



**Kühne Foundation Endowed Chair of Logistics Management
Kühne Institute of Logistics Management**

**Activity Report 2015
September 1, 2014 – August 31, 2015**



From left to right:
Eike Nohdurft, Anna Achenbach, Prof. Stefan Spinler, Linda Stein, Maximilian Burkhardt

**WHU – Otto Beisheim School of Management
Kühne Foundation Endowed Chair of Logistics Management
Kühne Institute for Logistics Management
Burgplatz 2
D- 56179 Vallendar**

Fon: +49 (0) 261 6509 – 430

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Preface

This report covers the period from September 2014 to August 2015. In this period, the chair's team continued to produce exciting research results which 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.

As far as teaching is concerned, the following lectures are offered in the Bachelor of Science Program at the WHU: a popular real options analysis class, a seminar on the quickly evolving topic of multi-modal logistics



as well as a literature seminar which introduces students to quantitative research in supply chain management. In the Master's program, this is followed by the logistics and supply chain management course; a real options class has been offered in the MBA curriculum, too. Last, a doctoral seminar on supply chain management is taught, again with an emphasis on quantitative methods in logistics research. Quite a number of international students groups visiting from, among other places, Pittsburgh and Michigan, were introduced to the specifics of European operations and supply chain management and the challenges as well as opportunities that come along with concerns about sustainability. A module consisting of courses on transportation and distribution management was well received at the Kühne Logistics University in Hamburg.

Publications in top-ranked journals indicate the quality of the research carried out at the chair. I would like to mention in particular the joint paper with the late Paul Kleindorfer and Matthias Winkenbach: *Enabling Urban Logistics Services at La Poste through Multi-Echelon Location Routing*, published in *Transportation Science*. This paper reflects one of the last projects that Paul was still able to initiate before his untimely death in 2012. His thoughts, guidance and enthusiasm for research are sorely missed. Matthias has, in the meantime, assumed the position of Director of MIT's Megacity Logistics Lab as a consequence of his outstanding research performed at the chair. Cooperation with leading scholars from abroad, for instance with Prof. John Birge (University of Chicago) or Prof. Elisa Long (UCLA), entail fascinating research projects and high quality research papers. Ultimately, this also leads to WHU becoming even better known at top US business schools.

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 being done 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. 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 is meant to provide an overview of the chair's activities. We all look forward to new exciting logistics research and teaching.

Vallendar, December 2015



Univ. Prof. Dr. Stefan Spinler

Note: All activities related to the issue of sustainability have been marked by a symbol.



From left to right: Dr. Daniel Hach, Prof. Stefan Spinler, Dr. Ingmar Ritzenhofen

Team

Head of Chair

Univ.-Prof. Dr. Stefan Spinler
stefan.spinler@whu.edu



Assistant

Linda Stein
linda.stein@whu.edu



Research Assistants

Anna Achenbach, M.Sc.
anna.achenbach@whu.edu



Maximilian Burkhardt, Dipl.-Kfm.
maximilian.burkhardt@whu.edu



Daniel Hach, M.Sc.
daniel.hach@whu.edu



Eike Nohdurft, M.Sc.
eike.nohdurft@whu.edu



Ingmar Ritzenhofen, M.Sc.
ingmar.ritzenhofen@whu.edu



Doctoral Students

Vefa Alparslan, M.A.
vefa.alparslan@whu.edu



Dipl.-Wirt.-Ing. Benjamin Gürtler
benjamin.guertler@whu.edu



Christian Haehl, M.Sc.
christian.haehl@whu.edu



Dipl.-Kfm. Alexander König
alexander.koenig@whu.edu



Dipl.-Ing. oec. Daniel Makowski
daniel.makowski@whu.edu



Silke Malina, MBA
silke.malina@whu.edu



Dipl.-Ing. oec. Benjamin Punge
benjamin.punge@whu.edu



Philipp Rau, M.Sc.
philipp.rau@whu.edu



Christian Rudolf, MBA
christian.rudolf@whu.edu



Max Schöne, M.Sc.
max.schoene@whu.e



Team

Doctoral Students

Dipl.-Wirt.-Ing. Johannes Teutsch
johannes.teutsch@whu.edu



Martin Vu, M.Sc.
martin.vu@whu.edu



Alumni

Dr. Judith Berndroth
Senior Operations Manager
Amazon
Germany, Koblenz



Dr. Katharina von Boch-Galhau
Executive Assistant
KG BURSPED Speditions-GmbH & Co.
Germany, Hamburg



Dr. Doreen Diehl
Head of Supply Chain Controlling &
Projects
Bayer Material Science (BMS)
Germany, Leverkusen



Dr. Daniel Girardet
Engagement Manager
McKinsey&Co., Inc
Germany, München



Dr. Robert Hein
CTO
Xioneer Systems (startup)
Austria, Vienna



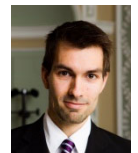
Dr. Sebastian Huber
Head of Business and Launch
Management
CREAVIS, Evonik Industries
Germany, Marl



Dr. Andreas Kretschmer
Consultant
The Boston Consulting Group
Germany, Berlin



Dr. Andrei Neboian
CEO
Xioneer Systems (startup)
Austria, Vienna



Dr. Sebastian Theißen
Strategic Project Manager Operations
Saint Gobain
Germany, Willich



Dr. Matthias Winkenbach
McKinsey & Company
Germany, Cologne



Honorary Professor

Prof. Dr. Jürgen Ringbeck
Strategic investor and consultant
Germany, Düsseldorf



Team

Professor Dr. Stefan Spinler
Head of Chair

fon: +49 (0) 261 6509 – 430
eMail: 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 continues teaching as a guest professor this latter class in Wharton's Executive Masters of Technology Management. 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. In 2011, a research team consisting of Paul Kleindorfer, Andrei Neboian, Alain Roset and Stefan Spinler was a finalist in the Daniel H. Wagner Prize for Excellence in Operations Research.

Linda Stein
Assistant

fon: +49 (0) 261 6509 – 431
eMail: linda.stein@whu.edu



Since the appointment of the Chair of Logistics Management by Prof. Spinler in 2009, Linda Stein has been the chair's secretary. She is returning to the WHU after a two years of maternity leave, where she was previously employed as Personal Assistant to Prof. Frenkel at the Chair of Macroeconomics and International Economics.

Team

Anna Achenbach, M.Sc.
Research Assistant

fon: +49 (0) 261 6509 – 434
eMail: anna.achenbach@whu.edu



Anna Achenbach (born 1990) is a Ph.D. 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.

Maximilian Burkhardt, Dipl.-Kfm.
Research Assistant

fon: +49 (0) 261 6509 – 435
eMail: maximilian.burkhardt@whu.edu



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.

Team

Daniel Hach, M.Sc.
Research Assistant

eMail: daniel.hach@whu.edu



Daniel Hach (born 1985) is a doctoral student and research assistant at the Chair of Logistics Management (Otto Beisheim School of Management) since October 2010. His research is focused on integrating renewable energies in the electricity market using quantitative models. Daniel Hach studied Information Systems at the University of Mannheim. During his studies he spent one semester abroad at the University of Sydney (Australia) and did parts of his diploma thesis at the University of California, Berkeley (USA). In terms of work experience he did several internships including McKinsey & Company, the Center for Strategic Projects (formerly Inhouse Consulting) of Deutsche Telekom AG, and the sales department of T-Systems GmbH. Prior to his studies he completed a vocational education as an IT-specialist. After his studies Daniel Hach worked as a consultant for McKinsey & Company in the Frankfurt Office where he belonged to the Business Technology Office. He worked with clients in the Energy and Public Sector as well as in the High-Tech and Financial Institutions area. He focused on strategy, process and organization topics. In January 2015, Mr. Hach successfully completed his Ph.D. and left the Chair of Logistics Management.

