr. Martin Willhaus, we provide content for the introductory week in Schindellegi and the final part of this seminar in Vallendar.

5.5 DIGITAL @ SCALE WITH MCKINSEY

In April and May 2018 the first run of the Digital@Scale Executive Training Program took place. It was the first ever sold-out executive training at WHU! 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). The program took place at the WHU Campus in Düsseldorf, The McKinsey Digital Experience Center in Aachen and in Berlin.
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”

The transport sector is the third-largest producer of carbon dioxide (CO2) in Germany. Within the scope of the government’s climate action plan, the country aims for a 40-42% CO2 reduction by 2030. Heavy-duty trucks (HDTs) are one of the main sources of emissions in the sector apart from passenger vehicles. Alternative fuel-powered HDTs could change that, but diesel is still by far the prevalent choice of fuel. Therefore, we aim to assess the future market potential of different alternative fuels and powertrains and try to answer the question which factors affect the purchasing decision and successful implementation of low emission HDTs in Germany. Furthermore, we intend to shed light on the possible operation of autonomous HDTs in Germany as the trucking industry is facing a massive shortage of drivers. Our research provides both a practical and theoretical contribution to spur the penetration rate of autonomous and low emission HDTs. The results of our research are of great importance to truck manufacturers, logistics service providers, policy makers, energy suppliers but also international academics.

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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.

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Bigdon, Jasmin (from 09-2017, ongoing)

“Increasing e-commerce customer experience and thus customer lifetime value with smart and speedy logistic services”

With yearly double-digit growth rates e-commerce has been prospering constantly and will continue to grow in future. Along with the further growth of the online market, retailer differentiation by product and price decreases and other services such as logistics or packaging become increasingly important for customer value generation.

Using different methodologies such as literature review, interviews and case study the impact of smart and speedy logistics on customer experience are analyzed. The goal is to identify the customer value creation potential from better customer experience with delivery and return services. Using those findings the customer and cost requirements for innovative urban logistics solutions are determined.

With special regard to scarcity of land in cities, sharing concepts, 24h turning platforms as well as multi-usage areal layouts are further analyzed and new concept ideas are developed.
Burkhardt, Maximilian (from 10-2014 to 09-2018)

„Decision behavior in humanitarian logistics – The effect of stress on operational decisions“

Managing the supply of food, medicine and other relevant non-food items (e.g., shelter) is a major challenge for humanitarian organizations during a crisis. Speed and the most efficient use of the available budget are important factors for the alleviation of suffering and a successful humanitarian operation. Regional procurement managers from humanitarian organizations are facing the challenge of helping people in need, while spending the available budget most efficiently. Overestimating the demand may result in supply shortages for other relevant relief items, due to a lack of budget. Underestimating the demand may result in suffering people, due to a lack of supply. In addition, procurement managers are facing severe time restrictions and have to deal with local, burdensome circumstances, while making order decisions.

In order to gain a better understanding of decision making in the potentially stressful humanitarian context, this dissertation focuses on three aspects: First, we investigate the effect of perceived stress on overall newsvendor performance in the newsvendor game and related biases in a humanitarian operations setting. Furthermore we distinguish the effect of different stressors on different biases. We therefore apply cognitive, psychological and emotional stressors, such as time pressure and the combination of noise and affective unpleasant pictures to the subjects. Second, we develop and test de-biasing techniques which help to improve newsvendor related decision making performance under stress. These techniques are intended to be useful tools for humanitarian organizations, managing on-site operations after a crisis in order to alleviate suffering more effective and efficient. All findings are based on laboratory experiments. Third, we seek to support real life humanitarian operations in cooperation with Kühne Foundation against the backdrop of our research.

Dewan, Novi (from 02-2017, ongoing)

“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. One of the co-authors, Novi Dewan teamed up with a renowned retina surgeon’s team in Mumbai and conducted eye screening tests through camps in the Mumbai slums. This helped her identify contextual aspects like behavioral hurdles in community screening, actors needed and device specificity and sensitivity.

The objective of the first paper is to develop a conceptual model/system and consequently the scientific model that uses queuing theory to optimize flow between various stages of screening, diagnosis and entering into treatment of patients, keeping in mind the capacity constraints of the system. The second paper will focus on technology diffusion using the Bass diffusion model for high-tech innovative devices in the healthcare area.
Faber, Andreas (from 08-2016, ongoing)

“The impact of data analytics in Supply Chain Planning”

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 meta learning 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. Thus, potential churners can be identified early-on with high accuracy and the underlying reasons for the prediction can be understood. The third paper is about price optimization for B2B customers in the logistics industry. We develop an algorithm that predicts the demand for different price levels and thus allows to choose the revenue maximizing price for each customer.