Eike Nohdurft, M.Sc.
Research Assistant

fon: +49 (0) 261 6509 – 433
eMail: eike.nohdurft@whu.edu



Eike Nohdurft (born 1985) graduated from RWTH Aachen University in 2011 being part of a joint Diploma-Master program in Industrial Engineering with the Tsinghua University in Beijing (China). His research is focused on epidemic modeling and supply chain optimization. During his studies, Eike Nohdurft worked as an intern for several companies including arvato services (Bertelsmann), Lufthansa Technik and Lufthansa German Airlines where he wrote his Diploma thesis about improving airline ground operations processes with Lean Management. After his graduation Eike Nohdurft works as a consultant for McKinsey & Company in the Hamburg Office where he was part of the operations practice. He worked with clients from the Airline, Automotive and Pharmaceutical industry mainly on process improvement and strategic organization topics.

Team

Ingmar Ritzenhofen, M.Sc.
Research Assistant

eMail: ingmar.ritzenhofen@whu.edu



Ingmar Ritzenhofen (born 1985) graduated as Master of Science in International Business from HEC Paris and Master in International Management from the CEMS program in 2010. In 2009 he earned a Bachelor of Science from WHU with specializations in Finance, Supply Chain Management and Strategy. In his Bachelor thesis, Ingmar Ritzenhofen studied the real options value of flexibility in supply chains at the example of a major international automotive supplier. In his Master thesis at the chair of Finance & Energy at HEC he analyzed the relationship between power forward sales and the price of carbon emission certificates. In the course of his studies Ingmar Ritzenhofen spent two semesters at Universidad Adolfo Ibañez in Viña del Mar in Chile and ESADE Barcelona. After his studies Ingmar Ritzenhofen worked as a consultant for McKinsey & Company from 2010 to 2012. He was primarily involved in projects in the automotive and logistics industry in Germany and China. Already during his studies he gained significant work experience during internships: 2009 for McKinsey & Company in Cologne in the automotive and logistics industry, 2008 for Morgan Stanley in Frankfurt in the area of Mergers and Acquisitions and 2007 at CNC-Communications and Network Consulting in the area of strategy and communications in New York City.

In January 2015, Mr. Ritzenhofen successfully completed his Ph.D. and left the Chair of Logistics Management.

Vefa Alparslan, M.A.
Doctoral Student

eMail: 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

Team

Vefa Alparslan spent one semester at École Supérieure du Commerce Extérieur in Paris. After his studies Vefa Alparslan worked as an external consultant for Lufthansa LSG Sky Chefs from 2012 to 2013. Today, he is working as an analyst for McKinsey & Company and he is primarily involved in projects in the aviation and logistics industry in Europe and the Middle East with a primarily focus on topics of network optimization, operations, pricing 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.

Dipl.-Wirt.-Ing. Benjamin Gürtler
Doctoral Student

eMail: benjamin.guertler@whu.edu



Mr. Benjamin Guertler (born 1985) studied industrial engineering and management at the university of applied sciences in Esslingen. He finished his studies in August 2008, specializing in production management. His diploma thesis provides an approach for holistic performance monitoring of suppliers and was written in cooperation with the MBtech Consulting GmbH. Among others, Mr. Guertler has worked at Behr Industry GmbH & Co. KG within development and at Robert Bosch GmbH within sales.

Between October 2008 and June 2011, Mr. Guertler worked as Consultant at the MBtech Consulting GmbH within Purchasing and Supply Chain Management. He supported the implementation of supplier management and supplier risk management at major companies in automotive industry and engineering. Furthermore, Mr. Guertler was responsible for the consulting approaches within supply risk management. In July 2011, Mr. Guertler took over a new responsibility at the parent company, MBtech Group GmbH Co. KGaA as Representative of the President and CFO and since January 2013 as Head of Corporate Risk Management.

Team

Christian Haehl, M.Sc.
Doctoral Student

eMail: christian.haehl@whu.edu



Christian Haehl (born 1985) joined the chair of Logistics Management at WHU as an external doctoral student as of October 2014. In his research he works on the valuation of containership investments under uncertainty using the real options approach. Specifically, he analyzes 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 deduct 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.

Dipl.-Kfm. Alexander König
Doctoral Student

eMail: alexander.koenig@whu.edu



Alexander König (born 1984) studied from 2004 until 2008 Business Administration at the WHU - Otto Beisheim School of Management in Vallendar, Germany. He spent his semesters abroad at Queen's University in Kingston, Canada and at Universidad Adolfo Ibáñez in Viña del Mar, Chile. His advanced studies were focused on Production Management, Controlling, as well as Technology and Innovation Management. He wrote his master thesis about Six Sigma in the German healthcare sector at the chair of production management at WHU. During his studies Mr. König pursued several internships, amongst others with Porsche Consulting and Booz & Company. After his studies he joined Booz & Company and worked for clients in the fields of financial services, pharma, IT Services and the manufacturing industry. His main project activities were around strategy development, supply chain management, sourcing, as well as risk and project management. In January 2012, Mr. König joined the chair of Logistics Management at WHU as external doctoral student. His research topic is Supply Chain Risk Management of Logistics Service Providers.

Team

Dipl.-Ing. oec. Daniel Makowski

Doctoral Student

eMail: 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. The program was particularly well suited to advance his skills in personnel management, staff development, lean production, and project management.

Research interests: Last Mile Logistics, e- Commerce, multi- channel retailing, Crowd Shipping

Silke Malina, MBA

Doctoral Student

eMail: 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 was 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 Weing AG in Singapore. Mrs. Malina works for Bosch Rexroth AG. Initially, she worked several years in controlling and currently she is responsible for various international projects in logistics. In January 2011, Mrs. Malina joined the chair of Logistics Management at the WHU in Vallendar as an external doctoral student. Her research topic is the management of supply chain complexity.

Team

Dipl.-Ing. oec. Benjamin Punge

Doctoral Student

eMail: benjamin.punge@whu.edu



Benjamin Punge (born 1983) studied Industrial Engineering and Management at the University of Technology Hamburg-Harburg and the University of Hamburg with majors in logistics and chemical engineering. In his diploma thesis, which he conducted in cooperation with Airbus Germany, he analyzed the supplier risk management in the Supply Chain for the cabin interior of the wide body aircraft A380. During his studies, Mr. Punge completed internships in the automotive industry and in the finance controlling department of Bayer Materialscience in Shanghai, China. He also worked as assistant to the CEO of a trading company in Hamburg. After the completion of his studies in 2009, Benjamin was hired by EADS for the groups' management development program and worked as a project manager for Airbus España in Madrid, Spain and Eurocopter Deutschland in Donauwoerth, Germany before starting in the role of a strategic buyer in the Aerostructure Procurement for Airbus Operations in Toulouse, France where he was responsible for different international sourcing projects. Benjamin is currently working for Airbus DS-RST in Rostock where he is leading the new business development activities of the internal engineering service provider of the Airbus Group. In January 2012, Mr. Punge joined the chair of Logistics management at the WHU in Vallendar as an external Ph.D. Student. His research topic is Supply Chain Risk Management and Supplier Selection in the aerospace industry.

Philipp Rau, M.Sc.

Doctoral Student

eMail: philipp.rau@whu.edu



Philipp Rau (born 1986) joined the chair of Logistics Management at WHU as an external doctoral student in September 2013. In his research, he is working on capacity investments in the ocean freight industry. Philipp Rau graduated as Master of Science in Business Administration from WHU in 2011 with specializations in Finance and Supply Chain Management. In his Master thesis he assessed the question whether a world currency would lead to sustainable monetary stability. He earned a Bachelor of Science from WHU with specializations in Finance and Accounting in 2009. In his Bachelor thesis, Philipp Rau worked on risk management in the air cargo industry by studying revenue management approaches, capacity options and financial intermediation. During his studies, he spent one semester at University of Hawai'i at Manoa and one semester at Sasin Graduate Institute at Chulalongkorn University in Thailand. After his studies, Philipp Rau worked as a consultant for McKinsey & Company from 2011 to 2013. He worked on projects in the logistics and consumer industry in Germany,

Team

Belgium and France. During his studies, he gained further work experience during several internships: 2011 for Arthur D. Little in Beijing in the automotive industry, 2010 for McKinsey & Company in Frankfurt in the logistics industry, 2009 for Rocket Internet in Berlin in online retailing, 2008 for Goldman Sachs in Frankfurt in investment banking and 2007 at GameGoods International in Cologne and Bucharest in online marketing.

Christian Rudolf, MBA
Doctoral Student

eMail: christian.rudolf@whu.edu



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. Christian works 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 responsible for an international Strategic Sourcing team, supporting large scale projects.

Team

Max Schöne, M.Sc.
Doctoral Student

eMail: max.schoene@whu.edu



Max Schöne (born 1989) joined the chair of Logistics Management at WHU as an external doctoral student in October 2014. His research is focused on commodity price modeling, procurement, and risk management. Max Schöne studied Business Administration at WHU, Washington University in St. Louis, and Università Commerciale Luigi Bocconi. In his studies he focused on finance, economics, production, and logistics management. Max Schöne completed several internships, among others, at Deutsche Bank in Milan and Frankfurt in the areas of Corporate Finance and Mergers & Acquisitions and at Berenberg Bank in the field of model development.

Dipl.-Wirt.-Ing. Johannes Teutsch
Doctoral Student

eMail: johannes.teutsch@whu.edu



Mr. Johannes Teutsch (born 1982) studied business and engineering at the University of Karlsruhe focused on production and logistics. His diploma thesis ("Economic analysis of an intermodal transportation network") was developed in the context of the research project "LogoTakt". He gained practical experience in the automotive industry and in the consultant sector. Currently, Mr. Teutsch is working as Senior Consultant at CBS Corporate Business Solution Unternehmensberatungs GmbH. Since April 2010 Mr. Teutsch has been an external doctoral student at the Chair of Logistics Management at WHU Vallendar. He is examining the interaction of Supply Chain Risks and Lean Production.

Martin Vu, M.Sc.
Doctoral Student

eMail: martin.vu@whu.edu



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

Team

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 at 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.

Alumni

Senior Operations Manager
Amazon
Germany, Koblenz

Dr. Judith Berndroth



Dr. Judy Berndroth is currently responsible for the overall management of inbound operations in Amazon Fulfilment Center Koblenz. She leads a team of 600 employees reporting to the general manager. Inbound throughput accounts for in avg. 1.2MM units/week. Judy has over 15 years broad lean management and logistics experience, in both operational and strategic roles. Abilities were acquired leading and continuously improving core operations at Amazon as well as exposure to IT projects and benchmark projects at DHL Express Corporate Department.

Executive Assistant
KG BURSPED Speditions-GmbH & Co.
Germany, Hamburg

Dr. Katharina von Boch-Galhau



After finishing her PhD, Dr. Katharina von Boch-Galhau moved to London to work as a sales analyst for an international software company. In April 2014 she joined her family business headquartered in Hamburg, Germany as assistant to the CEO. In her spare time, Dr. von Boch-Galhau continues her research in sustainable transportation.

Head of Supply Chain Controlling & Projects
Bayer MaterialScience (BMS)
Germany, Leverkusen

Dr. Doreen Diehl



Doreen leads the Supply Chain Controlling & Projects group at the Supply Chain Center EMEA at Bayer MaterialScience (BMS) soon to be Covestro. She and her team are responsible for developing and implementing key performance indicators which measure and steer the supply chain process performance at BMS as well as for improvement projects using Lean Six Sigma tools. On Dec 27th, 2014 her and Sebastian Huber's daughter Anna Elisabeth was born.

Alumni

Engagement Manager
McKinsey&Co., Inc
Germany, Munich

Dr. Daniel Girardet



After finishing his PhD, Dr. Daniel Girardet continued working for McKinsey&Co, Inc. Currently he works as a project manager in the Munich Office for clients in the transportation industry. He recently co-authored several articles on growth perspectives for European railway operators.

Xioneer Systems (startup)
Austria, Vienna

Dr. Andrei Neboian



CEO

Dr. Robert Hein



CTO

Dr. Andrei Neboian and Dr. Robert Hein, who graduated from the PhD program at the WHU – Otto Beisheim School of Management in 2012, founded a startup in Vienna (Austria) that develops, manufactures, and sells innovative 3D printers for professional users from the creative sector like engineers, designers, or architects. Thanks to a considerable public funding, the startup includes over six qualified team members. They are currently working on the pre-series prototype, which is already being tested together with final users before entering the market in 2015. Andrei and Robert are still benefitting from their PhD studies at the chair of logistics management and are thankful for the outstanding support and the great WHU spirit.

Alumni

Head of Business and Launch Management
CREAVIS, Evonik Industries
Germany, Marl

Dr. Sebastian Huber



Sebastian leads the department Business & Launch Management within CREAVIS, the central strategic research unit of Evonik Industries. With his team he enables the research project managers with business know-how and experience to successfully develop and market transformative innovations for the Evonik corporation. Together with his colleagues of CREAVIS, he strives to fulfill the organizations goals to develop sustainable innovations not only with positive impact on profits but also with quantifiable benefits for ecology and society.

Consultant
The Boston Consulting Group
Germany, Berlin

Dr. Andreas Kretschmer



After finishing his PhD, Dr. Andreas Kretschmer continued working for The Boston Consulting Group. Currently he works as a project leader for the new Berlin office project. In his spare time, Dr. Kretschmer continues his research on supply chain management at humanitarian organizations.

Alumni

Strategic Project Manager Operations
Saint Gobain
Germany, Willich

Dr. Sebastian Theißen



After finishing the Ph.D. as well as working as Supply Chain Project Manager for the L'Oréal Group, Dr. Sebastian Theißen continued his career in the automotive industry at Saint Gobain. In the position as Strategic Project Manager, Sebastian is responsible for projects improving the efficiency of production processes by using tools like 'World Class Manufacturing' as well as the development and integration of KPIs.