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

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

Over the last decade, nearly all industries have faced increased competitive pressure in the business environment and globalization of the markets. Serious and costly disruptions, either from internal and or external risk events, such as, material shortages and natural disasters related to climate change. In an era of increased frequency and severity of extreme weather events, Supply Chain Climate Change Risks is still an emergent field of study. Consequently, climate change extreme weather events induced indirect losses along supply chains, leading modern supply chains more vulnerable than ever.

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 framework aiming for assessing the various impacts of climate change risks on supply chains. The research will fill the gap between climate change risks and supply chains risks. Correlations among the previously mentioned risks will be underlined and current mitigation strategies implemented by the different case companies will be introduced and evaluated.

After developing the new framework and empirically validating it using the data of different case companies from various industrial sectors a discrete simulation model will be introduced. The model will help to reduce the potential costly disruptions of the climate change extreme weather events and associated risks to affect 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. An analysis of future supply chain risk management related to climate change risks will be conducted. The information provided by this research is essential for further research in the areas related to supply chain risk management and climate change risks and gives a starting point for a further investigation.
Haehl, Christian (from 10-2014 to 11-2017)

“Investment and Charter under Market and Regulatory Uncertainty: Real-Options based Studies in International Container Shipping”

In this dissertation the research focused on the valuation of container ship investments under different sources of uncertainty. Using real options approaches, the dissertation proposes a model for ship investment taking into account demand uncertainty and management's strategic options such as divestment and chartering. The dissertation further assesses how uncertainty about future environmental regulation affects the overall optimal capacity choice as well as the specific technology choice for regulatory compliance in container shipping. This research helps market participants make better investment decisions and regulators to understand the effects of regulatory uncertainty and various regulatory regimes on overall market outcomes.

Out of this dissertation, one article has been published with Transportation Research: Part E and a further article is currently under revision by EJOR.

Hess, Alexander (from 07-2016, ongoing)

**Keywords: Urban Logistics, Machine Learning, Demand Forecasting, Vehicle Routing, Capacity Planning**

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)

“Understanding intermodal passengers”

(Air) transport passengers are essential stakeholder in the mobility industry since they generate the demand for transport products and services. Research and the overall mobility sector start to broaden their scope beyond looking only at one mode but integrating the entire travel chain door-to-door (D2D), considering all modes and taking railway, busses, private vehicles, air travel but also novel mobility concepts such as car sharing or personal air vehicles, into consideration. Focusing on the customer demand side, this dissertation project offers a unique, intermodal perspective on the understanding of passengers and passenger groups. The analysis is based on an in-depth literature review of passenger trends and future customer needs, a Delphi survey with different stakeholders within the European mobility sector and a market segmentation of current and future passengers. As the main research outcome of this doctoral thesis, Ulrike aims to identify a novel classification of (current and future) intermodal D2D passenger groups, bridging all modes and incorporate both, an academic and practical point of view.

Makowski, Daniel (from 07-2015, ongoing)

“Decision Criterions 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. Both, academic and non-academic interest rose in recent years, but despite the increasing interest online food retailing still is a niche market. In 2015 the market share of online ordered
groceries was below 1% in Germany. Nevertheless in some regions, mostly bigger cities like Berlin with relatively high customer density, online groceries are a viable alternative to traditional supermarkets, the market share of online groceries is already between 3% and 5% and experts predict an accelerated growth for the German market in the next couple of years.

In the first paper the current situation of e-groceries in Germany was examined by expert interviews. The hypothesis that the last mile is the most challenging part of the entire supply chain was confirmed. High costs for last mile logistics connected with low market share of online groceries and therefore low customer density makes an economic last mile delivery difficult. Also an optimal delivery method for last mile delivery, the use of either company owned delivery vehicles, courier, parcel or crowd delivery services or a combination of these methods was not yet found. The use of hybrid delivery strategies, which is not yet followed by any of the interviewed retailers could strongly increase the delivery performance. Overall, compared to other countries the development of the German online grocery market lags behind other European countries. The interviewed experts quote that special requirements in Germany are the reason for the current situation. Without a big conglomeration area like Paris or London, the already complex logistics becomes even more difficult in areas with lower customer density. Additionally, because of the high number of discounters and supermarkets the gain in convenience due to home delivery of groceries is minor and the willingness to pay additional costs for home deliveries is low in Germany.

In addition to the actual delivery and the delivery strategy the interviewed experts identified the highest potential for optimization in order fulfillment, the second major pool of costs in last mile delivery. Storage strategies, taking into account the special requirements for food storage are not yet investigated in depth. Therefore we decided to focus on two topics for further research: on the one hand the development of hybrid delivery strategies and on the other hand research on optimal storage strategies.

Malina, Silke (from 01-2011, ongoing)

“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.
Rudolf, Christian (from 03-2014 to 09-2017)

“Supply Chain Risk Management in Large Scale Projects”

Large scale projects became a typical delivery model in the infrastructure construction industry. Even so this delivery model is well established, only one in one thousand projects can be defined as success. Ineffective Risk Management (RM), especially in the Supply Chain Management area was repeatedly identified as one of the key drivers for past project failure. Yet the Risk- and Supply Chain Risk Management (SCRM) body of knowledge seems well established, a lack of SCRM tailored to the specific requirements of LSCP can still be observed. The proposed research project shall close this gap by developing a model for SCRM in the specific context of LSCP. This shall be based on an explorative case study, conducted at company operating in the Nuclear Power Plant new build & major refit project business. The LSCP executed in this field show a historical track record for significant delays, claims, cost overruns and investor disappointment. Therefore they offer an ideal field of research and a key case with a high potential for broader generalization. The expected results shall contribute to a higher success-rate of LSCP thru enhanced and more effective SCRM, leading ultimately to lower cost of infrastructure projects. Moreover they shall contribute to an emergent literature on SCRM and project management practice based on an inductive empirical perspective.

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Schulze-Schwering, Stefan (from 10-2016, ongoing)

“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.

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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)

“Predicting transport delay of maritime container shipments between Europe and Asia with machine learning algorithms”

The prediction model aims at providing decision support for both shipping companies (e.g., Maersk) and shipping customers (e.g., automotive OEMs). The decision support covers medium-to-long-term strategic managerial actions regarding the setup of transport flows of the respective company. This can include setting or adjusting the selection of transport route, mode, schedule, and hub (especially container ports). Three major influencing factors are built into the model to predict transport delay: natural disasters (e.g., storm, flood, extreme temperature, earthquake), port congestion, and congestion in maritime chokepoints (e.g., Suez Canal, Strait of Malacca). Besides the recent increase of transport delay in the maritime container shipping industry, new opportunities from promising new analytical methodologies such as machine learning algorithms build the foundation for this research.

Vogel, Simone (from 06-2018, ongoing)

“A sustainable modular vehicle construction system to enable mass customization in urban freight transport.

Urban freight transport must adapt to the upcoming challenges of increasing e-commerce and urbanization, while at the same time urban infrastructures reach their limits. Negative externalities increase the pressure and shift the focus to alternative drive technologies such as e-mobility. In addition to these sustainability requirements, global competitive pressure is driving manufacturers to develop innovative, individual and customer-oriented mobility solutions. Research contains little profound insights into urban freight transport planning, even though it has the greatest impact on a city's sustainability, due to the lack of accountability of cities, businesses and users. This doctoral thesis aims to contribute to academic knowledge by examining the overarching research question: How can we use a modular vehicle construction system to enable mass customization that is able to effectively address the sustainability of the last mile by solving inefficiencies and exploiting synergies within the market?

By using different methodologies to answer this question, the existing research gap will be closed. First, an interview-based approach will be used to identify relevant parameters for classifying the urban freight market, which will allow the development of a conceptual framework for mass customization. Secondly, the modular vehicle construction system will be established, which is aligned to the frameworks and is designed to enable mass customization. Thirdly, the construction system and framework will be deployed to reveal possibilities for steering customers towards ideal configurations for sustainable urban freight transport.