Director, Megacity Logistics Lab
Massachusetts Institute of Technology (MIT)

Dr. Matthias Winkenbach



Matthias' doctoral research has been awarded the 2014 BVL Scientific Award and thus reflects the high quality of his research and, at the same time, the impact this research has in practice. This fact is furthermore corroborated by being a 2015-finalist in the Daniel H. Wagner Prize Competition of INFORMS, in a team consisting in addition of Alain Roset (La Poste) and Stefan Spinler. Matthias has assumed the position of Director of MIT's Megacity Logistics Lab and will thus continue his work on city logistics at the highest quality level.

Honorary Professor

Strategic investor and consultant
Germany, Düsseldorf

Prof. Dr. Jürgen Ringbeck



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 lectures on Transportation Management in the Master of Science Program and on Consulting Management in the Full-Time MBA Program.

Kühne Institute of Logistics Management



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
- Real options based supply chain modeling



Teaching

Lectures in the context of Logistics- and Supply Chain Management were offered in the Bachelor-, Master-, FTMBA- and Doctoral-Program.

Courses BSc-Program

Seminar Multi-Modal Logistics Platforms

This seminar is meant to familiarize students with multi-modal logistics platforms. Among the objectives of this course is getting acquainted with the different modes of transportation and their proper coordination. Furthermore, students will learn why many of the EU funded projects related to multi-modal logistics have been blessed with mixed success thus far.



Real Options (4 + 5 Semester)

This course deals with investment decisions as they arise in the context of international production and logistics networks, R&D projects and raw materials exploitation. The traditional discounted cash flow method is unable to account for the value of managerial flexibility. Real options, which aims at translating much of the methodology established for financial options valuation to real investment projects, allows to properly capture the value of flexibility. Several case studies exemplify the steps that need to be undertaken to perform a full-fledged real options valuation. In the MBA program this type of course is particularly meaningful as most participants have already project management experience and thus have been exposed to the shortcomings of traditional NPV analysis.

Introduction to Business Administration (Course A + B + C)

This class introduces first year students to the key components of a value chain, i.e., procurement, production and distribution. On a basic level, these activities are illustrated via case examples and mathematical models.

Courses MSc-Program

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.



Teaching

Courses MSc-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.

Course FTMBA-Program

Real Options Analysis

This course deals with investment decisions as they arise in the context of international production and logistics networks, R&D projects and raw materials exploitation. The traditional discounted cash flow method is unable to account for the value of managerial flexibility. Real options, which aims at translating much of the methodology established for financial options valuation to real investment projects, allows to properly capture the value of flexibility. Several case studies exemplify the steps that need to be undertaken to perform a full-fledged real options valuation. In the MBA program this type of course is particularly meaningful as most participants have already project management experience and thus have been exposed to the shortcomings of traditional NPV analysis.

Workshop Consulting Management – held by Honorary Professor Jürgen Ringbeck

Over the last fifty years, management consulting has not only been proven as a powerful approach to solve complex non-ordinary business problems, management consulting has become an often admired global service industry with global multi-billion \$ corporations like McKinsey, BCG, PWC or Accenture and a long tail of specialized functional and national players. Indeed the profession has become a highly attractive working ground for top students at business schools and beyond. Management Consulting is by purpose driving innovation of management principles and tools since its foundation in the early 20th century. Many famous frameworks and tools of strategic and functional management have been invented by leading consulting firms (e.g. BCG matrices, Supply Chain Mgmt). Moreover, the core consulting process - "Project Management" - has become an own area of research and continuous optimization. This course gives an introduction into the consulting industry and its core methods and tools. It highlights key frameworks of management consulting. Students have the chance to try out selected tools in a case study. A keynote speaker (top manager) will share his personal experience with consultants and explain benefits and limits from a customer perspective. Finally, the course gives an overview on the development of the consulting industry and its future perspectives.

Teaching

Course Doctoral-Program

Quantitative Supply Chain Models

The purpose of this seminar is to expose students to the most recent advances in management science and operations research. The methods presented are key building blocks of the participants' dissertations.

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. This year, Prof. Spinler ran the basic seminar in Schindellegi devoted to the topic of sustainable logistics.



Kühne Logistics University, Hamburg

MSc in Global Logistics Management / "Transportation and Distribution Management"

The objectives of this course are twofold: first, to familiarize students with concepts of transportation planning, management and deployment. Second, to provide students with insights H combination of case studies, theoretical concepts from business and economics and guest lectures by experienced industrial managers. A number of case studies and guest speakers provided additional insights into the intricacies of transportation and distribution management.

Executive Education Industry 4.0

The chair organized, together with the Executive Education Team, two highly acclaimed visits around the topic of Industry 4.0 for leading Chinese Business Schools. For alumni of the CEIBS (China Europe International Business School), we organized a trip involving visits to Siemens AG, BMW AG, Infineon AG, Porsche AG, Ernst & Young, Deutsche Börse, Amazon, Fraunhofer Institute, and audibene. Participants of Sun Yat-Sen University's EMBA program visited Bayer AG and the Fraunhofer Institute and were lectured about Industry 4.0 and hidden champions.



Visit of the CEIBS group at Infineon AG in Neubiberg



The Sun Yat-Sen EMBA group at the Düsseldorf Campus

Research

Our research activities focus on the topics sustainable logistics, risk management and humanitarian logistics.

Sustainability is a key concern for today's and even more so for tomorrow's businesses. Together with INSEAD and La Poste we continued our joint research on sustainability matters related to postal delivery. Matthias Winkenbach has developed a quantitative model for the optimal deployment of different types of vehicles (bikes, vans, pedestrians) for urban deliveries. The model results help to understand what the impact of time windows on the optimal network structure is. A key requirement during the model development, which was performed in close collaboration with Alain Roset and Bernard Lemarié (both of La Poste), was the need to be able to apply the model to practical circumstances. Another aspect that is relevant to sustainability is power generation as electric energy fuels electric vehicles, buses and (via overhead contact wire) trucks as well as warehouses and other logistics assets. Thus, a thorough understanding of current and future electricity markets and an estimate of future energy prices and volatility is of crucial importance. This is what the research of Daniel Hach (related to issues of capacity mechanisms) and Ingmar Ritzenhofen (concerned with renewable energy support schemes) is aimed at.



A holistic view on supply chain risk management to date does not exist in either the academic literature or business practice. To close this gap, a number of research projects have been defined to develop quantitative models for supply chain risk and thus provide optimal hedging opportunities for firms.

Research

Main Focus - Sustainability

“Quantitative assessments of capacity mechanisms in electricity markets with rising renewable feed-in”

Daniel Hach (from 10-2012 to 01-2015)

The share of electricity generated by renewable energy sources (RES) rises in countries around the world. Apart from reducing CO₂ emissions, the rise of RES leads to a challenge based on two facts. On the one hand, conventional generation is increasingly unprofitable due to decreasing load factors and falling wholesale electricity prices. On the other hand, an unchanged amount of conventional generation capacity is needed to replace intermittent renewable generation in times of shortage, as long as storage and demand response is not available on a large scale.



Capacity mechanisms are one way to address this challenge by ensuring sufficient capacity to obtain the reliability of the system. We assess capacity mechanisms in a three-step approach:

First, we evaluate the effect of capacity payments from a single investor perspective using a real options model of a gas-fired power plant. Our model includes multiple uncertainties and evaluates the effect of capacity payments under different degrees of RES penetration. In a numerical study, we implement stochastic processes for peak-load electricity prices and natural gas prices.

Second, we present a dynamic capacity investment model to assess the effect of different capacity market design options. The model incorporates investor behavior based on profitability considerations and reflects features such as strategic bidding, price elasticity of demand, and ramping constraints.

Third, we develop a stochastic dynamic capacity investment model that includes unplanned unavailabilities of conventional electric power plants. Using this model, we assess the robustness and the total bill of generation of a capacity market compared to an energy-only market. To estimate unplanned unavailabilities, we analyze a novel data set of the European Energy Exchange (EEX). The findings from these three models show that capacity payments and capacity markets incentivize investment and increase the reliability of the system - however, at significant costs. We demonstrate that in certain cases, these costs can be outweighed by the benefits in terms of increased reliability and competitiveness of the market. Therefore, the introduction should be carefully evaluated in every case and the capacity costs should be compared to reliability benefits and the decreasing effects on electricity prices.

Research

“Investments in renewable energy sources under renewable energy support schemes as well as market and regulatory uncertainty”, Ingmar Ritzenhofen (from 10-2012 to 01-2015)

Renewable portfolio standards and feed-in-tariffs are widely used policy instruments to promote investments in renewable energy sources. Regulators continuously evaluate these instruments along the main electricity policy objectives – affordability, reliability, and sustainability. We develop a quantitative approach to investigate the structural impact of renewable energy support schemes such as renewable portfolio standards, market premia and feed-in-tariffs on electricity markets along these dimensions using a long-term electricity capacity expansion model. We assess the robustness of these schemes in the face of uncertainty and ambiguity as induced by the annual variability of intermittent renewable feed-in and unknown future regulation. The robustness analysis is implemented employing a value-at-risk constraint. Scenarios are generated through Monte Carlo simulation and subsequently reduced by a scheme based on Kantorovich distances to lower the computational cost. This approach has been developed in collaboration with Prof. John R. Birge from the University of Chicago and the Energy Policy Institute at Chicago (EPIC).



Main Focus – Risk Management

“Supply Risk Management – New directions to Supply Risk Identification and Monitoring”, Benjamin Gürtler (from 07-2009 to 07-2015)

Increasing product and service complexity, outsourcing and globalization lead to complex and dynamic supply networks. Within supply networks, interrelationships and mutual connections of supply risks often create additional challenges for risk monitoring. During normal operation, interrelationships of risks largely remain hidden until the occurrence of a specific risk. To increase the effectiveness of risk monitoring, their understanding is important.

In the first step of this research, the interrelationships between supply risks are quantified and supply risks are categorized according to their role within the system. We follow a network oriented approach as defined by system theory. Empirical data gained from expert interviews show the relevance of our framework as early indicator for supply risks. This is particularly relevant for companies that exhibit a high degree of interconnectedness with their suppliers caused by high product complexity as is the case in the automotive industry. In the second step, the sensitivity of supply risks is analyzed based on their frequency distributions, in order to investigate the reliability of supplier ranking methods.

Finally, we link interrelationships and probability distribution functions and derive recommendations and levers to improve early identification of supply risk and to increase the efficiency of monitoring and ranking methods.

Research

“Supply Chain Risk Management and Lean Production“, Johannes Teutsch (started in 04-2010, ongoing)

In the context of the arising globalization, there are two essential trends for the industrial production sector existing: First, the supply chains and, as a result, the links between customers and suppliers become more and more complex and difficult to manage. As a consequence, the risks of the supply chain and the risk management process are important influence factors for the success of a company. Second, the production systems are optimized by Lean tools and the waste in production systems is eliminated. These trends influence the supplier-customer relationship: There are dependencies between production systems, the risks in supply chains and the consequences of incidents. The dependency is more and more important for the success of a company. So there are fundamental questions which have to be answered: How do Supply Chain Risks and Lean Production Systems interact? What types of links between Lean Production elements and Supply Chain Risks are existing and essential? What implies the decision for a Lean Production System for Supply Chain Risks? The goal of the dissertation project is to find answers for the questions above.

“Management of Supply Chain Complexity: A Study in the Drive and Control Industry“, Silke Malina (started in 01-2011, ongoing)

Supply chains are more and more challenged by increasing complexity caused through product variety, processes and structures. This raises the question how firms manage supply chain complexity and remain competitive. To answer this question it is essential to research the drivers of complexity and to develop a framework of how to control and manage structural as well as dynamic impacts. Firms may use complexity to differentiate from others, if they apply appropriate measures to control the supply chain. A case study is provided to conduct the analysis qualitatively and quantitatively. 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.

“Supply Chain Risk Management of Logistics Service Providers“, Alexander König (started in 01-2012, ongoing)

The increased risk for disruptions of supply chains (e.g. by natural disasters, terrorist attack) has been further intensified by trends in supply chain management (SCM) including outsourcing and partnering, globalization, single sourcing and inventory reduction. However, this traditional focus of SCM to optimize cost, time and quality has been extended by the task to make the supply chain resilient, resulting in the new domain of supply chain risk management (SCRM). SCRM is relatively new and still in its infancy. With the before described trend of outsourcing, logistics service providers (LSPs) have an increasingly important role in most supply chains, providing not only transportation and warehousing, but also other services such packaging and reverse logistics. Thus the question arises how LSPs and shippers are managing risks and use SCRM to avoid or minimize disruptions in today's supply chains. We will investigate the role of LSPs in supply chains and risk management by using different methodologies such as literature review, case studies and application of other relevant business theories to this question.

Research

**“Investment into ocean freight capacity - Development of a real options investment model in oligopolistic competition to evaluate investment decisions in shipping”,
Philipp Rau (started in 09-2013, ongoing)**

Philipp Rau's dissertation project is about investment into ocean freight capacity. Even though fundamental supply-demand data would project otherwise, global container shipping capacity has steadily increased over time - both in size per vessel and in total installed capacity. This, in part, is caused to highly cyclical industry development and somewhat irrational ordering behavior of players. Since there is a lack of perfect competition and complex factors (fuel efficiency, network constraints, financing, regulation, vessel size dynamics and asset prices) influencing investment, Philipp Rau develops an industry-specific investment model with use of real options theory and game-theoretic oligopoly in his first paper. In his second paper, Philipp Rau evaluates alliance behavior in the shipping market and especially its potential impact on investment decisions as well as its effect on optimal capacity. The idea is to set up an investment model and solve it using cooperative game theory concepts to derive relevant insights on investment strategy in the current market setting.

**“Supply Chain Risk Management in the Aerospace Industry”, Benjamin Punge
(started in 01-2012, ongoing)**

Modern aircraft manufacturing relies on a global web of suppliers whose number can be more than 10,000. To assure timely delivery of new airplanes, supply chain risk management is of primary importance for OEMs. Two developments have further increased the already existing vulnerability in the aerospace supply network in recent years. Firstly the simultaneous ramp up in many of the main aircraft programs such as Boeings` 777, 737 and the Airbus A320, A380 and A330 since 2009 together with the delayed start of production and ramp up of Boeings` 787 Dreamliner in 2010 and the intensified development efforts and production setup of the Airbus A350XWB in 2012 have put the supply chain for materials and standard parts under immense stress of capacity and brought many aerospace suppliers to the edge of their management capabilities. Secondly have many smaller and medium sized companies suffered from the circumstances on international financial markets that significantly reduced the availability of capital.

Consequently large OEMs have started mapping their supply chains to increase transparency among their various suppliers and to be able to proactively manage risks in their supply chain. This research project shall therefore aim at analyzing which different theoretical supply chain mapping techniques and processes exist and which factors and characteristics can be used to classify and distinguish the different approaches.