Vu, Martin (from 07-2014, ongoing)

"Managing Risk in Product Creation Projects: The Automotive Manufacturer Perspective"

The automotive industry is under pressure to face multiple challenges at the same time. The dynamics of the external market conditions has picked up pace. Fierce competition and disruptive industry trends as well as increasing market requirements and external value creation are at the core of this development. This reflects upon established internal processes and structures in the automotive industry – the result is a high risk environment. In this risk-intense environment, automotive manufacturers are forced to increase their efforts to not fall behind. This leads to ambitious growth targets and the introduction of increasingly more new products, derivatives and features under given time constraints. The framework that allows automotive manufacturers to address this development is a mixture of more efficient functional area processes and the ability to plan, conduct, steer and control these processes to design, develop and ramp-up new products quickly for the market. This ability is illustrated in product creation projects (PCP). Here, the project management function is challenged by the uncertainty and complexity that these cross-functional projects unveil. In this regard, the meaning of risk management increases. The purpose of this proposed research work is to improve risk management in PCP in the automotive industry by considering issues from the field. The focus will lie
on automotive manufacturers and their target achievement in the context of PCP conduction. First of all, this research work will deal with the improvement of the risk assessment quality in PCP by using the analytic hierarchy process (AHP) method for an exemplary PCP.

Weil, Philipp (from 07-2018, ongoing)

„Seasonal slot scheduling at airports“

The allocation of airport slots is a key area in the field of air transportation. The existing method is based on the IATA Slot Guidelines. This method has been developed and put in place in the 1970s. The existing solution has been proven being inefficient in several regards. In my dissertation project, I am analyzing inefficiencies of the existing allocation procedure to airlines, airports and other stakeholders and hence try to develop a model that results in a better allocation procedure for all actors on the market. Main idea is the integration of key variables of airport utilization into the allocation decision. Here, the utilization of critical infrastructure, such as the utilization of gates, waiting time at check-in desks and security lane will play an important role. The approach of this work is divided into three parts. The first part will be an empirical study, where mentioned stakeholders will be asked for their opinion. Furthermore, certain approaches towards optimization will be exposed to the participants. The evaluation of this will lead to part two, the conduction of a case study. Here, the investigation under real conditions at an airport will reveal, which obstacles exist for a change of method and which opportunities and drawbacks may result from it. Part three will deal with the actual optimization model. It will take the results of part one and two into consideration and deliver the optimized allocation model.

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. Marico-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


Soyk, C., Ringbeck, J., Spinler, S. (2018a): “Revenue characteristics of long-haul low cost carriers (LCCs) and differences to full-service network carriers (FSNCs)”, Transportation Research Part E: Logistics and Transportation Review 112, pp. 47–65


7.2 WORKING PAPERS


Reinhard Baller; Stefan Spinler: “Total Landed Costs, a quantitative survey – a desirable but still underutilized approach”

Reinhard Baller; Stefan Spinler: “Case study based implementation of a EOQ model for multiple parameter optimization”

Reinhard Baller; Steffen Hage; Pirmin Fontaine; Stefan Spinler: “The Assembly Line Feeding Problem: An extended formulation with multiple line feeding policies and a case study”

Andreas Faber, Stefan Spinler: “A new multi-step approach to intermittent demand prediction for an online retailer”

Andreas Faber, Stefan Spinler: "Interpretable and profit maximizing churn prediction in the B2B parcel logistics industry"


7.3 PAPER PRESENTATION AT CONFERENCES

INFORMS Annual Meeting 2017, October 2017, Houston (Texas), USA
Alexander Hess

Gesellschaft für Operations Research e.V. (GOR) and Netzwerk Industrial Ecology; “OR im Umweltschutz” and “Supply Chain Management”, March 2018, Ulm, Germany
Jan-Philipp Werning
8 EXECUTIVE EDUCATION & CORPORATE CONNECTIONS

8.1 TEACHING

- EMBA Sun Yat Sen – Industry 4.0 and Smart Manufacturing
- Tsinghua – Digital Transformation – a German Perspective; Smart Manufacturing and Internet of Things
- Movoya – Industry 4.0 and smart manufacturing
- CEIBS – Introduction to Germany, Smart Manufacturing and Internet of Things; Digital Transformation
- Digital@Scale with McKinsey – The What – the value chain

8.2 CORPORATE CONNECTION ACTIVITIES

- Host for NetloP-Seminar (for Logistics Managers) at WHU
- Guest Speaker acquisition for the Campus for Supply Chain Management
- Talk on Digitalization for BAMAKA AG Hauptversammlung
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 2018 conference, dedicated to the topic Real-time Visibility and Accessibility – Will shared data dissolve the complexity of global supply chains?, included Frauke Heistermann and Dr. Hansjörg Rodi (K+N). Prof. Spinler acts as an academic advisor for this event. Mr. Martin Willhaus has been very 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