The goal of this dissertation is to build a model relying on the notion of complex adaptive systems to represent the interdependencies among the various tiers of suppliers and to simulate appropriate hedging strategies.

Research

"Managing Risk in Product Creation Projects: The Automotive Manufacturer Perspective", Martin Vu (started in 07-2014, ongoing)

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. Industry experts will be confronted with a structured method for risk assessment and benefits over current approaches will be illustrated. Second of all, this research work will address the coordination issue in Engine development. The use of the NK model as important setting for search will consider different coordination approaches and illustrate improvement potential. In addition to the performance comparisons of different coordination approaches, the role of communication is evaluated.

"Supply Chain Risk Management in Large Scale Projects", Christian Rudolf (from 03-2014, ongoing)

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.

Research

“Optimal procurement and risk management policies in the presence of commodity price uncertainty”, Max Schöne (from 10-2014, ongoing)

Commodity price uncertainty constitutes a major source of risk in many industries requiring firms to set up effective procurement and risk management strategies to mitigate their exposure to adverse market movements. In this regard, practical evidence shows that successful strategies involve both operational decisions, such as pricing and inventory management, and financial hedging using derivative instruments. However, to determine the jointly optimal operational and financial hedging decisions, firms need to solve a complex optimization problem in the presence of multiple sources of uncertainty. Despite the practical relevance of this topic, there has been little research on the optimal alignment of pricing, procurement, and hedging decisions. Within the scope of this dissertation project, we aim to address this research gap and provide new insights with respect to optimal procurement and risk management policies under uncertainty.

Main Focus – Pharma Supply Chain

“Allocation strategies for epidemic intervention measures with an application to the Ebola crisis in Western Africa”, Eike Nohdurft (from 01-2014, ongoing)

Intervention resources have a vital role in epidemics like the 2014 – 2015 Ebola outbreak in West Africa. Their impact is measured in avoided number of new infections, which depends on the spatial allocation of intervention resources as the epidemic's trajectory is developing heterogeneously among regions. We propose an epidemic model with a novel factor accounting for behavioral adaptation in a population and use the model as a basis to optimize allocation of treatment resources among regions affected by the epidemic. Our optimization approach uses an Approximate Dynamic Program (ADP) and dynamically allocates resources from a fixed budget with a maximum deployment rate over the whole course of the epidemic. Our approach is suitable even for larger problem instances and numerical results indicate that it avoids up to 27% or 535 more infections compared to the currently applied allocation or several other heuristics. The epidemic model as well as the ADP capabilities are not limited to Ebola, but could easily be applied to other relevant diseases, like the Middle East respiratory syndrome or severe acute respiratory syndrome and additional intervention measures, like vaccines or community education programs.

Research

Main Focus – Humanitarian Logistics

“Decision behavior in humanitarian logistics - The effect of stress on order decisions in the newsvendor problem”, Maximilian Burkhardt (from 10-2014, ongoing)

Natural disasters, military conflicts and other complex emergencies; in 2013 the level of international humanitarian response to crises rose to a record of 22 Billion USD. Logistic operations in a humanitarian crisis are key, in order to provide the affected people with emergency supplies quickly. Approximately 80% of the United Nations humanitarian aid budget in 2010 was spent on logistics. Thus the need for efficient logistics operations and improved decision making through the application and development of new tools and concepts in an environment where resources are restricted and immediate action is of the essence, is more pressing than ever. In this dissertation we aim at evaluating the effect of stress on order decisions in the context of humanitarian logistics focusing on disaster relief operations. Time pressure and high-stakes involved serve as relevant task-related stressors in this context and are going to be applied, while facing a standard order decision, the newsvendor problem. In order to provide specific measurements for improvement, the experiments are conducted with a variation of differently skilled subject groups, stressors and settings.

“Predictive Analytics for the Optimization of Airline Operations“, Anna Achenbach (from 08-2015 ongoing)

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. To continue the productivity journey predictive analytics can help to uncover additional potentials and unknown factors and relations. According to my Master thesis predictive analytics will be a critical asset for airline operations. Especially the areas of fuel efficiency, crew scheduling and delay prediction hold great potential.

As of today several companies both airlines and IT- service provider have expressed their interest in a co-operation. Possible topics ranging from delay propagation to fuel prediction and crew scheduling are discussed and evaluated. Within the next month the co-operation partner will be chosen. Depending on the final topic different data mining approaches and statistical analysis will be used to develop a predictive algorithm. Extensions such as the inclusion of additional data sources will be the bases for the following papers.

“Investments into container shipping capacity under market and regulatory uncertainty - A real options approach“, Christian Haehl (from 10-2014 ongoing)

Christian Haehl's dissertation project focuses on investment decisions into container shipping capacity in the ocean freight markets. A highly volatile market environment, periods of depressed freight and charter rates and a race for economies of scale have repeatedly led to severe overall excess shipping capacities and financial distress for individual shipping companies. In addition to market uncertainties, recent introduction of new regulation has introduced additional regulatory uncertainty to ship investments.

The aim of this dissertation project is to better understand the investment decision of individual market participants and how especially regulatory uncertainty affects optimal investment rules. Insights acquired are expected to be useful for in three regards: individual investors gain more insight on optimal capacity decisions given market and regulatory uncertainty, regulators learn about the effects of lengthy regulatory consultations and the resulting uncertainty, and the research hopes to contribute to an overall understanding of resulting capacities in the market and whether observed decisions are in fact rational or not.

In his first Paper, Christian Haehl builds an investment model for capacity expansion in a monopolistic container shipping market. The model builds on real options theory and besides industry-specific factors (time to build and possibility to lay up ships) introduces the possibility to charter shipping capacity to the capacity expansion problem.

“Acquisitions in the logistics sector: A sustainable value creation or aware value destruction? – A case study based analysis“, Vefa Alparslan (from 11-2014 ongoing)

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 co-operations such as bilateral partnerships or joint ventures, mergers and acquisitions require thorough pre analyses and the success basically depends on different factors. Even 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 the 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 logistics related cases available. In this dissertation, I aim at identifying the main drivers for the success or failure of mergers and acquisitions in the logistics industry based on selected cases. I apply the case study research method to figure out why mergers and acquisitions in the logistics industry fail or succeed. In this context, European as well as Chinese cases are analyzed to see whether local or geographic circumstances have a significant influence on mergers and acquisitions. Furthermore, I aim at showing significant factors how logistics relevant mergers and acquisitions can be more promising in the future.

“Solving the last mile problem in online grocery business” (working title), Daniel Makowski (from 07-2015 ongoing)

Order groceries from the internet and have them delivered directly to the front door is an emerging trend. Newspapers, magazines, studies of consultancies, and research journals publish items on this topic. Despite the increasing interest online food retailing still is a niche market. The market share of e-groceries in Germany was only 0.3% or 370 million € in 2012. Nevertheless experts predict an accelerated growth for the German market in the next couple of years, until 2020 the market share of e-groceries could raise up to 10 %. Main drivers for this development are a growing demand for comfort in an aging population and time savings for employees with increasingly irregular working hours and less free time. To make home delivery of grocery goods suitable for the mass online grocers have to solve the “last mile problem”, often referred as the biggest challenge for further development of online food retailing. Consumer expect quick and flexible delivery at low rates and narrow delivery time frames, which is connected to high shipping expenses and logistical complexity for the retailers. In urban areas additional issues like infrastructural and environmental challenges need to be faced. In practice e-grocers have implemented various options to solve the

last mile problem, either by a company owned delivery fleet, in cooperation with logistic service providers, like parcel services, or by crowd delivery.

Based on the challenges stated above the research will answer the question how e-grocers can solve the last mile problem effectively in a market with a strong “service side complexity” and which last mile delivery method is most efficient.

Research

Research Seminar

A number of professors were invited to talk about their latest research, among them:

- 01-2015
Professor John R. Birge, Jerry W. and Carol Lee Levin Professor of Operations Management,
The University of Chicago Graduate School of Business
“Alternative Pricing Policies and Market Designs in Electricity Markets”
-

Research stays abroad - Part I

Research collaboration with Prof. Elisa Long, Anderson School of Management at University of California, Los Angeles (UCLA)

From January to April 2015, Eike Nohdurft, Ph.D. candidate and Research Assistant at WHU stayed as visiting researcher at the Decisions, Operations and Technology Management department of Anderson School of Management. During his stay, Eike Nohdurft worked together with Prof. Elisa Long on the research project “Allocation strategies for epidemic intervention measures with an application to the Ebola crisis in Western Africa”. Mr. Nohdurft had the opportunity work together with an established expert in the field of epidemic modeling as well as being advised by various professors of other disciplines at Anderson. The collaboration is combining the expertise of Prof. Long in epidemic modeling with the profound experience about mathematical optimization of the Kühne Foundation Endowed Chair of Logistics Management. Mr. Nohdurft was also able to participate in research seminars covering the latest topics relevant in the field of Operations Management research.

About Anderson School of Management

The Anderson School of Management is based at the University of California, Campus Los Angeles. The UCLA Anderson School is regularly ranked among the top business schools in the world. The Decisions, Operations and Technology Management department area has been ranked #2 among US business schools in citation impact while being comprised of 15 faculty members.

Research

Research stays abroad – Part II

Research collaboration with Prof. Jan van Mieghem of the Managerial Economics and Decision Sciences (MEDS) department at Kellogg School of Management, Evanston, IL, USA.

From January 06th, 2015 to March 21st, 2015, Philipp Rau, external PhD student at the Chair of Logistics Management at WHU, stayed as a visiting scholar at the Northwestern University Kellogg School of Management in the MEDS department. During his stay in Evanston, he had the opportunity to work with Prof. Jan van Mieghem, Harold L. Stuart Professor of Managerial Economics.

Philipp Rau presented his research at the Kellogg School of Management and was able to advance his research in cooperative game theory and alliance formation in the container shipping industry. Due to the highly international nature of Kellogg's PhD program, he had the chance to exchange ideas with researchers from all over the world. Besides his own research, Philipp Rau had the opportunity to attend PhD classes as well as a number of research presentations at Kellogg. Furthermore, he had a great exchange of ideas with highly renowned researchers in the field of operations research, game theory, and economics.

About Kellogg School of Management

The Kellogg School of Management at Northwestern University develops leaders who inspire growth in people, organizations and markets. Based just outside of Chicago, the school is a global leader in management education, renowned for its distinctive thought leadership and pioneering approach to learning. Kellogg offers an innovative portfolio of MBA programs.

The Doctoral Program at the Kellogg School of Management is founded on intellectual rigor, the desire to develop useful frameworks and insights for the business environment, and a culture of collaboration. Doctoral students are provided with the skills necessary to succeed as scholars: the ability to think critically, faculty with rigorous research methods, knowledge of the relevant questions in their field and the motivation to continue learning throughout their career.

Research

Working papers

- Ritzenhofen, I., Birge, John R. and S. Spinler (2015): The Structural Impact of Renewable Portfolio Standards and Feed-in-Tariffs on Electricity Markets. *European Journal of Operational Research (EJOR)* (under review)
- Ritzenhofen, I., Birge, John R. and Spinler, S. (2015): Robustness of Renewable Energy Support Schemes Facing Uncertainty and Regulatory Ambiguity. *Production and Operations Management* (under review)
- Winkenbach, M., E.E. Blanco and S. Spinler (2014): A Queuing-Theory-Based Framework for Macroscopic Traffic Flow Modeling. Submitted to *Transportation Science* (under review)

Publications

- Gürtler, B., S. Spinler (2015): Supply risk interrelationships and the derivation of key supply risk indicators. *Technological Forecasting and Social Change*, 92, 224 – 236.
- Gürtler, B., S. Spinler (2015): When does Operational Risk cause Supply Chain Enterprises to Tip? A Simulation of Intra-Organizational Dynamics. *Omega*, forthcoming.
- Neboian, A., S. Spinler (2015): Fleet replacement, technology choice and the option to breach a leasing contract. *Decision Sciences Journal*, 46 (1), 7 – 35.
- Hach, D. and Spinler, S. (2015): Capacity Payment Impact on Gas-Fired Generation Investments under Rising Renewable Feed-In – A Real Options Analysis. *Energy Economics*, forthcoming.
- Hach D., Chyong C.-K., Spinler S. (2015): Capacity market design options: A capacity expansion model and a GB case study. *European Journal of Operational Research (EJOR)*, forthcoming.
- König, A., S. Spinler (2015): The Effect of Logistics Outsourcing on the Supply Chain Vulnerability of Shippers – Development of a Conceptual Risk Management Framework. *International Journal of Logistics Management*, forthcoming.
- Ritzenhofen, I. and S. Spinler (2015): Optimal design of feed-in-tariffs to stimulate renewable energy investments under regulatory uncertainty – a real options analysis. *Energy Economics*, dx.doi.org/10.1016/j.eneco.2014.12.008
- Stefan T., Marcelo de la Cruz, Martin Vu (2014): Produkte systematisch entwickeln. *Controlling & Management Review (CMR)*, Volume 58, Issue 4, pp 24 - 31

- Winkenbach, M., P. R. Kleindorfer and S. Spinler: Enabling Urban Logistics Operations at La Poste through Integrated Location-Routing. Forthcoming in *Transportation Science*.

Examinations

Co-advisor for dissertations

- Röllecke, Felix Johannes - Advisor: Professor Huchzermeier
“Managing product returns – analytical and empirical studies towards optimal returns policies”
 - Steinbach, Torsten – Advisor: Professor Wallenburg
„Performance-based contracting for complex logistics services: Conceptual foundation and empirical insights“
 - Steuber, Marc – Advisor: Professor Huchzermeier
“Manufacturing re- and nearshoring: Recent trends in global footprint strategies”
 - Süßer, Theresa – Advisor: Professor Jost
“Determining the optimal level of customization: A strategic analysis of cost and benefits in platform-based mass customization”
 - Winselmann, Kai Philipp – Advisor: Professor Rudolf
“The Kelly Criterion and Growth Optimal Strategies in Theory and Practice”
-

Bachelor-Theses

- Berger, Niklas Konstantin Lauritz
“A Real Options based Valuation of the Music Streaming Service Spotify”
- Burkart, Gregor Maximilian Ahmed
“The Evolution of Valuation Models – Valuing Investment under Uncertainty in the German Mobile Telecommunication Services”
- Vogel, Simone
“Industry 4.0 – why is logistics an essential determinant of the success of Industry 4.0”
- Will, Lennart Raphael Axel Duncan
“Valuing Global Market Entry Options – The Case of audibene GmbH”
- Witmer, Julian Aaron
“Cross-Channel Retailing Integrierte Multichannel Systeme im Deutschen Lebensmittel-einzelhandel”
- Wolfewicz, Arne Jascha
„Evaluation of Latin American countries for strategic investments in lead logistics services location“

Examinations

Master-Theses

- Jattke, Hanka
“Last Mile Logistics Solutions in Omni-Channel Retail”
- Ziervogel, Jochen
“The Application of Big Data Techniques to Reduce the Funding Costs of German SMEs:
Literature Review and Case Study”
- Durán, José Daniel (KLU)
“Untersuchung von Belieferungskonzepten für die Region Lateinamerika im Bereich After
Sales der Automobilindustrie”

Activities for WHU

Group Speaker of the Supply Chain Management-Group

The group includes professors Arnd Huchzermeier, Lutz Kaufmann, Carl Marcus Wallenburg, Stefan Spinler and Assistant Professors Matthias Ehrgott and Felix Reimann. The Speaker of the Group has a coordinating role with respect to teaching and to extend the faculty in the group.



(from left to right: Professors S. Spinler, A. Huchzermeier, L. Kaufmann, C.M. Wallenburg)

Campus for Supply Chain Management

The 2015 Campus for Supply Chain Management was dedicated to the interesting topic of “Supply Chain 2025 - Expect the unexpected?”. The students’ team that organized the event, headed by Enrico Schönheit, did an excellent job in getting aboard relevant companies, practitioners and academics. Guest speakers such as Dr. Frank Appel (Deutsche Post), Karl Rudolf Rupprecht (Lufthansa Cargo) and Gregory Bryan (Amazon) contributed their view on the necessity and value of speed in the supply chain.

The next issue of the Campus is currently being planned. The discussions next year will focus on the topic “Supply Chain 4.0 - Where does digitization lead us?”

I would like to take the opportunity to thank Mr. Martin Willhaus, Managing Director of the Kühne Foundation, for his efforts to make this event a success. He continues to provide invaluable support for the students organizing the event to get in touch with industry leaders and thus fosters the exchange between academia and (logistics) industry.

Activities for WHU

Member of the Senate

The school's senate is comprised of eleven faculty members who are elected by the faculty. Prof. Spinler is one of them, with Prof. Wallenburg being the replacement.

Member of the search committee **Professorship in Operations Management**

Due to rising demand for Operations Management (OM) and Logistics in all of WHU's programs, a search for an additional faculty member in the area of OM was initiated. A total of 19 applications were received, from which four high-caliber candidates were invited for talks on campus.

Activities for the scientific community

Conference papers

- 26th Annual POMS Conference
Washington D.C./USA, May 08-11, 2015
“Decision making in humanitarian logistics operations under ambiguity”
Behavioral Operations Track
Burkhardt, Maximilian and Spinler, Stefan
“Optimal Allocation of Epidemic Intervention Resources with an Application to the 2014 West Africa Ebola Crisis”
Nohdurft, Eike and Long, Elias and Spinler, Stefan
- INFORMS Annual Meeting 2014
San Francisco/USA, November 09-13, 2014
“Robustness of capacity markets – a stochastic dynamic capacity investment model”
Hach, Daniel and Spinler, Stefan
“Coordinating the Health Care Supply Chain – Saving cost and improving service level through joint Forecasting and Planning”
Nohdurft, Eike and Spinler, Stefan
“Robustness of Renewable Energy Support Schemes Facing Uncertainty and Regulatory Ambiguity”
Ritzenhofen, Ingmar, Birge, John R., and Spinler, Stefan
- Atlantikbrücke Roundtable Discussion
Berlin/Germany, March 16, 2015
“The Renewables Revolution: Green Subsidies Between Promise and Failure”
Ritzenhofen, Ingmar, Birge, John R., and Spinler, Stefan
- Potsdam Institute for Climate Impact Research seminar
Potsdam/Germany, March 02, 2015
“Robustness of Renewable Energy Support Schemes Facing Uncertainty and Regulatory Ambiguity”
Ritzenhofen, Ingmar, Birge, John R., and Spinler, Stefan
- 27th European Conference on Operational Research
University of Strathclyde, Glasgow, July 12-15, 2015
“Investment into ocean freight capacity: A real options approach in oligopolistic competition”
Rau, Philipp and Spinler, Stefan

Activities for the scientific community

Award

Dr. Matthias Winkenbach receives Science Award for Supply Chain Management 2014



Dr. Matthias Winkenbach of WHU - Otto Beisheim School of Management has won the Science Award for Supply Chain Management 2014. The researcher received the award, presented by the German Logistics Association (BVL), for his thesis on urban logistics. The award was presented during the 31st International Supply Chain Conference in Berlin. The thesis, entitled „Quantitative Models for Optimization and Simulation in Urban Logistics,“ was prepared for the Supply Chain Management Group at WHU, under the direction of Prof. Stefan Spinler.

„In addition to its practical approach, the dissertation is persuasive particularly for its extraordinary methodological diversity,“ doctoral advisor Spinler pointed out. „The methodology addressed in the work is already in pilot projects in urban logistics in Nantes and Chambéry, where it serves as a basis for planning.“ The chairman of the jury, Professor Wolfgang Kersten of TU Hamburg, also emphasized that the work had been prepared in a high-profile international network, namely in cooperation with scientists from INSEAD and the Massachusetts Institute of Technology (MIT). In his dissertation, Winkenbach dealt mainly with issues associated with urbanization, globalization and the consequent rapid rise of eCommerce. He underscored the factors relevant from the point of view of businesses and the market, yet without neglecting the dimensions of environmental pollution and emissions. His findings have significance for a wide variety of network-optimization problems and can be applied beyond the field of urban logistics and road freight transport. The Science Award for Supply Chain Management carries cash prizes of EUR 10,000 for the recipient as well as for the supervising institution. The award in 2014 is sponsored by BASF. BVL presents the award each year. Scientists in all fields of supply chain management are eligible to apply for the award. They submit dissertations or postdoctoral theses, project studies or monographs with a close connection to practical issues in supply chain management. Crucial to evaluation of the work are factors of practical relevance as well as the innovative character of the work. This year’s lecture series featuring the five finalists for the award supported by the Kühne Foundation.



Activities for the scientific community

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)
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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

Appendix

List of acronyms and abbreviations

ANP	Analytic Network Process
BUGA	Bundesgartenschau
CCRM	Collaborative CO ₂ Reduction Management
BVL	Bundesverband für Logistik
DHV	Deutscher Hochschulverband
EJOR	European Journal of Operational Research
ETS	Emission Trading System
EV	Electric Vehicles
EWGCFM	Euro Working Group on commodities and Financial Modelling
FMSG	Fast Moving Consumer Goods Industry
FTMBA	Full-Time Master of Business Administration
GOR	Gesellschaft für Operations Research
ICV	Internal Combustion Vehicle
IFT	Intermodal Freight Transport
INFORMS	Institute for Operations Research and Management Science
LSP	Logistics Service Provider
NetloP	Netzwerkmanagement für logistische Prozesse
NGO	Non-Governmental Organization
OEM	Original Equipment Manufacturer
OR	Operations Research
PCD	Partnership for Child Development
POMS	Production and Operations Management Society
PTMBA	Part-Time Master of Business Administration
SCM	Supply Chain Management
SCRM	Supply Chain Risk Management
VHB	Verband der Hochschullehrer für Betriebswirtschaft
WFP	World Food Program